

The Impact of Financial Leverage on the Financial Performance of the Firms Listed on the Egyptian Stock Exchange

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Abstract

The purpose of this paper is to examine the impact of financial leverage on the financial performance of the 19 firms listed on the EGX30 index in the Egyptian Stock Exchange (EGX) from January 2019 to October 2023. This study used Total Debt-to-Total Assets and Total Debt-to-Total Equity as proxies for financial leverage, while Return on Assets (ROA), Return on Equity (ROE), Earnings per Share (EPS), Asset Turnover Rate, Sales Growth, and Net Profit Margin were used as measures of financial performance. The results showed that there is no effect of financial leverage on return on assets, return on equity, Net Profit Margin and Earnings per share, whether using the Total Debt-to-Total Assets or the Total Debt-to-Total Equity. Regarding asset turnover, the results showed a statistically significant effect on the debt-to-equity ratio, but none on the debt-to-assets ratio. The results also showed that the Total Debt-to-Total Assets ratio and the Total Debt-to-Total Equity ratio have a statistically significant effect on sales growth.

Keywords: Financial Leverage, Financial Performance, Egyptian Stock Exchange, EGX30 index

1. Introduction

The financing decision is crucial for businesses as it directly impacts their long-term profitability and survival. The debate over financial leverage, sparked by Modigliani and Miller's 1958 capital structure theory, persists today with no consensus on its impact on firm value or profitability, leading many firm managers to question its effectiveness. The Modigliani-Miller theorem is a cornerstone of corporate finance, positing that, under ideal conditions, a firm's value and its cost of capital are independent of its capital structure. This fundamental premise, however, prompts crucial inquiry when applied to real-world financial landscapes where market imperfections and unique local specificities often influence financing decisions and firm outcomes.

Jensen (1986) suggested that firms with significant debt must prioritize investing in profitable projects to ensure cash flow to cover interest payments; otherwise, investing in unprofitable projects increases the risk of bankruptcy

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due to missed debt obligations. Jensen's (1986) insight regarding debt as a mechanism to enforce managerial discipline and encourage investment in profitable projects is central to understanding the potential influence of capital structure. This perspective suggests that increased financial leverage could, in theory, lead to improved performance by compelling more efficient resource allocation. However, whether this theoretical disciplinary effect universally translates into enhanced firm performance across diverse real-world financial landscapes remains an open and critical empirical question.

Amarjit, et al., (2011) state that the choice of capital structure is crucial for maximizing shareholder returns and enhancing a firm's competitiveness. Schoubben and Hulle (2004) emphasize that a firm's capital structure determines whether the firm will survive during economic shocks. It is also crucial to its financial success and to achieving its objectives and long-term goals. Therefore, a company's decision on its capital structure is essential for its continued success and expansion. According to Akhter et al., (2012), financial leverage involves firms using borrowed funds in their capital structure, where interest payments are tax-deductible, and thereby enhancing profitability. Therefore, the financing mix is crucial for assessing a company's financial performance, as it reflects the firm's strategy to maximize tax deductions on interest expenses while balancing equity and debt to fund investments and expansion.

While the Modigliani-Miller theory implies that capital structure is irrelevant when markets are perfect, in Egypt there are many imperfections. For example, there is an overwhelming reliance on banks and trade credit for financing, due to the underdeveloped use of corporate bonds. This structural reality makes financing non-neutral, and thus financing decisions are crucial to a company's success and growth.

Financial leverage is the use of debt (borrowed money) to finance assets, anticipating that returns will exceed borrowing costs. It can also refer to the Total Debt a company uses to finance its assets to boost potential investment returns. Leverage is used to increase the return on equity (ROE). However, excessive financial leverage increases the risk of financial failure (Gunarathna, 2016). Financial leverage, while beneficial to a firm, also introduces financial risks, as the firm that fails to achieve adequate earnings before interest and taxes (EBIT) may face liquidation due to its inability to meet interest and other expenses, making capital structure choices critical managerial decisions that affect shareholder risk and return. (Amahalu & Obi ,2020).

Many studies and theories have examined the impact of capital structure on companies' financial performance. Myers (1977) suggests that excessive debt in a company's capital structure leads debt holders to demand higher returns due to the increased risk of underinvestment and potential bankruptcy, ultimately harming the firm's value. Haugen (1978) concluded that a company with more debt faces higher bankruptcy costs than one with less debt. Shuetrim et al. (1993) confirmed that the best capital structure is the one that reduces tax-related cash flows to the government, thereby enhancing the firm's overall value. Gomez et al. (2020) find that an increase in leverage correlates negatively with financial performance. Guo et al. (2021) suggested that higher debt levels may enhance profitability.

