



THE IMPACT OF CORPORATE GOVERNANCE MECHANISMS ON EARNING MANAGEMENT PRACTICES IN LIGHT OF THE COVID-19 PANDEMIC USING THE ARDL MODEL - AN APPLIED STUDY ON IRAQI COMPANIES

Hamza Nahedh Abd al-Karim al-Jumaili^a

Samah bin Salam Halawa^b

- Corresponding author. Assistant Lecturer, Fallujah University, College of Administration and Economics, Iraq . E-mail :hamzatnaljumaily@gmail.com , ORCID: <https://orcid.org/0000-0002-2886-3268>
- Lecturer, University of Sousse, Higher Institute of Management in Sousse, Republic of Tunisia. E-mail: halaoua.ahmed@gmail.com

Article history:	Abstract:
<p>Received: 4th October 2023 Accepted: 4th November 2023 Published: 6th December 2023</p>	<p>This study aims to determine the impact of corporate governance mechanisms represented by the factors of board size, ownership focus and company size on earning management, taking into consideration the COVID-19 period as an independent variable in a number of 13 Iraqi companies for a period of time represented by 2017-2021, represented by the problem of the study with: What is the impact of corporate governance mechanisms on earning management practices in light of covid-19? The study used the method of analyzing integrated time series regression models using (ARDL) Auto-Regressive Distributed Lag Model, and the study data was processed using the E-views12 program, The study found that the Board of Directors (BSIZE) and the coronavirus pandemic COVID-19 have a unilateral impact on earning management (EM), while the coefficient of ownership concentration, company size and company indebtedness indicate an adverse impact on earning management (EM), but this effect is not morally significant at a 5% indicative level.</p> <p>Based on the findings of the study, the two researchers recommend that the Governing Council should be restructured in a manner that regulates earning management practices, as well as take all measures and precautions to address health crises, as they have a clear impact on increasing earning management practices, such as the coronavirus pandemic.</p>

Keywords: Corporate governance; earning management; COVID-19 pandemic; Iraqi companies

1. INTRODUCTION

Financial reports are one of the most important sources of information on which economic decision makers rely. Therefore, we find that the accuracy of those decisions depends largely on the quality of the presented financial reports. These reports aim to provide useful information that helps their users in evaluating the company's economic performance, such as predicting future cash flows. These reports are prepared Reports according to a set of accepted and recognized accounting standards and principles (Al-Naas, 2014) that these principles and standards allow the company a space of freedom in choosing accounting methods and policies to deal with its economic activities and operations, and on this basis, the company will have at its disposal multiple alternatives used to meet what it seeks For him, one of these methods is the use of flexibility in estimation with regard to future events for some items of the financial statements. This flexibility is exploited by the company towards managing the results for various goals centered around showing the results of the company's business and its financial position contrary to reality.

Earning management occurs when the manager uses his personal considerations in his financial report, which may cause the company's stakeholders to be misled about the company's realistic state, and some studies show the possibility of management's intervention in the financial reporting process, not only through accounting estimation methods, but also through The operational decision related to the daily operations of the company, as they concluded (Healy and Wahlen, 1999) as well as (Dechow and Skinner, 1995) that some earning management arise through what managers do in managing operational processes, for example, expediting sales, changing the product shipment schedule, and delaying research and development expenses and also maintenance expenses.



Corporate governance mechanisms play a prominent role in limiting earning management practices, but the level of influence may vary according to the circumstances and strategies used in companies, and many studies have dealt with it that focused on showing its impact on reducing earning management practices by departments, as the study concluded (Jensen and Meckling, 1976) that boards of directors with a small number are more effective in supporting the activities of the chief executive officer than a board of directors with a large size, such a thing occurs because the boards of directors with a larger size tend to focus on preserving their name and good reputation so that the CEO becomes Sufficient freedom and power to control the company. On the contrary, (Yermack, 1996) found in his study that the size of the board of directors is inversely related to the management of results, that is, the smaller the board of directors, the more there is a practice of managing high results, while they found (Aprillya & Khusnul, 2021) that the size of the board of directors cannot affect the results. Earning management practices, in the sense that the size of the board of directors, whether large or small, cannot prevent the manager from practicing results management. Rather, that depends on the experience and skill of the board members and not on their number.

A study (Shaqqour, 2015) found that increasing the percentage of ownership dispersion and lack of concentration reduces the degree of profit management practice in hotels listed on the Amman Stock Exchange.

The study (Ramadan, 2013) found that the size of the company affects the tendency of management towards the practice of results management, so that the increase in the size of the company increases the probability of practicing earning management by 99.92% in the Jordanian industrial companies, as the study concluded that large companies are more practice in earning management than small businesses. The study (Ismail, 2015) concluded that there is no significant effect of the size of the company on earnings management, and a series of studies discussed the impact of the financial crisis of 2008 on the quality of financial reports such as the financial crisis of 2008, but non-financial crises such as the COVID-19 crisis that caused great disruption in financial markets and the global economy has not proven decisively and accurately impact on the quality of financial reports. To date, only a few studies have been able to investigate this issue but none have focused on an environment with strong governance at the country level (Pham et al., 2021). Corporate governance has always been a primary concern of studies related to the financial crisis (Erkens et al. 2012). Therefore, this study is one of the first studies to address the impact of corporate governance mechanisms on earning management practices during the pandemic. Now, there are many studies that deal with earning management in Arab countries. As for the State of Iraq, there are not a large number of studies that dealt with this problem, but they remained in the circle of their inability to generalize their findings, as a result of fluctuations in circumstances and political and economic instability in addition to These studies dealt with sectors of one type, so what distinguishes this study is its unique study of the practice of earning management in a sample of Iraqi companies listed in the Iraq Stock Exchange during the period from 2017-2021 for different sectors, taking into account the Corona pandemic as an independent variable covid- 19, and the other feature of this study is that it deals with a global health event (covid-19), which was considered as one of the factors that may affect the earning management practices, and this is what most of the current and previous studies missed, and on this basis our study aims to address the various corporate governance mechanisms, access and knowledge Its impact on earning management practices in light of the covid-19 pandemic. The study is limited to a group of Iraqi companies listed in the Iraq Stock Exchange market in various sectors (see Table:2) for the time period from 2017 to 2021.

Based on the foregoing in presenting a summary of our study in terms of constructing the problem of our study and its objectives, we can formulate the question of the problem with: What is the impact of corporate governance mechanisms (GCG) on earning management practices in light of the COVID-19 pandemic?

