

## **The Impact of the Covid-19 Pandemic Crisis on Accounting Conservatism in Algerian Companies**

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### **ABSTRACT**

Several studies argued that companies are more conservative during scandals and downturns as a means to provide information about uncertain situations and big economic losses, and that more conservative companies experience fewer difficult times due to recessions. Therefore, this paper aims to investigate the impact of the Covid-19 pandemic on accounting conservatism in Algerian companies. The research methodology relies on the model of Ball and Shivakumar (2005) as a measure of accounting conservatism, then introduces the Covid-19 pandemic as a dummy variable, and finally controls the model by company size, leverage, and return on equity. The study included 600 firm-year observations for 150 Algerian companies from 2018 to 2021, where the study period was divided into the pre-Covid-19 period (2018-2019) and the Covid-19 period (2020-2021). The results indicate that Algerian companies are generally conservative. However, they showed a very low level of conservatism during the Covid-19 period compared to very conservative financial information during the pre-Covid-19 period. Overall, this study has empirical implications for accounting standard-setters, auditors, and institutional regulators.

**Keywords:** Accounting conservatism, Economic crisis, Covid-19 pandemic, Algerian companies.

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## أثر أزمة وباء كوفيد-19 على التحفظ المحاسبي في الشركات الجزائرية

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### ملخص

أكملت العديد من الدراسات أن الشركات تكون أكثر تحفظاً في أثناء الفضائح وحالات الركود الاقتصادي كوسيلة لتوفير معلومات حول حالات عدم التأكيد والخسائر الاقتصادية الكبيرة، وأن الشركات الأكثر تحفظاً تواجه أوقاتاً أقل صعوبة نتيجة فترات الركود الاقتصادي. تهدف هذه الدراسة إلى استكشاف أثر وباء كوفيد-19 على التحفظ المحاسبي في الشركات الجزائرية بالاعتماد على نموذج (Ball and Shivakumar, 2005) كمقياس للتحفظ المحاسبي، بينما تم إدخال وباء كوفيد-19 كمتغير وهمي، وأخيراً التحكم في النموذج من خلال حجم الشركة، والرافعة المالية، والعائد على حقوق الملكية. شملت الدراسة 600 مشاهدة لـ 150 شركة جزائرية خلال الفترة من 2018 إلى 2021، حيث تم تقسيم فترة الدراسة إلى فترة ما قبل وباء كوفيد-19 (2018-2019)، وفترة وباء كوفيد-19 (2020-2021). وأشارت نتائج الدراسة إلى أن الشركات الجزائرية ممارسة للتحفظ المحاسبي بشكل عام. ومع ذلك، فقد أظهرت مستوى منخفضاً للغاية من التحفظ المحاسبي خلال فترة وباء كوفيد-19، مقابل مستوى مرتفع للتحفظ المحاسبي خلال فترة ما قبل وباء كوفيد-19. بشكل عام، من المتوقع أن تكون لهذه الدراسة عدة تأثيرات على واضعي المعايير المحاسبية والمرجعين والمنظرين المؤسسيين.

**الكلمات الدالة:** التحفظ المحاسبي، الأزمة الاقتصادية، وباء كوفيد-19، الشركات الجزائرية.

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## INTRODUCTION

In the last trimester of 2019, China announced the first cases of the Covid-19 pandemic, which spread very quickly throughout the world (Aljawaheri et al., 2021; Salameh Al-Qadi et al., 2023). The outbreak of the Covid-19 pandemic has widely affected economic activity, leading companies to operate under conditions often related to economic downturns. This includes many circumstances that have negatively influenced the financial performance of companies and threatened their continuation, such as the dramatic fall in financial markets, increase in unemployment, credit deterioration, liquidity problems, decreasing demand, vacations and layoffs, and production reductions (Deloitte, 2020; Aljawaheri et al., 2021; Cui et al., 2021). Additionally, the closure and social distancing as mechanisms to limit the pandemic's spread have paralyzed or at least restricted many activities and industries and disrupted the operations of many companies, leading to remarkable reductions in sales.

After Europe and America, Algeria was affected, where the first case was recorded on February 25, 2020 (Klouche-Djedid et al., 2021), and has experienced four peaks for daily new cases. Consequently, the Algerian government has imposed quarantine measures and a long period of total closure in 2020, followed by short periods of partial closure in 2021. For many companies, the closure and quarantine measures created unfavourable circumstances due to the restriction of their operations and the disruption of several related activities. Therefore, sales declined, the supply chain of imported raw materials became very slow, and some products and materials became scarce. With the pandemic outbreak, many Algerian companies faced difficult situations regarding their liquidity and solvency, which threatened their continuation. At the macro-economic level, the pandemic caused a depression in the Algerian economy in 2020, with real GDP growth of -6.5% and declines in all indicators. This situation was exacerbated by the drop in oil prices (Mousserati & Beddiar, 2021).

Accounting information reflects the influence of both company-specific and general macro-economic conditions, so that the informational content of financial reports varies across economic situations (Jenkins et al., 2009; Savova, 2021). As a result, the spread of the Covid-19 pandemic has increased stakeholders' demand for high-quality information and more clarification about the context in which managers and auditors make their judgements and estimates (Rinaldi, 2022). Unlike Algeria, where regulators did not respond to the Covid-19 pandemic, many standard-setters issued supplement guidance on accounting during the pandemic. At the international level, the IASB amended IFRS 16 "Leases" in May 2020, while the continuation of the pandemic was the reason for another amendment in March 2021 to determine additional required conditions to recognize rent concessions that appeared as a direct consequence of the Covid-19 pandemic (IASB, 2021).

According to the IASB Member "Mary Tokar" and the IASB Technical Staff Member "Sid Kumar", the increasing uncertainty associated with the pandemic should not change the pre-Covid-19 period estimates under the IFRS standards, whereas the estimates still need to be updated to reflect the uncertain future due to the pandemic (Tokar & Kumar, 2020). In this situation, companies need to disclose significant changes in estimates and their effects and consider the impact of the pandemic on the going concern assumption (Deloitte, 2020; IOSCO, 2020; Tokar & Kumar, 2020). Accountancy Europe considers the Covid-19 pandemic an adjusting event for periods after January 31, 2020; it recommends neglecting the going concern hypothesis and controlling the estimates (Deloitte, 2020; IOSCO, 2020).

The consequences of economic turbulence on financial reporting quality have not yet been correctly explored (Gaio et al., 2021), especially during the Covid-19 pandemic. Accounting conservatism is a

characteristic of financial reporting that attracts more attention during periods of crises due to its ability to reflect the conditions prevailing during downturns. Accounting conservatism is the asymmetric timeliness recognition of decreases *versus* increases in earnings (Kanagaretnam et al., 2014); this will directly impact the profitability ratios and financial position (Kanagaretnam et al., 2014), which could affect the company's relations with different parties. Consequently, conservatism is expected to be useful for users, especially under the uncertainty and risk that characterize periods of crises (Kim & Zhang, 2016; Ramanna, 2020; Gaio et al., 2021). During recessions, pessimism arising from accounting conservatism moderates the over-optimism of managers when preparing budgets and business plans, requiring them to take into account doubts related to the continuation of the company in the foreseeable future (Abdulhassan et al., 2022).