While the impact of financial leverage on financial performance is well-researched globally, studies specifically on the Egyptian Stock Exchange's EGX30 remain limited. The Egyptian market's unique reliance on bank financing and trade credit, given the undeveloped bond market, creates distinct dynamics for leverage. This study aims to address this gap by comprehensively analyzing how financial leverage affects the financial performance of companies listed on the Egyptian Stock Exchange from January 2019 to October 2023. We will explore financial leverage as a key factor influencing company profitability. The structure of this study will be outlined as follows: Sections 2 through 4 will cover the theoretical and empirical literature, data and methodology, and empirical results, respectively, concluding with a final summary.

2. Literature review

Research literature regarding the relationship between financial leverage and firm performance is highly controversial, as the empirical evidence obtained from different contexts and global markets are inconsistent. For example, Pouraghajan et al., (2012) found that the ratio of debt to total assets inversely correlated with the financial performance of companies listed on the Tehran Stock Exchange. Similarly, Ahmad et al., (2015) measured the profitability of companies in the cement sector of Pakistan and indicated that financial leverage negatively correlated with financial performance. Additionally, Khasawneh and Dasouqi (2017) found that companies listed on the Jordanian stock market exhibited a negative relationship between financial performance and the debt-to-total

assets ratio. Further, this negative correlation was suggested by Jaleel and Olayiwola (2017) when they investigated the financial performance of Chemicals and Paints firms in Nigeria and found that leverage had a negative but insignificant effect on financial performance. Other evidence of the adverse impact of leverage on financial performance includes Dalci's (2018) work on manufacturing firms in China; Samo and Murad's (2019) study of textile firms in Pakistan; and Ullah's (2019) research into companies listed on the Pakistan stock exchange. Finally, Nguyen and Nguyen (2020) also reported a statistically delayed inverse correlation on the Vietnamese stock exchange and Akhtar et al. (2021) also confirmed this finding for Pakistan's stock market, while Dsouza et al. (2023) found a similar relationship for industrial companies in the MENA region. In summary, Arhinful and Radmehr (2023) also supported a negative correlation between financial performance and debt service obligations for non-financial firms.

In contrast to these findings, other researchers, such as Kartikasari and Merianti (2016), concluded that financial leverage has a substantial positive impact on profit in Indonesia; while Ayaz et al. (2021) showed leverage helps improve profitability to the extent that the business reaches an acceptable point of leverage. Danso et al. (2021) indicated that size of the firm has a bearing on the relationship between profitability and leverage, and Nugraha et al. (2021) found leverage has a partial impact on profit for companies trading on the Indonesian Stock Exchange. All of these different research findings illustrate that the effect of leverage is marketed based on the different specific dynamics of the market and substantiate the need for this research given the unique nature of the Egyptian marketplace.

Agency Theory has an Egyptian flavour through the monitoring of banks, which serves as a primary tool for discipline. Bank debt has fixed obligations, which force managers to optimize resource allocation to improve operational efficiency, especially for companies listed on the EGX30 that are subject to significant oversight by financial institutions.

Despite this rich existing literature, there remains a notable paucity of studies specifically dedicated to examining this relationship within the unique context of the Egyptian Stock Exchange, particularly focusing on the EGX30 index. The economic and financial landscape of Egypt, characterized by companies' heavy reliance on bank financing and trade credit in the absence of a developed bond market, presents distinct structural and operational conditions that may yield leverage-performance dynamics different from those observed in other markets. Existing studies often generalize findings from diverse regions, which may not fully capture the intricacies of the Egyptian market. This study aims to bridge this specific contextual gap by providing a targeted and in-depth analysis of the impact of financial leverage on the financial performance of EGX30-listed firms, thereby contributing novel empirical evidence and insights directly relevant to the Egyptian market's unique characteristics

