

Financial Leverage's impact on Share Market Value : An Examination of a Few Economic Institutions Traded on the Algiers Stock Exchange Over the Period 2014-2023

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Abstract :

This study aims to demonstrate the effect of financial leverage, expressed by debts to private capital on the market value of the shares of the economic companies registered on the Algiers Stock Exchange. To make this achieved, has been relied upon a sample made up of two firms listed with the Stock Exchange of algiers, spread over the pharmacy sector (Saïdal and Biopharm) over 2014 - 2023. The study employed the descriptive method to clarify the theoretical notions of financial leverage and market value, and employed the standard method via analysis panel data utilising the EViews 13 program. The study discovered that financial leverage (FL) has a negative influence on market value (MV) , however not statistically significant.

Keywords: financial leverage , market value , economic firms , panel data .

Jel Classification Codes: G10, G20.

Introduction

The main goal of contemporary financial management is to optimize the worth of the company, more especially the wealth of the owners. Therefore, managers must make a lot of financial decisions that have an impact on their financial management. This is where the financing choice comes into play. It deals with giving the organization the money it needs to pay its debts, run its operations, and make investments, all of which increase the institution's market worth. One of the key financial techniques used by economic institutions to improve their capacity to meet their operational and fiscal goals include using financial leverage. This allows an organization to optimize its returns by capitalizing on supplementary returns produced by debt-financed assets. However, depending on a number of variables,

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this method can have both good and negative consequences on the market value of economic organizations. A number of financial theories pertaining to financial leverage also made reference to it, including the theory of Miller-Modigliani (M&M), which emphasizes the necessity for a balance between returns and risks. According to the idea, corporations can utilize debt to boost their market value because of the tax benefits associated with it, but they should be cautious of the possibility that bankruptcy expenses could lower this value. According to the agency theory of owner-manager interactions, agency costs are the outcome of disputes of interest between managers and owners. Leverage might diminish these expenses by making managers work harder to produce enough returns to pay off the debt, which cuts down on wasteful expenditure and boosts operational effectiveness. High debt levels, on the other hand, could encourage management to take chances and make decisions that might not be in the best interests of shareholders.

Aforementioned, the research problematic can be expressed in the subsequent question:

What impact does financial leverage have on the stock's market value?

Research Hypothesis :

The stock's market value is positively impacted by the financial leverage.

Research objectives :

This study aims to :

Clarifying the ideas of market value and financial leverage in theory.

Identify the most crucial financial leverage and market worth metrics and learn how to measure them.

Evaluate how the market value of equities is affected by financial leverage.

Methodology of the Research:

We used the descriptive approach in this work to interpret the theoretical underpinnings of the variables under investigation and prior research that was pertinent to the subject. Additionally, we conducted an econometric analysis using the econometric statistical approach, using panel data analysis by the EViews 13 program. To identify the most effective model for figuring out how financial leverage affects a stock's market value.

1. Literature Review:

Barakat (2014)²: The aim of the study was to examine how financial leverage, profitability affected on the value for 46 industrial enterprises included on the Saudi stock market between the years of 2009 - 2012. The research found that return on equity and market stock price, had a statistically significant positive association. However, financial leverage and stock value have a weak and adverse association.

Vijayalakshmi and Manoharan (2015)³: The objective of this research was to ascertain how financial leverage affected the two most significant metrics used to define an enterprise's worth, namely, market value and economic value added for

² Barakat, A. (2014), <<The impact of financial structure, financial leverage and profitability on industrial companies shares value (applied study on a sample of Saudi industrial companies)>>, Research Journal of Finance and Accounting, 5(1), pp. 55- 66.

³ Vijayalakshmi, D., Manoharan, P. (2015), <<Corporate leverage and its impact on EVA and MVA>>, International Journal of Multidisciplinary Research and Development, Vol. 2 No. 2, pp. 22-25

seven companies that were stated on the stock exchanges in Bombay-New York from 1996 until 2010. The small square method and panel data statistical techniques were used to achieve this. The research discovered that financial leverage significantly affected the market value and economic value added of the enterprises that were the subject of the analysis.

