

ACCOUNTING CONSERVATISM IN NON-STATE COMPANIES AND CONSOLIDATED FINANCIAL STATEMENTS

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Abstract

Research background: Accounting conservatism has been a significant area of research in the last few decades due to its effects on financial reporting quality. Nevertheless, it has been influenced by many factors that lead companies to be more or less conservative.

Purpose: This paper aims to contribute to this research stream by exploring the impact of state ownership and consolidation on accounting conservatism. The literature has not given much attention to state ownership and has never explored consolidation.

Research methodology: The study employed the data of 90 Algerian companies from 2016 to 2021 and employed Basu's (1997) model to measure conservatism. The relationships between variables were estimated using linear regression.

Results: The results indicate that Algerian companies' financial statements are generally conservative. However, accounting conservatism is more prevalent in state companies and separate financial statements.

Novelty: The study is the first in Algeria and is among the few studies that are interested in accounting consolidation as a determinant of conservatism.

Keywords: Accounting conservatism; Asymmetric timeliness of earnings; State ownership; Accounting consolidation

JEL classification: G34, M41

Introduction

Accounting conservatism is among the core concepts of reporting quality (Xu, Lu, 2008; Mohammed et al., 2017); it can be seen as a convention, principle, or constraint on accounting information. The IASC's framework of 1989 included conservatism as an attribute of reliability (IASB, 1989). However, the IASB concluded that conservatism contradicts neutrality and substance over form, so it was excluded from the IASB's conceptual framework of 2010. Later, the IASB reinstated conservatism in the 2018 conceptual framework to reinforce neutrality with further explanations (IASB, 2022).

Conservatism states that potential measurement errors should tend to understate rather than overstate net assets (Xia, Zhu, 2009). It can be implemented by recognising potential decreases in income immediately and delaying the recognition of potential increases in income until their realisation (Kimouche, 2021). Conservatism is employed to justify why several accounting policies are selected and applied, such as historical cost, provisions, impairment tests, etc.

Conservatism allows managers to ensure that risks and uncertainties inherent in the operations are properly taken into account in financial statements and that their estimates are not overly optimistic (Kimouche, 2021). This is a way to undermine accounting aggressiveness and opportunism through constraining motivations for the overvaluation of net assets and net income (Kimouche, 2021; Garanina, Kim, 2023) since conservatism requires adopting accounting policies that maintain the verifiability of financial information.

The literature identifies many factors affecting accounting conservatism. Nevertheless, research has predominantly focused on corporate governance and certain characteristics of companies while overlooking numerous other factors (Mohammed et al., 2017; Alkurdi et al., 2017). Therefore, this study contributes to this research stream by exploring two relatively overlooked factors: state ownership, which has received little attention in the literature, and consolidation, which has never been explored within the limits of our literature review. Additionally, we chose these two factors because they are the most important determinants of the governance system and financial reporting policy in Algerian companies, which mainly affect the conservativeness or aggressiveness of financial statements.

Unlike non-state companies, companies owned by the government are typically large and have static governance systems with more accessibility to financing; they are also more politically connected and face higher political costs. State companies operate in strategic sectors and pursue objectives beyond profitability, such as job creation, training, providing

commodities, etc. Contrarily, non-state companies are often smaller, family-owned, and more geographically concentrated. They have more flexible governance systems that can be easily changed since they are usually controlled by a limited number of shareholders or family owners. Non-state companies are also more financially constrained and face many difficulties when accessing bank financing under the objectives related to performance maximisation and the restrictions related to tax management.

On the other hand, accounting for consolidation requires addressing intercompany transactions and non-controlling interests as sources of discretion (Lin et al., 2022). Consolidation is often based on fair value as a basis for measurement, which generates goodwill and tends towards aggressive accounting at the expense of conservatism. Additionally, consolidation needs more judgements (Bonacchi et al., 2018) to handle goodwill and intangible assets arising from business combinations. Further, the presence of goodwill and intangible assets with an indefinite useful life in consolidated accounts requires testing the impairment of assets annually, which supports the conservative tendency. For these reasons, state ownership and consolidation are expected to influence conservatism.

This study was conducted using the financial data of Algerian companies, which adds significance to the research. It is the first in Algeria, where the government oversees 16,718 state companies, as per the latest report from the National Statistics Office (ONS, 2012). Furthermore, despite the absence of official statistics, many Algerian companies aggregate their accounts, whether for consolidation, combination, or other forms of grouping. For these reasons, this study is expected to have numerous implications for parties interested in financial statements, particularly regarding the potential accounting choices of companies and their tendencies towards conservatism.