3. Data and Methodology

3.1 Data

To investigate how financial leverage affects the financial performance of companies listed on the Egyptian Stock Exchange, this study utilized data from firms included in the EGX30 index. The EGX30, a price index tracking the performance of the 30 most active companies on the exchange, provided the sample for the period from January 2019 to October 2023. The EGX30 index serves as a comprehensive and reliable sample of companies within the Egyptian market. It comprises the 30 largest and most actively traded companies by liquidity and market capitalization. This ensures that the firms represented in the index not only include leading entities across various economic sectors but also represent the most attractive to investors and the most influential in market dynamics. Consequently, analyzing the EGX30 offers valuable insights into the performance of the majority of key sectors and helps draw relevant conclusions about the large-cap corporate landscape in Egypt. Quarterly data points for key financial metrics, including Return on Assets, Return on Equity, Asset Turnover, Net Profit Margin, Earnings per Share, Sales Growth, Total Debt-to-Total Assets, and Total Debt-to-Total Equity, were used in the analysis. Unlike studies relying on annual data, our use of quarterly data in this study serves two key advantages: (1) It captures the dynamic performance patterns of Egyptian firms, which are significantly influenced by seasonal fluctuations and quarterly monetary policies, and (2) provides more observations (greater data points) that enhance the statistical power of our analysis

A variety of governmental and non-governmental sources were relied upon to obtain the study data, including:

- The Egyptian Stock Exchange website.
- The published financial statements of each company in the sample.

- Non-governmental websites such as the Mubashir Stock Exchange website

Not all stocks are chosen; only specific stocks are selected for this test and they must meet the following conditions:

- The Egyptian pound must be used as the trading currency on the stock.
- The stocks of financial institutions and banks should be excluded due to their unique asset structure and liability (high leverage).

By applying these conditions to the sample, we identified 19 stocks listed on the EGX30 index of the Egyptian Stock Exchange that meet the test criteria. Excluding financial institutions (banks and insurance companies) from the EGX30 sample is a standard methodological necessity in corporate finance research. Unlike non-financial firms, the capital structure of financial institutions consists solely of deposits, which are treated as liabilities. In addition to this distinction, the regulatory frameworks under which financial institutions operate (such as Basel III) set capital requirements and therefore influence their leverage behavior. If financial institutions were included in the study, all financial ratios used (Debt to Assets and Debt to Equity) would be skewed and therefore cannot be directly compared with those of the industrial and service firms included in this analysis. As such, the remaining 19 firms comprise the entire non-financial sample of the EGX30 and constitute a comparable sample for robust statistical analysis.

3.2 Methodology

This study adopted the Total Debt-to-Total Assets ratio and the Total Debt-to-Total Equity ratio as indicators of financial leverage. Return on equity (ROE), Return on Assets (ROA), Earning per Share (EPS), assets turnover rate, sales growth and net profit margin are measures of financial performance. The correlation matrix was used to assess relationships among variables, and multiple regression was used to estimate the impact of financial leverage on financial performance.

For the dependent variables, the analysis incorporated several key financial metrics: return on assets calculated as net income relative to total assets, sales growth measured by the percentage change between current and prior period sales, return on equity derived from after-tax income compared to shareholders equity, asset turnover representing net sales against total assets, earnings per share computed as net income divided by outstanding shares, and net profit margin expressed as net income relative to net sales. This comprehensive approach provided a robust framework for evaluating both capital structure and financial performance.

2.3 Regression Analysis and Model Specification

To empirically investigate the impact of financial leverage on financial performance, this study employed multiple linear regression analysis using the Pooled Ordinary Least Squares (OLS) method. The general form of the regression model estimated is:

$$Y_{i,t} = \beta_0 + \beta_1 FL_{i,t} + \epsilon_{i,t}$$

Where:

- $Y_{i,t}$ represents the dependent variable, which is a measure of financial performance for firm i at time t . In this study, $Y_{i,t}$ alternately denotes:
 - Return on Assets (ROA), calculated as Net Income / Total Assets.
 - Return on Equity (ROE), calculated as After-Tax Income / Shareholders' Equity.
 - Earnings Per Share, computed as Net Income / Number of Outstanding Shares.
 - Asset Turnover Rate, representing Net Sales / Total Assets.
 - Sales Growth, measured by the percentage change between current and prior period sales.
 - Net Profit Margin, expressed as Net Income / Net Sales.

- $FL_{i,t}$ represents the independent variable, which is a measure of financial leverage for firm i at time t . In this study, $FL_{i,t}$ alternately denotes:
 - Total Debt-to-Total Assets (TD/TA), calculated as Total Debt / Total Assets.
 - Total Debt-to-Total Equity (TD/TE), calculated as Total Debt / Shareholders' Equity.
- β_0 is the intercept term, representing the expected value of the dependent variable when the independent variable is zero.
- β_1 is the regression coefficient for the financial leverage variable, indicating the estimated change in the dependent variable for a one-unit change in financial leverage, holding all other factors constant.
- $\epsilon_{i,t}$ is the error term, capturing the influence of unobserved factors on the dependent variable.

