Finance and Business Economics Review | **Volume 7 /Number 1/March /2023/p258-270**

The effect of capital structure on the financial performance of companies listed on the Algerian stock exchange: Case of the Saidal group

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***Received**: 11/12/2022* ***Accepted**: 11/03/2023* ***Published**: 31/03/2023*

Abstract:

The present study aims to shed light on the impact of capital structure determinants on the financial performance of a public economic firm listed on the Algerian Stock Exchange, represented by the Saidal Group, during the period from 2010 to 2021. Furthermore, the study relied on the financial statements (balance sheet and income statement table) published on the official website of the stock exchange to collect the financial data of the firm.

In pursuance of this aim, three multiple models were estimated in which dependent variables expressing financial performance were represented in each of the return on assets (ROA), return on equity (ROE), and earnings per share (EPS), while the independent variables expressing the determinants of the capital structure were represented in each of the ratio of medium and long-term debt to total assets (MLTDTA), the ratio of short-term debt to total assets (STDTA), and the self-financing capacity (SFC). In addition to this, the control variables were used in the models to represent the liquidity and size of the firm, which was measured in the Neperian logarithm of its total assets.

The study reached a set of results, the most important of which are the presence of a statistically significant positive relationship between the capital structure, as measured by the firm's self-financing capacity, and the financial performance with its three indicators, as well as the existence of a statistically significant negative relationship between the ratio of medium- and long-term debt to total assets and financial performance.

As for the ratio of short-term debt to total assets, it has a negative and statistically insignificant impact on both the return on assets and the return on equity, but also has a negative and statistically significant impact on earnings per share. In light of this, the study recommends that the firm should rely on internal financial sources rather than external financial sources to finance its various investments in order to improve its future financial performance.

Keywords: Capital Structure, Financial Performance, Return on assets, Return on equity, Earnings per share.

JEL Classification: G32, L25.

1. Introduction:

The majority of firms' primary goal is to maximize the value of their revenues while using the fewest costs possible. As a result, people look for funding alternatives that help them reach this goal when they want to finance their investments. These sources are both internal (equity) and external (debts) sources of financing, but most firms use a mix of these two sources, which is called the "**capital structure**," which was first discussed in the theory of Modigliani and Miller (1958), as they indicated that the value of the firm is not affected by the structure of its capital.

In the presence of several hypotheses (the absence of taxes, the cost of bankruptcy, the cost of management, the variance of information, and the efficiency of the market), that is, the financing decision is independent and has nothing to do with the increase or decrease in the market value of the firm.

Several theories followed in an effort to develop the idea of capital structure and ascertain its impacts. They include the tradeoff theory, which claims that as the share of debts in a firm's capital structure increases, the value of the enterprise will continue to rise due to the tax savings from debt. The financial benefits accruing from these debts are recorded in the results accounts table as burdens, which leads to a decrease in the cost of capital and the highest value of the firm's shares in the financial market. Furthermore, the Funding Priorities Theory (Pecking Order Theory) of its author (Donaldson, 1961), who collected information about a sample of major American firms to test their financing practices, concluded that the firm's management prefers to use its own resources over those of external sources to finance its operations due to their low cost.

The agency cost theory also touched upon the capital structure, through which Jensen and Meckling (1976) attempted to address the problem of conflict of interest between managers and shareholders on the one hand and between shareholders and lenders on the other.

As a result of the arguments put forth in these theories, the study and analysis of a firm's capital structure mix have emerged as one of the most crucial topics currently being discussed by economists and researchers, especially in light of how much of an impact it has on the firm's financial performance. This is due to the fact that any source can bear costs for the institution and expose it to a set of risks that may affect its value and expected returns, making it necessary for the firm to find an appropriate combination of internal and external financial sources in line with its nature, size, and needs to achieve an optimal financial structure that guarantees wealth creation and access to the required financial performance.

By addressing the following issue, we will examine the hypothesis that there is a correlation between the capital structure and the financial performance of a public economic firm listed on the Algerian Stock Exchange based on the following question:

What are the determinants of the capital structure that affect the financial performance of the Saidal Group?

1.1. Research Questions and Hypothesis:

The fundamental research questions are as follows:

- Does the capital structure affect the ROA of the Saidal group?
- Does the capital structure affect the ROE of the Saidal group?
- Does the capital structure affect the EPS of the Saidal group?
- If there is a positive or negative relationship between capital structure and financial performance, which of the financial indicators best captures this relationship?