This paper investigates the impact of the Covid-19 pandemic on accounting conservatism in Algerian companies based on monitoring and contracting perspectives. It asks a question about whether the global economic crisis arising from the pandemic intensifies the tendencies of Algerian companies towards conservatism to provide information about economic losses, moderate information risk, mitigate agency problems, and reduce litigation risks and political costs. The study included 600 firm-year observations for 150 companies and covered the pre-Covid-19 period of 2018 and 2019, as well as the Covid-19 period of 2020 and 2021.

Overall, the study contributes to the literature by providing additional empirical evidence about the consequences of the Covid-19 pandemic on the quality of financial reporting, which has not yet received sufficient attention from researchers. The study also confirms the previous evidence that downturns are a fundamental determinant of accounting conservatism and highlights the accounting choices of managers and their tendencies during crisis periods. Moreover, the study was carried out in Algeria, where crisis periods as a determinant of accounting

conservatism have not previously been explored. Lastly, this study has empirical implications for accounting standard-setters, auditors, and institutional regulators.

The remainder of this paper is structured as follows: The next section reviews the literature and develops the research hypothesis. Then, the methods and materials are described, followed by presenting and discussing the results. Finally, the conclusions are summarized.

## Literature Review

### Accounting Conservatism Concepts

Accounting conservatism (or prudence) is the cornerstone of accounting practice. There has been a history of accounting conservatism practices (Basu, 1997; Watts, 2003; Dickhaut, 2010; Ruch & Taylor, 2015; Istrate, 2021), where prudence as a convention was present in European merchants' accounting since the beginning of the 15<sup>th</sup> century before the treatise of Pacioli on accounting bookkeeping (Dickhaut, 2010; Istrate, 2021). The practice of conservatism has endured over time and expanded in the early 19<sup>th</sup> century (Istrate, 2021).

Before 2010, the International Accounting Standards Board (IASB) adopted conservatism within the dimensions of reliability as a qualitative characteristic of financial information. However, the 2010 *Conceptual Framework for Financial Reporting* excluded conservatism and considered that it biased accounting information and contradicted neutrality as a component of faithful representation. The new *Conceptual Framework for Financial Reporting* of 2018 restated accounting conservatism as the support of neutrality (IASB, 2018).

The 1989 *Framework for the Preparation and Presentation of Financial Statements* views conservatism or prudence as the exercise of caution when issuing judgements needed to make estimates

under circumstances of uncertainty to ensure that income and assets are not overstated and expenses and liabilities are not understated (IASB, 2018). Accounting conservatism includes accounting methods or tendencies that, on average, lead to understating the book value of net assets relative to their economic value (Basu, 1997; Beaver & Ryan, 2005; Ruch & Taylor, 2015; Pasko et al., 2021). That understatement expresses the caution adopted regarding risks related to future inflows and outflows.

Accounting conservatism is the tendency of managers to adopt less verification when recognizing gains *versus* high verifiability for losses (Basu, 1997; Watts, 2003). Putting that concept into financial reports requires immediate recognition of potential decreases in net assets even before their realization and delaying the recognition of increases in net assets until they become realizable or sufficiently certain. Literature also explains conservatism through timeliness, since the recognition of losses precedes the recognition of gains. However, conservatism does not mean the more timely recognition of losses, but the postponement of gains.

The literature distinguishes two forms of conservatism: conditional and unconditional (Basu, 1997; Watts, 2003; Beaver & Ryan, 2005). Conditional conservatism reflects managers' tendency to adopt low verification when reporting bad news compared to higher verifiability for good news (Basu, 1997; Watts, 2003; Abdulhassan et al., 2022). Therefore, book values are written down under sufficiently adverse circumstances, but not written up under favourable circumstances (Gharibi & Nemati, 2015). In uncertain situations, managers should select reporting methods having the least desirable effects on assets and equity and the most desirable effects on liabilities (Saremi & Shorvarzi, 2014; Abdulhassan et al., 2022).

Conditional conservatism is the asymmetric timeliness recognition of losses *versus* gains, as expected losses are recognized more quickly than gains. Conditional conservatism requires the recognition of losses even before their realization and deferring profits until they are realizable (Ball & Shivakumar, 2005; Cui et al., 2021; Abdulhassan et

al., 2022). Conditional conservatism is required by accounting standards, as it is expected to improve the efficiency of contracts and reduce the information asymmetry between managers and other parties. It enables them to make more accurate forecasts about the company's future performance and profitability of its projects (Basu, 1997; Watts, 2003; Ball & Shivakumar, 2005; Jenkins et al., 2009; Cui et al., 2021).

Contrarily, unconditional conservatism is the systematic recognition of the lowest amounts for assets and revenues *versus* the highest values for liabilities and expenses without considering any news events (Ball & Shivakumar, 2005). Unconditional conservatism includes discretion and is expected to be inefficient, providing biased numbers for the contracting perspective, or at least being neutral (Jenkins et al., 2009).

### **The Role of Accounting Conservatism during Crisis Periods**

Monitoring and contracting perspectives primarily motivate managers to be more conservative, requiring them to provide information about economic losses, thus constraining earnings management practices and opportunistic payment risk (Basu, 1997; Ball & Shivakumar, 2005; Cui et al., 2021). Francis et al. (2013) concluded that conservatism is an effective governance mechanism to moderate information risk, mitigate agency problems, and reduce litigation risks and political costs. From an informational perspective, managers could also use conservatism to reduce information asymmetry and signal private information (Cui et al., 2021) that helps users make required corrections in their valuations.

Francis et al. (2013) stated that financial reports have become more conservative in the last three decades due to accounting scandals and the adoption of the Sarbanes-Oxley Act. Under conservatism,

expected unfavourable circumstances will be timely reported, so that the probability of a company's default or failure will be lower. Conservatism provides the necessary information, leading to faster detection of problems and giving investors enough time to respond (Gharibi & Nemati, 2015). Other researchers view crises as exposing companies to more agency problems and a high level of information asymmetry, motivating managers to practise more earning manipulations for their own benefit (Francis et al., 2013; Aljawaheri et al., 2021; Muneer Shana'a et al., 2023). Therefore, more conservative companies would experience fewer value decreases during financial distress, since conservatism is a way to mitigate agency problems and information asymmetry.

In times of crises, companies need to be efficient in their operations and resilient with their asset and liability structures. Accounting conservatism is a way to balance the two pulls by helping a company recognize the expected losses and write off dud assets, which reduces unwanted costs in bad times and enables the company to survive the crisis (Ramanna, 2020). Additionally, the rapid deterioration of non-current assets is more likely to occur in recession periods; so, recognizing impairment losses as a common conservative accounting practice is of utmost importance (Gaio et al., 2021).

The effects of a financial crisis on a company happen through two channels: adverse macro-economic circumstances decrease the revenues from the company's sales, and thus operational performance will decline. Also, the financial collapse of monetary and financial markets makes access to financing more difficult, which increases pressure on liquidity (Gaio et al., 2021). Companies' financial reporting processes incorporate the effects of negative macro-economic indicators that signal a crisis period by recognizing the expected losses to dilute negative performance in future periods (Duarte et al., 2019). Jenkins et al. (2009) argued that companies' failure prediction models based on accounting information are highly sensitive to economic declines and can be improved when controlled

by recessions.