It is important to note that this general model was estimated separately for each combination of a single financial performance measure ($Y_{i,t}$) and a single financial leverage proxy ($FL_{i,t}$).

3. Empirical Results

3.1 Descriptive Statistics

Table 1 shows the descriptive statistics for all variables. The Total Debt-to-Total Assets ratio measures a company's financial leverage. It indicates the proportion of debt the company uses to finance its assets. The maximum Total Debt-to-Total Assets ratio is 0.6751 with a minimum of 0.4413; showing a 6.47% standard deviation from the mean. The Total Debt-to-Total Equity ratio measures the financial leverage of the company too. It indicates the proportion of debt compared to the proportion of equity used by the company to finance its assets. The maximum Total Debt-to-Total Equity ratio is 1.99 with a minimum of 0.98; showing a 33% standard deviation from the mean. The maximum Return on assets ratio is 0.02 with a minimum of -0.03 and 1.2% standard deviation from the mean. Return on Equity maximum and minimum ratios are 0.057 and -0.058 ,respectively, and 2.8% standard deviation from the mean. The maximum and minimum asset turnover ratios are 0.205 and 0.130, respectively, and 2% standard deviation from the mean. Net Profit Margin maximum and minimum ratios are 0.372 and -0.236, respectively, with a 14.8% standard deviation from the mean. Earnings per share maximum and minimum ratios are 0.75 and -0.2133, respectively, with a 23.6% standard deviation from the mean. Sales Growth maximum and minimum ratios are 2387 and -18 respectively with a 908% standard deviation from the mean.

Table 1. Descriptive Statistics

	Return on Assets	Return on Equity	Asset's turnover	Net Profit Margin	Earnings per share	Sales Growth	Total Debt -to- Total Assets	Total Debt -to- Total equity
Mean	0.00649	0.01159	0.155	0.096	0.29647	487	0.516	1.35
Standard Error	0.00285	0.00663	0.005	0.035	0.05571	214	0.015	0.08
Median	0.01024	0.01509	0.148	0.106	0.25466	15	0.494	1.27
Standard. D	0.01209	0.02815	0.02	0.148	0.23634	908	0.065	0.33
Sample Variance	0.00015	0.00079	0.001	0.022	0.05586	82484	0.004	0.11
Kurtosis	4.187	1.08599	1.617	0.533	0.19220	0	1.180	-0.60
Skewness	-1.721	-0.6804	1.303	-0.388	-0.0569	2	1.309	0.77
Range	0.0505	0.11497	0.075	0.607	0.96328	2405	0.2337	1.01
Minimum	-0.0305	-0.058	0.130	-0.236	-0.2133	-18	0.4413	0.98
Maximum	0.0201	0.05713	0.205	0.372	0.75	2387	0.6751	1.99

Source: Authors' construction

3.2 Correlations Matrix

Table 2 shows the relationship between various financial leverage indicators measured by the Total Debt to total assets ratio and the Total Debt to total equity, and financial performance indicators proxied by return on assets, return on equity, assets turnover, net profit margin, earnings per share, and sales growth. Most of the correlations between financial leverage indicators and financial performance show an insignificant relationship between financial leverage and the Companies' financial performance when we compare the Total Debt to total assets ratio with most of the financial performance indicators, but when comparing the Total Debt to total equity ratio with most of the financial performance indicators, the results show that there is a positive relationship between financial leverage and the financial performance of companies measured only by Assets turnover and Sales Growth, Where the correlation coefficient is equal to 0.719 and 0.658, respectively.