To answer these research questions we will test the following hypotheses:

H0: The capital structure has a statistically significant and positive impact on the return on assets (ROA);

H1: The capital structure has a statistically significant and positive impact on the return on equity (ROE);

H2: The capital structure has a statistically significant and positive impact on the earnings per share (EPS).

1.2. Research objectives:

We will try through this study to achieve the following objectives:

- To consider theoretical and empirical studies on the relationship between capital structure and financial performance;

- To analyze the impact of the capital structure on the financial performance of the Algerian Saidal group during the period (2010-2021);
-To propose recommendations to help the Saidal Group create an optimal capital structure.

1.3. Research Limitation:

-This study did not cover all performance indicators; it takes just accounting performance indicators;
-This analysis did not take into consideration others factors such as, tangible assets, operational risk, tax saving due to depreciation and provisions, profitability. Thus, it did not take economic factors such as: inflation, exchange rate, interest rate.

2. The empirical literature on the relationship between capital structure and financial performance (An Empirical Review):

Many academics have focused on researching the nature of the connection between capital structure and financial performance ever since capital structure theories first emerged. Some of them came to the conclusion that there is a positive relationship between capital structure and financial performance, while others came to the conclusion that there is a negative relationship between the two. Many scientific studies and research, on the other hand, have found a statistically significant relationship between capital structure and financial performance. On the other hand, some of them indicated that there is a statistically insignificant relationship between capital structure and financial performance. Through this study, we will attempt to present the key findings of various current scientific studies in this area, including:

-Rebel A. Cole and Hamid Mehran (1998):

The two researchers chose a sample of savings firms that evolved into joint-stock companies. To examine the relationship between the financial structure and financial performance of these institutions before and after the imposition of anti-OPA regulatory restrictions on ownership of public companies to prevent takeovers, This study showed that there is a linear relationship between the financial structure and the financial performance of the firms, so after the expiry of the regulatory restrictions imposed on the financial structure, there was an expansion of internal ownership, which led to a positive increase in financial performance.

-Mahfuzah Salim and Raj Yadav (2012):

The two researchers attempted to determine the nature of the relationship between capital structure and financial performance, using a sample panel of 237 firms listed on the Malaysian Stock Exchange, distributed over six (06) different sectors: construction, consumer products, industrial products, agriculture, real estate, trade, and services, for which financial data were gathered for the period from 1995 to 2011. To measure the dependent variable (financial performance), (Salim) and (Yadav) used four indicators, representing in each the rate of return on assets, the rate of return on equity, earnings per share, and Tobin's Q index while measuring the independent variable (capital structure) based on the following indicators: the ratio of short-term debt to total assets, the ratio of long-term debt to total assets, the ratio of total debt to total assets, and the rate of enterprise growth. The enterprise size variable was included as a control variable. The results of the study indicated that each of the return on assets, return on equity, and earnings per share are negatively associated with each of the short-term debts, long-term debts, and total debt, moreover, there is a positive correlation between the growth rate and the financial performance of all sectors.

-Sedea Nassar (2016):

The purpose of this study was to investigate the effect of capital structure on the financial performance of Istanbul's industrial firms. The researcher relied on the annual financial statements of 136 industrial firms listed on the financial market, which covered a period of 8 years, from 2005 to the end of 2012. To test the nature of this effect, he estimated three linear models, where the dependent variables in these models that express financial performance were each represented in the return on assets, return on equity, and earnings per share, while the independent variable was expressed as the ratio of total debts to total assets. Finally, and based on the results of estimating the models under study, the study concluded that there is a statistically significant negative relationship between the capital structure and the financial performance indicators of the studied firms.

-Amina HAOUDI & Basma AZZOUZ (2020):

The two researchers attempted to test the impact of shareholder concentration on the performance of companies listed on the Casablanca Stock Exchange, so a sample of 70 companies listed on the Casablanca Stock Exchange was selected during the period 2016-2018, and shareholder concentration was studied as an independent variable and measured by the share of the three largest shareholders, while the value of the company is the dependent variable and measures the financial performance of the company. The study also added the size of the company as a control variable. And by using the multiple regression model, the results were reached showing that there is a significant positive relationship between the shareholders' concentration and the financial performance of the company.

