

# The Impact of Financial Diagnosis Determinants on Corporate Financial Performance

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## ABSTRACT

*The aim of this research is to identify and study the indicators of financial performance of large Algerian companies using the financial diagnosis method and its axes. Variables representing each axis of financial diagnosis (solvency, profitability, and profitability) were found. This study is based on a sample of forty (40) companies operating in the Algerian market over a period of five years from 2017 to 2021. The obtained results show that company size, profitability rate and self-financing capacity are significant determinants of the financial performance of large Algerian companies.*

**KEYWORDS:** *Financial diagnosis, Financial performance, Return on assets.*

**JEL CLASSIFICATION:** *C23, G32, P17.*

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## 1. INTRODUCTION

In this 21st century, we live in a constantly changing world, marked by an unstable, complex, and highly competitive environment. This is how any company or business leader, regardless of its sector of activity, is confronted with management problems and must find in a timely manner quick and effective solutions, and make the necessary decisions. This requires study in all areas of business life. The financial diagnosis is one of the tools that allows measuring and evaluating the performance of the company, which is a review of its financial situation. It helps to take stock of the company, analyse its strengths and weaknesses, address the causes of dysfunction for a potential recovery, and plan for its future. Measuring financial performance is a complex concept that can be understood in several dimensions, such as liquidity, profitability, productivity, growth, etc. Each company has its own method of evaluating its financial performance. In addition, each dimension of financial performance is associated with specific measurement indicators: company's performance, analysing investment risks, budget planning, and seeking financing. Financial institutions also use financial diagnosis to assess the solvency and repayment capacity of their clients. In short, the financial diagnosis is an essential tool to assess the financial health of a company or organisation. It enables informed financial management and strategic planning decisions in the business world and the broader economy. This study led us to the following problem: "To what extent does the financial diagnosis assess the financial performance of companies?"

The adopted methodology in our research aims to answer the main research question in which a descriptive approach was used by reviewing recent and relevant literature in order to define basic concepts (financial diagnostic and financial performance), and we attempted to create an econometric model that describes the relationship between the independent variable (ROA) and the dependent variables (variables that measure financial diagnostic).

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Finally, the result of the model will be discussed.

## 2. FINANCIAL DIAGNOSIS VS. FINANCIAL PERFORMANCE

### 2.1 The financial diagnosis

According to the definition of Pascal BARNETO and Georges GREGORIO: «The purpose of the financial diagnosis is to assess the profitability, solvency, and the main financial balances of an economic entity. In a context where capital movements are accelerating, the publication of accounts has become an essential source of information for partners, including institutional investors, that require greater comparability and readability of financial data (Barneto & Gregorio, 2009). According to Doy OGIEN, the financial diagnosis is an approach that aims to:

- Identify current or future business causes and challenges;
- Highlight any adverse elements or malfunctions in their financial situation and performance;
- Present the likely evolution prospects of the company and propose a series of actions to be implemented to improve or redress its situation and performance.

The diagnosis is conducted based on past financial statements in a dynamic and comparative perspective. Documents from the last two or three fiscal years are gathered to study the company's evolution and compare performance over time. This comparison is facilitated by the use of financial ratios (Ogien, 2008).

According to Elisabeth BERTIN and Christophe GODOWSKI: «the purpose of the financial diagnosis is to identify and evaluate the mechanisms of value creation within a company. The raw material of financial diagnosis is constituted at least by the accounting documents from the accounting system (balance sheet, income statement, cash flow statement, and annex) to which it is possible to add other summary documents such as the flow table or forecast accounts (Bertin et al., 2013).

According to Philippe AVARE, Jean-Claude COILLE: «The financial diagnosis is then one of the main components of the general strategic diagnosis. It makes it possible to highlight many of the management choices made in the company and aims to make decisions (granting a loan, capital increase, investment, industrial or commercial partnership, etc.)» (Coille & Avare, 2014).

For Elie COHEN: “The financial diagnosis is a set of concepts, methods, and tools that make it possible to assess the financial situation of a company, the risks that threaten it, and the level and quality of its performance” (Bertin et al., 2013).

According to Hervé HUTIN: «The financial diagnosis of a company is a diverse discipline, which can vary from one analyst to another based on their methodology. External to the firm and having only a fiscal leash, the analyst will seek to assess the reliability of the data, interpret the numbers, and attempt to align the company with an industry standard. When present within the company and responsible for an audit, the accountant will consider accounting data only as a part of the usable information. The objective of this approach is to identify the strengths and weaknesses of the company. Therefore, good analytical and synthesis skills are necessary for this field. This discipline also requires thorough mastery of financial analysis tools” (Hutin, 2003).