Al Slehat (2020)⁴: The research sought out to ascertain the effects of financial leverage, asset composition on the valuation of 30 companies that were listed between 2010 and 2018 on the Amman Stock Exchange. To make sure the sequence was stable, they used statistical techniques comprising root analysis and basic regression examination of the connection between the elements under study. The investigation came to the conclusion that financial leverage had no impact on the worth of the enterprises that were being assessed. But the worth of listed corporations is influenced by both the company's size and asset structure.

2. Theoretical Background

2.1 - Financial Leverage:

Leverage has various meanings :

It pertains to the lifting of large and heavy things utilizing force and specialized techniques in the domains of the physical and natural sciences. From a financial standpoint , it's seen as the extent to which economic organizations rely on borrowing to satisfy their financial needs, whether it be through bonds or loans issued through financial organizations⁵.

Financial leverage is known as the amount of debt that a financial structure employs rather than issuing new shares to produce profits in an attempt to enhance shareholders' worth⁶.

The idea of financial leverage is to determine the extent to which an institution can control its resources to achieve strong financial performance, as well as how well it can manage liquidity to minimize costs while ensuring optimal outcomes. taking into account the connection to its debts as well. Since it is in its best interest to have low debt in relation to its resources, the institution will have trouble repaying its debts as soon as the debt (D) surpasses the private capital (CP). This foundation determines whether or not to fund the last one, while also evaluating the severity of the hazards connected with it and the degree to which providers and funders can recover their financial outlay⁷.

2.2 Measurement of Financial Leverage:

• Financial leverage ratio :

⁴ Zaher Abdel Fattah Al-Slehat . (2020), <<Impact of Financial Leverage, Size and Assets Structure on Firm Value: Evidence from Industrial Sector, Jordan>>, International Business Research, Canadian Center of Science and Education, vol. 13(1), pages 109-120

⁵ Paramasivan, C., & Subramanian, T. (2009). *Financial Management* . India: New Age International Publishers.p.83

⁶ Al-Sayegh, N. (2018). *Bank Credit*. Lebanon: dar Scientific Books.p.183

⁷ Chrissos, J., & Gillet, R. (2012). *Décision d'investissement*. Paris, France: Pearson Education 3e édition.p.64

$$\text{FL}(\text{financial Leverage}) = \frac{\text{EBIT}(\text{Earnings Before Interest and Taxes})}{\text{EPS}(\text{Earnings Per Share})}$$

This proportion demonstrates how much the company can make returns before the interest and taxes are calculated⁸.

• **Long-term Debt to Working Capital:** This proportion illustrates how much working capital may be used to cover long-term sources⁹. Assets both on and off the budget can be used to quantify financial leverage in banking organizations without taking the first category's risk associated with capital. This percentage must not fall below 3%¹⁰.

• **Current Obligations to Private Capital:** This ratio illustrates the amount of money that the company gets from outside sources in comparison to the money that its owners give. Long-term funding sources will be unable to finance current assets, if the owners don't use their own funds to finance the assets, as they are bound by the principle of maintaining balance¹¹.

A basic method for estimating the price of debt entails dividing the entire interest paid on debt by the total amount of debt. the impact of financial leverage is known as the ability to enhance the asset's financial yield by funding a part of projects with borrowed capital at a lower cost , to obtain higher value than borrowing costs¹².

Financial leverage mostly consists of (DF/CP). This relates to three situations¹³:

• $\text{DF/CP} > 0$: The company's financial leverage impact is positive, meaning that profits rise.

• $\text{DF / CP} < 0$: Financial leverage has a negative effect on the company; as debt levels rise, the profit ratio falls.

• $\text{DF / CP} = 0$: In this instance, financial leverage has no influence on the company's earnings.

It is perfect for both the bank and the company lending it to ensure that this percentage does not be ($1 > \text{DF/CP}$). In contrast, financiers, suppliers, lenders, and parties may assume all of the risks that the institution does. Everything is related to a specific overall financial performance¹⁴.