This study aims to Statement of the theoretical framework for corporate governance mechanisms as well as management of results, in addition to an overview of the Corona pandemic; Verifying the existence of earning management practices in the Iraqi companies under study for the various sectors. and an examination of the impact of the Covid-19 pandemic on the level of earning management practices by corporate management.

2. Theoretical framework; previous studies and hypotheses

2.1. Results management

Earning management is a major indicator of the quality of financial reports, and by reviewing the literature and previous studies, we can show the definition of earning management according to what was presented by (Schipper, 1989), where he defined earning management as manipulating external reports to achieve special benefits such as improving compensation for managers. Walker also emphasizes both accrual and real earnings management in the following definition: the use of managerial judgment about (within GAAP) accounting choices, earnings reporting options, and real economic decisions to influence how underlying economic events are reflected in one or more measures of earnings (Malek, 2018), earning management can be called disclosure management in the sense of purposeful intervention in the process of preparing external financial reports. Manipulation aims to change the reported financial performance of the organization where transactions can be rescheduled in relation to the transaction



recognition dates which is known as real manipulation (Marc, 2010), and earning management can be classified into two categories: accruals management and real activities manipulation. Where receivables management is in Generally Accepted Accounting Principles (GAAP), real activities manipulation occurs when managers take actions that change the timing or structure of an operation, investment, or financing with the intent of trying to affect the outputs of the accounting system, receivables management is not achieved by changing the core operating activities of the company but by Choose the accounting methods used to represent those activities. In contrast, earning management involves changing the company's core operations in an effort to boost current-period earnings. Both types of earning management involve managers' attempts to increase or decrease profits (Katherine, 2010), and despite the costs associated with the manipulation of real activities, executives are unlikely to rely solely on merit manipulation to manage results. Although genuine manipulation of activities is likely to impose greater long-term costs on the company, there are reasons to believe that managers can expect to incur larger private costs, and this happens least in the short term when they engage in accrual manipulation, as CFOs would like to More in manipulating the results through real activities rather than entitlements, and we can explain the reason for this to two possibilities, First, accrual manipulation is more likely to attract attention from the auditor or regulator than real decisions about pricing and production. Second, relying on accrual manipulation alone carries risks (Sugata, 2006).

The prevalence of real activity manipulation as a profit management tool was not well understood until recent years, with more than 400 executives surveyed and documenting the widespread use of real activity manipulation. 80% of CFOs surveyed stated that in order to achieve their profit target, they reduce spending on research and development, advertising and maintenance, while 55% said they would delay a new project, even if such a delay causes a small loss of value to the company. Also, managers avoid reporting annual losses or missing analyst forecasts by manipulating sales, underestimating discretionary expenses, and overproduction to reduce cost of goods sold, with the intent of increasing profits. So recent research has begun to examine the consequences of manipulating real activities. Whereas, companies that meet profit criteria only by engaging in real activity manipulation have better operating performance in the subsequent three years than companies that do not engage in real activity manipulation. (Amy, 2012), and there are three relevant studies looking at real earnings management activities and their results in the capital market. (Roychowdhury ,2006) focuses on the manipulation of real activities, which he defines as administrative actions that deviate from normal business practices, and are carried out with the primary aim of misleading certain stakeholders into believing that profit standards have been met in the normal course of operations. Focusing on the zero-profit threshold and examining annual data, he found consistent evidence of companies trying to avoid reporting losses in three ways: (1) boosting sales by speeding up their timing and/or generating unsustainable additional sales through additional price cuts or offering more credit terms lenient (ii) increasing production and thus allocating more overhead to inventory and less to cost of goods sold, resulting in lower cost of goods sold and higher profit margin; or (iii) reduce the total discretionary expenses (defined as the sum of R&D, advertising, general administrative expenses, and selling expenses) to improve the selling margin. This is most likely when these discretionary expenditures do not generate immediate income (Daniel & Paul, 2008).

Whereas (Zang, 2006) analyzes the trade-offs between accrual manipulation and real earnings management. It suggests that decisions to manage earnings through "real" actions precede decisions to manage earnings through accruals. Their results show that real manipulation is positively associated with the costs of accrual manipulation, and that accrual and real manipulation are negatively related. These results led her to conclude that managers treat the two strategies as alternatives.

(Gunny, 2005) deals with the consequences of real earnings management and found that real earnings management has a significant negative impact on future operating performance.

2.2. Corporate Governance

Corporate governance has emerged relatively late in the business world, and the term "corporate governance" and its everyday use in the financial press is a new phenomenon in the last 20 years or so. However, the theories behind the development of corporate governance, and the areas they encompass, date back much earlier and are drawn from a variety of disciplines including finance, economics, accounting, law, management and organizational behaviour. On this basis, the development of corporate governance is a global event, and therefore it is a complex field, including legal, cultural, ownership and other structural differences. Therefore, some theories may be more relevant to some countries than others, or more relevant at different times depending on the stage reached by each country or group of countries. The stage of development may refer to the evolution of the economy, corporate structure, or ownership, all of which influence how corporate governance is developed and accommodated in a country's environment (Christine, 2013). Corporate governance describes all influences that affect corporate operations, including those related to the appointment of controllers and/or regulators involved in regulating the production and sale of goods and services. Corporate governance, described in this way, includes all types of companies, whether they are established under civil



law or other laws. Companies exist as common or civil law companies, joint ventures, limited liability companies, cooperatives, joint societies, building societies, friendly societies, trade trusts, etc. (Shann, 1997). The purpose of corporate governance is to direct and control the activities of the organization from By establishing structures, rules, and procedures for decision-making (Vasant, 2020), where good corporate governance helps prevent corporate scandals, fraud, and potential civil and criminal liability of the organization, good corporate governance enhances the reputation of the organization and makes it more attractive to customers, investors, suppliers, and shareholders in the case of non-profit organizations. There is some evidence that good corporate governance produces a direct economic benefit to the organisation. A study conducted at Georgia State University and published in December 2004 found that public companies with independent boards of directors have higher returns on equity, higher profit margins, higher dividend yields, and larger share repurchases. This is consistent with another study of 250 companies conducted by the MIT Sloan School of Management which found that, on average, companies with superior information technology (IT) governance practices are 25% more profitable than companies with poor management. (FREDERICK & KEITH, 2006) And when we define corporate governance, we must take into account six factors: institutional, shareholders, governance, control, performance, and stakeholders, as corporate governance deals with how suppliers and shareholders guarantee their rights, and corporate governance is the link between managers, shareholders, and customers and creditors and suppliers (Georgios, 2018). Good corporate governance increases investor confidence, and there is evidence to suggest that where companies introduce good governance practices, stock prices rise. However, corporate governance is also about creating value-creating relationships with all stakeholders, including creditors, employees, the wider community and the environment. (Richard, 2007) Corporate governance also revolves around how public companies are structured and directed. In terms of every strategy, every innovation in product, operations and marketing, every acquisition and divestiture, every decision regarding asset allocation, financing, joint ventures, financial reporting, regulations, compensation, and community relations - every decision and every one of the thousands of decisions within each unit - is made Determined by part of the corporate governance system. Each of these decisions can be made consistent with long-term, sustainable value creation for investors, employees, and society, or for the benefit of one group in the short-term, regardless of the consequences for others. Through a system of checks and balances, they provide a transparent and accountable system for advancing objectively defined goals and standards (Robert & Nell, 2011).

