

Determinants of Financial Performance: Evidence from Algerian Non-Listed Corporations

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Abstract

This article offers valuable insights into the financial performance of non-listed Algerian corporations. Employing advanced econometric techniques, specifically System GMM, the study examines financial performance from 2013 to 2022. We defined the financial performance using three dependent variables (i.e., ROA, ROE, NPM) and the following independent variables: financial leverage, growth, size, age, liquidity, and tangible assets. The results reveal that financial performance is at a minimum influenced by three factors (size, liquidity, and growth). Additionally, financial leverage has an impact on both Return on Assets and Equity. Finally, tangible assets impact financial performance solely in terms of Return on Equity.

Keywords: corporate financial performance, privately owned corporation, state owned corporation, generalized method of moments.

JEL classifications: G30; G40; L25

DOI: 10.24818/RMCI.2026.2.372

1. Introduction

Corporate is a sizeable legal entity or group of companies under the control of a single organization. It represents an essential component in the economic environment of any country. Often, the performance of most developed countries defined by the number of corporations listed on their stock markets (Pan & Qiu, 2022). Even non-listed corporations can influence the strength and healthiness of the economy, basically, in countries lacking sophisticated stock exchanges.

Corporate performance (CP) is a generic and dynamic concept. From a business perspective, it is mostly about generating profits and wealth for business owners (Aifuwa, 2020). Moreover, corporate performance refers to the level of success a business achieves in accomplishing its objectives, taking into account both non-financial and financial factors. Corporate financial performance (CFP), in contrast, is a specific aspect of overall corporate performance. It refers to a company's financial health and success, which can be measured using various

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quantitative indicators, such as liquidity, financial leverage, and growth. The results of corporate financial performance help management decide whether to continue with existing financial and non-financial strategies if the year-end results are positive, or to modify them if the year-end results are unsatisfactory.

In this context, it is necessary to examine the financial performance of Algerian corporations, especially non-listed ones, to identify the factors that influence their financial performance. The results will help us better understand how non-listed businesses in Algeria perform compared to companies operating in different economic environments.

In Algeria, as in numerous other countries, two prominent types of corporations play pivotal roles in the economy. First, we have privately owned corporations, which are integral to fostering entrepreneurship and innovation. These businesses are typically owned by families or a small group of shareholders, and unlike public companies, their shares are not traded on stock exchanges, allowing for more closely held control and a focus on long-term growth.

On the other hand, we have state-owned corporations, fully owned by the government, which act as formidable competitors to their privately owned counterparts. These entities often play a crucial role in national economic strategy, shaping market dynamics and providing essential services. Together, these two types of corporations create a diverse economic landscape, each contributing uniquely to Algeria's growth and development.

A wealth of research has been dedicated to uncovering the crucial determinants that drive corporate financial performance. While some studies examine internal factors—such as the size, age, financial leverage, and growth of a corporation—others focus on external factors, including GDP growth, inflation, exchange rates, and population dynamics. (Ahinful, Boakye, & Osei Bempah, 2023). Understanding these determinants is essential for businesses aiming to enhance their performance and thrive in a competitive landscape.

Our research aims to uncover the critical internal factors driving the financial performance of numerous non-listed corporations in Algeria's private sector. By utilizing advanced econometric methods, we provide a fresh perspective that sets our work apart from earlier studies, which have largely focused on publicly traded companies. This approach not only sheds light on the unique challenges and opportunities faced by private enterprises but also offers valuable insights for improving their financial outcomes.

1.2 Literature Review

In this article, we chose a set of variables frequently used in the literature relating to our research topic. This study used only the variables with accessible data when selecting the variables that can influence financial performance.

1.2.1 Dependent Variables

Corporate financial performance is a tool used to measure an organization's current development and potential growth (Thi Kim, Duvernay, & Thanh, 2021).

In literature, financial performance has several measures, but the most used ones are return on assets (ROA), return on equity (ROE), and net profit margin (NPM). All of the previous measures refer to financial ratios extracted from the financial statements to indicate how profitable a company is in relation to its total assets, shareholders' equity, and revenues.