1. Literature review and hypotheses development

1.1. Institutional background

Since its independence in 1962, Algeria has inherited an accounting system from France in addition to a complete economic and institutional setting. On the other hand, Algeria is a code-law country, where accounting is primarily derived by taxation and the financing of companies largely relies on banks, so accounting in Algeria tends to be conservative. Since 2010, accounting in Algeria has been based on the Financial Accounting System (SCF), which is inspired by the 2003 IFRS version. This version relies on the IASC's framework of 1989, where conservatism was considered an attribute of reliability (IASB, 1989).

The SCF adoption in Algeria was the result of a long path of reform after the adoption of the National Accounting Plan (PCN) in 1975, reflecting the socialist orientation. With the economic transition in the early 1990s, the PCN became inadequate for the new orientations towards capitalism, especially the privatisation of companies and the extension of the private sector. Nevertheless, the adoption of the SCF has not led to significant changes in accounting practices in Algeria, which are still influenced by the traditions of the socialist era, particularly the link between accounting and taxation. Additionally, the SCF tends to neglect the newly adopted concepts, especially substance over form and current value. Furthermore, Algeria lacks the economic and institutional prerequisites for the adoption of the IFRS, such as an active and efficient stock exchange and frameworks for good governance.

1.2. Accounting conservatism explanations

From the perspective of corporate governance, accounting conservatism is a mechanism to monitor a company, ensure the efficiency of contracts, and moderate information asymmetry. Conservatism enables companies to provide information about economic losses and reflect unfavourable situations (Basu, 1997; Ball, Shivakumar, 2005; Cui et al., 2021), achieving faithful representation as a fundamental qualitative characteristic of financial information (IASB, 2022). Conservatism is also a means to limit the aggressiveness of managers in disclosing extremely optimistic financial performance and their opportunism to manipulate financial statements by restricting the available discretion (LaFond, Watts, 2008). Moreover, conservatism can be employed to protect the company's wealth by avoiding any dividends or taxes on unrealisable earnings.

According to agency theory, accounting is a means to provide information for principals (shareholders or debtors) to control the commitment of the agents (managers) to the clauses of contracts. Therefore, conservatism as an accounting rule contributes to producing the information employed by agency parties to set contract clauses. Highly conservative financial statements can moderate agency costs and enhance contract monitoring (Ball, Shivakumar, 2005). Additionally, the underestimation of income and assets is less dangerous than their overestimation in terms of litigation risks, potential penalties, and political costs (Bushman, Piotroski, 2006; Xia, Zhu, 2009).

Conservatism can also be interpreted from an informational perspective since managers could also use conservatism to signal private information and reduce information asymmetry among investors (Cui et al., 2021). Increased financial leverage requires a higher level of accounting conservatism in financial reports to reassure debtors and, thus, mitigate

agency problems since conservatism prevents any cash dividends for shareholders and other opportunistic payment risk through reducing discretion available for managers that motivates earnings management practices (LaFond, Watts, 2008; Mousa, 2014).

1.3. Accounting conservatism and state ownership

There is little evidence concerning the influence of state ownership on accounting conservatism in previous studies. The existing literature primarily focuses on the relationship between accounting quality as measured by earnings management and state ownership. The results provide mixed evidence regarding the relationship between state ownership and accounting conservatism. Our literature review identifies three distinct streams of research according to their findings.

The first stream showed that state ownership is neutral since governments control companies to achieve macroeconomic and social objectives rather than prioritising financial performance or accounting quality. In this context, Capalbo et al. (2014) found no significant effect of state ownership on earnings manipulation in Italy. They pointed out that the appointment of managers in state companies may be influenced more by political connections than financial achievements. Mohammed et al. (2017) revealed no evidence supporting a relationship between conservatism and state ownership in Malaysia. They explained that state companies are a key factor for economic growth, so their managers face increased public pressure and scrutiny, which requires them to avoid aggressive reporting.

The second stream showed that conservatism increases with the intensity of state ownership. Xia and Zhu (2009) recorded higher levels of conservatism in Chinese state companies as a result of higher pressures and political concerns among state companies. Moreover, Xia and Zhu (2009) pointed out that non-state companies are under more financing constraints, so they seek to enhance their financial results by reducing the intensity of conservatism. Xu and Lu (2008) documented that state companies can benefit from extensive state support, so they do not need to resort to earnings management.

Starting from the reality that state companies are highly politically connected, Mohammed et al. (2017) observed a positive relationship between political connections and conservatism in Malaysian companies. They considered political connections as a weak mechanism for corporate governance and argued that agency problems may increase as public merit expands and that politics can significantly influence resource allocation.

Cullinan et al. (2012) reported that Chinese non-state companies, whose ownership structure includes the state as a minority shareholder, exhibit more conservatism compared to

companies in which the state does not have any ownership. Garanina and Kim (2023) revealed that Russian companies owned by the government exhibit higher levels of conservatism. They suggested that state companies prioritise reinforcing political connections with government authorities as a core objective.