2.2.1. Definition of Corporate Governance

The concept of corporate governance is generally simple and unambiguous, but when we tried to define it and scan the available studies looking for precedence, we came across a bewildering array of concepts behind the available definitions. The definition varies according to the sensitivity of the analyst, the varying degrees of sophistication, and from the point of view of academics versus that of corporate management. However, there is a basic uniformity in the thinking of all analysts that there is a unified and specific need to get rid of corporate mismanagement and to strengthen corporate governance at any cost possible. Margaret Blair defined it as "the whole set of legal, cultural, and institutional arrangements that determine what publicly traded companies can do, who controls them, how that control is exercised, and how risks and returns are exercised." (Thomas & Douglas, 2012) Academics define it from their point of view as addressing the problems that result from the separation of ownership and control. From the perspective of this definition, corporate governance focuses on some structures and mechanisms that would ensure a sound internal structure and board rules; the creation of independent committees; rules for disclosure of information to shareholders and creditors; Transparency of operations and impeccable decision-making and management oversight, as well as the ways in which corporate finance suppliers ensure they themselves get a return on their investment. (AIMA, 1997) Economics is defined as "a field in economics that looks at how to secure/incentivize the effective management of firms through the use of incentive mechanisms, such as contracts, organizational designs, and legislation. This is often limited to the issue of improving financial performance, for example, how can business owners secure/motivate corporate managers to deliver a competitive rate of return (OECD, 2001)."

2.2.2. Principles of Corporate Governance

The concept of corporate governance is based on certain principles, the most important of which are: (Fernando and al., 2017)

(1) Principle of fairness: This principle assumes that the corporate governance framework should ensure fair treatment of all shareholders, including minority shareholders, foreigners and other stakeholders such as employees, customer community, etc. The principles also stipulate that all contributors to the same class chain should be treated equally. Directors and key executives must be required to disclose to the Board whether they have, directly, indirectly or on behalf of third parties, a material interest in any transaction or matter directly affecting the Company.

(2) Transparency principle: Transparency is the cornerstone of corporate governance laws and codes. Transparency means openness and the willingness of the company to provide clear information to shareholders and other stakeholders



in all aspects of the workflow. Business enterprises must disclose their financial and operational results in a timely and accurate manner to ensure that their shareholders and other stakeholders understand the nature of the organization's operations and the future direction in terms of developments. In terms of financial reporting, most countries now require that listed companies use International Financial Reporting Standards (IFRS) as a framework/guideline.

(3) Principle of accountability: Corporate accountability refers to the obligation and responsibility to provide an explanation or reason for the company's actions and behaviour, and the board of directors must provide a balanced and understandable assessment of the company's position and prospects, and the board of directors is responsible for determining the nature and extent of the significant risks it wishes to take, The board of directors must maintain sound risk management and have effective internal control systems in place, the board must establish formal and transparent arrangements for corporate reporting and risk management and to maintain an appropriate relationship with the company's auditor, the board must inform stakeholders at regular intervals, and evaluate Fair, balanced and understanding of how the company achieves its business.

(4) Fiduciary principle: Another principle of good corporate governance is the fiduciary principle. Board members who are agents of the shareholders who invest money and own the organization must act in confidence while carrying out their duties to ensure full disclosure, diligence and obedience to principle. diligence and obedience to principle. Managers should not abuse their position of trust for personal gain at the expense of clients. The law requires the agent to exercise the highest degree of care and utmost good faith in preserving and preserving the assets and rights of the principal, and imposes damages and penalties on the trustee at fault.

(5) Responsiveness principles: Another principle governing good corporate governance is to respond efficiently and effectively to the needs of society. Responsive governance is governance that responds or interacts with issues, personalities and situations and takes decisions only after a comprehensive and impartial examination of all impacts as well as alternative courses of action.

To reach the objectives of the study and answer the problematic question, we put the following hypotheses:

- H₁: Board size affects results management.
- H₂: The focus of ownership influences results management practices.
- H₃: Firm size influences results management practices.
- H₄: The presence of covid-19 has increased results management practices.

2.2.3. Theories related to the development of corporate governance

Given the many disciplines that have influenced the development of corporate governance, the theories that inform them are quite diverse. (Table:1) provides a summary of some theories related to the development of corporate governance (Christine, 2013).

Table 1: Corporate governance theories

Theory name	Summary
Agency theory	Agency theory defines an agency relationship where one party (the principal) works with another party (the agent). In a company context, the principal is the principal and the manager is the agent.
Transaction cost economics theory	This theory views the company itself as a governance structure. Choosing an appropriate governance structure can help align the interests of the board members and shareholders.
Stakeholder theory	Stakeholder theory takes into account a broader set of components rather than focusing on stakeholders. So, when there is a stakeholder focus, the corporate governance structure provides some direct representation of stakeholder groups.
Guard theory	The directors are seen as the custodians of the company's assets and will be qualified to act in the interests of the shareholders.
Class domination theory	The directors see themselves as an elite at the helm of the company and will recruit/promote new manager appointments keeping in mind the suitability of the new hires for that elite.
Managerial domination theory	The management of the company with its knowledge of day-to-day operations may effectively dominate the managers and thus weaken the influence of the managers.
Path dependence theory	Path dependence may be structure driven and rule-governed corporate structures depend on the structures with which the economy begins.



Resource dependence theory	Managers can link the company to the resources needed to achieve the company's goals.
Foundation theory	The institutional environment influences societal beliefs and practices that affect the different "actors" within the society.
Policy theory	Political theory has a significant impact on different ownership and governance structures.
Network governance theory	The network's governance structure allows for superior risk management.