For instance, in a study of the Jordan industrial sector, Matar & Eneizan (2018) used the return on assets ratio to evaluate financial performance. Otherwise, Suvvari et al. (2019) selected the return on assets and the return on equity in their study as determinants of the financial performance of a sample within the financial sector. Madaleno & Barbuta (2019) used the return on equity to evaluate corporate financial performance and confirmed that this ratio provides valuable information on company financial performance. Also, other studies used net profit margin to measure financial performance, and their results stated the significant influence of the determinants of company financial performance on the net profit margin (Xu & Wang, 2018).

1.2.2 Independent Variables

When we looked for previous studies linked to our research topic, we found several studies investigating determinants of corporate financial performance worldwide. Some of these studies investigated the influence of internal factors on financial performance, while the rest focused on the impact of external factors on financial performance. In our work, we chose corporate financial leverage (LEV), corporate size (SIZE), corporate age (AGE), corporate growth (GROWTH), corporate liquidity (LIQUI), and corporate tangible assets (TANG) as determinants of corporate financial performance.

Corporate size is a significant factor in a firm's profitability and financial performance (Oyelade, 2019). Large companies obtain more debt financing from banks due to their size compared to small companies. If corporate wisely use this source of finance for profitable investments. The corporate size will positively impact financial performance (Goh, Rumapea, & Toni, 2020). According to Sharma et al. (2021), the size of the insurance companies has a positive relation with their financial performance within the United Kingdom.

Corporate growth has been studied by researchers for many years, where the term growth is associated with the life cycle of a business (Gupta, Guha, & Krishnaswami, 2013). In a study of the Asian-pacific markets, Yadav et al. (2022) found a significant positive relation between growth and financial performance. This result was found, as well, in a study of a sample of manufacturing companies listed on the Indonesia stock exchange (Hermuningsih, 2019).

Corporate liquidity refers to its ability to convert assets into cash to meet short-term liabilities and obligations. Cash is the most liquid asset of the company's assets as it is already in the form of money. Contrariwise, fixed assets, such as equipment, real estate, and vehicles, are non-liquid assets as it takes a long time to

convert into cash. Li et al. (2020) argue that corporate liquidity maximizes financial performance. In other words, the more liquidity a company has, the higher its financial performance. On the flip side, some studies stated that liquidity mitigates the financial performance of corporations (Sudiyatno & Suwanti, 2022).

Corporate tangible assets refer to fixed assets whose lifetime is more than one year. In other words, tangible assets are physical and measurable assets used in a company's operations, e.g., equipment, land, and buildings. According to Hameed et al. (2022), Tangible assets have a significant negative relationship with corporate financial performance. Contrariwise, Gichur (2023) found that tangible assets affect positively corporate financial performance.

2. Data and Methodology

We designed our study to investigate the major determinants of the financial performance of a sample of non-listed corporations in the Algeria stock market. The study's sample covered 228 corporations representing Algerian's economic private sector for the period of (2013-2022). This study used a modern econometric technique (i.e., System GMM) that gives us a better understanding of the causal relationship between corporate financial performance and its determinants. We used data from the CNRC database, which offers the financial statements of all the registered corporations across 58 provinces in Algeria.