The last stream is of utmost importance as it encompasses a wide range of studies that suggest less conservative financial reporting in state companies. A notable study conducted by Chen et al. (2010) demonstrated that state companies in China were less conservative since lenders had diminished concerns regarding potential risks associated with their default. Also, Gaio and Pinto (2018) observed a lower level of conservatism in European state companies compared to non-state companies. This can be attributed to government protection and political connections that make state companies need less conservatism and are less required to comply with market pressures regarding reporting requirements.

Liu et al. (2014) found that Chinese state companies exhibit less timely recognition of losses, and the managers of these companies are more likely to manipulate financial reports following government involvement, as presumed by the political cost hypothesis. Gaio and Pinto (2018) added that state companies are more motivated to manipulate financial reports compared to non-state companies to obscure the reality of their financial situations.

Alkurdi et al. (2017) and Le and Moore (2022) showed negative associations between state ownership and conservatism in Jordan and Vietnam, respectively. The explanations reveal that state companies face pressure from government authorities or politicians to make optimistic reporting decisions. They also argue that state companies suffer higher degrees of agency problems, leading managers to practice more earnings manipulation to preserve their positions (Xia, Zhu, 2009; Capalbo et al., 2014; Alkurdi et al., 2017).

Rezazade (2015) indicated that conservatism is less pronounced in Iranian state companies. Similarly, Saleh et al. (2021) showed an increase in conservatism in Indonesian companies due to privatisation and enhanced governance. From the agency theory perspective, the delegation of control to management, who acts as an agent on behalf of the exclusive shareholder, gives rise to minor agency problems and reduces the need for conservatism as a means to constrain managerial opportunism (Xu, Lu, 2008).

Dharmayuni et al. (2020) found that Indonesian state-owned enterprises listed on the IDX during the period 2017–2019 are less conservative. They tend to recognise gains more timely than losses and do not classify temporary gains as exceptional or extraordinary. This practice was explained by bonus incentives that motivated managerial opportunism to accelerate the recognition of gains and, thus, improve financial performance. Similarly, Sari (2021) indicated

that state-owned companies in Indonesia are less conservative compared to non-state-owned companies during the period 2012–2015.

Besides the previous studies, Bushman and Piotroski (2006) concluded that managers tend to adapt financial reports according to the nature of state ownership. The study revealed that higher degrees of conservatism are associated with lower state ownership in common-law countries compared to higher state ownership in code-law countries. Considering this finding and recognising that Algeria is a code-law country, we assume that Algerian state companies are more conservative.

Hypothesis 1 Financial statements of Algerian non-state companies are less conservative compared to state companies.

1.4. Accounting conservatism and consolidation of financial statements

In the scope of our literature review, the study by Khodamipour and Dehghan (2015) is the only one that was concerned with the influence of consolidation on accounting conservatism. The previous studies were interested in the value relevance of consolidated versus separate financial statements. This is due to the differential usefulness of both statements when making decisions in stock markets, considering that the majority of listed companies are parent companies required to present both financial statements.

The major previous studies supported the view that consolidation improves the value relevance of financial information. Among the first studies was carried out by Niskanen et al. (1998), which found that the consolidation of financial statements of Finnish-listed companies enhanced the informational content of earnings. Hsu et al. (2012) documented a better reflection of market value by the control-based approach of consolidation than the ownership-based approach in Taiwan.

Sotti (2017) discovered that consolidated accounts of European listed companies are value-relevant. In the same context, Sotti (2018) documented the superiority of consolidated financial statements over the separate in Italy regarding value relevance. Similarly, Busari and Bagudo (2021) revealed that the financial statements of Nigerian companies were value-relevant, whether separate or consolidated, with the superiority of consolidated accounts.

The conclusions state that consolidated financial statements align with the economic entity concept (Hsu et al., 2012) and are comprehensive financial reports, where the assets and liabilities of subsidiaries are presented in a single financial position (Sotti, 2017). Additionally, consolidated financial statements more accurately and reliably reflect the performance

of the entire economic entity and have a better ability to assist investors in predicting future performance (Niskanen et al., 1998).

Contrarily, separate financial statements contain only the assets and liabilities of the parent company since investments in subsidiaries are reported as financial instruments (Sotti, 2017). Furthermore, Sotti (2018) argued that the lower value relevance of separate financial statements can be attributed to the lack of commitment to the substance over form principle since companies disclose their financial information for regulation or taxation purposes. Niskanen et al. (1998) emphasised that individual accounts neglect the interdependencies among subsidiaries within the parent company as a single economic entity.