2.2.4. Adapting corporate governance to COVID-19

The COVID-19 crisis has prevented many companies from meeting certain legal and regulatory obligations, and governments around the world have taken steps to amend these requirements. Although some of these adjustments are temporary, they may also have a lasting impact on how companies are managed, their capital structure, ownership structure and how they manage their relationships with shareholders and stakeholders. This gives new impetus to discussions about a number of long-term developments that may require the adaptation of corporate governance policies and regulations in the post-COVID-19 era. Experiences from the pandemic require improvements in risk and crisis management frameworks as well as related issues such as audit quality, stock price manipulation and insider trading. Countries should also draw on their experiences to strengthen or clarify regulatory frameworks to participate remotely in shareholder meetings. Also, the recent practices of some companies related to amending the terms of executive remuneration following the Covid-19 crisis require a new scrutiny of the conditions and procedures for determining and supervising performance-related wages. On this basis, the pandemic raised concerns and prompted lawsuits regarding the quality of risk disclosures. Although most lawsuits related to COVID-19 are yet to be adjudicated, experiences from the pandemic require improvements in risk and crisis management frameworks (including health, supply chain, reputation, and environmental risks) as well as related issues such as audit quality and fraud. In stock quotes and insider trading. In some areas risk monitoring and detection can be enhanced with the use of new digital technology.

The pandemic has also resulted in an important development in many markets, which is the increase in corporate group structures. The more complex the group structure, the more complex the governance arrangements and the greater the range of potential abusive practices. Therefore, special attention should be paid to addressing the shortcomings in national disclosure frameworks related to capital structures and corporate oversight.

Over the past decade, many markets have seen an increase in ownership concentration, which is largely attributed to the growth of state ownership through various state-controlled investors. Against this backdrop, policymakers and regulators must ensure a level playing field regarding the governance of state-controlled listed companies and their peers owned by private investors. All categories of shareholders in state-controlled listed companies must be treated fairly and the company must adhere to the same standards of transparency and disclosure as other listed companies. With respect to shareholder meetings, countries should draw on experiences during the COVID-19 crisis in order to strengthen or clarify their regulatory frameworks for remote participation. This would improve the odds of all shareholders following the meeting and asking questions about how the company is being run during the pandemic.

After the outbreak of COVID-19, there were concerns that some companies may have rearranged executive bonus terms by adapting performance measures and ignoring established goals. In order to ensure the link between executive bonuses and corporate performance in the long term, the experiences gained from these practices require renewed scrutiny of the conditions and procedures for determining and supervising performance-related pay. (OECD, 2021)

2.3. Covid-19 pandemic

COV-19 is one of the strains that may cause disease in animals and humans. A number of these viruses cause respiratory diseases in humans that range in severity from the common cold to more serious diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) (Kfuss, 2020), and the spread of this virus resulted in an almost complete disruption of all state institutions as well as companies for quite a while, and so far there have been a limited number of studies that have dealt with the impact of COVID-19 on economic life in various fields, as the study (Li, and al. 2022) examined whether The market could recognize the value of corporate governance mechanisms (ownership structure, board structure, management incentives) for listed Chinese companies. Non-state-owned enterprises are more immune to the negative shocks of COVID-19. As for the structure of the board of directors, it was found that the double-chairman-CEO arrangement is more valuable and can effectively mitigate the negative shocks of the epidemic on the share price. As for management incentive mechanisms, it shows that management contribution, management compensation, and executive stock options are all effective mechanisms and



can withstand better against the negative shocks of the COVID-19 pandemic on corporate stock prices. While the study (Yu-Lin and Ya-Chih, 2022) examined whether COVID-19 affects the quality of corporate financial reporting and whether corporate governance has a mitigating effect using data from listed companies in the United Kingdom, it showed that the quality of corporate financial reporting was less during an epidemic. Specifically, companies have engaged in more profit management through real activities during the pandemic. It also found that a larger board size helps mitigate the negative impact of COVID-19 on the quality of financial reporting, although this study did not find any mitigating effect on the independence of the board and the duplication of the CEO.

IFAC believes that to be crisis-ready, companies, i.e., boards and management, must use “integrated thinking” in the management of their organisations, with a focus on value drivers, business model flexibility, clear assessments of risks and opportunities, and strong alignment of KPIs and incentives. Crises put businesses to the test, highlighting strategic and structural weaknesses or dependencies that might be easy to overlook in boom times. IFAC’s partnership with the International Integrated Reporting Council shows our support for companies to focus on creating and preserving value over the long term, and regulators that oversee corporate reporting must protect the interests of investors and other stakeholders who rely on public information provided by companies. In turbulent times, regulators must embrace their hedging role to generate confidence in the markets. Collaboration with companies, auditors and other important service providers is needed. What is most needed in times of great uncertainty is direct dialogue between multiple stakeholders including regulators, firms, investors and various components of the accounting profession that proactively identify and improve understanding of crisis-related issues and impacts. IFAC supports early action by regulators to collaborate directly with firms and provide appropriate guidance in order to support the reporting of high-quality information to shareholders and stakeholders. (IFAC, 2022)

3. STUDY METHODOLOGY

3.1. Study sample and source of information

This study uses a sample of Iraqi companies listed on the Iraq Stock Exchange for the period 2017-2021. The sample was distributed among a number of sectors, as shown in Table No. (2). The observations for this study were (52) observations. The data contained in this study were obtained through the financial reports and annual reports of the companies, which were obtained through the website of the Iraqi Securities Commission (<https://www.isc.gov.iq>)

Table 2: Details of the companies and the type of sectors covered by the study

No.	The Company's name	sector type	Percentage of Sector%
1	Modern tailoring		
2	Al Mansour Pharmaceutical Industries	industry sector	
3	Baghdad Soft Drinks Company		0.571
4	The Iraqi Company for Carpets and Furniture		
5	Babylon Hotel Company	Tourism and hotels sector	
6	Karbala Hotel		0.285
7	Baghdad Iraq General Transport Company	Services sector	
8	Karkh City Games Company		0.285
9	Iraqi company for the production and marketing of agricultural products	Agriculture sector	
10	Al-Amin Insurance Company		0.143
11	Gulf Insurance	Insurance sector	
12	Between the Two Rivers Company for Financial Investments	Investment sector	
13	Asiacell	Telecom sector	
Total	13 companies	7 sectors	%100



3.2. Analysis methodology and estimation results of the study model

This axis includes the methodology, the statistical method, and the results that have been reached, as it includes the presentation of the statistical methodology used in the analysis, through the use of modern standard approaches and methods that study the long-term relationships and effects between variables, which are represented in the methods of analyzing integrated time series regression models, through Studying the unit root of the time series of the study variables to determine the degree of their stillness (integration) and then analyzing the co-integration to verify the existence of a long-term complementary relationship between the independent variables and the dependent variable, and then estimating this relationship using the methodology (Auto-Regressive Distributed Lag Model -ARDL).