-Michael Ojo Oke and Babajide Francis Fadaka (2021):

In this study, the two researchers tested the relationship between capital structure and financial performance in consumer goods production companies in Nigeria, as the study sample was limited to 18 active companies listed on the Nigerian Stock Exchange during the period from 2008 to 2018. Return on assets, return on equity, and earnings per share were relied upon to measure the dependent variable represented in the financial performance of the companies under study. In contrast, the ratios of short-term debt to total assets, long-term debt to total assets, the ratio of total debt to total assets, and the company's growth rate (expressed as the change in its total assets) are independent variables that express the company's capital structure. In addition to the dependent and independent variables, the researchers used another type of variable called the control variable, which was represented in this study by the size of the company measured in the Neperian logarithm of the company's assets in a given year.

The financial performance of the firm and its capital structure are both found to be negatively correlated, and there is a positive link between the company's growth rate and its financial performance, according to the results of generating regression models using panel data.

-Khouri Nabil (2021):

In a study conducted in Algeria, the researcher examined the effect of capital structure on the financial performance of a sample of 207 non-financial institutions, which were split into 53 productive and 154 non-productive establishments (commercial and service) based on the nature of their activities and according to ownership into 38 public and 169 private institutions. To analyze this effect, the researcher used Panel data to estimate the random effects Tobit model, which relies on the rate of return on assets as a dependent variable in the model that expresses the financial performance of institutions and relies on each of the ratios of medium- and long-term debts to total assets. The ratio of total debts to total assets, as independent variables in the model, expresses the capital structure of the institutions.

As for the controlling variables in the model, it relied on each of the tangible assets, the size of the firm, the liquidity of the firm, the self-financing capacity, the tax savings resulting from debts, and the tax savings resulting from depreciations and provisions.

The study's findings supported the trade-off theory and showed that the capital structure is not neutral, but it has a positive and statistically significant impact on financial performance. Additionally, it was also shown that the tangibility of assets will lead to a decrease in their financial performance due to their poor use of their fixed assets in an efficient manner. However, it has come to light that the tax savings from debts are viewed as an alternative to tax savings from depreciations and provisions.

-Zerrouki Bille and Talem Zakaria (2022):

Through their research, the two researchers attempted to test the impact of capital structure on the performance of Algerian banks using a sample of 20 banks distributed as follows: From 2010 to 2018, 14 private banks and 6 public banks were established. It was used each of the return on equity and the net interest margin as indicators that express the financial performance of banks during the study period, as for the capital structure of banks only, it was measured using each of the ratio of total debt to total assets, bank ownership, where this variable takes the value 0 in the case if a public bank and the value 1 in the case of a private bank, tangible assets, customer liquidity and capital adequacy ratio. The results of the study indicated through the estimation of the regression model using Panel data that each of the debt ratio, customer liquidity, and bank ownership have a positive and statistically significant effect on financial performance indicators. It also turns out that tangible assets have a positive effect on the return on equity and a negative one on the net interest margin. As for capital adequacy, it is associated with a positive and statistically significant relationship with the return on equity and a negative and non-significant statistical relationship with the net interest margin.

3. Research Methodology:

3.1. Study sample and data collection tools:

The Saidal group for the development, manufacture, and distribution of pharmaceutical items intended for human consumption served as the sole economic company included in the study sample out of the country's largest companies. It was established in 1982 to meet the needs of local citizens for medicines. As a company with shares, its estimated capital is 2,500,000,000 Algerian dinars, and it was listed on the stock exchange in 1999, where 80% of its capital is owned by the state and the remaining 20% belongs to institutional and private investors. (WWW.SAIDGROUP.DZ)

The data collection tools were the financial statements of the firm, represented in the table of accounts of the results and the balance sheet, which is published on the official website of the Algiers Stock Exchange (www.sgbv.dz), in order to extract a set of indicators and financial ratios that represent the variables of the study during the period from (2010-2021). The statistical analysis program known as (SPSS) was also relied upon to analyze the data.