⁸ Paramasivan, C., & Subramanian, T. (2009). *Financial Management* . India: New Age International Publishers.p.87

⁹ Al-Maghrabi, M. (2020). *Risk Management in Islamic Banks*. Egypt: Modern Academy of University Books.p.120

¹⁰ Al-Maghrabi, M. (2020). *Risk Management in Islamic Banks*. Egypt: Modern Academy of University Books.p.102

¹¹ Tawfik, J. (1987). *Fundamentals of Financial Management*. Lebanon: Dar Al-Nahda.p.122

¹² Thauvron, A. (2005). *Evaluation D'entreprise*. Paris: Economica.p.44

¹³ Ogien, D. (2011). *gestion Finance de l'entreprise*. paris: Dunod.p.96

¹⁴ Bobinaite, V. (2015). Financial Leverage and its Determinants in Companies Producing Electricity from Wind Resources in Latvia. *Economics and Business* (27).p.34

2.3 Market Value :

The price that an item would fetch on the market, considering the prices that buyers are willing to pay and sellers are willing to accept, is known as market value. Additionally, it might refer to the market capitalization of a publicly listed corporation. It is calculated by taking the current share price and multiplying it by the entire quantity of shares that are in use. Due to market rates for exchange-traded assets like stocks and futures are readily available and frequently distributed, determining market value is comparatively easier for these types of instruments. The market value of a firm is a decent indicator of investors' perspectives about its business potential and the market valuations vary greatly, ranging from less than 1 million \$ for the smallest companies to several hundred billions for the largest and most successful enterprises globally. Market value is established through the multiples or valuations that investors give companies.¹⁵

2.4 Determining the Market Value :

- Earnings per Share (EPS): An organization's EPS is determined by dividing its total profit by the number of shares it has in circulation. Greater profitability is evidenced by a greater EPS.¹⁶.

$$EPS = \frac{(\text{Net income} - \text{Preferred dividends})}{\text{Number of Outstanding Common Shares}}$$

- Book Value Per Share (BVPS): is computed by dividing the firm equity by the total number of shares in circulation¹⁷.

$$BVPS = \frac{(\text{Equity share capital} + \text{Total reserves and surplus})}{\text{Number of existing equity share}}$$

- Market Cap per Equity: is calculated by taking the market capitalization of the firm and dividing it by the entire number of shares.¹⁸

$$\text{Market Cap per Equity} = \frac{\text{Market Capitalization}}{\text{Number of outstanding shares}}$$

3. Econometric Research

¹⁵ James, C. (2024, March 16). What Is Market Value, and Why Does It Matter to Investors? Retrieved from investopedia: <https://www.investopedia.com/terms/m/marketvalue.asp>. (consulté le 12/08/2024).

¹⁶ Gibson, C. H. (2009). *Financial Reporting & Analysis*. USA: Eleven Edition. Nelson Education, Ltd. p.338

¹⁷ CFI, T. (2024). Market Value. Récupéré sur corporatefinanceinstitute: <https://corporatefinanceinstitute.com/resources/valuation/market-value/>. (consulté le 12/08/2024).

¹⁸ CFI, T. Op.Cit

We are going to try to examine and measure the impact financial leverage on firms market value . This will be achieved by applying the appropriate statistical techniques and mathematical tools, as well as by adhering to the research model's procedures and methodological processes.

3.1 Research Sample :

This study was depended on a sample of two firms listed on the algiers stock exchange between 2014 and 2023, where the firms under study are active in the pharmaceutical sectors (Saïdal Corporation and Biopharm Corporation). The sample was selected according to the following factors:

- Availability all annual reports and various annual financial statements that end on 12/31.
- exclusion of companies operating in the banking and finance industries. This is attributed to the variations in the general model of their financial statements.

Data on these variables was collected through the official website of the Algiers Stock Exchange <https://www.sgbv.dz/ar>

3.2 Research variables:

The dependent variable : The market value (MV) of the company, as established by the closing share price .This was extracted from data obtained from the Algiers Stock Exchange.

$$\text{Market Value} = \text{Total number of outstanding shares} \times \text{Current market price per share.}$$

The Independent Variable is: Financial leverage (FL) represents the contribution of debt to the financing structure compared to equity. **FL= Debts / Private capital.**

As for formulating a mathematical model is used to investigate how financial leverage affects the market value of corporations. Taking into account the various factors, the research model can be explained as follows: **MV= B₀ + B₁ FL**

3.3- Statistical features of the research variables

The following table displays the research variables' many statistical properties:

Table 1: Statistical properties of the variables under investigation

Date: 07/09/24 Time: 12:27
Sample: 2014 2023

	FL	MV
Mean	0.798310	1002.450
Median	0.743200	840.0000
Maximum	1.384700	2300.000
Minimum	0.346900	500.0000
Std. Dev.	0.247877	526.6801
Skewness	0.844553	1.101630
Kurtosis	4.262908	3.471622
Jarque-Bera	3.706682	4.230652
Probability	0.156713	0.120594
Sum	15.96620	20049.00
Sum Sq. Dev.	1.167415	5270447.
Observations	20	20

Source: Created by researchers using the Eviews13 software.

considering Table (1), we note the following:

The market value showed an lower limit of 500 and an upper limit of 2300, recorded an arithmetic average calculated at 1002.450.