Another set of studies was interested in the influence of consolidation on earnings management. The findings strongly support the idea that consolidation involves more estimations, encouraging earnings management. Additionally, there are some disparities between consolidated and separate accounts in terms of accounting policies, leading to more flexibility in consolidated financial statements. This perspective was confirmed by Bonacchi et al. (2018), who found that Italian parent companies practice earnings management differently from their subsidiaries.

Lin et al. (2022) showed that, before 2005, when Taiwanese groups consolidated their accounts through the ownership-based approach, they engaged in accounting earnings management to conceal subsidiaries. However, after the switch to the control-based approach, real earnings management through related-party transactions was adopted as an alternative. According to Hsu et al. (2012), transactions between a parent and its subsidiaries involve more earnings management.

Unlike separate financial statements, consolidation involves more discretion, leading to aggressive accounting or earnings management to the detriment of conservatism. In this context, Styliani (2011) showed that UK companies adopt more earnings management and less conservatism in their consolidated accounts. Khodamipour and Dehghan (2015) also indicated that the separate accounts of Iranian companies are more conservative. Starting from the literature, the second hypothesis was formulated as follows:

Hypothesis 2 Consolidated financial statements of Algerian companies are less conservative when compared to the separate.

2. Method and materials

2.1. Model specification

Literature offers many proxies for accounting conservatism, such as negative accruals (Givoly, Hayn, 2000), hidden reserves (Penman, Zhang, 2002), and asymmetric accruals-to-cash flows (Ball, Shivakumar, 2005). However, this study employed the model of asymmetric timeliness of losses and gains (Basu, 1997) since the financial data available at the National Centre for Commercial Register (CNRC) portal, which is the source of data, limits the use of other models. The model of Basu (1997) assumes that the timely recognition of losses and gains implies that they are recognised as transitory and tend to reverse. Therefore, losses and gains were measured as decreases and increases in income.

$$\Delta NI_{it} = \alpha_0 + \alpha_1 D\Delta NI_{it-1} + \alpha_2 \Delta NI_{it-1} + \alpha_3 D\Delta NI_{it-1} \times \Delta NI_{it-1} + \xi_{it} \quad (1)$$

where ΔNI_{it} is the annual change in net income during the period scaled by total assets; $D\Delta NI_{it-1}$ is a dummy variable taking 1 if the prior period annual change in net income is negative, otherwise 0; α_0 is an intercept; $\alpha_1, \dots, \alpha_3$ are parameters; ξ_{it} is the error term.

Conservatism requires the untimely recognition of gains by delaying their integration into income until their realisation, so they are recognised as permanent increases in income without potential reversal, which implies $\alpha_2 = 0$. Conversely, conservatism requires the timely recognition of losses by integrating them into income before their realisation; hence, they are recognised as transitory decreases in income that will reverse, which implies $\alpha_2 + \alpha_3 < 0$. The timely recognition of losses more than gains implies $\alpha_3 < 0$.

Consistent with Ball and Shivakumar (2005), we introduced company ownership and consolidation as dummy variables, which were multiplied by the variables of Basu's (1997) model to measure their impact on each parameter.

$$\begin{aligned} \Delta NI_{it} = & \beta_0 + \beta_1 D\Delta NI_{it-1} + \beta_2 \Delta NI_{it-1} + \beta_3 D\Delta NI_{it-1} \times \Delta NI_{it-1} + \beta_4 PRO \times D\Delta NI_{it-1} + \\ & + \beta_5 PRO \times \Delta NI_{it-1} + \beta_6 PRO \times D\Delta NI_{it-1} \times \Delta NI_{it-1} + \beta_7 SIZE_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} \Delta NI_{it} = & \gamma_0 + \gamma_1 D\Delta NI_{it-1} + \gamma_2 \Delta NI_{it-1} + \gamma_3 D\Delta NI_{it-1} \times \Delta NI_{it-1} + \gamma_4 NFS \times D\Delta NI_{it-1} + \\ & + \gamma_5 NFS \times \Delta NI_{it-1} + \gamma_6 NFS \times D\Delta NI_{it-1} \times \Delta NI_{it-1} + \gamma_7 SIZE_{it} + \varepsilon_{it} \end{aligned} \quad (3)$$

The variables are as defined in Model (1), where PRO is a dummy variable taking the value 1 if the company is non-state-owned, otherwise 0; NFS is a dummy variable taking the value 1 for consolidated financial statements, otherwise 0; SIZE is the company size; β_0 and γ_0 are intercepts; $\beta_1, \dots, \beta_7$ and $\gamma_1, \dots, \gamma_7$ are parameters; ε_{it} and ξ_{it} are the error terms. Models

(2) and (3) include interactive variables to reflect the effect of ownership and consolidation on accounting conservatism. Using interactive variables is important in this context because Model (1) measures accounting conservatism, so the interaction of ownership and consolidation variables (PRO and NFS) with the variables of Model (1) allows reflecting conservatism in non-state companies and consolidated financial statements.