3.2. Research variables:

Following a thorough review of the various theoretical and empirical literature dealing with the issue of capital structure and its impact on financial performance, as well as data from the Algerian stock exchange database, a set of financial indicators and ratios that measure the financial performance and capital structure of the Saidal group have been relied on. Where it can be clarified, these financial indicators and ratios and how to measure them are shown in the following table:

Table (01): study variables

type of variable	Variable Symbol	The name of influence factors	Measurement criteria and how to define	Previous authors used
Dependent variable	**ROA**	Return on assets	$\frac{Net\ income}{total\ assets}$	Saeed, &al., (2013) Opoku-Asante & al (2022)
	ROE	Return on equity	$\frac{Net\ income}{shareholders'\ equity}$	Nirajin & Priya(2013) DINH & Pham (2020)
	EPS	Earnings per share	$\frac{Net\ income}{number\ of\ shares}$	Mehar(2018) Hai Dang &al (2019)
Independent variables	**MLTDTA**	Medium and long-term debt ratio	$\frac{Medium\ and\ long-term\ debt}{total\ assets}$	Perri & cela(2022) Hai Dang &al (2019)
	STDTA	short-term debt ratio	$\frac{short\ term\ debt}{total\ assets}$	Perri &cela(2022) Hai Dang &al (2019)
	SFC	Self-financing capacity	$\frac{Net\ income + depreciation\ and}{shareholders'\ equit}$	Guerrache (2016)
control variables	**SIZE**	size	Log(Total assets)	BOUTBHIRT(2021) HAKMAOUI & YERROU (2013)
	LIQ	Liquidity	$\frac{current\ assets}{current\ liabilities}$	Hammada (2018**)** OUDGOU(2018) BOUTBHIRT(2021)

3.3. Research Model:

To analyze the relationship between the determinants of the capital structure of the firm and its financial performance, we will use the multiple regression model, knowing that the financial performance of the firm is the dependent variable in this model. While the independent variables represented by the determinants of the capital structure.

Our study hypotheses are expressed through the following three equations:

$$EPS_t = \beta_0 + \beta_1 MLTDTA + \beta_2 STDTA + \beta_3 SFC + \beta_4 Size + \beta_5 LIQ + \varepsilon_t \text{ .. (01)}$$

$$ROE_t = \beta_0 + \beta_1 MLTDTA + \beta_2 STDTA + \beta_3 SFC + \beta_4 Size + \beta_5 LIQ + \varepsilon_t \text{ .. (02)}$$

$$ROA_t = \beta_0 + \beta_1 MLTDTA + \beta_2 STDTA + \beta_3 SFC + \beta_4 Size + \beta_5 LIQ + \varepsilon_t \text{ .. (03)}$$

Where:

MLTDTA : Medium and long-term debt to Total assets;

STDTA : Short-term debt to Total assets;

SFC: Self- financing capacity;

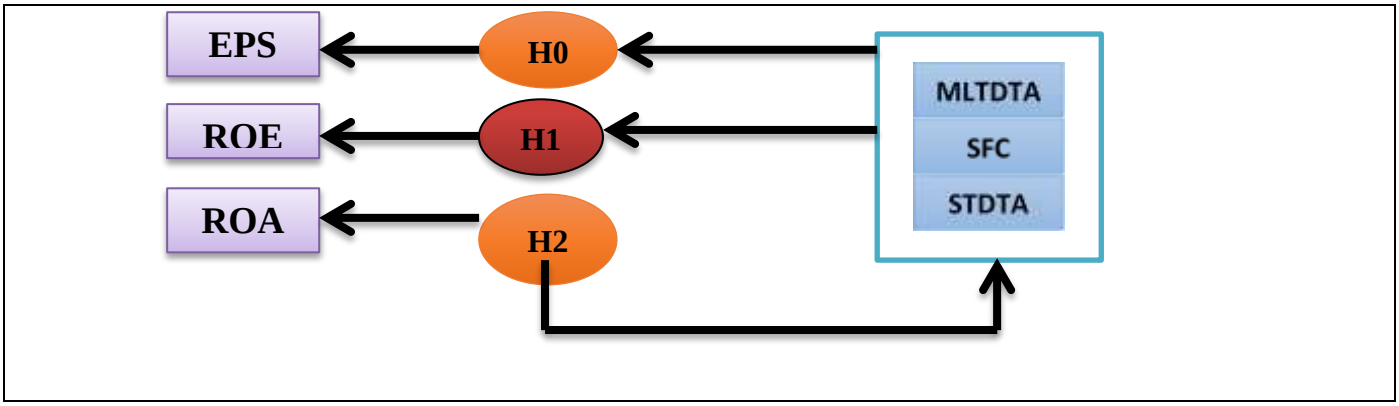
Size*:* Company size*;*

LIQ: Company liquidity.