Kim and Zhang (2016) recorded a positive association between conditional conservatism and a lower probability of future declines in stock prices for a sample of 114,548 U.S. firm-year observations during 1964-2007. That association was more pronounced for companies suffering from information asymmetry. The explanations revealed that conditional conservatism constrains the practices of managers to cache bad news and overestimate performance, thus reducing the risk of stock price crashes. Zhang (2020) documented that companies' access to trade credit is positively associated with conditional conservatism, whether before or after the 2008 financial crisis, suggesting that prudent companies can easily access the loan market due to the high demand for conditional conservatism by suppliers during the downturn periods.

Balakrishnan et al. (2016) found that less conservative companies experienced sharp declines in their investments during the 2008 financial crisis that were clearer for financially constrained companies with higher external financing needs or higher information asymmetry. They also showed that more conservative companies experienced fewer decreases in debt expansion and stock performance. Kaya (2021) argued that conditional conservatism could reduce the effects of crises on banks' lending capacity. Pinnuck (2012) reported that if banks had used more conservative methods to limit the excessive loans by managers, the 2008 financial crisis would not have expanded as quickly.

As previously mentioned, agency theory is the pertinent framework encompassing the different perspectives that explain accounting conservatism. During crisis periods, managers need to align their interests more closely with those of equity owners and debtors in order to moderate agency problems, reduce litigation risks, and minimize political costs (Francis

et al., 2013; Gharibi & Nemati, 2015; Cui et al., 2021), which can be achieved through conservatism. However, the agency relationships in Algeria differ from those in the Anglo-American context (Kimouche, 2020), since Algerian companies mainly depend on bank financing due to the inefficiency and inactivity of the Algiers Stock Exchange, which includes only four listed companies. Additionally, the ownership structures of Algerian companies are highly concentrated, since the majority of them are public or family-owned and exposed to a lower level of external monitoring by institutional owners or the stock exchange (Kimouche, 2021).

The managers of Algerian companies, as agents, primarily face the monitoring of either the government or the owner families as principals. The banks appear as a third party in this agency relationship, where their monitoring is crucial when granting loans due to the nature of the banking system in Algeria, which is mainly oriented by the government within the framework of monetary policy and dominated by public banks (Sadaoui & Khenniche, 2015; Zerrouki & Fellag, 2017). Lending by Algerian banks requires financial strength with more tangible guarantees and fewer debt covenants. In addition to public ownership, family ownership and banks, taxation services in Algeria impose strict monitoring on companies through tax mechanisms and tax auditing. Thus, taxation is a primordial determinant of operating and accounting decisions in Algerian companies (Zerrouki & Fellag, 2017).

In that simple agency model, the agency problems are less severe and agency costs are less pronounced compared to the American and European contexts, where stock exchanges are more active, ownership structures are more diversified and less concentrated, external and institutional monitoring is effective, and banks are vigilant as long as the debt is still present. The agency model in Algerian companies is specific, even when compared with those in emerging markets, since the preparation of financial information is primarily driven by tax and legal considerations rather than by the considerations of financial

reporting or corporate governance. In fact, the reality of agency problems in Algeria can change the tendencies of companies towards accounting conservatism, whether during crisis periods or not.

### **Empirical Studies about the Impact of Crises on Accounting Conservatism**

Jenkins et al. (2009) posited that accounting conservatism is likely to vary across business cycles. However, there is no consensus about the behaviour of accounting conservatism during crisis periods, where studies present different levels of conservatism. We distinguished three streams regarding the relationship between accounting conservatism and crises: the first exhibited a decline in accounting conservatism during crisis periods, and the second showed an increase in accounting conservatism after the periods of crises. Contrarily, the third stream indicated an increase in accounting conservatism during the crisis periods.

Among the early studies in the first stream, we identified the study of Gul et al. (2002), which investigated the consequences of the Asian financial crisis of 1997 on accounting conservatism in Hong Kong and the role of audit fees. The study used 2,061 observations during 1994-1995 as a non-crisis period and 1996-1997 as a crisis period. The results indicated that the financial crisis in Hong Kong was associated with a decline in accounting conservatism. Saremi and Shorvarzi (2014) showed a significant negative relationship between accounting conservatism and financial distress for 123 companies listed in the Tehran Stock Exchange from 2005 to 2010.

Sodan et al. (2013) employed 1,426 observations from seven countries in central and eastern Europe during 2002-2011 to study accounting conservatism during the 2008 financial crisis. The results suggested that conservatism was lower during the financial crisis than before. Leune (2014) investigated the effect of the 2008 financial crisis on accounting conservatism for 54

Dutch-listed companies from 2005 to 2013. He found a similarity in the sensitivity of earnings to gains and losses during the pre-crisis period, followed by a sensitivity of earnings to gains more than losses during the crisis period.

Gharibi and Nemati (2015) studied accounting conservatism under financial crises and stock price crash risks for 93 companies listed in the Tehran Stock Exchange during 2007-2014. They found that accounting conservatism is negatively associated with financial crises and stock-price crash risks. Sholikhah and Suryani (2020) studied the impact of financial distress, interest conflict, and litigation risks on accounting conservatism using the financial reports of 20 Indonesian manufacturing companies for four years (2014-2017). The results revealed that situations of financial distress could reduce the adoption of accounting conservatism in Indonesia. From their side, Lima et al. (2021) did not exhibit conclusive evidence regarding the presence of accounting conservatism during the macroeconomic crisis for 251 companies listed in B3 during 1995-2017.

Gaio et al. (2021) explored the influence of the financial crisis on the reporting of non-financial asset impairments for 1,383 European-listed companies from 2005 to 2014. The results showed that companies reported lower amounts of non-financial asset impairments during the crisis period. El Houcine (2021) analyzed the effect of the 2008 financial crisis on accounting conservatism for 80 French-listed companies from 2005 to 2009. The results indicated that French companies were not conservative during the financial crisis, where managers tended to adopt aggressive accounting. Abdulhassan et al. (2022) investigated the relationship between accounting conservatism and the financial crisis for 103 Iranian-listed companies during 2015-2019. The results indicated that financial crises motivate managers to report less conservative accounting information.

The second stream of studies completes the first stream, suggesting that an increase in conservatism after crisis periods follows the decline in conservatism during crisis

periods. Warganegara and Vionita (2010) studied whether the Asian financial crisis affected the level of accounting conservatism in Indonesia. Using 125 companies during the two years 1996 and 2001, they suggested that the earnings of Indonesian companies were less conservative before the financial crisis, while they did not exhibit the expected level of accounting conservatism in the post-financial crisis period.

Vichitsarawong et al. (2010) explored the influence of the 1997 Asian financial crisis on accounting conservatism and the timeliness of earnings in Hong Kong, Malaysia, Singapore, and Thailand. The results indicated that conservatism and timeliness of earnings during the crisis period were lower than in regular periods. The study concluded that managers seek to reduce the unfavourable effects of the crisis by divulging good news. Vichitsarawong et al. (2010) recorded an improvement in conservatism and timeliness of earnings after the financial crisis compared to the pre-crisis period. They revealed that regulators must set the required governance measures to support supervision that would enhance conservatism and timeliness.