## 2.2 Financial performance

A company's financial performance refers to its ability to create value from the financial resources at its disposal. These are cash, equity, and bank debt. Financial resources can also come from donations, grants, or crowdfunding. "The notion of corporate performance, like governance or corporate governance, suffers from a significant definition problem. Indeed, in the economic, managerial, or financial literature, performance is often mentioned in different forms such as economic, financial, stock market, organisational, partnership, relational, etc. interchangeably with terms like efficiency, effectiveness, efficiency, productivity, and/or value creation (Vernimmen, 2020). Moreover, according to the authors and their theoretical conceptions of enterprise and governance, different notions of performance may have different meanings and refer to different management objectives for the enterprise, which can add to the confusion. In fact, how approaches and authors define the notion of performance depends, most of the time, on their responses to a series of four closely related questions:

- Why is performance measured? Should performance be seen as a prior encouragement to make a specific effort, or rather as a goal to be achieved? Should it be considered as punishment or reward after the fact? Or is its measurement simply an accounting or tax normative requirement?
- What performance is measured? An absolute «cardinal» performance or an «ordinal» relative performance? A stock market performance, an accounting performance, or an overall performance?
- For whom is performance measured? Shareholders (current and/or potential)? The company's board of directors? The company's directors? The other stakeholders?
- Over what time horizon should performance be measured? Short-term (quarterly or semi-annual accounts), medium-term or long-term?"

According to Yvon Mougín «Corporate performance is a taboo word. It replaced another term that is now politically incorrect, which is productivity, which, in turn, had already replaced the term yield, an awful word banned from all Western companies" (Mougín, 2011).

Performance can be defined as the combination of three main dimensions: economy, effectiveness, and efficiency. These three concepts are generally used as criteria for assessing performance.

### - **Efficiency**

Efficiency refers to the ability of the company to achieve its established goals with available resources. In other words, it is the extent to which the actual results correspond to the desired outcomes.

### - **Efficiency**

Efficiency is a concept similar to effectiveness, but it focuses on how resources are used. Therefore, efficiency refers to the company's ability to achieve its set objectives by using resources optimally and with minimal waste.

### - **Economy**

An economic enterprise uses its resources efficiently to produce goods or services at a reasonable cost while meeting the expectations and needs of its stakeholders. And according to Dominique WOLFF, «The notion of performance is a construct that varies according to the authors, a generic term that has been and continues to be understood in different ways. In management, performance refers to the achievement of the organisation's objectives. Performance is a notion polarised on the announced result, but it also conveys a value judgment on the result finally obtained (positive or negative) and the approach that made it possible to achieve it. Thus, by extension, it can designate a success" (Wolff, 2010).

After the presentation of the two concepts, namely the financial diagnosis and the financial performance, it was possible to conclude that the financial diagnosis is a process which makes it possible to analyse the financial situation of a company, it is based on the use of various financial variables. And then we will decide to see this relationship in a real case and with a field study. To do this, we will analyse an econometric model, the model allows us to measure the impact of different financial variables on financial performance.

### 3. RESEARCH METHODS

In this part, we will discuss the description of our sample, present it of the different variables selected for the construction of econometric models and the statistical tools that have been used.

#### 3.1 Presentation of the sample

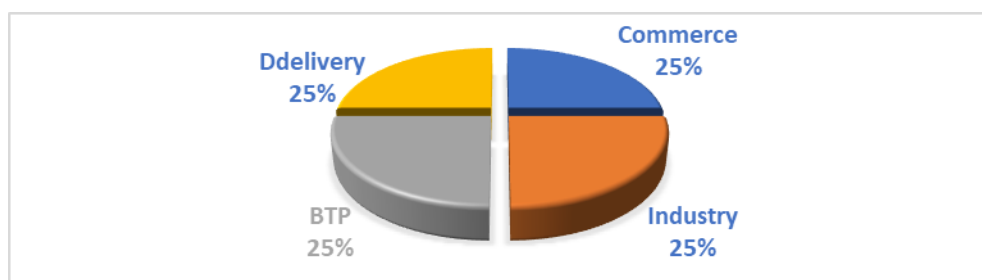
We gathered a sample of 40 large Algerian companies operating in four different sectors of activity: construction, trade, industry and services. The breakdown of enterprises by sector of activity is presented in the following table:

**Table 1. Breakdown of enterprises by sector**

The sector of activity	Commerce	Industry	BTP	Delivery	Total
The number of companies	10	10	10	10	40
Percentage	25%	25%	25%	25%	100%

Source: developed by ourselves from the data collected.

The table presented shows that the 40 companies listed are divided into 4 sectors in a fair way, with 10 companies in each sector.