T: 2010……2021.

$\boldsymbol{\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5}$: estimation factor ; $\boldsymbol{\varepsilon}: random\ error.$

Figure (01): Proposed model of the Relationship between Financial performance and capital structure



4. Results and Discussion:

In this part we will try to present and discuss the results of our study. First, we will present the results of the descriptive analysis of the selected variables. Secondly, we will present the Pearson correlation between the variables. Finally, we will present the results of the multiple regression**.**

4.1. Statistical Description:

The descriptive analysis of the study variables is given in table (02) below, and it contains their mean, minimum, maximum and standard deviation values.

Table (02): Results of descriptive statistics analysis

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	12	,1100	8,8300	3,861667	2,6621961
ROE	12	,2100	15,8700	7,374167	1,1547920

EPS	12	,69	2,42	1,9629	,49467
MLTDTA	12	16,6300	33,8600	26,468333	3,3692895
STDTA	12	14,6200	29,7500	20,351667	2,0829625
SFC	12	4,7300	27,8700	15,247500	4,4629687
SIZE	12	10,4358	10,6841	10,558408	,0883055
LIQ	12	19,1600	33,7300	23,460000	3,2839277

From the results of Table N° (02), we find that the average earnings per share was estimated at 1.96% with a standard deviation of 0.49 during the period (2010-2021), which led us to believe that this deviation could be attributed to fluctuations in the company's net income from one year to another. While the average return on equity was estimated at 7.37% with a standard deviation of 1.15, this deviation could also be due to the fact that the growth rate of equity is higher than the growth rate of net profit, and this is because of the company's increased expenses, and also its poor exploitation of its assets in an efficient manner. The average return on assets was estimated at 3.86%, with a standard deviation of 2.66.

4.2. Correlation matrix:

The correlation matrix between the variables used in our study is presented as follows:

Table (03): Pearson Correlation

	EPS	ROE	ROA	MLTDTA	STDTA	SFC	SIZE	LIQ
EPS Pearson Correlation Sig. (bilatérale) N	**1** **12**	**-**	*					
ROE Pearson correlation Sig. (bilatérale) N	**-**	**1** **12**	**					
ROA Pearson Correlation Sig. (bilatérale) N	*	**	**1** **12**					
MLTDTA Pearson Correlation Sig. (bilatérale) N	**-,**847** ,001 12	**-,783**** **,003** **12**	-,843** ,001 12	**1** **12**				
STDTA Pearson Correlation Sig. (bilatérale) N	,684* ,014 12	,889** ,000 12	,823** ,001 12	-,258 ,419 12	**1** **12**			
SFC Pearson Correlation Sig. (bilatérale) N	,752** ,005 12	,928** ,000 12	,863** ,000 12	-,398 ,201 12	**,**273 ,391 12	**1** **12**		
SIZE Pearson Correlation Sig. (bilatérale) N	-,571 ,052 12	-,815** ,001 12	-,755** ,005 12	**,**523 ,081 12	,256 ,422 12	,282 ,374 12	**1** **12**	
LIQ Pearson Correlation Sig. (bilatérale) N	-,219 ,494 12	-,239 ,454 12	-,173 ,591 12	,058 ,858 12	-,354 ,260 12	**-,**330 ,295 12	-,008 ,981 12	**1** **12**

**. The correlation is significant at the level 0.01 (bilateral).
*. The correlation is significant at the level 0.05 (bilateral).

The strength of the correlation between the dependent and independent variables in the study was assessed using Pearson's correlation matrix. Where the value of the Pearson coefficient ranges between -1 and +1, and the closer it is to -1, this indicates a strong negative relationship between the variables. Whereas if it approaches 1, it indicates that there is a strong positive relationship between the variables. Referring to the results of the above table, it becomes clear to us that there is a positive, strong, and statistically significant correlation between the capital structure represented by the capacity to self-finance, the ratio of short-term debt to total assets, and the financial performance expressed as return on earnings per share, return on equity, and return on assets.