Table 2. Correlations Matrix

		Return on Assets	Return on Equity	Assets turnover	Net Profit. Margin	Earnings per share	Sales Growth	Total Debt - to- Total Assets	Total Debt - to- Total equity
ROA	Pearson Correlation	1	.503*	.380	.537*	.403	.344	.050	.173
	Sig. (2-tailed)		.033	.120	.022	.097	.162	.844	.493
ROE	Pearson Correlation	.503*	1	.332	-.016	-.124	.112	.182	.309
	Sig. (2-tailed)	.033		.178	.950	.624	.658	.469	.212
Assets turnover	Pearson Correlation	.380	.332	1	.201	.230	.437	.271	.719**
	Sig. (2-tailed)	.120	.178		.423	.359	.070	.276	.001
Net Profit Margin	Pearson Correlation	.537*	-.016	.201	1	.553*	.256	.348	.225
	Sig. (2-tailed)	.022	.950	.423		.017	.305	.157	.369
Earnings per share	Pearson Correlation	.403	-.124	.230	.553*	1	.565*	-.134	.272
	Sig. (2-tailed)	.097	.624	.359	.017		.014	.597	.274
Sales Growth	Pearson Correlation	.344	.112	.437	.256	.565*	1	-.037	.658**
	Sig. (2-tailed)	.162	.658	.070	.305	.014		.884	.003
Total Debt -to- Total Assets	Pearson Correlation	.050	.182	.271	.348	-.134	-.037	1	.573*
	Sig. (2-tailed)	.844	.469	.276	.157	.597	.884		.013
Total Debt -to- Total equity	Pearson Correlation	.173	.309	.719**	.225	.272	.658**	.573*	1
	Sig. (2-tailed)	.493	.212	.001	.369	.274	.003	.013	

Source: Authors' construction

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

3.3 Regression Analysis

Table 3 shows the regression results with return on assets as the dependent variable and financial leverage indicators measured by the Total Debt-to-Total Assets ratio and the Total Debt-to-Total Equity as an independent variable. It is clear from the results that Adjusted R Square is very weak, as its value equals -9.5%; this means that the explanatory power of the financial leverage indicators is very weak. The results also indicate that the Debt-to-Asset's coefficient is insignificant and equal to -0.014 with t-statistics equal to 0.817, and the Debt-to-Equity coefficient is insignificant and equal to -0.008 with a t-statistics equal 0.499. The results also show that the value of the F-statistic is 0.259 with a significance value equal to 0.775 which is higher than the 5% significance level thus indicating the model is insignificant. These results indicate that there is no statistical effect of financial leverage on return on assets.

The absence of a statistically significant effect of financial leverage on Return on Assets (ROA) in our analysis, further highlighted by an extremely low Adjusted R-squared, indicates that leverage, as measured, does not meaningfully explain the variation in asset profitability for EGX30-listed Egyptian firms. This finding aligns with some prior research, notably Jaleel and Olayiwola (2017) in Nigeria, contrasting with a more common negative relationship observed in other emerging markets. This insignificance in Egypt can be attributed to several factors: a potentially high cost of debt that negates its benefits, inefficiencies in converting debt-financed assets into profits,

and the unique structure of the Egyptian debt market reliant on bank financing and trade credit rather than developed bond markets. These local specificities mean that the traditional impact of leverage on asset returns may not manifest as seen elsewhere.

Table 3. Regression results of the financial leverage indicators and return on assets

Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	.000	2	.000	.259	.775	.183	-.095
Residual	.002	15	.000				
Total	.002	17					
Coefficients							
	Unstandardized Coefficients	Standardized Coefficients		t-stat			P-value
	B	Std. Error	Beta				
(Constant)	.003	.025		.118			.908
Debt. To.Assets	-.014	.058	-.073	-.236			.817
Debt. To.Equity	.008	.011	.215	.693			.499

Source: Authors' construction

The regression analysis detailed in Table4, using return on equity as the dependent variable and financial leverage (Total Debt-to-Total Assets and Total Debt-to-total equity) as independent variables, yielded largely insignificant results. The Adjusted R-squared value of -2.5% points to a very weak ability of the financial leverage indicators to explain changes in return on equity. Neither the Debt-to-Assets coefficient (estimated at -0.004 with a t-statistic of 0.979) nor the Debt-to-Equity coefficient (0.026 with a t-statistic of 0.326) reached statistical significance. Moreover, the F-statistic of 0.791 (p-value = 0.471) is above the 5% level, confirming the model's overall insignificance. Consequently, these outcomes suggest that there is no statistical relationship between financial leverage and return on equity.