**Figure 1. Breakdown of enterprises by sectors**

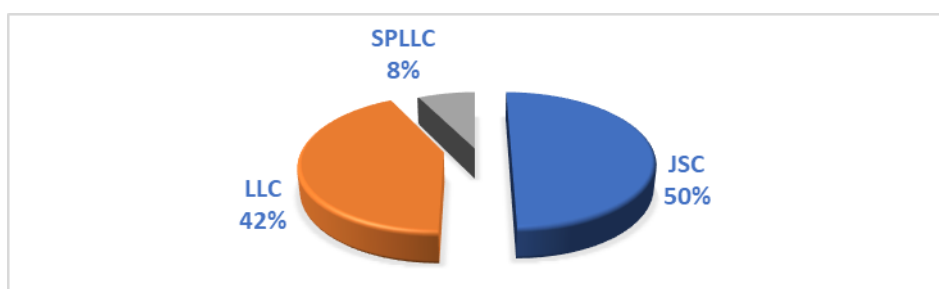
Source: developed by ourselves from the data collected.

As regards the legal status of enterprises, which expresses their legal form as defined by law, the sampled enterprises are classified into three distinct categories, namely joint stock companies (JSC), limited liability companies (LLC) and single-person limited liability companies (SPLLC).

**Table 2. Breakdown of enterprises by legal form**

The legal form	JSC	LLC	SPLLC	Total
The number of companies	20	17	3	40
Percentage	50%	43%	8%	100%

Source: developed by ourselves from the data collected.



**Figure 2. Breakdown of enterprises by legal form**

Source: develop by ourselves from the data collected.

The paragraph describes the breakdown of the types of enterprises in a given sample. It indicates that half of the enterprises in this sample are Joint Stock Companies (JSC) representing 50% of all companies. 42% of the enterprises are limited liability companies (LLC), while the sole proprietorships with limited liability (LL) represent only 8% of the total enterprises in this sample. To conduct our empirical study, we need data for five fiscal years (2017, 2018, 2019, 2020 and 2021), including balance sheets and income statements. Our sample includes 40 companies from four sectors: trade, industry, construction and service from the Directorate of Large Algerian Companies. The data used in this study are only quantitative and were obtained from a database that we have created by collecting accounting information from large Algerian companies during our practical internship in the Directorate of Large Companies from 20 March to 12 April 2017.

### 3.2 Description and measurement of variables

In this part, we define all the variables selected for the statistical study and their measurements. In the following, we present all the variables selected for statistical analysis, as well as their measurements. We start with the variable to be explained, followed by the explanatory variables. Finally, we summarise the explanatory models that were tested later.

#### • The dependent variable

The variable we seek to explain using independent variables is financial performance, which is measured by the ROE financial profitability ratio.

$$ROA = \frac{\text{Net profit}}{\text{Total assets}} \quad (1)$$

#### • Independent variables

The choice of independent (explanatory) variables is made by referring mainly to the variables and indicators used in the approach of the financial diagnosis according to the three axes: solvency (Debt ratio, Solvency ratio, CAF and BFR), profitability (SIZE, Capital turnover rate and Operating ratio) and profitability (Profitability rate) as well as past empirical studies, we start with the definitions after we will present the hypothesis of each variable.

#### - Debt ratios

The first measure adopted is to calculate the short-term debt ratio, called a CSD, by dividing the total amount of short-term debt by the balance sheet total.

$$\text{debt ratios} = \frac{\text{short term debts}}{\text{Total assets}} \times 100 \quad (2)$$

The second measure adopted concerns DMLT's medium- and long-term debt. The LTMD ratio is calculated by dividing the total amount of medium- and long-term debt by the balance sheet total.

$$\text{debt ratios} = \frac{\text{Medium and long term debts}}{\text{Total assets}} \times 100 \quad (3)$$

### **H1: The degree of financial debt negatively influences performance.**

#### **- Profitability rate**

The rate of return noted TP, also known as profit margin, is a ratio that expresses the net accounting result as a percentage of sales excluding taxes (excluding VAT). This ratio makes it possible to evaluate the profitability of a company according to its level of activity. A high profitability rate indicates a good financial performance of the company.

$$\text{PR} = \frac{\text{Net Profit}}{\text{revenu}} \times 100 \quad (4)$$

### **H2: The profitability rate positively influences financial performance**

#### **- Solvency ratio**

When a company assesses its own solvency, as well as when it is studied by external investors, especially banks, several financial ratios are considered. The ratio that divides equity by balance sheet total is one of these indicators. It is important to be able to interpret these ratios to understand the financial situation of the company. Solvency is often considered the first step in financial diagnosis; A high solvency ratio indicates financial stability and an ability to repay debts.