Cerqueira and Pereira (2020) studied accounting conservatism in seventeen European countries using 4,839 observations from 1998 to 2018. Their results indicated a low level of accounting conservatism in the pre- and during the 2008 financial crisis, followed by a high level of conservatism in the post-crisis period. Cerqueira and Pereira (2020) distinguished two stages regarding the conservatism level during downturns, depending on the severity of the crisis. At the onset, managers avoid reporting negative news, expecting an economic recovery, and thus conservatism decreases. Later, with the crisis increasing severity and uncertainty about the future, managers adopt more conservative accounting practices.

The third stream of studies was commenced by Jenkins et al. (2009), who found that companies are

more conservative during economic recessions than during expansions for a sample of 120,070 firm-year observations from COMPUSTAT during 1980-2003. They argued that focusing on downside risk during recessions motivates managers and auditors to adopt more conservative accounting practices. Jenkins et al. (2009) explained that highly conservative financial information reduces litigation risk during decline periods; investors also have more tendencies towards more conservative earnings that reflect timely signals about projects with negative net present value. Additionally, the need for more external funding during the decline periods due to the limitations on internal financing implies more conservative financial information. Finally, the crisis period increases the scrutiny of regulators, which motivates managers to adopt more conservative accounting practices.

Watts and Zuo (2011) studied the impacts of accounting conservatism on companies' valuations during the 2008 crisis for 2,983 U.S. companies. They showed a positive association between conservatism and the crisis, which is more pronounced for companies with higher agency costs. They stated that conservative companies experienced less difficult times during the crisis and that accounting conservatism limits managerial opportunism, enhances the borrowing and investment capacity of the company, and improves its value.

Al-Hroot et al. (2017) investigated the impact of the 2008 financial crisis on accounting conservatism for Jordanian commercial banks from 2005 to 2011. They observed a positive influence of the financial crisis on accounting conservatism, which means that Jordanian commercial banks were more conservative during the crisis period. Gunn et al. (2018) explored the timing of the asset impairment losses during the 2008 financial crisis for 2,045 non-financial companies from COMPUSTAT during 2007-2010. The results showed that conservative companies during the preceding five years reported timelier asset impairment losses during the financial crisis, especially for companies with strong corporate governance, high leverage, and

industrially specialized auditors.

Duarte et al. (2019) investigated the relationship between accounting conservatism and investment level during the Brazilian economic crisis (2014-2017) for 217 non-financial public companies listed in Brazil, Bolsa, Balcão (B3) from 2010 to 2018. The results indicated that public companies were more conservative during the Brazilian economic crisis. However, companies with high degrees of conservatism had low levels of investment during the crisis period. Khurana et al. (2006) indicated that in periods of economic expansion, companies are less conservative than in recession periods and have more incentives to defer bad news, arguing that their reporting during expansion periods is penalizing.

Concerning the Covid-19 pandemic as a crisis that led to a worldwide economic downturn, Rinaldi (2022) reviewed the published academic research about accounting under Covid-19 from the beginning of 2020 to October 2021 in a wide range of renowned journals. He identified five key research topics during this period: public budget response, accounting education, the public sector, financial markets, and corporate disclosure. We identified another theme that concerns the quality of financial reporting during the Covid-19 pandemic (Aljawaheri et al., 2021; Cui et al., 2021; Aldoseri et al., 2022; Yoo, 2022). Nevertheless, studies on this topic are still limited, which justifies carrying out this study.

Aljawaheri et al. (2021) conducted one of the first studies on the last subject, providing evidence that, with the outbreak of Covid-19, Iraqi companies manipulated earnings to maintain the stability of their performance. Cui et al. (2021) explored whether the high level of conditional conservatism was associated with a high level of stock return in Chinese companies during the outbreak of the Covid-19 pandemic. Using 1,909 companies listed in the Shanghai and Shenzhen Stock Exchanges from January 2 to March 10, 2020,

the results showed that more conditionally conservative companies had fewer declines in stock returns during the Covid-19 pandemic outbreak.

Savova (2021) suggested that Bulgarian companies were going concern for the first quarter of 2020. However, the alterations in their performance over the first three months (during the beginning of the Covid-19 pandemic) compared to the same period in 2019 revealed threats against the going concern hypothesis with the reduction of business activity volumes and the increasing liquidation probabilities. Aldoseri et al. (2022) explored the managerial determinants of accounting conservatism during the Covid-19 pandemic, depending on the data of 50 Saudi-listed companies. They found that Saudi companies reported conservative financial information during the pandemic. Yoo (2022) observed an increase in the levels of accounting conservatism in Korean companies after the Covid-19 pandemic.

Our research asks the question of whether Algerian companies showed the same level of conservatism before and during the Covid-19 period. As previously summarized, the literature provided mixed evidence about the crisis impact on accounting conservatism, considering that Algerian companies tend to disclose conservative financial information and that governance practices and accounting traditions tend to be more cautious and prudent (Kimouche, 2020, 2021). Based on monitoring and contracting perspectives (Basu, 1997; Ball & Shivakumar, 2005; Cui et al., 2021), we believe that during downturn periods, companies report more conservative financial statements to provide information about economic losses, constrain opportunism, and enhance their borrowing and investment capacity (Jenkins et al., 2009; Watts and Zuo, 2011). Thus, this study begins with the following hypothesis:

*Hypothesis: Algerian companies are more conservative during the Covid-19 period compared to the pre-Covid-19 period.*

### **Methods and Materials**

This study relies on a descriptive approach by collecting

data from Algerian companies from 2018-2021 to estimate accounting conservatism using the model of Ball and Shivakumar (2005). The original conservatism model was adjusted using the Covid-19 pandemic as a dummy variable and then by a number of control variables to test the impact of the pandemic on accounting conservatism.

### **Sample and Data Collection**

This study included 150 Algerian companies for four years (2018-2021), with a total of 600 firm-year observations. The sample excluded financial companies, because their accruals and cash flows are determined differently compared to other industries. The companies were selected relying on the accessibility of financial statements and the availability of all required financial information during all years, since most Algerian companies are not listed in the financial market and are family-owned or public; hence, they do not have many disclosure requirements. Besides, the governance of Algerian companies involves high levels of caution and secrecy regarding disclosure. We collected the required financial data from the National Center for Commercial Register database (CNRC portal: <https://sidjilcom.cnrc.dz>).

### **Model Specification**

Our measure of accounting conservatism depends on the model of Ball and Shivakumar (2005), which is among the pertinent models and is appropriate for Algerian companies, because it only employs variables from financial statements without needing market variables. The model is also known as the "asymmetric accrual to cash flow model" (AACF), since it uses a cash flow-based dummy variable to reflect the asymmetric recognition of bad news *versus* good news, in which negative net cash flows from operations indicate bad news and positive net cash flows from operations reflect good news.

$$TACC_{it} = \alpha_0 + \alpha_1 DCFO_{it} + \alpha_2 CFO_{it} + \alpha_3 CFO*DCFO_{it} + \xi_{it} \quad (1)$$

where:  $TACC_{it}$  is the total accounting accruals for the period standardized by the total assets at the beginning of the period;  $DCFO_{it}$  is a dummy variable that takes 1 if net cash flows from operations (OCF) are negative, otherwise it takes 0;  $CFO_{it}$  is the net cash flows from operations for the period standardized by the total assets at the beginning of the period;  $\alpha_0$  is an intercept;  $\alpha_1$ ,  $\alpha_2$ , and  $\alpha_3$  are the regression coefficients;  $\xi_{it}$  stands for the residuals.