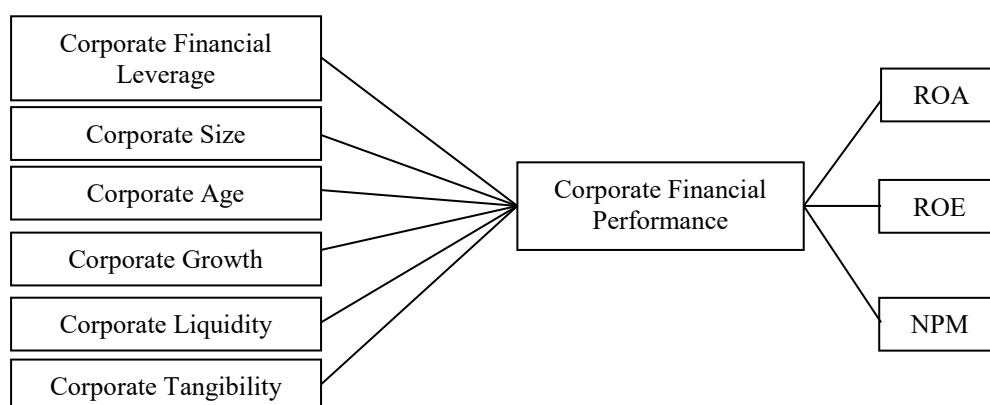


Figure 01. Determinants of corporate financial performance.

Source: Authors' Elaboration based on literature

Figure 01 presents the causal relationship between the study's variables. The left side of this figure represents the independent variables, while the right side represents the dependent variables.

Variables used in the empirical estimations

Table 1

Variables	Type of Variables	Name of Variables	Measurement Method
Dependent Variables	Quantitative	Return on Assets (ROA)	Net Income/ Total Assets
		Return on Equity (ROE)	Net Income/ Equity
		Net Profit Margin (NPM)	Net Income/ Sales
Independent Variables	Quantitative	Corporate Financial Leverage (LEV)	Total Debt/ Total Assets
		Corporate Size (SIZE)	Natural log of Sales
		Corporate Age (AGE)	Log (Current year- Foundation year)
		Corporate Liquidity (LIQUI)	(Current Assets- Inventory)/ Current Liabilities
		Corporate Tangibility (TANG)	Tangible Assets/ Total Assets
		Corporate Growth (GROWTH)	(Total Assets for the current year - Total Assets for the previous year)/ Total Assets for the current year

Source: Authors' Compilation based on literature

Table 01 presents the variables used in our empirical estimations that test the potential relationship between variables. All used variables are quantitative, as the study relied on secondary data extracted from the financial statements of the corporations. Our study used variables frequently cited in the literature, and their data are available in our case study.

According to Roodman(2009), the system generalized moments method (i.e., system GMM) is a technique designed for situations with “small T, large N” panels, meaning few time periods and many individuals; independent variables that are not strictly exogenous, meaning they are correlated with past and possibly current realizations of the error; fixed effects; and heteroskedasticity and autocorrelation within individuals.

To investigate the relationship between the dependent and the independent variables, we have built two models as follows:

Model 1: Return on Assets (ROA)

$$ROA_{it} = \beta_0 ROA_{it-1} + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LIQUI_{it} + \beta_5 TANG_{it} + \beta_6 GROWTH_{it} + d_t + (u_i + \varepsilon_{it})$$

Model 2: Return on Equity (ROE)

$$ROE_{it} = \beta_0 ROE_{it-1} + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LIQUI_{it} + \beta_5 TANG_{it} + \beta_6 GROWTH_{it} + d_t + (u_i + \varepsilon_{it})$$

Model 3: Net Profit Margin (NPM)

$$NPM_{it} = \beta_0 NPM_{it-1} + \beta_1 LEV_{it} + \beta_2 SIZE_{it} + \beta_3 AGE_{it} + \beta_4 LIQUI_{it} + \beta_5 TANG_{it} + \beta_6 GROWTH_{it} + d_t + (u_i + \varepsilon_{it})$$

Where: ROA_{it-1} , ROE_{it-1} and NPM_{it-1} are lagged dependent variables (i.e., Internal instrumental variable), ROA is return on assets ratio, ROE is return on equity, NPM is net profit margin ratio, LEV is corporate financial leverage ratio, $SIZE$ is corporate size ratio, AGE is corporate age ratio, $LIQUI$ is corporate liquidity ratio, $TANG$ is corporate tangibility ratio, $GROWTH$ is corporate growth ratio, d_t is year dummy variable (i.e., External instrumental variable), u_i is heterogeneity effects, ε_{it} is the error.