$$\text{SR} = \frac{\text{Equity}}{\text{Total assets}} \times 100 \quad (5)$$

### **H3: The solvency ratio negatively influences financial performance**

#### **- The cash flow ratio (CIF)**

Self-financing is mainly made up of undistributed profits and depreciation allowances. This variable is at the centre of our empirical study, because it is the subject of debates in financial theory. Based on the assumption that companies prefer internal to external financing. The ratio we use allows us to measure the percentage of financial dependence of companies, by calculating the ratio between self-financing capacity (CIF) and equity. A positive CIF indicates that the company generates enough cash to finance its investments, repay its debts, and distribute dividends. A negative CIF may indicate financial difficulties.

$$\text{CIF} = \frac{\text{Auto financing capacity}}{\text{Equity}} \times 100 \quad (6)$$

### **H4: Auto financing capacity has a positive effect on performance.**

#### **- The size of the company**

This variable allows us to measure the size of the company. The size of a company is considered an important determinant of its performance. There are several ways to calculate the size of a business, including taking the logarithm of total assets, the logarithm of turnover (CA), or the logarithm of the number of employees. In our study, we chose to use the logarithm of the total assets. It is easy to calculate and is independent of the company structure. In addition, total assets are a measure of enterprise value, which is consistent with

the size measurement objective. A larger size may indicate a greater ability to invest, a greater market presence, and a greater ability to negotiate with suppliers and customers.

$$\text{size} = \text{Log}(\text{Total assets}) \quad (7)$$

**H5: Size positively influences performance.**

- **The speed of capital revenue (asset revenue):**

The ratio in question is an effective indicator of the company's ability to effectively use its assets to generate sales, that is, its turnover. It is calculated by dividing the turnover of the company by its total assets, which makes it possible to determine how much turnover the company generated for each 1 DA invested in its assets.

$$\text{ASSET-R} = \frac{\text{Revenue}}{\text{Total assets}} \times 100 \quad (8)$$

**H6: The capital revenue rate positively influences performance.**

- **The operating ratio**

The operation ratio measures the company's ability to generate a profit before deducting financial, tax, and extraordinary expenses, and before amortisation and provisions. It indicates the share of sales that is available to finance investments, financial expenses, and dividends. A high operating ratio indicates good profitability and efficient cost management.

$$\text{OR} = \frac{\text{Gross operation surplus}}{\text{revenue}} \times 100 \quad (9)$$

**H7: The operating ratio positively influences performance.**

- **Net working capital needs rate**

The net working capital needs rate or ratio is a financial indicator that measures the proportion of working capital needed to finance a business for a given period. It is generally calculated by dividing the ratio by the Total Active over a given period, such as a quarter or a year. A high net working capital needs may indicate inefficient use of the company's financial resources, while a low NWCN may indicate effective working capital management.

$$\text{NWCN} = \frac{\text{net working capital needs}}{\text{Total assets}} \quad (10)$$

**H8: Net working capital needs negatively influence financial performance.**

### 2.3 Model Specification

This study proposes a model to test the research hypotheses. This model aims to study the effect of financial profitability by different variables such as debt ratios, profitability rate, solvency ratio, self-financing ratio (CIF), size of the company, speed of capital turnover (asset turnover), the operating ratio and the BFR rate. The model is presented as follows:

$$\text{ROA}(t) = c + \beta_1 * \text{DRLT}(t) + \beta_2 * \text{DRST}(t) + \beta_3 * \text{PR}(t) + \beta_4 * \text{SR}(t) + \beta_5 * \text{CIF}(t) + \beta_6 * \text{Size}(t) + \beta_7 * \text{ASSET} - \text{R}(t) + \beta_8 * \text{OR}(t) + \beta_9 * \text{NWCN}(t) \quad (11)$$

The data used are generally time series. In addition, it is possible to have instantaneous cut data for a given period. Panel data, also called longitudinal data, combine both dimensions (individual and temporal) by recording the values of the variables studied for a set of individuals over a specific period. Therefore, the panel data model is formulated as a dual index model, such as:

$$Y_{it} = a_i + \sum_k \beta_k X_{k_{it}} + \varepsilon_i$$

With  $i = 1 \dots N$ ;  $t = 1 \dots T$ ;  $k$  is the number of explanatory variables

A two-index notation is used,  $i$  for the individual and  $t$  for time.  $X_{k_{it}}$  explanatory variables are time variable.

Now, we will conduct a statistical analysis of these in order to study the impact of the financial diagnostic approach on financial performance.