According to Ball and Shivakumar (2005), accounting accruals play two roles: offsetting cash flows under the matching principle to mitigate the noise due to the volatility in working capital and exhibiting asymmetric recognition of losses *versus* gains. Therefore, in the presence of good news, the relationship between cash flows and accruals is negative, which means an offset of cash flows by accruals. However, the relationship between cash flows and accruals is positive (no offsetting) and higher in periods of economic losses (bad news).

Consequently, the coefficient of cash flows from operations  $\alpha_2$  measures the sensitivity of accruals to good news (positive cash flows), reflecting accruals' role in mitigating cash flow noise, so it is expected to be negative. The incremental coefficient  $\alpha_3$  reflects the differential sensitivity of accruals to bad and good news and is expected to be positive. Therefore, the measure of accruals' sensitivity to bad news (asymmetric recognition of losses *versus* gains) is the sum of two coefficients,  $\alpha_2$  and  $\alpha_3$ . Finally, Ball and Shivakumar (2005) did not provide any predictions for the intercept  $\alpha_0$  and the intercept coefficients.

Starting from the original conservatism model of Ball and Shivakumar (2005), we introduced the Covid-19 impact as a dummy variable multiplied by the variables of Model (1) to measure the influence of the pandemic on each parameter (Warganegara & Vionita, 2010; Leune, 2014; Cerqueira & Pereira, 2020), as shown in Equation (2):

$$TACC_{it} = \beta_0 + \beta_1 DCFO_{it} + \beta_2 CFO_{it} + \beta_3 CFO*DCFO_{it} + \beta_4 COV_{it} + \beta_5 COV*DCFO_{it} + \beta_6 COV*CFO_{it} + \beta_7 COV*CFO*DCFO_{it} + \varepsilon_{it} \quad (2)$$

where:  $COV_{it}$  is a dummy variable that takes 1 during the Covid-19 period (2020 and 2021), otherwise it takes 0 (2018 and 2019);  $\beta_0$  is an intercept;  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ , and  $\beta_7$  are the regression coefficients;  $\varepsilon_{it}$  stands for the residuals.

The variables are as defined in Model (1),  $\beta_2$  reflects the mitigating role of accruals during the pre-Covid-19 period and is expected to be negative, while  $\beta_3$  reflects the asymmetric loss recognition before the pandemic and is expected to be positive. Consistent with Ball and Shivakumar (2005), who used a dummy variable for private companies, we expected that when companies are less conservative during the Covid-19 period, their asymmetry is lower. Hence,  $\beta_7$  will be negative, since it reflects the differential sensitivity of accruals to bad and good news during the pandemic. There are no predictions for the intercept  $\beta_0$  and the intercept coefficients  $\beta_1$ ,  $\beta_4$ ,  $\beta_5$ . The coefficient  $\beta_6$  measures the sensitivity of accruals to good news during the pandemic period with no prediction. Finally, the measure of accruals' sensitivity to bad news during the pandemic is the sum of the coefficients  $\beta_2$ ,  $\beta_3$ ,  $\beta_6$ , and  $\beta_7$ .

Following Ball and Shivakumar (2005) and Warganegara and Vionita (2010), we controlled Model (2) by the company size, leverage, and return on equity:

$$TACC_{it} = \gamma_0 + \gamma_1 DCFO_{it} + \gamma_2 CFO_{it} + \gamma_3 CFO*DCFO_{it} + \gamma_4 COV_{it} + \gamma_5 COV*DCFO_{it} + \gamma_6 COV*CFO_{it} + \gamma_7 COV*CFO*DCFO_{it} + \gamma_8 SIZE_{it} + \gamma_9 LEV_{it} + \gamma_{10} ROE_{it} + \gamma_{11} CFO*SIZE_{it} + \gamma_{12} CFO*LEV_{it} + \gamma_{13} CFO*ROE_{it} + \gamma_{14} DCFO*SIZE_{it} + \gamma_{15} DCFO*LEV_{it} + \gamma_{16} DCFO*ROE_{it} + \zeta_{it} \quad (3)$$

The variables are as defined in Model (2), where:

$SIZE_{it}$  is the company size at the end of the period measured by the logarithm of total assets;  $LEV_{it}$  is the leverage ratio at the end of the period;  $ROE_{it}$  is the return on equity for the period;  $\gamma_0$  is an intercept;  $\gamma_1, \gamma_2 \dots \gamma_{15}$ , and  $\beta_{16}$  are the regression coefficients;  $\zeta_{it}$  stands for the residuals.

## Results and Discussion

### Descriptive Statistics

Table 1 summarizes the results of descriptive statistics for 150 Algerian companies during 2018-2021. According to the mean, net cash flows from operations (CFO) reached 6.93% of total assets on average *versus* -3.39% of total assets for accounting accruals (TACC), thus accounting accruals can offset about a half of the cash flows. As shown in Table 1, the dummy variable of cash flows (DCFO) suggests that the data includes 405 observations with positive net cash flows and 195 observations with negative net cash flows; negative CFO

reached 3.83% of total assets on average. The leverage ratio (LEV) indicates that the debts of Algerian companies reached 60.57% of total assets on average, and the return on equity (ROE) shows that Algerian companies earn 8.67% of total equity on average.

We recorded 95 negative net cash flow observations and 205 positive net cash flow observations among the 300 observations for the Covid-19 period. During the Covid-19 period, net cash flows from operations (COV\*CFO) reached 3.64% of total assets on average, with a positive value, while negative net cash flows from operations (COV\*CFO\*DCFO) reached 1.43% of total assets on average. The two values are less than those recorded for the pre-Covid-19 period, as a sign of the economic downturn known by Algerian companies due to the pandemic at the beginning of 2020.

**Table 1**  
**Descriptive statistics for variables during the period of study**

		Mean	Median	Min.	Max.	Std. Dev.	Jarque-Bera	Observations
<b>TACC</b>		-0.0339	-0.0106	-1.7706	1.5167	0.2472	(6387)**	600
<b>DCFO</b>	<b>0</b>	405	-	0	1	-	-	600
	<b>1</b>	195						
<b>CFO</b>		0.0693	0.0199	-1.6577	2.1111	0.2778	(7953)**	600
<b>CFO*DCFO</b>		-0.0383	0.0000	-1.6577	0.0000	0.1326	(165980)**	600
<b>COV</b>	<b>0</b>	300	-	0	1	-	-	600
	<b>1</b>	300						
<b>COV*DCFO</b>	<b>0</b>	205	-	0	1	-	-	600
	<b>1</b>	95						
<b>COV*CFO</b>		0.0364	0.0000	-0.4139	2.1111	0.1692	(55675)**	600
<b>COV*CFO*DCFO</b>		-0.0143	0.0000	-0.4139	0.0000	0.0526	(22583)**	600
<b>SIZE</b>		8.9526	9.0082	6.1056	11.6766	1.0464	(7)**	600
<b>LEV</b>		0.6057	0.4964	0.0000	8.0467	0.6903	(56205)**	600
<b>ROE</b>		0.0867	0.0584	-2.5908	4.5652	0.9873	(2618748)**	600
<b>CFO*SIZE</b>		0.6266	0.1914	-12.6967	18.7707	2.3768	(8341)**	600
<b>CFO*LEV</b>		0.0027	0.0009	-5.6250	1.1543	0.2676	(26938)**	600
<b>CFO*ROE</b>		0.0409	0.0056	-2.9032	2.5218	0.3003	(81851)**	600
<b>DCFO*SIZE</b>		2.8521	0.0000	0.0000	11.6755	4.1623	(104)**	600