Our findings clearly show that financial leverage has no statistically significant effect on Return on Equity (ROE) for EGX30-listed Egyptian firms. This is further underscored by a very low Adjusted R-squared, confirming the weak explanatory power of leverage. While this may diverge from some theoretical expectations, it aligns with certain studies in specific emerging markets. This lack of a direct impact can be attributed to several local factors: a potentially high cost of debt in Egypt that could absorb any additional profits from borrowing; inefficient debt utilization where borrowed funds aren't effectively translated into higher returns; and crucially, the unique nature of the Egyptian debt market, which predominantly relies on bank loans and trade credit rather than developed bond markets. These local specificities likely override or modify the traditional impact of financial leverage on shareholder returns

Table 4. Regression results of the financial leverage indicators and the return on equity

Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	.001	2	.001	.791	.471	.309	-.025
Residual	.012	15	.001				
Total	.013	17					
Coefficients							
	Unstandardized Coefficients	Standardized Coefficients		t-stat			P-value
	B	Std. Error	Beta				
(Constant)	-.025	.056		-.454			.656
Debt. to.Assets	.004	.130	.008	.027			.979
Debt.to.Equity	.026	.026	.304	1.016			.326

Source: Authors' construction

. Table 5 displays the regression analysis of asset turnover (dependent variable) on financial leverage, measured by Total Debt-to-Total Assets and Total Debt-to-Total Equity. The model showed an Adjusted R-squared of 48.7%.

Specifically, the debt-to-assets coefficient (-0.064, $t = 0.339$) was insignificant, but the debt-to-equity coefficient (0.050, $t = 3.958$) proved significant. With an F-statistic of 9.054 and a p-value of 0.003 (below 5%), the model was overall significant. These results imply that only the debt-to-equity ratio, among the tested financial leverage measures, has a statistically significant influence on the asset turnover ratio.

The analysis for Asset Turnover reveals that the model, with a robust Adjusted R-squared of 48.7% and overall statistical significance, effectively explains variations in asset turnover. Specifically, the Debt-to-Equity ratio showed a significant positive influence, indicating that as firms increase debt relative to equity, they become more efficient at utilizing assets to generate sales, possibly driven by pressure to cover fixed obligations. Conversely, the Debt-to-Assets ratio's effect was insignificant. These findings highlight that, in the Egyptian market, the structure of financing relative to the firm's equity base is more critical in driving asset utilization efficiency than the overall debt level relative to total assets

Table 5. Regression results of the financial leverage indicators and the Assets turnover

Table 3. Regression Results of the financial leverage indicators and the Assets turnover							
Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	.004	2	.002	9.054	.003	.740	.487
Residual	.003	15	.000				
Total	.007	17					
Coefficients							
	Unstandardized Coefficients		Standardized Coefficients		t-stat	P-value	
	B	Std. Error	Beta				
(Constant)	.119	.028			4.322	.001	
Debt. To.Assets	-.064	.065	-.209		-.987	.339	
Debt. To.Equity	.050	.013	.839		3.958	.001	

Source: Authors' construction

Table 6 displays the regression analysis with Net Profit Margin as the dependent variable and financial leverage indicators (Total Debt-to-Total Assets ratio and Total Debt-to-Total Equity) as independent variables. The results clearly demonstrate very limited explanatory power, with an Adjusted R-squared of only 0.5%, indicating that these financial leverage measures account for little variance in Net Profit Margin. Furthermore, individual coefficient analyses revealed that both the Debt-to-Assets coefficient (0.745, t -statistic = 1.106) and the Debt-to-Equity coefficient (0.017, t -statistic = 0.129) were statistically insignificant. The overall model was also insignificant, as evidenced by an F-statistic of 1.044 and a p-value of 0.376, both of which are well above the 5% significance level. Collectively, these findings indicate that financial leverage has no statistically discernible effect on Net Profit Margin in this context.

The analysis for Net Profit Margin decisively shows no statistically significant effect from financial leverage. This outcome is underscored by the extremely low Adjusted R-squared, which indicates a negligible role for debt in explaining variations in Net Profit Margin. This consistent insignificance across profitability metrics (including ROA and ROE) suggests that for EGX30-listed Egyptian firms, the theoretical benefits or costs of leverage on profit generation are either nullified or outweighed by other factors. This could stem from the elevated cost of borrowing in Egypt, which may absorb any potential profit gains from debt. It might also reflect operational inefficiencies or a business environment where the strategic deployment of debt doesn't directly translate into higher net profits. The unique composition of Egyptian debt, heavily skewed towards bank loans and trade credit rather than bond markets, could also limit the expected direct impact on Net Profit Margin. These local specificities appear to dilute the conventional relationship between financial leverage and profitability, highlighting a complex interplay of capital structure, operational efficiency, and market dynamics in the Egyptian context

Table 6. Regression results of the financial leverage indicators and the Net Profit Margin

Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	.045	2	.023	1.044	.376	.350	.005
Residual	.325	15	.022				
Total	.370	17					
Coefficients							