3. Results and Discussions

3.1 Results

Sys GMM Results of ROA's Model

Table 2

Variables	Coefficient	T-statistic	P-value
ROA L1.	0.3233	2.76	0.006***
LEV	-0.0447	-3.21	0.002***
SIZE	0.0176	3.47	0.001 ***
AGE	-0.0239	-1.25	0.213
LIQUI	0.0069	3.05	0.003 ***
GROWTH	0.0664	3.24	0.001 ***
TANG	0.0076	0.47	0.640
Year Dummies	Yes		
No. of Obs.	2052		
Groups/Instruments	228/24		
AR (2)	0.698		
Hansen Statistic	0.363		

Notes: ***, **, * are statistical significance at the 1%, 5% and 10 % levels respectively; *t*-statistics are based on white heteroskedasticity-consistent standard errors; *p*-values reported for AR(2) and Hansen statistic

Source: Authors' Computations

Table 02 shows the results of the return on assets (ROA) regression model using the system generalized method of moments (i.e., Sys GMM). We can observe from the table that the *p*-value of the Arellano-Bond diagnostic test AR (02) is not significant, as it is above five percent (5%); this supports the acceptance of the null hypothesis (H_0), which states that there is no autocorrelation in the residuals. Furthermore, the *p*-value of the Hansen statistic test is also not significant, as it's above five percent (5%), which allows us to state that the overall model is accepted from a statistical perspective and confirms the validity of the used instruments.

Sys GMM Results of ROE's Model

Table 3

Variables	Coefficient	T-statistic	P-value
ROE L1.	0.2719	5.72	0.000 ***
LEV	-0.1423	-3.84	0.000 ***

Variables	Coefficient	T-statistic	P-value
SIZE	0.0231	2.20	0.029 **
AGE	-0.0503	-1.16	0.248
LIQUI	-0.0006	-0.09	0.924
GROWTH	0.0848	2.40	0.017 **
TANG	-0.0395	-1.69	0.092 *
Year Dummies	Yes		
No. of Obs.	2052		
Groups/Instruments	228/24		
AR (2)	0.995		
Hansen Statistic	0.294		

Notes: ***, **, * are statistical significance at the 1%, 5% and 10 % levels respectively; *t*-statistics are based on white heteroskedasticity-consistent standard errors; *p*-values reported for AR (2) and Hansen statistic

Source: Authors' Computations

Table 03 shows the results of the return on equity (ROE) regression model using the system generalized method of moments (i.e., Sys GMM). We can observe from the table that the *p*-value of the Arellano-Bond diagnostic test AR (02) is not significant, as it is above five percent (5%); this supports the acceptance of the null hypothesis (H_0), which states that there is no autocorrelation in the residuals. Furthermore, the *p*-value of the Hansen statistic test is also not significant, as it's above five percent (5%), which allows us to state that the overall model is accepted from a statistical perspective and confirms the validity of the used instruments.

Sys GMM Results of NPM's Model

Table 4

Variables	Coefficient	T-statistic	P-value
NPM L1.	0.2001	3.64	0.000 ***
LEV	-0.0751	-1.19	0.235
SIZE	0.0459	4.13	0.000 ***
AGE	-0.0283	-0.58	0.565
LIQUI	0.0265	3.34	0.001 ***
GROWTH	0.1096	3.81	0.000 ***
TANG	-0.0002	-0.01	0.990
Year Dummies	Yes		
No. of Obs.	2052		
Groups/Instruments	228/33		
AR (2)	0.169		
Hansen Statistic	0.109		

Notes: ***, **, * are statistical significance at the 1%, 5% and 10 % levels respectively; *t*-statistics are based on white heteroskedasticity-consistent standard errors; *p*-values reported for AR (2) and Hansen statistic

Source: Authors' Computations

Table 04 shows the results of the net profit margin (NPM) regression model using the system generalized method of moments (i.e., Sys GMM). We can

observe from the table that the p -value of the Arellano-Bond diagnostic test AR (02) is not significant, as it is above five percent (5%); this supports the acceptance of the null hypothesis (H_0), which states that there is no autocorrelation in the residuals. Furthermore, the p -value of the Hansen statistic test is also not significant, as it's above five percent (5%), which allows us to state that the overall model is accepted from a statistical perspective and confirms the validity of the used instruments.

