The Impact of Capital Structure on Stock Returns of the Egyptian Banks: The Mediating Role of Bank's Financial Performance

By

Dr. Ghada Nabile Ahmed Abd-Elmaged

Lecturer, Business Administration Department

Faculty of Commerce, Tanta University

ghada_nabeel@commerce.tanta.edu.eg

Scientific Journal for Financial and Commercial Studies and Research (SJFCSR)

Faculty of Commerce – Damietta University

Vol.6, No.2, Part 1., July 2025

APA Citation

Abd-Elmaged, G. N. A. (2025). The Impact of Capital Structure on Stock Returns of the Egyptian Banks: The Mediating Role of Bank's Financial Performance, ***Scientific Journal for Financial and Commercial Studies and Research***, Faculty of Commerce, Damietta University, 6(2)1, 29-54.

Website: https://cfdj.journals.ekb.eg/

The Impact of Capital Structure on Stock Returns of the Egyptian Banks: The Mediating Role of Bank's Financial Performance

Dr. Ghada Nabile Ahmed Abd-Elmaged

Abstract:

The study aims to examine the impact of capital structure on stock returns, with the mediating role of financial performance of the banking sector in Egypt, which is the one of the largest industry in Egypt. The investigation is kept limited to banking industry since different industries have different financing requirements. The study used annual data from a sample of 8 Egyptian banks registered in the EGX100 index between 2010 and 2022. The research methodology was built upon quantitative approach by collecting panel data (secondary data) for the assigned period to test the research hypotheses. Structural Equation Modeling (SEM) was used as a statistical tool to analyze the collected data. Results revealed that capital structure has a positive direct impact on stock returns. Also, capital structure has a negative indirect impact on stock returns through the mediator variable which is referred to as financial performance. Thus, financial performance partially mediates this effect. The study proposes for future studies the impact of capital structure on stock returns through other mediating factors.

Keywords: capital structure, stock returns, financial performance, Mediating role, EGX100 index, Panel data, Structural Equation Modeling (SEM), Egypt.

1. Introduction

Capital structure refers to the way that how firms finance its right hand side of the balance sheet. Most firms level both side of balance sheet with optimal level of debt and equity mix to maximize the overall value of the firm (DeAngelo, DeAngelo & Skinner, 2004). Firms have different sources of funds; borrowing, retaining profits or issuing shares. The right hand of the balance sheet is related to the capital structure by deciding the way of combining between funds sources. Capital structure refers to the mixture of debt and equity and other sources of funds that firms' managers use to finance firms' activities. Managers of firms undertake a trade-off between risk and return when deciding on a certain capital structure mix. Firms that rely heavily on debt to fund their operations have a higher risk of going bankrupt, which drives up demand for a higher rate of return from stockholders (Brigham & Ehrardt, 2001). In countries where debt interest

is tax deductible, firms prefer all debt to finance their capital structure. A highly levered firm is the firm which uses high amount of debt in its capital structure. In contrast, unlevered firm is the firm which does not use debt in its capital structure at all (Lasher, 2008).

According to finance theory, the capital structure does affects firm's cost of capital and consequently financial performance. Cost of capital serves as the benchmark for firm's capital budgeting decisions therefore the optimal mix of debt and equity is imperative to outperform. Shareholders' wealth maximization concept also dictates that institutions choose the optimal mix of debt and equity financing that best serves the ultimate objective of the firm. Capital structure theory in response suggests that institutions establish what is often referred to as a target debt ratio, which is based on various trades-offs between the costs and benefits of debt versus equity (Yegon et al., 2014).

Practical decision makers consider that equity is the most expensive form of raising capital, because shareholders should be compensated by paying them return in the form of dividends. On the other hand, debt is the cheaper form of financing because of tax deductible. However, there is no fixed proportion of leverage have to be used in the firm's capital structure, it differs from firm to another according to the kind of firm, sector, country, size, and some other variables. Moreover, the decision of choosing certain proportion of combination is one of the most difficult financial decisions because this proportion will determine the overall firm's value. However, the value of the firm should be maximized so this proportion should achieve this goal (Harris & Raviv, 1991).

According to Al-Manaseer (2020), the stock return shows the gain or loss that happens to a stock over a specific period of time. It is considered an important basis and motive in the investment process, as investors consider it a key determinant in deciding between alternative investment options. Researchers classified stock returns into two primary types: actual returns and expected returns. The expected return is the return an investor anticipates to earn in the future. It is always unpredictable, while the actual return is the return an investor actually receives in reality. The difference between both is what creates the risk of uncertainty. Therefore, investors seeking a high return must accept the high risk associated with it, and vice versa (Ramlah, 2021). According to previous study results Al Salamat & Mustafa (2016) and Ali (2017), Stock returns are directly impacted by the capital structure.