	Unstandardized Coefficients	Standardized Coefficients		t-stat	P-value
	B	Std. Error	Beta		
(Constant)	-.311	.288		-1.083	.296
Debt. To. Assets	.745	.674	.326	1.106	.286
Debt. To. Equity	.017	.132	.038	.129	.899

Source: Author's construction

Table 7 shows the regression results with Earnings per share as the dependent variable and financial leverage indicators measured by the Total Debt-to-Total Assets ratio and the Total Debt-to-Total Equity as an independent variable. It is clear from the results that Adjusted R Square equals 9.2%, this means that the explanatory power of the financial leverage indicators is very weak. The results also indicate that the Debt-to-Assets coefficient is insignificant and equal to -1.575 with t-statistics equal to 147, and the Debt-to-Equity coefficient is insignificant and equal to 0.372 with t-statistics equal to 0.085. The results also show that the value of the F-statistic is 1.862 with a significance value equal to 0.190 which is higher than the 5% significance level thus indicating the model is insignificant. These results indicate that there is no statistical effect of financial leverage on Earnings per share.

The analysis for Earnings Per Share (EPS) consistently reveals no statistically significant effect from financial leverage. This outcome, despite a modest Adjusted R-squared, strongly indicates that debt, as measured, doesn't directly or discernibly impact shareholder-focused profitability for EGX30-listed Egyptian firms. This pervasive insignificance across profitability metrics suggests that theoretical benefits or costs of leverage are either nullified or outweighed by other factors specific to the Egyptian market. This includes the elevated cost of debt, which likely absorbs potential gains, and the unique composition of Egyptian debt (bank loans and trade credit vs. bond markets) which might not fund growth-oriented investments. Additionally, inefficiencies in capital allocation could mean borrowed funds don't translate into meaningful EPS boosts.

Table 7. Regression results of the financial leverage indicators and the Earnings per share

Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	.189	2	.094	1.862	.190	.446	.092
Residual	.761	15	.051				
Total	.950	17					
Coefficients							
	Unstandardized Coefficients	Standardized Coefficients		t-stat	P-value		
	B	Std. Error	Beta				
(Constant)	.606	.440		1.378	.188		
Debt. To. Assets	-1.575	1.031	-.431	-1.528	.147		
Debt. To. Equity	.372	.202	.519	1.841	.085		

Source: Author's construction

Table 8 presents the regression analysis where sales growth served as the dependent variable, and financial leverage was assessed using both the Total Debt-to-Total Assets ratio and the Total Debt-to-Total Equity ratio as independent variables. The model demonstrated a strong explanatory power, with an Adjusted R-squared of 64.7%. Both financial leverage indicators exhibited statistical significance: the debt-to-assets coefficient was significantly negative (-8653.3, t-statistic = 0.003), while the debt-to-equity coefficient was significantly positive (2783.436, t-statistic = 0.0). The overall model's significance is further confirmed by an F-statistic of 16.6 and a p-value of 0.0, which is well below the 5% threshold. These findings collectively indicate a statistically significant impact of the financial leverage indicators (Total Debt-to-Total Assets and Total Debt-to-Total Equity) on sales growth.

The analysis for Sales Growth reveals a statistically significant and strong relationship with financial leverage, where the Debt-to-Assets ratio shows a significant negative influence, while the Debt-to-Equity ratio has a significant positive impact. This contrasting effect highlights a key dynamic in the Egyptian market: a higher overall debt burden relative to a firm's total assets can constrain sales expansion, likely due to increased financial

constraints. Conversely, strategically leveraging equity with debt effectively stimulates sales growth, suggesting an optimal capital structure in which borrowed funds are efficiently deployed for market expansion, possibly driven by pressure to generate higher returns on an amplified equity base. These findings emphasize that the specific composition of financial leverage, particularly its relationship to the equity base, is paramount for sales growth in Egyptian firms, more so than the aggregate debt level alone. The apparent difference in results between the D/A and D/E leverage measures can be explained by their different meanings. The D/A measures the total amount of debt relative to a company's total resources. Our study suggests that there is a sales growth drag due to both the company's overall debt burden (as indicated by a high D/A ratio) and the resulting interest costs. On the other hand, Debt-to-Equity (D/E) focuses on the relationship between debt and the owners' capital. In the Egyptian market, many firms operate with a small equity base. In this case, even a small increase in borrowing significantly inflates the D/E ratio. The positive link between D/E and sales growth suggests that these highly geared firms are 'forced' to push their sales harder to generate enough cash to meet their fixed bank obligations. Therefore, D/A reflects the cost burden, while D/E reflects the operational pressure to grow sales to survive.