• **Descriptive statistics for the model**

**Table 3. Model descriptive statistics**

The variables	Mean	Std. Dev	Min	Max
ROA	0.02975	0.0846	-0.37	0.87
NWCN	0.4215	1.2714	-2.34	17.59
CIF	1.104	4.8212	-0.95	46.72
DRLT	0.1753	0.3181	0	3.1
DRST	0.2597	0.564	0	5.18
OR	0.3096	0.9963	-0.64	10.36
ASSET_R	0.5747	0.6614	-0.64	3.81
SR	0.508	1.9124	0	0.91
PR	0.077	0.2386	-1.05	2.06
Size	10.0305	1.0807	0	11.97

Source: Statistical analysis by STATA 14.2 software.

Descriptive statistics of dependent variables show that the average financial profitability is close to 3% with a maximum value of 87% and a minimum value of -37%. When negative profitability is observed, this means that the undertaking in question recorded a negative result during the observation year. This indicates that the revenues generated by the business were lower than the expenses incurred.

Compared to the variables DRLT and DRST, they are in the range [0: 3.1] and for the DRST [0: 5.18] with an average of 17.53% and 25.97%, a zero value means that the company has not incurred long-term or short-term debt.

Thus, for the variable ASSET\_R in the interval [-0.64: 3.81] and an average of 57.47%, the negative minimum value that the company achieved a loss-making result and a maximum value means that the company generated for 1 DA of assets 3.81 of turnover. For the variable SR (solvency ratio) of an average of 50.8% and maximum value of 0.91 it means that the assets of the company are made up of 91% of the shareholders' equity. The ratio PR ratio which expresses the net accounting result as a percentage of the turnover is in the interval [-1.05: 2.06] and this maximum value expresses that the company has realised 2.05 DA of profit for each 1 DA of turnover.



As regards the net working capital needs with an average of 42.15% and a minimum value of -2.34. This means that the company uses short-term financing to finance its short-term assets and to reduce its need, with a maximum value of 17.59 this high value may be due to the management of the company that grants extended payment terms to these customers or faces shorter payment terms from its suppliers. CIF with an average of 1.104 indicates that almost all companies achieve self-financing capacity exceeds equity with a percentage of 10%. On the other hand, a negative CIF value indicates that cash flows from operating activities are insufficient to cover undisbursed expenses. This can be the result of various factors, such as lower sales, high operational costs, or significant investments.

• **The correlation matrix**

**Table 4. Model correlation matrix**

	ROA	NWCN	CIF	DRLT	DRST	OR	ASSET-R	SR	PR	Size
ROA	1									
NWCN	-0.047	1								
CIF	-0.389	0.002	1							
DRLT	-0.212	0.403	0.133	1						
DRST	-0.016	0.360	0.050	0.134	1					
OR	0.021	-0.044	-0.064	0.077	-0.053	1				
ASSET-R	0.036	-0.028	0.016	0.089	-0.013	-0.166	1			
SR	-0.005	0.091	-0.037	-0.039	-0.019	-0.027	-0.0828	1		
PR	0.782	-0.058	-0.281	-0.177	-0.051	0.2	-0.0625	0.003	1	
Size	-0.137	0.007	-0.035	0.040	0.017	0.267	-0.3088	0.126	0.073	1

Source: Statistical analysis by STATA 14.2 software.

From this table, we note that:

A positive correlation of more than 25% between working capital requirement and short- and long-term debts implies that the higher the financial need of the company, the more it tends to incur debt.

Given the nature of the equation through which ROA is calculated as abovementioned, there is a strong and positive correlation between ROA and profit. That is, the higher the profit, the higher the ROA. Moreover, a high correlation was found between the size and operating margin, which means that a high operating margin implies a good management/command of costs. In other words, the bigger the size of a firm is, the better it is at managing its costs. A low correlation of 25% lower between the ROA and the operating ratio and the speed of turnover of equity (ASSET\_R). The operating ratio has a slight influence on profitability because the gross operating surplus covers only a few expenses of the company, and thus for the ASSET\_R which measures how much the company generates turnover of 1 DA of the assets. Therefore, the two ratios do not consider all the expenses of the company, which explains its weak influence on profitability.

A negative and 25% higher correlation between self-financing capacity and the profitability rate of -28.1%. This means that when the CIF increases, the profitability rate decreases, a company may have a positive CIF even if it generates lower net profits due to undisbursed expenses (depreciation and provisions). And between the speed of equity turnover and the

size of -30.88%, a company that generates more revenue business from 1 DA of the asset does not mean that it is large because of mismanagement of expenses. A low and negative correlation between ROA and solvency and working capital requirement. The less profitable the business, the less profit it generates to meet its debts.