3.2.1. Description of the study model

The proposed standard model to identify the impact of corporate governance mechanisms on earning management practices in light of the Corona (COV-19) pandemic includes an applied study on Iraqi companies on a number of economic variables expressed by a mathematical function that is determined through the literature represented in theory and applied studies.

In determining the variables of the standard model, the study relied on theoretical sources and information available from previous applied studies, and since the study aims to measure the impact of corporate governance mechanisms on earning management practices in light of the Corona COV-19 pandemic, therefore, the variables are:

Dependent variable: earning management (EM).

The dependent variable in this study represents earning management through discretionary accruals (DA), and the earning management measurement model was used in this study according to the modified Jones model 1995. The following are the stages of calculating the total benefits to measure earning management using the modified Jones model:

The first stage: (calculation of total dues):

Total Accruals = Net Income from Operations - Cash Flows from Operations

$$TA_{it} = NIO_{it} - CFO_{it}$$

The second stage: Calculating the maturity value with a simple linear regression equation:

$$TA_{it} = \alpha_0(1/A_{it-1}) + \alpha_1 (\Delta Rev_{it}/A_{it-1}) + \alpha_2 (PPE_{it}/A_{it-1}) + e$$

Stage Three: Non-Discretionary Due Calculation (NDA):

$$NDA_{it} = \alpha_0(1/A_{it-1}) + \alpha_1 (Rev_{it}/A_{it-1} - \Delta Rec_{it}/A_{it-1}) + \alpha_2 (PPE_{it}/A_{it-1})$$

Stage Four: Estimated Merit Calculation:

$$DA_{it} = TA_{it} - NDA_{it}$$

whereas:

$TA_{i,t}$: the total accruals of company i during year t

$NIO_{i,t}$: net operating profit of company i during year t

$CFO_{i,t}$: net cash flows from the operating activities of company i during year t

NDA_{it} : the non-discretionary accruals of company i during year t

A_{it-1} : The total assets of the company over the past t-1 year

ΔREV_{it} : the rate of change in revenue (sales) between the current year t and the previous year t-1

PPE_{it} : total fixed assets for year t

ϵ_{it} : random error, representing the remainder of the total entitlement that is not explained by the regression model and is used as an indicator of voluntary entitlement. (DA)

Independent variables: The independent variable in this study is the mechanism of corporate governance (GC). The mechanisms used by the researcher in this study are an internal mechanism consisting of the size of the board of directors (BSIZE), measured by the number of board members in the company. Ownership concentration (prstructure) was used as another independent variable measured by the presence of ownership concentration by the number of members who have the largest number of shares concentrated to the total number of board members, and the company size (COSIZE) was used as another variable measured by the natural logarithm of the size of the company's assets, in addition to the pandemic period was used Corona covid-19 as an independent variable, the number 1 is given in the year in which the pandemic appeared and 0 is given otherwise.

Control variables: In this study, the debt ratio variable (DEBT) was used as a Control variables, as the indebtedness ratio used in this study is a comparison between the total debt and the total assets of the company. That is, the ratio of total debt to total assets is called the debt ratio.



4. ANALYSIS METHODOLOGY AND MATHEMATICAL FORM OF THE MODEL

The study relied on the (ARDL) Auto-Regressive Distributed Lag Model methodology, which was presented by Pesaran and Shin (2001). The ARDL methodology has many advantages, the most important of which are:

1- The possibility of combining variables with more than one level of stability, such as I (0) and I (1), and it is not required that they all be stable at the same level, coupled with the fact that the time series of the variables are not integrated of the second degree (I (2)) or order higher.

2- Through the ARDL methodology, we can determine the complementary relationship of the dependent variable with the independent variables in the short and long run, in addition to determining the size of the effect of each of the independent variables on the dependent variable.

3- The estimations resulting from this model are characterized by impartiality and efficiency, in addition to that it helps to get rid of problems related to deleting variables and problems of autocorrelation (Al-Shorbaji, 2009).

In addition, the study relied on the (ARDL) methodology as one of the most appropriate models with the volume of observations used, which are (65) observations obtained from Iraqi companies listed in the Iraq Stock Exchange for the period 2017-2021. Thus, the final form of the model to be estimated becomes as follows:

$$EM_{it} = \alpha_{it} + B_1 BSIZE_{it} + B_2 prstructure_{it} + B_3 COSIZE_{it} + B_4 COV-19_{it} + \varepsilon_{it} \dots \text{Model 1}$$

$$EM_{it} = \alpha + B_1 BSIZE_{it} + B_2 prstructure_{it} + B_3 COSIZE_{it} + B_4 COV-19_{it} + B_5 DEBT_{it} + \varepsilon_{it} \dots \text{Model 2}$$

4.1. The results of the analysis of the study model:

The practical application of the (ARDL) methodology included three steps represented in determining the degree of integration of the variables under study using unit root tests, testing the existence of an integral relationship using the Bounds Testing Approach, and finally estimating the (ARDL) to obtain the regression coefficients. The following is a discussion of the results of the study model analysis:

(1) Testing the stability of time series data (unit root tests)

The unit root test aims to examine the properties of the time series for all the variables in the model during the study period, to ensure the extent of their static, and to determine the degree of integration of each variable separately. Despite the multiplicity of unit root tests, the study will depend on the application of the Augmented Dickey Fuller test (ADF). Table (3) shows the results of the (ADF) test for the variables of the study.

Table 3: Results of the unit roots test for the study variables

variable	the level		The first difference	
	P.value	test value (ADF)	P.value	test value (ADF)
earning management (EM)	0.0000	-7.949	-----	-----
Board of Directors (BSIZE)	-----	-----	0.0000	-6.944
proprietary focus (prstructure)	-----	-----	0.0000	-7.824
company size (COSIZE)	-----	-----	0.0000	-8.051
Corona pandemic period (covid-19)	-----	-----	0.0000	-5.515
debt ratio (DEBT)	0.0027	-3.990	-----	-----

Source: Authors' own.

It is clear from Table (3) and based on the expanded Dickey-Fuller test (ADF) that the variables (earning management (EM), debt ratio (DEBT)) are the only variables within the study variables that are stable in their level at a significant level of 5%, which means that they are Integrated from degree (0) (0)I, while we find that the variables (Board of Directors (BSIZE), Ownership concentration (prstructure), Company size (COSIZE), Corona covid-19 pandemic period) are not static in their levels, and therefore tests were re-run The unit root again for these variables, and the results indicated that there is stillness for these variables after the first differences at a significant level of 5%, and this means that the time series of these variables are integrated of the first order (1)I, and this is considered a good indicator of the effectiveness of using the joint integration test between the time series.