3.2 Discussions

In an attempt to define and interpret the financial performance of the Algerian private corporations, we applied the system generalized method of moments (i.e., Sys GMM) to understand the relationship among the dependent variables represented by return on assets (ROA), return on equity (ROE), net profit margin (NPM), and the independent variables represented by corporate financial leverage (LEV), corporate size (SIZE), corporate age (AGE), corporate liquidity (LIQUI), corporate tangibility (TANG), and corporate growth (GROWTH). The estimation results differ between the three adopted models, as shown in Table 02 for the return on assets, Table 03 for the return on equity, and Table 04 for the net profit margin.

Firstly, in the analysis of return on assets (ROA), we observe that the financial performance of corporations is influenced by four key factors: financial leverage (LEV), corporate size (SIZE), corporate liquidity (LIQUI), and corporate growth (GROWTH). As shown in Table 02, the results from the regression model (using Sys GMM) indicate a significant relationship between corporate financial leverage and return on assets. The p -value for corporate financial leverage is 0.002, which is less than 1%, indicating statistical significance. Additionally, the coefficient for corporate financial leverage is -0.0447, suggesting that financial leverage negatively affects return on assets. Specifically, for every one-unit increase in corporate financial leverage, the corporate financial performance decreases by 0.0447 units.

As shown in Table 02, the estimations of the regression model indicate a significant relationship between corporate size and corporate return on assets. The p -value for corporate size is 0.001, indicating it is less than 1% and therefore statistically significant. Additionally, the coefficient for corporate size is 0.0176, suggesting that corporate size positively impacts return on assets. Specifically, an increase of one unit in corporate size corresponds to an increase of 0.0176 units in corporate financial performance.

Also, the estimations of the regression model indicate a significant relationship between corporate liquidity and corporate return on assets. The p -value for corporate liquidity is equal to 0.003, which is less than 1%. Furthermore, the coefficient of corporate liquidity is equal to 0.0069, which means that the liquidity has a positive impact on the return on assets. If the corporate liquidity increases by one unit, the corporate financial performance increases by 0.0069 units.

There is a significant relationship between corporate growth and corporate return on assets. The p -value for corporate growth is equal to 0.001, which is less than 1%. Furthermore, the coefficient of corporate growth is equal to 0.0664, which means that the growth has a positive impact on the return on assets. If the corporate growth increases by one unit, the corporate financial performance increases by 0.0664 units.

Secondly, in analyzing the return on equity (ROE), we found that the financial performance of the corporations is influenced by four key determinants: financial leverage (LEV), corporate size (SIZE), corporate growth (GROWTH), and corporate tangible assets (TANG). As presented in Table 03, the estimates from the regression model (i.e., System Generalized Method of Moments or Sys GMM) indicate a significant relationship between corporate financial leverage and return on equity. The p -value for corporate financial leverage is 0.000, which is less than 1%. Furthermore, the coefficient for corporate financial leverage is -0.1423, indicating that an increase of one unit in financial leverage results in a decrease of 0.1423 units in return on equity. This suggests that financial leverage negatively impacts corporate financial performance.

Moreover, the estimations of the same model indicated a significant relationship between corporate size and corporate return on equity. The p -value for corporate size is equal to 0.029, which is less than 5%. Furthermore, the coefficient of corporate size is equal to 0.0231, which means that the size has a positive impact on the return on equity. If the corporate size increases by one unit, the corporate financial performance increases by 0.0231 units.

The results also show a significant relationship between corporate growth and corporate return on equity. The p -value for corporate growth is equal to 0.017, which is less than 5%. Furthermore, the coefficient of corporate growth is equal to 0.0848, which means that the growth has a positive impact on the return on equity. If the corporate growth increases by one unit, the corporate financial performance increases by 0.0848 units.