• **Homogeneity Test (Fisher Test)**

**Table 5. Fisher test results**

Fisher Test	
Fixed-effects (within) regression	Number of obs = 200
Group variable: society	Number of groups = 40
F test That all u_i = 0 : F (39, 151) = 1.36 Prob > F = 0.0978	

Source: Statistical analysis by STATA 14.2 software.

According to the results of this test, we observe that the probability of the calculated Fischer statistic is greater than 5%. Therefore, we reject the H1 hypothesis and conclude that our model is homogeneous (pooled).

• **Hausman test (fixed or random effects)**

**Table 6. Hausman test results**

Hausman Test	
Chi2(9) = (b-B)[(V_b-V_B) ^ (-1)] (b-B) = 15.34	
Prob>chi2 = 0.0820	

Source: Statistical analysis by STATA 14.2 software.

After performing the probability test, we find that the associated value is greater than 5%. This finding indicates that random effects are present in the model we studied. In other words, there are unobserved variations specific to each individual unit in the sample, which can have a significant influence on the regression results. Therefore, it is important to consider these random effects in order to obtain accurate and reliable estimates for our model.

• **Multilinearity test**

It is worth mentioning that in regression analysis, multicollinearity occurs when certain predictor variables in the model measure the same phenomenon or are highly correlated with each other. When it is in the case of a pronounced multiple linearity, it can be problematic because it can increase the variance of regression coefficients, making them unstable and difficult to interpret.

**Table 7. Multicollinearity test results**

VARIABLE	VIF	1/VIF
NWCN	1.39	0.717339
DRLT	1.3	0.768284
Size	1.19	0.839494
DRST	1.16	0.861571
PR	1.16	0.861592
OR	1.16	0.86471

VARIABLE	VIF	1/VIF
ASSET-R	1.14	0.876766
CIF	1.1	0.907001
SR	1.04	0.959276
MEAN VIF	1.18	

Source: Statistical analysis with STATA 14.2 software.

Looking at the table above, we can see that the average VIF (Mean VIF) is 1.18, with a maximum of 1.39. These values are well below the limit of 10, which allows us to conclude that there is no problem of multilinearity between variables in our specific case. A VIF (Variance Inflation Factor) below 10 indicates that each variable in the model provides unique and distinct information that is not already provided by the other variables. In other words, there is no excessive correlation between predictive variables, which ensures that each of them contributes significantly and independently to the explanation of the dependent variable.

• **Autocorrelation test (Wooldridge test)**

**Table 8. Wooldridge test**

Wooldridge test
H0: not first order autocorrelation
F (1, 39) = 14.526
Prob > F = 0.005

Source: Statistical analysis with STATA 14.2.

The test shows that the probability = 0.005 which is less than 5%. Therefore, we reject the null hypothesis, we confirm the presence of autocorrelation problem.

• **Heteroscedasticity test**

**Table 9. Breusch-Pagan test results**

Breusch-pagan / Cook Weisberg
H0: Constant Variance
Chi2(1) = 134.14
Prob > Chi2 = 0.0000

Source: Statistical analysis by STATA 14.2 software.

We note that the p-value probability = 0 is less than 5%, which leads us to the rejection of the null hypothesis and the confirmation of the presence of a heteroscedasticity problem. Due to the problems of heteroskedasticity and autocorrelation identified from the tests, we chose to use the Panel-Corrected Standard Errors (PCSE) method to estimate our model. This method takes into account the presence of these statistical problems and makes it possible to correct them. It provides unbiased coefficients, particularly for micropanel, as suggested by Beck and Katz (1995, 1996). Using the PCSE method, we obtain more reliable and robust estimates of regression coefficients, considering heteroskedasticity and autocorrelation problems in our model.

• Correction of the model

**Table 10. Corrected model table**

Linear regression, heteroskedastic panels corrected standard errors						
Group variable: ID			Number of obs = 200			
Time variable: Année			Number of groups = 40			
Panels: heteroskedastic			Obs per group min = 5			
Autocorrelation: no autocorrelation			Avg = 5			
			Max = 5			
Estimated covariance = 40			R-squared = 0.6994			
Estimated autocorrelation = 0			Wald chi2(9) = 109.32			
Estimated coefficients = 10			Prob> Chi2 = 0.0000			
Het-corrected						
ROA	Coef	Std. Err	Z	P> z	[95% Conf. Intervall]	
NWCN	0.0002298	0.0025405	0.09	0.928	-0.00475	0.005209
DRLT	-0.013616	0.0104084	-1.31	0.191	-0.034016	0.0067844
DRST	0.0048712	0.0066355	0.73	0.463	-0.008134	0.0178765
SR	0.0002005	0.0006656	0.3	0.763	-0.001104	0.0015051
CIF	-0.003266	0.0016597	-1.97	0.049*	-0.006519	-1.32E-05
PR	0.2672556	0.0367807	7.27	0.000***	0.1951667	0.3393444
OR	-0.007218	0.0059488	-1.21	0.225	-0.018877	0.0044416
ASSET-R	0.0031218	0.0059067	0.53	0.597	-0.008455	0.0146987
Size	-0.135789	0.003276	-4.14	0.000***	-0.020000	-0.007158
_cons	0.1498415	0.0315975	4.74	0.000***	0.0879115	0.2117715
* p<0.05; ** p<0.01; *** p<0.001						

Source: Statistical analysis by STATA 14.2 software.