<b>DCFO*LEV</b>	0.2431	0.0000	0.0000	8.0466	0.6586	(12324)**	600
<b>DCFO*ROE</b>	0.0580	0.0000	-2.5908	4.5652	0.4681	(9892)**	600

\*\* Significant at the 1% level.

Comparing the means of control variables (SIZE, LEV, and ROE) with those multiplied by the dummy variable (DCFO\*SIZE, DCFO\*LEV, and CFO\*ROE), it appears that the mean of each control variable is higher before their multiplication by the dummy variable. Therefore, the observations with negative net cash flows from operations are associated with smaller-sized, lower-leveraged, and lower-performing companies. The standard deviations indicate that company size is the most dispersed, followed by return on equity, cash flows from operations, and accounting accruals, respectively, while the dispersion is unimportant for all variables compared to the range. Finally, the Jarque-Bera statistic is significant at the 1% level, indicating that the data distribution is not normal for all variables.

Table 2 presents the comparative values of each variable among the years of study and between the pre-Covid-19 and the Covid-19 periods. The table shows that accounting accruals (TACC) as an absolute value increased during the

study period and substantially increased in the Covid-19 period compared to the pre-Covid-19 period. Contrarily, cash flows from operations (CFO) declined during the study period and decreased during the Covid-19 period, but that decrease is unimportant; the high decline was recorded in the negative cash flow from operations (CFO\*DCFO) as an absolute value. The dummy variable (DCFO) indicates a convergence in the positive and negative net cash flow from observations between the years and between the pre-Covid-19 and the Covid-19 periods. Finally, the control variables were decreased, but they did not show considerable changes during the study period, except for the return on equity (ROE), which suggests a high decline in the performance of Algerian companies during the Covid-19 period compared to the pre-Covid-19 period.

**Table 2**  
**The evolution of conservatism-model variables during the study period**

		<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>pre-Covid-19</b>	<b>Covid-19</b>	<b>Period</b>
<b>Observations</b>		150	150	150	150	300	300	600
<b>TACC</b>		-0.0229	-0.0323	-0.0345	-0.0472	-0.0276	-0.0409	-0.0339
<b>CFO</b>		0.0675	0.0656	0.0599	0.0554	0.0666	0.0577	0.0693
<b>DCFO</b>	<b>0</b>	98	102	105	100	200	205	405
	<b>1</b>	52	48	45	50	100	95	195
<b>CFO*DCFO</b>		-0.0441	-0.0519	-0.0268	-0.0302	-0.0478	-0.0285	-0.0383
<b>SIZE</b>		9.0517	9.0416	8.9502	8.7673	9.0435	8.8588	8.9526
<b>LEV</b>		0.6493	0.5966	0.6044	0.5726	0.624131	0.5885	0.6057
<b>ROE</b>		0.0654	0.0664	0.0467	0.0382	0.0659	0.0425	0.0867
<b>COV</b>	<b>0</b>	150	150	0	0	300	0	300
	<b>1</b>	0	0	150	150	0	300	300

## Correlation Analysis

Table 3 summarizes the results of the bivariate correlation between variables, indicating very strong relationships between accounting accruals (TACC) on the one hand, and cash flows (CFO), and size multiplied by cash flows (CFO\*SIZE) on the other hand; the two correlations are negative and significant at the 1% level. The relationship between accounting accruals and negative cash flows (CFO\*DCFO) is also strong and significant at the 1% level, but it is positive. The relationships between accounting accruals as the dependent variable and dummy variable (CFO\*DCFO), cash flows during the pandemic (COV\*CFO), return on equity multiplied by cash flows (CFO\*ROE), and size multiplied by the dummy variable (DCFO\*SIZE), as independent variables, are medium and

significant at the 1% level.

The results show that the relationships between accounting accruals on the one hand, the dummy variable (COV\*DCFO), negative cash flows during the pandemic (COV\*CFO\*DCFO), leverage multiplied by cash flows (CFO\*LEV) and leverage multiplied by the dummy variable (DCFO\*LEV), on the other hand, are significant at the 1% level, but they are very weak. The relationships between accounting accruals and the remaining variables (COV, SIZE, LEV, ROE, and DCFO\*ROE) are not statistically significant. Finally, the relationships between independent variables are medium, weak, or insignificant; we did not record any strong relationships.