β_2 and γ_2 are expected to be null, reflecting a delaying and persistent recognition of gains, so there is no transitory recognition and subsequent reversal. β_3 and γ_3 reflect the timely recognition of losses more than gains; hence, they are expected to be negative. β_5 and γ_5 measure the differences in gain recognition between state and non-state companies and between separate and consolidated financial statements without predictions for them.

Alternatively, the parameters β_6 and γ_6 measure the differences in loss recognition between state and non-state companies and between separate and consolidated financial statements. The predictions suggest that if state companies and separate financial statements recognise losses in a timelier manner compared to non-state companies and consolidated accounts, $\beta_6 > 0$ and $\gamma_6 > 0$.

Table 1. Variables' description

Variable	Calculation	Meaning of the parameter	Sign
ΔNI_{it-1}	$(NI_{it-1} - NI_{it-2}) / Assets_{it-1}$	Recognition of gains as permanent increases in income without potential reversal	0
$D\Delta NI_{it-1}$	$\Delta NI_{it-1} < 0 \rightarrow D\Delta NI_{it-1} = 1$ $\Delta NI_{it-1} > 0 \rightarrow D\Delta NI_{it-1} = 0$	The model takes into account only the negative annual change in net income (conservative tendency)	?
$D\Delta NI_{it-1} \times \Delta NI_{it-1}$		Recognition of losses as transitory decreases in income that will reverse in the future (timely recognition of losses more than gains)	–
$PRO \times D\Delta NI_{it-1}$	Non-State company $\rightarrow PRO = 1$ State company $\rightarrow PRO = 0$	The model takes into account only the negative annual change in the net income of non-state companies	?
$PRO \times \Delta NI_{it-1}$		Differences in gains recognition (as permanent) between state and non-state companies.	?
$PRO \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$		Differences in losses recognition (as transitory) between state and non-state companies	+
$NFS \times D\Delta NI_{it-1}$	Consolidated accounts $\rightarrow NFS = 1$ Separate accounts $\rightarrow NFS = 0$	The model takes into account only the negative annual change in the net income of consolidated accounts	?
$NFS \times \Delta NI_{it-1}$		Differences in gains recognition (as permanent) between separate and consolidated accounts	?
$NFS \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$		Differences in losses recognition (as transitory) between separate and consolidated accounts	+
$SIZE_{it}$	Logarithm of total assets		?

Source: own elaboration.

2.2. Sample and data collection

Owing to the specificities of the business environment in Algeria, where the majority of companies remain unlisted on the stock exchange and comprehensive financial databases are notably absent, the study sample was constructed depending on the portal of the National Centre for Commercial Register (CNRC) [<https://sidjilcom.cnrc.dz>]. Notably, due to the limited activity of the Algiers Stock Exchange, Algerian companies do not face many disclosure requirements, making the CNRC database the sole source of financial data.

According to the last investigation of the Algerian ONS, there are 934,250 companies in Algeria; only 16,718 of them are state-owned (ONS, 2012). However, the majority of non-state companies are SMEs, so the sample selection considered big-sized companies that have more than 2 billion DZD. The initial sample included 957 companies, of which 343 are non-state-owned, 524 are owned by the state, and 90 are mixed-owned (ONS, 2012).

The selection of companies was based on the availability of the required financial data during all of the study's periods without considering banks and financial entities. The final sample included 90 companies, including 54 state-owned and 36 privately owned, and 66 of them prepared consolidated financial statements. The study was carried out during the period from 2016 to 2021, which represents a total of 540 observations.

3. Results and discussion

3.1. Descriptive statistics

Table 2 indicates that the annual change in net income represents 1.63% of total assets on average for the current period and 1.66% for the prior period, with standard deviations of 9.83% and 10.15%, respectively. The results show that the negative annual change in net income represents 3.38% of total assets on average, with a standard deviation of 8.76%. When considering only non-state companies, the annual change in net income reaches 2.17% of total assets, while the negative yearly change in net income reaches 2.81% of total assets. For consolidated financial statements, the annual change in net income represents 2.31% of total assets, while the negative yearly change in net income represents 2.61% of total assets.

Table 2. Descriptive statistics results

	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
ΔNI_{it}	0.0163	0.0017	0.1723	-0.1432	0.0983	540
ΔNI_{it-1}	0.0166	0.0019	0.1723	-0.1548	0.1015	540
$D\Delta NI_{it-1} \times \Delta NI_{it-1}$	-0.0388	0.0000	0.0000	-0.1548	0.0876	540
$PRO \times \Delta NI_{it-1}$	0.0217	0.0158	0.1723	-0.1512	0.1162	540
$PRO \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$	-0.0281	0.0022	0.0000	-0.1532	0.1047	540
$NFS \times \Delta NI_{it-1}$	0.0231	0.0066	0.1711	-0.1545	0.0967	540
$NFS \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$	-0.0261	0.0035	0.0000	-0.1514	0.1044	540
$SIZE_{it}$	9.8219	9.9486	11.2195	7.5540	0.7721	540

Source: own elaboration.