(2) Choose the optimal deceleration period for the differentials

Since the (ARDL) model is very sensitive to time gaps, therefore, the optimal slowing period for the variables in the study model was determined using an Autoregressive Model Unrestricted vector by using five different criteria to determine the period: (Al-Shorbaji, 2009)



- The final prediction error (FPE) criterion.
- Aquiline Information Criterion (AIC).
- Schwarz information standard (SC).
- Hannan-Cowen information criterion (Q-H).
- Greatest possible ratio (LR) criterion.

According to these criteria, the optimal deceleration period is chosen that has the lowest value, which most of the criteria agreed upon. Table (4) shows the results of selecting the optimal deceleration period for the study variables.

Table 4: Criteria for selecting the optimal slowing down period for the study variables.

slowdown period	LR	FPE	AIC	SC	12
0	57.70411	57.49467	3.76E+17	NA	-1718.84
1	55.56753*	54.10149*	1.27e+16*	243.4389	-1581.05
2	56.86461	54.14196	1.37E+16	54.49778*	-1546.26
3	58.56351	54.58426	2.34E+16	31.06579	-1523.53
4	60.33768	55.10182	4.74E+16	23.88522	-1503.06
5	61.30289	54.81043	4.97E+16	43.25047	-1458.31

***Refers to the optimal number of slowing periods chosen by each criterion at the level of significance (5%).**

Source: Authors' own.

It is clear from Table (4) that the optimal number of slowing down periods, which most of the used criteria agreed on, and which has the lowest values for all criteria, is one slowing down period, which is used in estimating the study model.

(3) Bounds Testing Approach

Cointegration methodology is used to find out the equilibrium relationship between the variables in the long run. Unit root tests showed that the study variables are integrated from the rank ((0)I) for the variables (earning management (EM)), debt ratio (DEBT)) and the rank ((1)I) for the variables (board of directors (BSIZE), ownership concentration (prstructure). , the size of the company (COSIZE), the period of the Corona pandemic (covid-19), and therefore the (Bounds Testing Approach) methodology is suitable for testing the extent to which cointegration is achieved between these variables within the framework of the (ARDL) model, as in this test the (F) statistic is calculated. To test the null hypothesis (0H), which states that all explanatory variables lagging for one period are equal to zero, meaning that (H0: B0=B1=B2=B3=B4=0) (no cointegration between the variables) against the alternative hypothesis (H1), which It states that the parameters of the explanatory variables lagging for one period of time are not equal to zero, i.e. (H1: B0=B1=B2=B3=B4±0) (having a cointegration).

After extracting the (F) statistic value, it is compared to the tabular (F) value calculated by (Pesaran et, 2001). The original meaning that it is integrated from the order of zero ((0)I), and the second is the value of the upper limit and assumes that all variables are static in their first difference, meaning that they are integrated from the order one integer ((1)I). If the value of the calculated (F) statistic is greater than the upper limit of the tabular (F) value, the null hypothesis is rejected and the alternative hypothesis, which states that there is a cointegration relationship between the variables, is accepted. But if the value of the calculated (F) statistic is less than the minimum tabular (F) value, the null hypothesis is accepted, that is, there is no co-integration between the variables. But if the value of the (F) statistic lies between the upper and lower limits, then the results are inconclusive, meaning that the inability to make a decision to determine whether or not there is cointegration between the variables (Abdul Qader, 2013). In order to verify the extent of the existence of a long-term complementary relationship between the dependent variable and the explanatory variables in the study, the (F) statistic was estimated through the limits test, and the results were as shown in Table (5).

Table 5: The results of the limits test for co-integration between the variables of the study

F-statistic	K	Value
15.751	4	
I (1) Bound	I (0) Bound	Significance
4.06	3.03	10%
4.57	3.47	5%
5.07	3.89	2.50%



5.72

4.4

1%

Source: Authors' own.

It is clear from the results of the estimate, and by looking at the value of the F statistic under the Value column, we find it (15.751), and by comparing it with the critical value at the level of significance of 5%, it is clear that it is greater than the upper limit of the critical value Bounds table, amounting to (4.57). With reference to the decision-making rule, the null hypothesis is rejected. Existence of cointegration and acceptance of the alternative hypothesis that there is cointegration and that there is a long-term equilibrium relationship moving from the independent variables (board of directors (BSIZE), concentration of ownership (prstructure), company size (COSIZE), period of the COVID-19 pandemic) to the dependent variable (earning management (EM)).

(4) The results of estimating the study models

In light of the results of the stability test presented above and to ensure the existence of a long-term equilibrium relationship between the dependent variable and the independent variables, the ARDL model is estimated according to the equation described in the previous paragraphs and based on the number of slowing periods specified according to the criteria for choosing the slowing period for all variables. All calculations related to estimating the model were performed using the E-views12 program, and the following tables show the results of the estimation of the study models as follows:

First model:

$$EM_{it} = \alpha + B_1BSIZE + B_2prstructure + B_3COSIZE + B_4COV-19 + \epsilon_{it}$$

The following is a table showing the results of estimating the first study model:

Table 6: the results of estimating the first study model.

Variable	feature values	standard errors	t-Statistic	Prob.*
Board of Directors (BSIZE)	-0.00821	0.010555	-0.77762	0.4401
proprietary focus (prstructure)	-0.00188	0.018221	-0.10295	0.9184
company size (COSIZE)	0.029216	0.013002	2.24701	0.0286
Corona pandemic period (covid-19)	0.066216	0.038541	1.718066	0.0913
equation constant (C)	0.79169	0.331263	2.3899	0.0202

Source: Authors' own.

$$EM_{it} = 0.79169 - 0.00821BSIZE + -0.00188prstructure + 0.029216COSIZE + 0.066216COV-19 + \epsilon_{it}$$

R-squared= 0.17 Adjusted R-squared=0.06 F-statistic=27.12 Prob(F-statistic) = (0.023).

It is clear from the results of the estimation of the (ARDL) model shown in Table (6) that:

* The value of the Board of Directors coefficient (BSIZE) indicates that there is an adverse effect on earning management (EM), as the value of the Board of Directors coefficient (BSIZE) is (-0.00821), and this means that an increase in the Board of Directors (BSIZE) by (1%) will lead to The management of the results decreased by (0.01%), and this effect is not considered significant, as the probability value reached (0.4401), which is greater than the level of significance (0.05).

* The value of the prstructure concentration coefficient indicates that there is an adverse effect on earning management (EM), as the value of the prstructure concentration coefficient was (-0.00188), and this means that increasing the prstructure concentration by (1%) will lead to Management of results decreased by (0.001%), and this effect is considered non-significant at the 5% significance level, as the probability value reached (0.9184), which is greater than the significance level (0.05).