Furthermore, it also shows the existence of an inverse, strong, and statistically significant correlation between each of the ratios of medium- and long-term debts to total assets, the size of the enterprise, and the financial performance as measured by its various indicators. In addition to this, it is also clear that there is a negative, weak, and statistically insignificant correlation between the level of liquidity of the institution and its financial performance indicators.

It should be noted that Pearson's correlation matrix not only gives the degree of correlation between the dependent and independent variables, but also gives the degree of correlation between the independent variables among them, to ensure that there are no double or multiple correlations between the variables, leading us to fall into a false regression. By referring to the results of Table N° 3, we note that the relationship between the independent variables is weak, and therefore there is no correlation, whether double or multiple, between these variables.

4.3. Regression results:

The following table summarizes the estimated coefficients of the multiple regression:

Table (04): Regression Coefficients

Variables	Model 1 : Dependent variable:EPS			Model 2 : Dependent variable: ROE			Model 3 : Dependent variable: ROA		
	Coefficient β	T test	Sig	Coefficient β	T test	Sig	Coefficient β	T test	Sig
Constant (C)	25,721 (17,97)	1,431	,202	-,604 (198,04)	-,003	,998	-8,206 (121,68)	-,067	,948
MLTDTA	-,069 (,010)	-6,662	,001	-,381 (,115)	-3,323	,016	-,276 (,071)	-3,917	,008
STDTA	-,237 (,031)	-7,658	,000	-,456 (,341)	-1,337	,230	-,305 (,210)	-1,455	,196
SFC	,154 (,022)	7,142	,000	,753 (,237)	3,173	,019	,400 (,146)	2,740	,034
SIZE	-1,744 (1.62)	-1,074	,324	1,499 (17,89)	,084	,936	1,801 (10,994)	,164	,875
LIQ	-,044 (,16)	-2,682	,036	,002 (,17)	,010	,992	,020 (,110)	,184	,860
adjusted r-square : 0.61 F Statistic :30.97 ; Sig : 0.001				**adjusted r-square : 0.78 F Statistic : 27.59; Sig :0.00**			**adjusted r-square : 0.67 F Statistic : 19.14 ; Sig :0.01**		

**NB: Values in parentheses represent standard deviation

It is clear from the results of Table N°4 that the value of the adjusted R- squared ($\overline{R^2}$) in the three estimated models was 0.61, 0.78, and 0.67, respectively, which means that 61% of the changes in earnings per share are caused by the independent and control variables in the model, and the remaining percentage is 39% and refers to other factors within the random error limit. While we find that these

variables did not explain only 78% of the changes in the return on equity, in contrast, the percentage of their interpretation of the return on assets did not exceed 67%.

On the other hand, it became clear that the Fisher test (F), the value calculated for this test was estimated at 30.97 in the first model with a probability value of 0.010 (Prob = 0.001 < 0.05), while its value was 27.59 in the second model with a probability value of 0.0 (Prob = 0.00 <0.05), but in the third model it was estimated at 19.14 with a probability value estimated at 0.01 (Prob = 0.01 < 0.05), which indicates that these three models are statistically significant at a significant level of 5%, which indicates their quality and the reliability of their results in validating the study hypotheses.

The constant parameter's value was negative in the second and third models, indicating that if the independent and control variables' coefficients are equal to zero, the average of the firm's financial performance, as measured by return on equity and return on assets, is equal to (0.604) and (8.20), respectively. This result has no commercial meaning because no firm, whatever it is, can start its activity without capital and debt.

However, the corresponding probability value is greater than 0.05 in both models, which indicates that it is not statistically significant. Whereas the constant parameter's value was positive in the first model, indicating that if the independent and control variables' coefficients are equal to zero, the average of the firm's financial performance is equal to 25.72, but it is also not statistically significant because the corresponding probability value is greater than 0.05 (Prob = 0.202 > 0.05), and therefore the null hypothesis is accepted at the 95% confidence interval.

According to the findings of estimating the three models, we conclude that the ratio of medium and long-term debt to total assets has a negative and statistically significant effect on financial performance at a significant level of 5%, which leads us to accept the alternative hypothesis (H1), that is, the higher the ratio of medium and long-term debt in the capital structure of the firm, whenever its financial performance decreases, so the firm must reduce the ratio of medium and long-term debt in its capital structure to raise its financial performance, as a result of its tax advantage, which is consistent with the conclusions reached by Al-Taani (2013) and Ansca et al. (2019).