3.2. Models' validation

Before all, it is necessary to check the stationary of the data for all of the variables. As is shown in Table 3, the three-unit root tests used are significant at 1% for all variables, except for ADF and PP when used for $NFS \times D\Delta NI_{it-1}$, which are significant at 5%. These results reject the null hypothesis of the existence of a unit root, indicating that all variables do not contain unit roots. Therefore, the estimation of models did not require the use of dynamic methods.

Table 3. Unit root test results

	Levin, Lin & Chu t	ADF – Fisher Chi-square	PP – Fisher Chi-square
ΔNI_{it}	(-78.91)**	(775.8)**	(785.5)**
$D\Delta NI_{it-1}$	(-10.88)**	(238.3)**	(240.1)**
ΔNI_{it-1}	(-78.91)**	(775.8)**	(785.5)**
$D\Delta NI_{it-1} \times \Delta NI_{it-1}$	(-16.38)**	(425.9)**	(425.9)**
$PRO \times D\Delta NI_{it-1}$	(-6.80)**	(103.6)**	(104.8)**
$PRO \times \Delta NI_{it-1}$	(-20.78)**	(331.4)**	(335.9)**
$PRO \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$	(-10.48)**	(182.8)**	(183.5)**
$NFS \times D\Delta NI_{it-1}$	(-5.72)**	(164.9)*	(162.6)*
$NFS \times \Delta NI_{it-1}$	(-38.33)**	(486.7)**	(530.8)**
$NFS \times D\Delta NI_{it-1} \times \Delta NI_{it-1}$	(-150.5)**	(404.5)**	(420.9)**
$SIZE_{it}$	(-3.33)**	(301.8)**	(361.6)**

Null hypothesis: Unit root.

* Significant at 5%.

** Significant at 1%.

Source: own elaboration.

This study used panel data, which requires testing the homogeneity of parameters and intercepts to determine whether the models have a panel structure. The results in Table 4 indicate that the Hsiao test is significant at 1% for H1, suggesting the heterogeneity of parameters and/or intercepts for the three models. However, the results show that the parameters are homogeneous since the test is insignificant for H2. The test is significant at 1% for H3, indicating the heterogeneity of intercepts. In summary, these results demonstrate that all of the models have panel structures with individual effects.

Table 4. Hsiao test results

Hypothesis	Model (1)		Model (2)		Model (3)	
	F-Stat.	P-Value	F-Stat.	P-Value	F-Stat.	P-Value
H1	2.035	0.000	2.604	0.000	2.788	0.000
H2	0.356	0.999	0.877	0.805	0.786	0.871
H3	4.714	0.000	4.440	0.000	4.645	0.000

Null hypothesis (H1): homogeneity of parameters and intercept.

Null hypothesis (H2): homogeneity of parameters.

Null hypothesis (H3): homogeneity of intercept.

Source: own elaboration.

As the models have a panel structure, the appropriate method for estimating them needs to be selected. According to Table 5, the Fixed Effects Method is deemed suitable for estimating all of the models, as the Hausman test yields significance at 1% for each one.

Table 5. Hausman test results

	Chi-Sq. Stat.	Chi-Sq. d.f.	Prob.
Model (1)	48.13	3	0.000
Model (2)	66.52	7	0.000
Model (3)	72.21	7	0.000

Null hypothesis: Random Effects.

Source: own elaboration.

3.3. Models' estimation results

Table 6 summarises the results of the models' estimation. For Model (1), it appears that it is significant at 1%, with a high explanatory power of 71.5%. In line with the assumptions of Basu (1997) and Ball and Shivakumar (2005), the parameter relating to ΔNI_{it-1} is close

to zero and insignificant, showing a persistent recognition of gains without any reverse by Algerian companies. However, the parameter relating to $\Delta \text{ANI}_{it-1} \times \Delta \text{ANI}_{it-1}$ is significant at 1% and negative, suggesting a transitory recognition of losses with a reversal and a more timely recognition of losses than gains by Algerian companies. Therefore, accounting practices in Algerian companies are highly conservative, with a conservatism coefficient of 85% as a reversal of income decreases (non-repeating transitory losses).

Table 6 indicates that Model (2) is statistically significant at 1% and explains 79.8% of the variability in the dependent variable (ΔNI_{it}). Similar to Model (1), Model (2) shows an untimely recognition of gains versus a more timely recognition of losses with a reverse, suggesting a high level of conservatism in the financial statements of Algerian companies.