There is a significant relationship between corporate tangible assets and corporate return on equity. With a p -value of 0.092, which is less than 10%, it is clear that tangible assets play a crucial role in shaping corporate financial outcomes. More strikingly, the coefficient for corporate tangible assets stands at -0.0395, highlighting that an increase of just one unit in tangible assets leads to a decrease of 0.0395 units in return on equity. This evidence underscores the need for corporate leaders to carefully evaluate their investments in tangible assets, as they may inadvertently hinder financial performance.

Finally, when analyzing the net profit margin (NPM) of corporations, it's clear that their financial performance is significantly influenced by three factors: corporate size (SIZE), corporate liquidity (LIQUI), and corporate growth (GROWTH). The findings presented in Table 04 demonstrate a robust connection between corporate size and net profit margin. The remarkably low p -value of 0.000 for corporate size, well below the 1% threshold, underscores the strength of this relationship. Moreover, with a coefficient of 0.0459, we see that an increase in

corporate size by one unit translates to a rise of 0.0459 units in net profit margin. This compelling evidence highlights the crucial role that corporate size plays in enhancing financial performance, making it an essential factor for businesses aspiring to thrive in a competitive landscape.

The Same table indicates a significant relationship between corporate liquidity and corporate net profit margin. The p -value for corporate liquidity is equal to 0.001, which is less than 1%. Furthermore, the coefficient of corporate liquidity is equal to 0.0265, which means that the liquidity has a positive impact on the net profit margin. If the corporate liquidity increases by one unit, the corporate financial performance increases by 0.0265 units.

The regression model reveals a compelling and significant connection between corporate growth and a corporation's net profit margin. With a p -value of just 0.000—well below the 1% threshold—it is clear that corporate growth is a significant determinant. Moreover, the coefficient of 0.1096 indicates that an increase of one unit in corporate growth directly contributes to an improvement of 0.1096 units in financial performance. This underscores that fostering corporate growth is not only beneficial but essential for enhancing profitability.

4. Conclusion

Through this research, we investigated a crucial topic that belongs to the financial aspect of a corporation. We attempted to find the key determinants (i.e., Measures) of the financial performance of a sample of non-listed Algerian corporations operating within the private sector. Therefore, our research excluded all the Algerian corporations listed on the stock exchange. This study used a timeframe of ten years (from 2013 to 2022) and a sample of 228 corporations to examine the relationship between the variables.

The results have shown that the financial performance of the non-listed corporations is influenced by five factors, which are corporate financial leverage, corporate size, corporate liquidity, corporate growth, and corporate tangible assets. These results further confirm the prior research cited in the literature review section.

Results indicate a positive relationship between corporate size and corporate financial performance (i.e., ROA, ROE, NPM), which reveals that Algerian corporation can use their size to obtain more debt financing from commercial banks to finance their investments and operating cycles and generate revenue, in the medium and long terms.

Results indicate a negative relationship between corporate financial leverage and corporate financial performance (i.e., ROA, ROE), which reveals that Algerian corporations with more debt financing experience a decline in their financial performance. That means more debt financing influences their yearly financial results due to the high cost and risk of debt. An Algerian corporation must obtain an optimal financing mix of debt and equity to maintain excellent financial performance.

Results indicate a positive relationship between corporate liquidity and corporate financial performance (i.e., ROA, NPM), which reveals that Algerian corporations maintain enough levels of liquidity to face their short-term obligations, leading in the end to strengthen their financial position and financial performance. In other words, Algerian corporations with stable levels of liquidity have good financial performance.

Results indicate a positive relationship between corporate growth and corporate financial performance (i.e., ROA, ROE, NPM), which reveals that Algerian corporate growth rate over the years increases and influences their financial performance positively.

Results indicate a negative relationship between corporate tangible assets and corporate financial performance (i.e., ROE), which reveals that Algerian corporations' fixed assets decrease over the years compared to total assets and negatively influence their financial performance.

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