The previous table shows the impact of selected variables on the ratio of economic profitability. We find a coefficient of determination (R2) of about 69.94%, which means that the variables included in the model explain up to 69.94% of the variations of our dependent variable (ROA). However, it is important to note that there may be other variables not considered in this model that may also influence the financial diagnosis process. Moreover, the Wald test, which evaluates the overall significance of the model, revealed a significant chi-squared statistic at the threshold of 1% (Prob>chi2 = 0.000). This indicates that the set of variables included in the model has a good adequacy. Therefore, we can say that the explanatory power of the model is satisfactory. The equation below shows the estimated model:

$$\begin{aligned}
 ROA = & 0.000229NWCN - 0.013616DRLT + 0.0048712DRST + 0.0002005SR \\
 & - 0.003266CIF + 0.2672556PR - 0.007218OR + 0.0031218ASSET\_R \quad (12) \\
 & - 0.135789Size + 0.1498415
 \end{aligned}$$

#### 4. DISCUSSION OF RESULTS

##### • Net working capital needs

The NWCN with a very high degree of significance (92.8%) which is not significant with a very low coefficient (0.0002298), this explains a slight influence of working capital requirement on the financial performance measured by the ROA, that is to say, the BFR shows that companies have working capital needs. This need which is due to the value of the current liabilities (debts of suppliers) is greater than the current assets (stocks and receivables). When the company adopts a rigorous inventory management and effective credit policy to manage delays, and minimise delays, this can have an indirect positive effect on the ROA. Our findings led us to reject our hypothesis (H8).

##### • Long- and medium-term debt

The long- and medium-term debt variable with a degree of significance of 19.1% and a negative coefficient of 0.013616 means that this variable is not statistically significant at a confidence level of 95%. Through the negative coefficient, we can conclude that when long- and medium-term debts increase, the financial performance measured by the ROA decreases. This negative impact is due to the high financial charges. If interest charges are high in relation to the company's revenues or profits, this can reduce overall profitability and therefore ROA. Because interest is an expense that decreases the net profit and, therefore, decreases the ability of the company to generate a return on its assets.

Also, if a company is heavily indebted, it will have to devote a significant portion of its profits to debt repayment, which can limit its ability to invest, innovate, or face economic difficulties. In the event of financial difficulties, the company may face additional pressure to repay its debts, which can lead to a decrease in ROA. The results obtained clearly contradict the initial hypothesis (H1). These results are affiliated with the results of Jensen et al. (1992), Aivazian et al. (2003).

##### • Short-term debt

Short-term debts are not significant (46.3%) compared to the ROA and with a positive coefficient of 0.0048712. Short-term debt can influence the ROA and its impact depends on how it is used because if the company wisely uses short-term debt to finance investments or operations that generate a return above cost of the debt, this can lead to increased profits and therefore ROA.

Also, short-term debts can be used to optimise the cash management of a company by borrowing short-term at low interest rates and investing these funds profitably for a short time. Thus, for this variable, the results invalidate the first hypothesis (H1).

##### • The solvency ratio

The solvency ratio with a degree of 76.3% which is not significant, the solvency ratio influences slightly and positively the ROA (0.0002005). This means that a solvent company can benefit from easier access to financing on favourable terms, such as lower interest rates on loans or more flexible repayment terms. This can reduce the company's financial costs and free up resources for productive investments, which can contribute to a small improvement in ROA.

The results led us to invalidate the hypothesis (H3). The coefficient sign is positive; this is consistent with the theory and results of Shliefer and Vishny (1986).

**• Auto financing capacity**

The negative coefficient of -0.003266 suggests that a decrease in the CIF variable is associated with a decrease in ROA. This indicates that a reduction in the CIF variable can have a negative impact on the profitability of the company's assets. If the CIF variable represents operating costs, a negative coefficient indicates that higher costs are related to lower asset profitability. This can be due to overspending, poor cost management, operational inefficiencies, or other factors weighing on profitability. On the other hand, if the CIF variable reflects the level of capital investment, a negative coefficient suggests that larger investments do not necessarily translate into increased asset profitability. This may indicate that the investments made are not generating the expected returns, which may be due to planning errors, inefficient resource allocation, or investments in unprofitable projects. The results show that the hypothesis (H4) is false.