* The value of the company size coefficient (COSIZE) indicates that there is a direct effect on earning management (EM), as the value of the company size coefficient (COSIZE) was (0.029216), and this means that an increase in the size of the company (COSIZE) by (1%) will lead to an increase in Managing the results by (0.03%), and this effect is considered significant at the significance level of 5%, as the probability value reached (0.0286), which is less than the significant level (0.05).

* The value of the coefficient of the covid-19 pandemic period indicates that there is a direct effect on earning management (EM), as the value of the coefficient of the covid-19 pandemic period reached (0.066216), and this means that an increase in the corona covid-19 pandemic by (1%) will lead to Increasing the management of the results by (0.071%), and this effect is considered significant at the level of significance of 10%, as the probability value reached (0.0913), which is less than the level of significance (0.010).



The significance of the function as a whole has been proven at the level of significance of 5%, and this is evident through the value of F and the probability value of the (F. Statistic) test, as the F values in the long term reached (27.12) with a level of significance (0.023), which is less than the level of significance (0.05), which confirms the significance The estimated model as a whole.

The modified determination coefficient, whose value was (0.06), indicates that the independent variables (board of directors (BSIZE), ownership concentration (prstructure), company size (COSIZE), the period of the Corona-19 covid pandemic) explain between (6) % of the variation in the dependent variable (EM), while the remainder of these changes can be attributed to other variables not included in the model.

To ensure that the model fulfills a number of standard criteria necessary for the process of sound statistical inference, the most important of these criteria is the fulfillment of the assumptions of the error limits, that is, the observations of the random error limit are independent of each other, similar in distribution, and that they are distributed normally, in addition to testing the structural stability of the estimates of the estimated model. Following are the results of the tests:

Residual autocorrelation test results:

The following table shows the results of testing the null hypothesis that the residuals are not independent of each other using the Breusch-Godfrey Serial Correlation LM Test. The results indicate that there is no statistical evidence to accept the null hypothesis; In the sense that there is no autocorrelation for the residuals, as the value of the significance level was (0.427), which is a value greater than 5%.

Table 7: Lagrangian's multiple tests for the model's residual independence hypothesis

F-statistic	0.737702	Prob. F (2,54)	0.483
Obs*R-squared	1.702122	Prob. Chi-Square (2)	0.427

Source: Authors' own.

Contrast stability test results

To test the stability of variance hypothesis, the Breusch-Pagan-Godfrey test was used. The following table shows the results of the test, which indicates that there is no statistical evidence to reject the null hypothesis, which means that there is no problem of variance in the estimated model, as the test value reached (0.705), which is a value greater than the level of significance (5%).

Table 8: Breusch-Pagan-Godfrey test for the constant-variance hypothesis

F-statistic	0.623311	Prob. F (7,56)	0.7345
Obs*R-squared	4.626057	Prob. Chi-Square (7)	0.7055

Source: Authors' own.

test the condition of independence of the independent variables (no multiple linear correlation)

To verify the condition that there is no linear correlation problem between the independent variables in the estimated model, the value of the variance inflation coefficient (VIF) was relied upon, as the higher the value of the inflation coefficient, the sharper the linear correlation, and usually the values of the inflation coefficient that exceed the number (5) are seen as a reflection Because of the problem of linear correlation between the independent variables, the following table shows the results of the estimate:

Table 9: Results of the variance inflation coefficient test for the variables of the study model

independent variables	The value of the inflation factor VIF
Board of Directors (BSIZE)	1.846552
proprietary focus (prstructure)	1.520271
company size (COSIZE)	1.037046
Corona pandemic period (covid-19)	1.11304

Source: Authors' own.

The results in Table (9) indicate that the value of VIF for all the independent variables in the model indicates that there is no linear correlation between the independent variables.

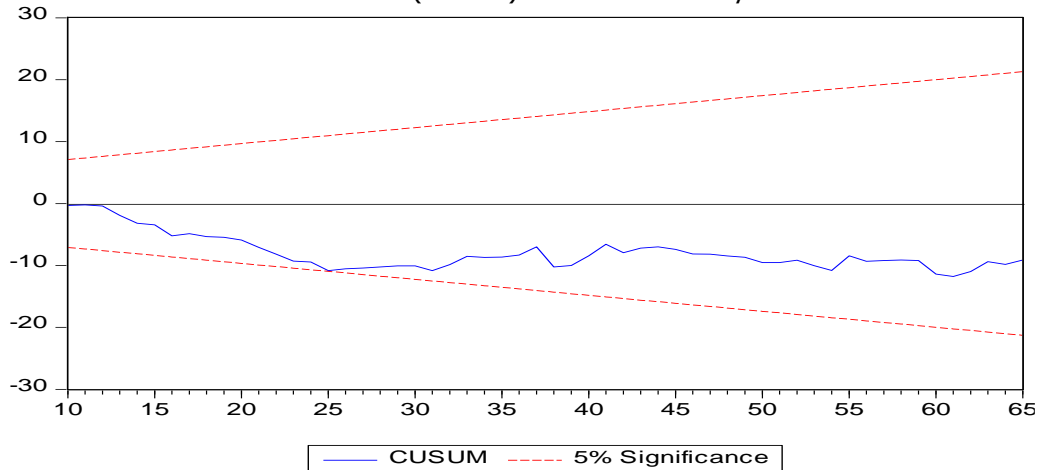
Testing the structural stability of the parameters of the model Parameters stability

To find out the consistency of the coefficients of the model variables in the long and short term, the cumulative sum of the remainders (CUSUM) test was used. 5%, while these coefficients are not stable if the statistical graph is outside the critical graph lines. In the estimated model, it is noted that the test of the cumulative sum of the remainder (CUSUM) falls within the critical limits at a significant level (5%), which indicates that there is stability and harmony in the model



estimates between the long-term results and the short-term results, that is, the coefficients estimated for the unrestricted error correction model the user is structurally stable during the study period.

Figure 1. The cumulative sum of the remainders (CUSUM) to test the stability of the coefficients of the study model



Source: Authors' own.