The series' values deviate from their average by a standard deviation of (526.6801), with a median calculated at (840).

Regarding the financial leverage (FL), its arithmetic average reached (0.798310) with a maximum value of (1.384700) and a minimum value of (0.346900), as these two values show the highest and lowest levels of growth witnessed by the financial leverage during the study period, and this series is bisected by a median of (0.743200), and the values differ from their mean with a standard deviation of (0.24787).

3.4- Analyzing correlation:

The table presents the correlation matrix of the study variables.

Table 2: Correlation matrix between the variables under investigation.

Covariance Analysis: Ordinary
Date: 07/09/24 Time: 12:28
Sample: 2014 2023
Included observations: 20

Correlation t-Statistic Probability	FL	MV
FL	1.000000 ----- -----	
MV	-0.485159 -2.353951 0.0301	1.000000 ----- -----

Source: Created by researchers using the Eviews13 software.

Table (2) demonstrates that there is a negatif correlation between financial leverage (FL) and market value (MV) with a value of (-0.485159), which is considered a weak correlation. It is statistically significant, as the associated significance level reached (0.0301), which is less than 0.05 at a significance level of 0.5%.

3.5- Levin & Lin & Chu stability test:

This test was done to confirm that the research variables were stable.

The instability of the series is the null hypothesis for this examination.

Table 3: reflects the results of the stability test for the study variables (FL, MV).

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-4.25589	0.0000

Method	Statistic	Prob.**
Levin, Lin & Chu t*	-7.23873	0.0000

Source: Created by researchers utilizing the Eviews13 software.

According to the results of the Levin & Lin & Chu test in Table (3), the study variables show stability at the 5% level. Rejecting the null hypothesis because the study variables have a probability of less than 5%.

3.6 Lagrange Multipliers (LM) test:

To examine heterogeneity or to choose which models are more appropriate. There are a several exam option., the most important and significant test is the Lagrange Multipliers (LM) test, it was developed by Breusch and Pagan and is depending on the (LM) statistic's probability value, as this is viewed the first test in The cross-sectional data model is grounded on contrasting the fixed and random effects model with the aggregate regression model, based on the likelihood value of (LM). These two hypotheses serve as the foundation for this:

H0: The best choice is the model of pooled regression.

H1: the ideal selection would be the fixed or random effects model.

The hypothesis 1 is accepted if the Lagrange multiplier's probability value is lower than 0.05, demonstrating that the fixed or random effects model is the most appropriate explanation for the relationship, thus we disprove the notion of hypothesis 0, which states that the aggregate regression model is appropriate.

Table (4) Findings of the test Lagrange

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	10.26104 (0.0014)	0.000355 (0.9850)	10.26139 (0.0014)

Source: Created by researchers using the Eviews13 software.

Grounded in the test results displayed in Table (4), we reject hypothesis Ho and accept hypothesis H1, we accept the random or fixed effects model, since the probability value (LM) = 0.0014 is less than the significance criterion of 5%.

3.7- Hausman test

After confirming in the previous test that it is not an aggregate regression model, we compare the two models employing the Hausman test to see which makes more sense: the random model or the fixed effects model.

The hypotheses that follow serve as the foundation for this test:

Ho: The random effects model is the appropriate one.

H1: The fixed effects model is the suitable one.

Table 5 : Results obtained from the Hausman test.

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	23.454330	1	0.0000

Source: made with the Eviews13 program by researchers.

findings from the Hausman test, which are shown in Table (5) support the acceptance of the hypothesis1 and the dismissal of the hypothesis0. The probability value associated with this test attained 0%, which falls below the 5% threshold of significance .

It may be inferred from this that the model of fixed effects is more appropriate for estimating study data.