In contrast, we discover that the ratio of short-term debt to total assets has a negative and statistically significant impact on earnings per share at a significant level of 1%, which means that a one-unit increase in the ratio of short-term debt to total assets will result in a 0.237-unit decrease in the earnings per share. It also became clear to us that the ratio of short-term debt to total assets has a negative and statistically insignificant effect on both the return on equity and the return on assets. This result is consistent with the results of the study conducted by AbuTawahina (2015) on a sample consisting of 35 companies listed on the Palestinian Stock Exchange and belonging to five different sectors, where he indicated that there is no statistically significant effect of the ratio of short-term debt to total assets on both returns on assets and return on equity in industrial firms.

In terms of the self-financing capacity, it has a positive and statistically significant impact on financial performance indicators at a level of 5%, which means that an increase of one unit will result in an increase of 0.154 units in the return on the company's shares and 0.753 units in the return on equity. While the return on assets increases by 0.400 units, it is necessary for the firm to increase the proportion of its equity in the composition of its financing mix to improve its financial performance.

The size of the firm has no effect on the financial performance, as its effect was statistically negative and insignificant on the earnings per share, while its effect was positive and statistically

insignificant on both the return on equity and the return on assets at different levels of significance (1%, 5%, and 10%).

The liquidity of the firm has a positive and statistically insignificant effect on both the return on equity and the return on assets, while its effect is negative and statistically significant at a significant level of 5% on earnings per share, meaning that an increase in the volume of liquidity by one unit will lead to a decrease in financial performance, which is expressed as earnings per share. With 0.044 units, the firm must therefore make the best use of the excess cash available to it after paying all of its debts by looking for new ways to use it to boost its profitability and financial performance as well as increase wealth for its shareholders and other stakeholders.

5. Conclusion:

The practical side of this study was projected on the Saidal Pharmaceutical Industry group listed on the Algerian stock exchange, and this was done over a period of 12 years, from 2010 to the end of 2021.

To achieve the study objective, the multiple regression model was used to analyze the study data, which related to the following variables: return on assets, return on equity and earnings per share as dependent variables that measure the financial performance of the firm during the period studied, in contrast, each use of the medium and long-term debt to total assets, the ratio of short-term debt to total assets and the self-financing capacity of the firm as determinants of its capital structure, that is, they represent the independent variables in the model. In addition to these two types of variables, another type of variable called the control variable was used, which was expressed in our study by the size of the firm and its general liquidity ratio.

The study came to a set of conclusions based on the results of estimating regression models, which we summarize as follows:

- ➔ There is a statistically significant and negative relationship between the ratio of the medium and long-term debts to total assets and the financial performance of the firm with its three indicators (ROA, ROE & EPS). The ratio of short-term debts to total assets has a negative and statistically significant impact on the earnings per share. There is also a negative and statistically insignificant impact of the ratio of short-term debts to total assets on the financial performance of the institution, as measured by the return on assets and the return on equity. In contrast, the self–financing capacity of the firm is connected to a positive and statistically significant relationship with different financial performance indicators.
- ➔ With regard to the size of the firm, it positively affects both the return on equity and the return on assets, but this effect is statistically insignificant, while the size of the firm negatively affects the share of the net profits of the firm, With regard to the liquidity of the enterprise, the results of the estimate showed that it has a positive and statistically insignificant effect on both return on equity and return on assets, while it has a negative and statistically significant effect on earnings per share.

Based on the results of the applied study reached, we will present a set of recommendations that will improve the future financial performance of the firm:

- ➔ The firm raises the percentage of internal financing sources within the composition of its capital structure due to its lower cost compared to external sources, as well as its positive impact on its financial performance.

- ➔ Not resorting to financial borrowing to finance uncertain investments or to expand activity, as it is relied upon as a last alternative. Investors in the capital of institutions listed on the Algiers Stock Exchange must take into account the capital structure of any institution before investing in it because the strength of the financing mix of the institution determines the level of returns.
- ➔ To understand the methodology used in choosing the financing mix, all the rules and principles on which the financing mix is determined should be included in the firm's final annual reports, which summarize its data and financial statements.

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