Second model:

$$EM_{it} = \alpha + B_1 BSIZE_{it} + B_2 prstructure_{it} + B_3 COSIZE_{it} + B_4 COV-19_i + B_5 DEBT_{it} + \epsilon_{it}$$

The supervisory variable, the indebtedness ratio, was introduced to the variables of the first model. The following table shows the results of the estimation of the second study model

Table 10: The results of estimating the second study model

Variable	feature values	standard errors	t-Statistic	Prob.*
Board of Directors (BSIZE)	0.034819	0.018646	1.867424	0.0672
proprietary focus (prstructure)	-0.00716	0.011015	-0.64959	0.5187
company size (COSIZE)	-0.00276	0.01859	-0.14853	0.8825
Corona pandemic period (covid-19)	0.068754	0.039623	1.735212	0.0883
debt ratio (DEBT)	-1.06E-12	2.51E-12	-0.42383	0.6733
equation constant C	-0.93549	0.47394	-1.97385	0.0534

Source: Authors' own.

$$EM_{it} = -0.93549 + 0.034819 BSIZE_{it} - 0.00716 prstructure_{it} - 0.00276 COSIZE_{it} + 0.068754 COV-19_i + -1.06E-12 DEBT_{it} + \epsilon_{it}$$

R-squared= 0.16 Adjusted R-squared=0.05 F-statistic=13.08 Prob(F-statistic) = (0.033).

It is clear from the results of the estimation of the (ARDL) model shown in Table (10) that:

* The value of the Board of Directors coefficient (BSIZE) indicates that there is a direct effect on earning management (EM), where the value of the Board of Directors coefficient (BSIZE) was (0.034819), and this effect is considered significant at the level of significance (10%), as the probability value reached (0.0672), which is less than the significance level (0.010).

* The value of the prstructure concentration coefficient indicates that there is an adverse effect on earning management (EM), as the value of the prstructure concentration coefficient was (-0.0071), and this effect is considered non-significant at the level of significance of 5%, as the probability value reached (0.518), which is greater than the significance level (0.05).

* The value of the company size coefficient (COSIZE) indicates that there is an adverse effect on earning management (EM), as the value of the company size coefficient (COSIZE) was (-0.0027), and this effect is considered non-significant at the level of significance of 5%, as the probability value reached (0.882), which is greater than the significance level (0.05).

* The value of the coefficient of the covid-19 pandemic period indicates that there is a direct effect on earning management (EM), as the value of the coefficient of the covid-19 pandemic period reached (0.0687), and this effect is



considered significant at the level of significance of 10%, as the probability value reached (0.0687). 0.088), which is less than the significance level (0.010).

* The value of the debt ratio coefficient (DEBT) indicates that there is an inverse effect on earning management (EM), as the value of the debt ratio coefficient (DEBT) was (-1.06E-12), and this effect is considered insignificant, as the probability value reached (673088). It is greater than the significance level (0.010).

The significance of the function as a whole is proven at the level of significance of 5%, and this is evident through the value of F and the probability value of the (F. Statistic) test, where the values of F in the long term reached (13.08) at a level of significance (0.033), which is less than the level of significance (0.05), which confirms the significance The estimated model as a whole.

The modified determination coefficient, whose value was (0.05), indicates that the independent variables (board of directors (BSIZE), ownership concentration (prstructure), company size (COSIZE), the period of the Corona-19 covid pandemic) explain between (5) % of the variation in the dependent variable (EM), while the remainder of these changes can be attributed to other variables not included in the model.

Through the results of the two models, we can put a summary of the results of hypothesis testing, as in the table below:

Hypothesis	The first model	The second model
H₁	reject the hypothesis	accept the hypothesis
H₂	reject the hypothesis	reject the hypothesis
H₃	accept the hypothesis	reject the hypothesis
H₄	accept the hypothesis	accept the hypothesis

5. CONCLUSION

This study examines corporate governance mechanisms regarding earning management practices in the company in light of the COVID-19 pandemic. Where it dealt with a sample of Iraqi companies listed in the Iraq Stock Exchange for the period from 2017-2021, and the study relied on the methodology (ARDL) Auto-Regressive Distributed Lag Model, which was presented by Pesaran and Shin (2001), where two models were built for this study, the first model It deals with the independent variables (the size of the board of directors, the percentage of ownership concentration, the size of the company and the COVID-19 pandemic), and the second model deals with the independent variables in addition to the control variables (debt ratio), and to test the limits of co-integration between the variables of the study. A long-term equilibrium relationship moving from the independent variables (board of directors (BSIZE), ownership concentration (prstructure), company size (COSIZE), period of the COVID-19 pandemic) to the dependent variable (earning management (EM)).

Based on the results of testing the research hypotheses through the (ARDL) model for the first model, we concluded that the size of the board of directors and the percentage of ownership concentration have an adverse effect on earning management (EM), as the value of the board coefficient was (-0.00821), and this means that the increase in the board of directors and the concentration of Ownership by (1%) will lead to a decrease in earning management by (0.01%) and (0.001%), respectively, and this effect is considered non-significant at the level of significance of 5%. While the company size variable (COSIZE) has a direct effect on earning management (EM), meaning that increasing the company size (COSIZE) by (1%) will lead to an increase in earning management by (0.03%), and this effect is considered significant at the level of significance 5%, and this result applies to the Corona pandemic variable, where we concluded that the presence of the pandemic increased earning management practices, meaning that an increase in the Covid-19 pandemic by (1%) will lead to an increase in earning management by (0.071%), and this effect is considered significant Significant at the level of significance of 10%. As for the results of the second model represented by the introduction of the control variable, we concluded that the introduction of the control variable changed some of the results, as it was proven to us that the Board of Directors (BSIZE) and the Corona (COVID-19) pandemic have a direct effect on earning management (EM), as the value of The coefficient of the Board of Directors (BSIZE) and the Coronavirus (COVID-19) pandemic (0.034819) (0.0687) respectively, and this effect is considered significant at the level of significance (10%), meaning that the larger the size of the board of directors, the greater the earning management practices, and the higher the practices Management of results in the period of the Corona pandemic, while the ratio of ownership concentration coefficient and the size of the (COSIZE) indicates that there is an adverse effect on earning management (EM), where the value of the coefficient of ownership concentration and company size is (-0.0071) and (-0.0027), respectively, and this effect is considered non-significant at the level of significance of 5%. While we found that the debt ratio factor (DEBT) has an inverse effect on results management, but this effect is not significant at the 5% level of significance, as the lower the company's debts, the higher the earning management practices.

The results of this study indicate the importance of following up earning management in the coming years to monitor the impact of the COVID-19 pandemic on results management, since our study is unique in dealing with this



variable, and we need to study it continuously to show the extent to which this pandemic reflects on the management's aspirations towards earning management practices in the future. This study calls for companies to take care of structuring their board of directors and increasing the number of members, in addition to having more transparent disclosure in terms of the number of board meetings, since most of the companies that our study dealt with do not disclose the number of board meetings.

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