**Table 3**  
Correlation results

	Correlation t-Statistic	TACC	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]		
[1] CFO		-0.8765 (44.50)**	1 --																
[2] DCFO		0.4336 (11.76)**	-0.4678 (-12.93)**	1 --															
[3] DCFO*CFO		0.6263 (19.63)**	0.4895 (17.83)**	-0.4158 (-11.17)**	1 --														
[4] COV		-0.0047 -0.11	0.0124 0.30	-0.0190 -0.46	0.0735 1.80	1													
[5] COV*CFO		-0.4896 (-13.72)**	0.4842 (17.59)**	-0.3299 (-8.54)**	0.1947 (4.85)**	0.2148 (5.37)**	1 --												
[6] COV*DCFO		0.2380 (5.99)**	-0.2494 (-6.29)**	0.4249 (19.56)**	-0.1700 (4.21)**	0.4334 (11.75)**	-0.3248 (-8.39)**	1 --											
[7] COV*DCFO*CFO		-0.3148 (-8.10)**	0.2714 (6.89)**	-0.3913 (-10.39)**	0.3478 (9.06)**	-0.2714 (-6.89)**	0.3924 (-10.42)**	-0.4262 (-19.62)**	1 --										
[8] SIZE		-0.0020 -0.05	0.0224 0.55	-0.1273 (-3.14)**	0.1627 (4.03)**	-0.0898 (-2.20)*	-0.0368 -0.90	-0.0595 (-2.35)*	0.1692 0.1191	1 1									
[9] LEV		-0.0297 -0.73	-0.0051 -0.12	0.1420 (3.51)**	-0.0425 -1.04	-0.0249 -0.61	0.0244 0.60	0.0832 (2.04)*	0.0181 0.44	0.1191 (2.93)**	1 --								
[10] ROE		0.0245 0.60	-0.0120 -0.29	0.0645 1.58	0.0106 0.26	0.0769 0.189*	0.0058 0.14	0.0892 0.84	-0.0346 0.20	0.0090 0.20	0.0082 0.20	1 --							
[11] CFO*SIZE		-0.8613 (-41.42)**	0.4953 (55.48)**	-0.4711 (-13.05)**	0.4539 (16.25)**	0.0048 0.12	0.4819 (17.48)**	-0.2514 (-6.35)**	0.2617 0.74	0.0303 0.70	-0.0285 -0.38	-0.0157 --	1 --						
[12] CFO*LEV		-0.1793 (-4.45)**	0.1171 (2.88)**	-0.0225 -0.55	0.0037 0.09	0.0206 0.50	0.1359 (3.35)**	-0.0355 -0.87	0.0520 1.27	-0.0247 -0.60	-0.0815 (-2.00)*	0.4384 0.4123	0.1188 -0.0933	1 1					
[13] CFO*ROE		-0.3930 (-10.44)**	0.4998 (18.31)**	-0.2874 (-7.33)**	0.2560 (6.47)**	0.0292 0.71	0.3864 (10.23)**	-0.1323 (-3.26)**	0.1214 (-2.66)**	-0.1081 (-5.50)**	-0.2196 (-1.40)	-0.0572 0.18(9.2)**	0.4123 -0.29(2.29)*	1 --					
[14] DCFO*SIZE		0.4129 (11.08)**	-0.4486 (-12.26)**	0.4871 (150.59)**	-0.3829 (-10.13)**	-0.0217 -0.53	-0.3163 (-8.15)**	0.4127 (18.94)**	-0.1214 (-9.32)**	-0.0237 -0.58	0.1921 (4.78)**	0.0662 1.62	-0.4580 (-12.59)**	-0.0253 -0.62	-0.3023 (-7.75)**	1 --			
[15] DCFO*LEV		0.1973 (4.92)**	-0.2404 (-6.05)**	0.4317 (15.34)**	-0.2037 (-5.08)**	-0.0144 -0.35	-0.1514 (-3.74)**	0.3264 (-8.44)**	-0.1308 (-3.22)**	0.1485 (-3.67)**	0.4599 0.136	0.0556 (-28.56)**	-0.2641 1.36	-0.0138 (-6.69)**	-0.4535 (-0.34)	0.4792 (-16.24)**	1 --		
[16] DCFO*ROE		0.0540 1.32	-0.0459 -1.12	0.1786 (4.44)**	0.0046 0.11	0.0720 1.76	-0.0650 -1.59	0.2148 (5.37)**	-0.0896 (-2.20)*	-0.0011 -0.03	0.0683 1.67	0.4705 (13.03)**	-0.0510 -1.25	-0.1267 (-3.12)**	-0.0295 -0.72	0.1818 (-4.52)**	0.1400 (-3.45)**		

\* Significant at the 5% level, \*\* Significant at the 1% level.

## Model estimation Results

Table 4 summarizes the results of the models' estimation, showing that Model (1) is significant at the 1% level with high explanatory power, knowing that Model (1) measures

accounting conservatism in Algerian companies in the whole study period without isolating the Covid-19 effect. The results of Model (1) are consistent with the assumptions of Ball and Shivakumar (2005),

suggesting that the coefficient of cash flows from operations (CFO) is significant at the 1% level and that accruals offset 69.21% of cash flow when it is positive. The differential coefficient of CFO\*DCFO is also significant at the 1% level, indicating that the incremental sensitivity of accruals to bad and good news reached 31.30%. Therefore, in years with negative cash flows, accruals offset only 37.91% (69.21%-31.30%) of cash flows on average, which means that when cash flow is negative, the mitigating role of accruals is less pronounced. Thus, Algerian companies are conservative during the study period, since they tend to recognize unrealized losses through accruals more than gains.

When controlling Model (1) by the Covid-19 pandemic, as shown in Model (2), it appears that companies exhibit similar behaviour in terms of accruals. The coefficient of cash flows from operations (CFO) is significant at the 1% level and suggests that, during the pre-Covid-19 period, accruals offset 70.56% of cash flow when it is positive. The differential coefficient of CFO\*DCFO is also significant at the 1% level, indicating that accruals present 26.89% as an incremental sensitivity of accruals to bad and good news together. Consequently, during the pre-Covid-19 period, accruals offset 43.67% (70.56%-26.89%) of cash flows on average when cash flow is negative, showing less mitigation of cash flow noise by accruals. Thus, Algerian companies adopted conservative accounting practices during the pre-Covid-19 period as the timely recognition of losses more than gains (asymmetric recognition).

For the Covid-19 period, the coefficient of COV\*CFO is insignificant and very weak, suggesting that no additional sensitivity to positive cash flows was recorded for accruals compared to the pre-Covid-19 period. Thus, similar to the pre-Covid-19 period, accruals offset 70.56% of positive cash flows during the Covid-19 period. Regarding the differential sensitivity of accruals to bad and good news, the incremental coefficient of COV\*CFO\*DCFO is significant at the 1%

level, suggesting that the incremental sensitivity of accruals to bad and good news jointly during Covid-19 reached 6.93% (33.82%-26.89%). Therefore, during the Covid-19 period, accruals offset 77.49% (70.56%+33.82%-26.89%) of cash flows on average when cash flow is negative. Consequently, Algerian companies were less conservative during the Covid-19 period, since their asymmetry was lower; they offset 70.56% of positive cash flows *versus* 43.67% of negative cash flows during the pre-Covid-19 period, while they offset 70.56% of positive cash flows compared to 77.49% of negative cash flows during the Covid-19 period. The hypothesis of the study must therefore be rejected.

When controlling Model (2) by size, leverage, and return on equity, the explanatory power significantly increases by 8.42% (87.15%-78.73%). Except for SIZE and DCFO\*SIZE, all the coefficients that interacted with the control variables are significant at the 1% level. The coefficients of leverage (LEV) and return on equity (ROE) reveal that accruals decrease by 9.84% of debt and increase by 15.58% of net income, respectively, during positive cash flow periods. The coefficient of DCFO\*LEV indicates that highly leveraged companies report more positive accruals during negative cash flow periods. However, the coefficient of DCFO\*ROE indicates that highly-performed companies report more negative accruals during negative cash flow periods. The coefficients of CFO\*SIZE and CFO\*LEV suggest that the relationship between accruals and positive cash flows is more positive for larger and highly leveraged companies. For highly performing companies, the coefficient of CFO\*ROE reveals that the relationship between accruals and positive cash flows is more negative.