Table 8. Regression results of the financial leverage indicators and the Sales Growth

Model	Sum of Squares	df	Mean Square	F	Sig.	R	Adjusted R Square
Regression	9649080	2	4824540	16.6	.000	.830	.647
Residual	4373241	15	291549				
Total	14022322	17					
Coefficients							
	Unstandardized Coefficients	Standardized Coefficients		t-stat	P-value		
	B	Std. Error	Beta				
(Constant)	1191.125	1054.927		1.129	.277		
Debt. To.Assets	-8653.322	2470.854	-.616	-3.502	.003		
Debt. To.Equity	2783.436	484.315	1.011	5.747	.000		

Source: Authors' construction

4. Conclusion

This study examined the relationship between financial leverage and corporate performance among 19 non-financial companies listed on Egypt's EGX30 index from 2019 to 2023. Using two key leverage metrics - the Total Debt -to-assets ratio and debt-to-equity ratio - we analyzed their impact on multiple performance indicators including ROA, ROE, EPS, asset turnover, sales growth, and net profit margin.

Our analysis revealed several important findings. Financial leverage demonstrated a statistically significant positive relationship with sales growth, suggesting that strategic use of debt financing can effectively fund business expansion and operational improvements. We also observed a significant connection between the debt-to-equity ratio and asset turnover, indicating that leveraged firms may achieve better utilization of their asset base. However, the study found no significant correlation between leverage measures and other profitability indicators like ROA, ROE, EPS or net profit margin. This nuanced finding implies that while debt can drive top-line growth, its benefits may be offset by associated interest costs and potential operational inefficiencies. To explain the lack of a significant impact of financial leverage on profitability metrics such as ROA, ROE, and EPS, it is crucial to consider the interest rate environment in Egypt during the study period from 2019 to 2023. According to Central Bank of Egypt data, lending rates were highly volatile, starting at 16.25% in early 2019, then decreasing during the pandemic, before rising sharply from 9.75% in March 2022 to 19.75% by August 2023. This rapid increase in borrowing costs significantly increased firms' financial burdens, consuming the operational gains from sales growth and asset turnover. Consequently, this explains the gap between the expansion in business activity and the lack of improvement in net profitability within the Egyptian market context.

The significant positive link between debt-to-equity and both sales growth and asset turnover aligns with aspects of Agency Theory, suggesting that utilizing financial leverage drives managerial efficiency and expansion, directly challenging the Modigliani-Miller theorem's irrelevance premise. However, the absence of a significant correlation with core profitability measures (ROA, ROE, EPS, Net Profit Margin), despite top-line growth, implies that while

financial leverage fuels expansion, its associated high costs in Egypt and reliance on bank/trade credit likely erode net income benefits, creating a disconnect between growth and bottom-line profitability.

These results carry important implications for various stakeholders. For corporate managers, they highlight the need for careful capital structure optimization - debt can be a useful growth lever but requires prudent management to avoid eroding profitability. Where the major positive effect that financial leverage has on asset turnover & sales growth is an affirmation of Agency Theory's hypothesis that debt has a disciplinary effect on the way managers of Egyptian firms utilize their assets efficiently in meeting the strict repayment schedules imposed by banks. Yet, the lack of a statistically significant impact on profitability (ROA, ROE) is due to the 'trade-off' postulated by Modigliani & Miller; since banks in Egypt charge very high rates of intermediate debt, the cost of that debt will most likely offset the tax-shield & operational benefits before achieving any gain in sales.

Investors may find these insights valuable when assessing companies' growth potential relative to their financial risk profiles. From a policy perspective, the findings underscore the importance of transparency in financial markets to enable better risk assessment by all market participants.

Several limitations should be acknowledged. The relatively small sample size of 19 firms and five-year study period may affect the generalizability of results. Future research could build on this work by examining larger datasets over longer time horizons, incorporating additional performance metrics, and potentially conducting sector-specific analyses to uncover more granular insights.

In conclusion, this study contributes to our understanding of capital structure dynamics in emerging markets like Egypt. It demonstrates that financial leverage can be a double-edged sword - capable of driving sales growth but requiring careful management to translate that growth into improved profitability. These findings open several avenues for future research into how macroeconomic conditions and industry-specific factors may moderate the relationship between leverage and firm performance.

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