3.8 Model Estimation:

Table 6 : The fixed effects model's findings

Dependent Variable: MV
Method: Panel Least Squares
Date: 07/09/24 Time: 12:37
Sample: 2014 2023
Periods included: 10
Cross-sections included: 2
Total panel (balanced) observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FL	-97.28802	349.9846	-0.277978	0.7844
C	1080.116	288.1719	3.748166	0.0016
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.678686	Mean dependent var	1002.450	
Adjusted R-squared	0.640884	S.D. dependent var	526.6801	
S.E. of regression	315.6198	Akaike info criterion	14.48443	
Sum squared resid	1693469.	Schwarz criterion	14.63379	
Log likelihood	-141.8443	Hannan-Quinn criter.	14.51359	
F-statistic	17.95386	Durbin-Watson stat	0.524939	
Prob(F-statistic)	0.000064			

Source: Made by researchers utilizing the Eviews13 software.

the goodness of fit test results will be evaluated in order to do a statistical evaluation of the model acceptance.

Assessing fit: The adjusted coefficient of determination is the main tool used in this test to determine how much the independent factors account for the dependent variable.

The adjusted coefficient of determination (Adjusted R – squared) = 0.640884 and the coefficient of determination (R) = 0.678686 .In accordance with the fixed effects model findings in Table (6), show that the independent variables account for 64.08% of the variance. of the alterations occurring inside the dependent variable. This percentage is both good and acceptable.

Testing the statistical significance of parameters: With a significance level of 0.05, the test determines the degree to which the independent variable explains the behavior of the dependent variable in light of the the next two hypotheses by comparing the computed t-statistic with the tabular value using the student's t-distribution.

$H_0: b_i = 0$ $H_1: b_i \neq 0$

According to the results presented in Table (6), we find that:

The fixed term parameter C has a probability value of (0.0016), which is smaller than 0.05, implies acceptance of the substitute H_1 . This implies that the market value and the fixed term, have a positive statistically significant connection.

Financial leverage (FL) parameter has a probability value of (0.7844), which is bigger than 0.05, which means accepting the hypothesis H_0 , indicating that there is no correlation between financial leverage (FL) and market value (MV).

Examining the model's overall significance: According to the Fisher distribution statistic, this test compares the Fisher statistic's probability value to the significance threshold of 0.05. It is based on the results presented in Table (6), we find that the probability value attached to the Fisher statistic is estimated at $\text{Prob}(F\text{-statistic}) = 0.000064$, which is completely smaller than the significance level of 0.05. So, we reject H_0 and accept H_1 , which indicates that the model has total statistical and overall significance.

Through all of the above studies, the model equation can be formed as shown in Table (6) like this: **$MV = 1080.116 - 97.28802 \times FL + E_i$**

3.9 Discussion of the Findings

The influence of financial leverage (FL): The estimated fixed effects model regression results shown in Table (6) demonstrated that financial leverage has a negative impact that is not statistically significant on market value (MV), as its value reached (-97.28802) with a probability estimated at (0.7844), that is, bigger than the significance level of 5%, which means that every 1 unit change in financial leverage leads to a 97.28802 unit decrease in the company market value (MV). Therefore, there is an inverse association that is not statistically significant between the financial leverage and the market value with a significance threshold of 5%. This refutes the reliability of the hypothesis that served as the investigation's direction.

This outcome was in agreement with what was stated in the study (**Abdallah Barakat**, 2014), which confirms the existence of a inverse relationship between financial leverage and stock price that is not statistically significant. This contradicts many studies, including the study (**Manoharan and Vijayalakshmi**, 2015), which proves the presence of a statistically significant impact link between the financial leverage and the market price.

Conclusion

Through this research, we sought to ascertain how a sample of two companies listed on the Algiers Stock Exchange's market value was impacted by financial leverage throughout the 2014–2023 timeframe. The investigation produced a number of findings, the most significant of which are:

Financial leverage (FL) has a negative, but not statistically significant, impact on market value (MV).

The heavy reliance on debt by the firms under study had a detrimental impact on their market value, and this clarifies their inability to profit from debt perks.

Based on the earlier findings, the following recommendations are possible.:

- Institutions should find the optimal ratio of debt to equity in order to lower capital costs and increase market value, excessive debt rises financial risk.
- evaluate the economic environment and adapt financial leverage strategies accordingly.
- Avoid over-reliance on one type of creditor because diversification of financing sources may reduce financial risk.

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