**• The rate of profitability**

The profitability rate has a significant influence due to its coefficient (0.2672556) with a lower degree of 1%. It reflects that the profitability rate explains the financial performance of the company; when it increases the PR of a unit, the ROA increases 26.72%.

Economically, a high profitability rate indicates that the company generates higher profits relative to its revenues. And a high profit margin means that the company is efficient in its management of costs and expenses, and is able to generate higher revenues compared to the resources committed. Also, it indicates more efficient use of company assets. When the company generates higher profits relative to its total assets, it means that it is able to generate higher returns on its investments. This may be due to a more efficient use of productive assets. We conclude that the profitability rate of companies is a determinant of financial performance, which leads us to confirm our hypothesis (H2).

**• The operating ratio**

This ratio negatively influences ROA with a coefficient of 0.007218 and a degree of significance of 22.5%. This may be due to problems such as high operating costs, low profit margins, poor management of operations, lower revenues, etc. Low operational profitability reduces the company's ability to generate sufficient revenue to support a high ROA.

When OR is insufficient to cover the company's debt interest, this may indicate an excessive reliance on debt to finance its operations. High interest can reduce the company's bottom line, resulting in a lower ROA. In addition, high debt can increase the financial risk of the company and negatively affect the confidence of investors and creditors, which can also impact the ROA. Thus, it is important to note that OR's influence on ROA can vary depending on the industry. Some sectors may have lower profit margins due to the nature of the business or competition, such as the trade and service sector. The observations found correspond to our hypothesis (H7).

**• The speed of equity turnover**

According to this study, it is observed that as the turnover rate increases, the economic profitability rate also increases, confirming our hypothesis (H6). ASSET\_TO, which is measured by the division of turnover by total assets, gives how much turnover the company earns on 1 DA of the assets. This explains the positive influence that is to say the higher this ratio is, the more the company generates more turnover. This leads to high profitability, which is also confirmed by Koch and Shenoy (1999).

#### • Size

According to our study, there is a negative and significant relationship at the 1% threshold, between business size and economic profitability (ROA), and we invalidate our hypothesis (H5).

The negative coefficient indicates that an increase in the size of the business is associated with a decrease in the ROA. This may suggest that, as the business grows, it faces challenges related to operational efficiency, resource management, and asset profitability. For example, a larger enterprise may have higher coordination costs, increased bureaucracy, slower decision-making, etc., which may affect its ability to generate high ROA. And when a company grows in size, it can diversify into different businesses or markets, which can lead to increased complexity in its operations. Managing multiple activities can be more difficult, resulting in inefficient resource allocation, higher costs, and reduced asset profitability.

## 5. CONCLUSIONS

In conclusion, financial diagnosis holds paramount importance in evaluating the financial condition of a company or organisation. It provides the opportunity to make informed financial management and strategic planning decisions in the area of business and the economy in general. The objective of our empirical study is to analyse the factors that influence the financial profitability of Algerian companies. To achieve this objective, we used a regression on panel data using a sample of forty banks present on the Algerian market in the sectors of construction, industry, trade and services. The data cover the period from 2017 to 2021. Before proceeding to the regression, we first presented the sample, the variables, and the statistical tools used. Then, we have in the second section made an analysis of the data and finally finished with the interpretation of the results. The results obtained from the regression on panel data show that the size of the companies, the rate of profitability, and the self-financing capacity have a significant relationship with the economic profitability measured by the ROA, while the size and self-financing capacity have a negative impact on the ROA variable, on the other hand, the profitability rate positively influences the ROA.

### 5.1 Recommendations

- The search for more favourable repayment conditions, such as reduced interest rates or longer maturities. Address the impact of long- and medium-term debt on financial performance;
- Prudent management of short-term debt, it is important to ensure that these uses generate a return above the cost of debt. Rigorous analysis of investment projects and prudent cash flow management are essential to maximise profitability;
- Prudent management of short-term debt, it is important to ensure that these uses generate a return above the cost of debt. Rigorous analysis of investment projects and prudent cash flow management are essential to maximise cash flow and operating ratio;
- Increase in profit margin. To increase profit margin, the company must focus on improving its cost and expense management. This may include negotiating better contracts with suppliers, optimising production processes, reducing waste and inefficiencies, or identifying new revenue streams;
- To strengthen its solvency, the company can work on improving its overall financial management, in particular by strengthening its financial statements, improving its debt collection policy, and maintaining a reasonable level of debt.

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