Focusing on the incremental coefficients related to the independent variables $\text{PRO} \times \Delta \text{NI}_{it-1}$ and $\text{PRO} \times \Delta \text{ANI}_{it-1} \times \Delta \text{ANI}_{it-1}$, it becomes evident that in contrast to state companies, non-state companies tend to timely recognise gains as transitory components of income with the intention to reverse them in the future. This inference is drawn from the negative and significant parameter associated with $\text{PRO} \times \Delta \text{NI}_{it-1}$ at 1%. Similarly, the parameter related to $\text{PRO} \times \Delta \text{ANI}_{it-1} \times \Delta \text{ANI}_{it-1}$ is also significant at 1% but positive. This implies that non-state companies exhibit a reduced propensity to timely recognise losses as transitory items to reverse them in the future. These findings confirm *Hypothesis 1*, which posits that non-state Algerian companies exhibit lower levels of conservatism in their financial statements compared to state companies.

Table 6 indicates that Model (3) is significant at 1% and possesses a high explanatory power of 77.5%, which is greater than that recorded for Model (1) and slightly lower than that recorded for Model (2). Model (3) also indicates a high level of conservatism in the financial statements of Algerian companies due to the more timely recognition of losses versus gains.

Concerning conservatism in consolidated accounts, the incremental coefficient relating to $\text{NFS} \times \Delta \text{NI}_{it-1}$ is negative and significant at 1%, and therefore, Algerian parent companies are more likely to timely recognise gains as transitory items and reverse them later in their consolidated financial statements. Nevertheless, the incremental coefficient relating to $\text{NFS} \times \Delta \text{ANI}_{it-1} \times \Delta \text{ANI}_{it-1}$ is positive and significant at 1%; thus, Algerian parent companies are less likely to timely recognise losses to reverse them in the future when consolidating their financial statements. As a result, the consolidated financial statements of Algerian companies are less conservative than their separate financial statements, as assumed by *Hypothesis 2*.

Table 6. The estimation results for the study models

Variable	Model (1)		Model (2)		Model (3)	
	Coeff.	t-Stat.	Coeff.	t-Stat.	Coeff.	t-Stat.
Intercept	-0.004	(-0.61)	0.159	(2.99)**	0.120	(2.25)*
$\Delta\Delta NI_{it-1}$	-0.027	(-2.63)**	-0.041	(-3.93)**	-0.048	(-3.58)**
ΔNI_{it-1}	-0.022	(-0.82)	-0.018	(-0.67)	-0.020	(-0.76)
$\Delta\Delta NI_{it-1} \times \Delta NI_{it-1}$	-0.850	(-20.65)**	-0.917	(-22.72)**	-0.918	(-21.95)**
$PRO \times \Delta\Delta NI_{it-1}$			0.034	(2.66)**		
$PRO \times \Delta NI_{it-1}$			-0.782	(-8.27)**		
$PRO \times \Delta\Delta NI_{it-1} \times \Delta NI_{it-1}$			1.617	(10.44)**		
$NFS \times \Delta\Delta NI_{it-1}$					0.040	(2.77)**
$NFS \times \Delta NI_{it-1}$					-0.414	(-4.75)**
$NFS \times \Delta\Delta NI_{it-1} \times \Delta NI_{it-1}$					1.201	(8.16)**
$SIZE_{it}$			-0.015	(-2.87)**	-0.011	(-2.15)*
F-Stat.	(177.86)**		(156.11)**		(135.74)**	
R-squared	0.715		0.798		0.775	
Durbin-Watson	2.05		2.03		2.07	

Dependent variable: ΔNI_{it} .

Estimation method: Panel EGLS (Period SUR).

* Significant at 5%.

** Significant at 1%.

Source: own elaboration.

4. Discussion

The results of this study revealed that accounting practice in Algeria is conservative, reflecting the cautious and secretive nature of managerial culture, which aligns with the expectation that Algeria is a code-law country where accounting practices are less influenced by the substance over form principle. Additionally, the financing of companies relies on the banking system due to the inactivity of the Algiers Stock Exchange.

The results confirm the findings of Bushman and Piotroski (2006), who found that higher degrees of conservatism correlate with higher levels of state ownership in code-law countries. They also align with studies that suggested less conservatism in the financial statements of non-state companies compared to those of state companies (Xia, Zhu, 2009; Xu, Lu, 2008; Xia, Zhu, 2009; Cullinan et al., 2012; Garanina, Kim, 2023). These results can be attributed to the higher pressures and political concerns among state companies, in addition to

their ability to benefit from state support, so state companies do not need to manipulate their accounts to avoid financing constraints or mitigate agency costs.