**Table 4**  
**The results of conservatism model and the impact of Covid-19 pandemic**

	Predict	Model (1)		Model (2)		Model (3)	
		Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
<b>Intercept</b>	?	0.0019	0.29	0.0019	0.20	0.0435	0.81
<b>DCFO</b>	?	0.0001	0.01	-0.0039	-0.24	-0.1008	-1.19
<b>CFO</b>	-	-0.6921	(-31.64)**	-0.7056	(-24.46)**	-1.4723	(-7.01)**
<b>CFO*DCFO</b>	+	0.3130	(7.03)**	0.2689	(5.32)**	0.2375	(4.89)**
<b>COV</b>	?			-0.0005	-0.04	-0.0100	-0.96
<b>COV*DCFO</b>	?			-0.0115	-0.47	-0.0099	-0.52
<b>COV*CFO</b>	?			0.0323	0.73	0.0802	(2.32)*
<b>COV* CFO*DCFO</b>	-			-0.3382	(-2.63)**	-0.2922	(-2.82)**
<b>SIZE</b>	?					-0.0005	-0.08
<b>LEV</b>	?					-0.0984	(-9.19)**
<b>ROE</b>	?					0.1558	(12.79)**
<b>CFO*SIZE</b>	?					0.0851	(3.63)**
<b>CFO*LEV</b>	?					0.1672	(6.83)**
<b>CFO*ROE</b>	?					-0.5462	(-13.01)**
<b>DCFO*SIZE</b>	?					0.0059	0.63
<b>DCFO*LEV</b>	?					0.1377	(8.44)**
<b>DCFO*ROE</b>	?					-0.1875	(-11.09)**
<b>F-statistic</b>		(733.22)**		(317.63)**		(254.52)**	
<b>Adj. R-squared</b>		0.7857		0.7873		0.8715	
<b>Durbin-Watson</b>		2.09		2.09		2.06	
<b>Observations</b>		600		600		600	

Dependent variable: TACC.

\*\* Significant at the 1% level.

\* Significant at the 5% level.

## Discussion

These results refute our hypothesis that Algerian companies are more conservative during the Covid-19 period compared to the pre-Covid-19 period, which is consistent with several previous studies that revealed a decline in accounting conservatism during crisis periods (Gul et al., 2002; Sodan et al., 2013; Gharibi & Nemat, 2015; Sholikhah & Suryani, 2020; El Houcine, 2021; Abdulhassan et al., 2022). These results confirm the conclusion of Aljawaheri et al. (2021) that the outbreak of

Covid-19 implies Iraqi companies manipulating earnings to maintain the stability of their performance. This conclusion is consistent with the view that during downturn periods, companies adopt less conservative accounting practices in order to moderate the current negative impact of big economic losses due to the crisis that can aggravate the declines in financial performance and defer that impact by allocating it to future periods. According to Savova (2021), the alterations in performance due to Covid-19 caused

threats against the going concern hypothesis with the reduction of business activity volume and the increasing liquidation probabilities of companies.

These results differ from those of many studies providing evidence that crisis periods are associated with a higher level of accounting conservatism in financial reports (Jenkins et al., 2009; Watts & Zuo, 2011; Al-Hroot et al., 2017; Gunn et al., 2018). They also differ from those of Aldoseri et al. (2022) and Yoo (2022), who found that companies reported highly conservative financial information during the Covid-19 pandemic. Therefore, the explanations related to the monitoring and contracting perspectives (Basu, 1997; Ball & Shivakumar, 2005; Jenkins et al., 2009; Watts & Zuo, 2011) are not valid in Algeria during the Covid-19 period. That could be the result of the total closure and physical distancing during the pandemic, which restricted scrutiny and control by regulators and other stakeholders. Furthermore, contracting and monitoring mechanisms in Algeria and the financing markets in which Algerian companies operate mainly differ from those in other economic environments.

Additionally, these results indicate that agency theory predictions (Francis et al., 2013; Gharibi & Nemati, 2015; Cui et al., 2021) are invalid in the Algerian context, where companies tend to be less conservative during the pandemic. This can be explained by the specificities of the corporate governance model in Algerian companies, where agency problems are less pronounced compared to the Anglo-American context. Therefore, managers are not much concerned with moderating agency costs, reducing litigation risks, or minimizing political costs. On the contrary, they seek to maintain the stability of performance and demonstrate companies' ability to continue in the foreseeable future, thus facilitating their access to bank financing, which enables them to mitigate the liquidity crisis caused by the pandemic. Moreover, the pandemic provides an opportunity for companies to be less conservative, thus extricating themselves from the accumulation of earning decreasing practices during previous periods (tax reduction).

This is due to the small margins for tax services to adjust taxes and incentives granted by the government to address structural economic fragilities.

These results contribute to the literature from many perspectives. They provide additional empirical evidence about the consequences of the Covid-19 pandemic on the quality of financial reporting, which has not yet received sufficient attention from researchers. Also, they confirm the previous evidence that downturns are a fundamental determinant of accounting conservatism and highlight the accounting choices of managers and their tendencies during crisis periods. However, the results demonstrate that the assumptions adopted by the literature are not always valid. Moreover, the study was carried out in Algeria, where crisis periods as a determinant of accounting conservatism have not previously been explored. Despite the contributions of this study, future studies are invited to avoid its limitations by exploring accounting conservatism in Algerian companies during the post-Covid-19 period using other measures of conservatism and a larger number of observations.

## Conclusion

A wide range of literature argues that accounting conservatism is a means to mitigate agency problems, enhance the efficiency of contracts, and reduce information asymmetry (Jenkins et al., 2009; Watts & Zuo, 2011; Francis et al., 2013; Cui et al., 2021). Moreover, accounting conservatism constrains earnings management and opportunistic payment risk (Basu, 1997; Ball & Shivakumar, 2005; Cui et al., 2021). Consequently, many studies revealed that scandals and downturns led companies to be more conservative in order to provide information about difficult situations and big economic losses (Jenkins et al., 2009; Watts & Zuo, 2011; Francis et al., 2013). Other studies suggested that more conservative companies experience fewer negative impacts due to

recessions (Pinnuck, 2012; Francis et al., 2013; Balakrishnan et al., 2016; Kim & Zhang, 2016; Zhang, 2020; Kaya, 2021). The conclusions stated that accounting conservatism leads to faster detection of problems, giving investors enough time to respond (Gharibi & Nemati, 2015).

This paper investigates the impact of the Covid-19 pandemic crisis on accounting conservatism in Algerian companies. The research methodology uses the model of Ball and Shivakumar (2005) as a measure of accounting conservatism, then introduces the Covid-19 pandemic as a dummy variable, and finally controls the model by company size, leverage, and return on equity. The study included 600 firm-year observations for 150 Algerian companies from 2018 to 2021, where the study period was divided into the pre-Covid-19 period (2018-2019) and the Covid-19 period (2020-2021). The required financial data was collected from the National Center for Commercial Register database (CNRC portal: <https://sidjilcom.cnrc.dz>).

The results indicated that Algerian companies are generally conservative; they showed a higher level of conservatism during the whole period, as evidenced by the high sensitivity of earnings to losses compared to gains, which implies a more timely recognition of losses than gains. However, Algerian companies showed a lower level of conservatism during the Covid-19 period compared to very

conservative financial information during the pre-Covid-19 period. Therefore, Covid-19 decreased accounting conservatism in Algerian companies, which refutes the contracting and monitoring perspectives and approves the opportunism view through earnings manipulation to maintain the stability of financial performance. Our explanations argue that closure and physical distancing during the pandemic restricted scrutiny and control by regulators and stakeholders. Also, contracting, monitoring, and financing mechanisms in Algerian companies differ from those in other environments.

The results of this study imply that accounting standard-setters in Algeria must quickly respond to crisis periods by issuing additional guidance for companies. Auditors of Algerian companies need to be more vigilant when certifying financial reports during crisis periods to ensure that companies adopt sufficient conservatism levels, constrain accounting manipulation, and thus provide relevant and faithful representations of financial information. On their side, regulators must adopt supplementary control mechanisms during periods of crises to guarantee transparency and fair disclosure.

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