In contrast, the results of this study differ from many studies that found higher levels of conservatism in the financial statements of non-state companies compared to those of state companies (Zhu, Li, 2008; Chen et al., 2010; Liu et al., 2014; Rezazade, 2015; Alkurdi et al., 2017; Gaio, Pinto, 2018; Saleh et al., 2021; Le, Moore, 2022). This study refutes the assumption that state companies are less concerned with earnings quality and have less need to comply with market pressures. Furthermore, the study disproves the conclusion that lenders are less concerned about the potential risks associated with the default of state companies. The study also does not align with the assumption that the managers of state companies practice more earnings manipulation to increase their financial benefits and preserve their positions.

Regarding the impact of consolidation on conservatism, this study aligns with previous studies. It has been observed that consolidation involves a higher level of estimates and offers greater flexibility. These factors, in turn, can motivate more earnings management practices (Hsu et al., 2012; Bonacchi et al., 2018; Lin et al., 2022). The study also confirms the findings of Stylian (2011) and Khodamipour and Dehghan (2015), who indicated that consolidated financial statements involve more discretion, leading to aggressive accounting practices and thus undermining accounting conservatism.

Conclusions

The literature on conservatism determinants is a significant research area due to its relevance for various users of financial statements, as it helps them in explaining and anticipating managerial accounting choices. Nevertheless, previous studies have predominantly focused on corporate governance and certain organisational characteristics of companies while overlooking numerous other factors that could significantly influence the extent of conservatism. Therefore, this study aims to contribute to this trend by investigating conservatism in non-state companies and consolidated financial statements in Algeria. This is due to several differences between companies resulting from state ownership and consolidation regarding the adoption of accounting policies and the issue of estimates.

Based on an analysis of the financial statements of 90 Algerian companies from 2016 to 2021 and applying Basu's (1997) model, the findings indicate that conservatism is more prevalent in the financial statements of state companies and separate financial statements. These results align with the assumption that non-state companies are more financially constrained

compared to state companies that can benefit from state financial support. Therefore, non-state companies adopt more aggressive accounting by reducing the degree of conservatism to enhance their financial performance.

Furthermore, the results are consistent with the assumption that state companies face greater pressures and political concerns, so they are more concerned with the quality of financial reporting. Additionally, the results confirm the expectation that consolidation involves more judgements and estimates, which leads to more flexibility and motivates managers to engage in earnings management to the detriment of accounting conservatism.

Although conservatism has been widely explored in previous studies, this study contributes to the literature on two significant sides. Firstly, the study investigates two characteristics that can be considered a source of substantial differences among companies regarding governance systems and financial reporting, which in turn influence conservatism levels. Regarding state ownership, there is limited evidence about the tendencies of state and non-state companies towards conservatism. Moreover, there is no explicit empirical evidence about conservatism in both separate and consolidated financial statements.

Secondly, this study is the first of its kind in Algeria, which has undergone a long period of transition involving various institutional and economic reforms. Companies in Algeria have distinct systems of governance and different accounting practices compared to other environments. As a result, this study provides additional empirical evidence for previous studies about the determinants of accounting conservatism.

This study is expected to have substantial implications for stakeholders interested in financial information. It will shed light on the potential accounting decisions of managers in Algerian companies and their tendencies towards conservatism. In this context, Algerian regulators are invited to implement good governance guidelines and improve accounting standards to enhance reporting quality. They should provide guidelines for fair and adequate disclosure, especially financial information that clarifies the position of managers in terms of conservatism. They should also emphasise the neutrality of managers when selecting accounting policies, considering the needs of different categories of users. This study requires users to employ financial information carefully, especially for non-state companies and consolidated financial statements, considering the potential aggressiveness of managers.

The auditors of Algerian companies need to expand their scope of verification for non-state companies and consolidated financial statements and employ additional analytical procedures to mitigate any potential aggressive accounting practices since conservatism is less prevalent in the two cases. For example, auditors can use extended samples when testing

internal control systems and consider high levels of auditing risk. Also, auditors can impose internal confirmations on management about the estimations and judgements adopted and focus more on verifying impairment losses and provisions.

Despite the contributions of this study, future studies should avoid certain methodological limitations. Specifically, the sample size should be extended to include other forms of ownership and small companies. Additionally, the study's methodology introduced a sample bias, as many companies were excluded due to the lack of their financial data for one year or more. The financial data available at the National Centre for Commercial Register (CNRC) portal limits the use of alternative models to measure accounting conservatism, especially those that do not rely on the asymmetric timeliness of earnings. Furthermore, the model design omitted several important control variables, such as industry, leverage, and activity level, which could significantly influence the results. Finally, the model design considered only the separate effects of explanatory variables and neglected the potential interactive effect between them.

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