Financial performance of a firm is a subjective measure of how well a firm can use its' assets to generate revenues. Erasmus (2008) observed that financial performance measures, such as profitability and liquidity among others, gave stakeholders a useful tool for assessing a firm's past financial performance and its current position. Brigham & Gapenski (1996) argued that in theory, the Modigliani and Miller model was valid. However, in practice, bankruptcy costs did exist and that these costs were directly proportional to the debt levels in a firm. This conclusion implied a direct relationship between capital structure and the financial performance of a firm.

The firms' financial performance is directly related to changes in share prices. Efficient management practices enhance share value (Hass, 2002). The dynamic Pecking order theory prevails an increase in profit depends on increased equity financing and causes increase in stock returns. On the other hand, the increase in debt decreases stock price and hence stock returns (Myers, 1984). Thus, the capital structure has an indirect impact on stock returns through financial performance.

This paper, by using dynamic panel data techniques, investigates potential direct and indirect impact of capital structure and its financial performance on stock returns of the banking sector in Egypt, which is the one of the largest industry in Egypt. The investigation is kept limited to banking industry since different industries have different financing requirements. Previous researchers, including Bradley, Almazan & Manzano (2005), reported that institutions in a given industry develop similar capital structures. Exogenous variables appear to force institutions in the same industry in similar fashion, thus leading to the existence of an industry specific capital structure.

2. Research Problem:

Capital structure is an important financial topic and a heavily researched element of business and investment studies. Its significance comes from the correlation between an individual firm's ability to meet its objectives and its capital structure, especially regarding its responsibility to stakeholders. However, financial managers still struggle to understand the effect of capital structure on stock returns. The main focus here will be to answer the following question:

"What is the impact of capital structure on stock returns through the financial performance in the Egyptian banking sector?"

3. Research Objectives

The main objective of this study is to determine direct and indirect impact of capital structure and its financial performance on stock returns of the banking sector in Egypt.

4. Literature Review

4.1 Theoretical Literature Review

The study anchored its variables on two theories namely: (i) Agency Theory which is linked with the capital structure and firm performance, (ii) Pecking-Order Theory which is linked with the capital structure and stock return.

4.1.1 Agency Theory

In 1976, Jensen & Meckling introduced the concept of agency costs as a driver to explain the capital structure. The authors state in their paper that if the principal (i.e. manager) and the agent (i.e. shareholders) maximize their utility, there are costs that are going to arise since their interests are not necessarily aligned. Shareholders know that managers will act in favor of their private benefit even if this can affect the firm's performance. Shareholders also know that they cannot verify and measure managers' complete performance. This arises as a result of ownership separation. The implication is that if a firm needs financing, debt is better than equity since by issuing equity the private benefits are carried by new shareholders but with debt the cost of these benefits stays internalized (Myers, 2003). Additionally, with debt there will be a third party (creditors) that will have power and that can help decrease the agents' egotistical actions and potentially improve firm performance.

4.1.2 Pecking-Order Theory

Myers & Majluf (1984) assume perfect markets except for information asymmetry. Information asymmetry means that managers know more about their company's risk, operations, activity and the true value of the shares more than their external investors do (Brealey, Myers & Allen, 2011). Asymmetric information has an impact on a company's financing decision. If a company decides to issue equity, on one hand, it could be considered as good news for investors and a sign of growth opportunities with positive NPVs. On the other hand, it could be bad news and shows that managers are trying to issue

overvalued shares (Myers, 2003). The Pecking Order suggests that firms start by internal financing using their retained earnings; the external financing by issuing debt and the last option is the new issue of equity. In cases where external financing is needed (the firm does not have enough internal funds to finance its own project) debt is preferred over equity. The reason for this is that according to this theory issuing equity can give bad signals such as managers' pessimism to the investors, which will consequently cause the stock price to decrease (Brealey, Myers & Allen, 2011).

The pecking order theory assumes that high-growth companies, which often have a large financing need, end up with a high level of indebtedness due to management's reluctance to increase capital through new issues (Frank & Goyal, 2003). The choice of financing that is made is also affected by whether companies show a financial deficit or surplus. If you show a surplus, you are expected to use retained earnings to reduce long-term liabilities, and if you show a deficit, you are expected to add long-term debt in the first stage (Myers, 1984).

4.2 Empirical Literature Review and hypotheses development

4.2.1 The effect of capital structure on stock returns

Capital structure refers to the mix of long-term sources of funds. The capital structure always remains the topic of interest to researcher, academician, practitioners and corporate world. In order to find the impact of capital structure on the profitability of a firm, many studies have been carried out in this field. As stated by Bergrren & Bergqvist (2014) examine the relationship between capital structure and stock return by taking 50 Swedish companies over the period (2009-2013). The results show a positive effect of financial leverage, growth, and liquidity on stock return. However, there is a negative effect of profitability on stock return. In addition, the size of firm has a significant effect on financial leverage and stock return.

Njoki (2014) examines the relationship between capital structure and stock return for a sample of 50 companies listed in the Nairobi Securities Exchange over the period (2011-2013). The results show a positive effect of financial leverage on stock return. The size of firm and profitability have no significant effect on stock return. Finally, there has a positive effect of operating leverage on stock return. In a study that took place in Jordan by Allozi & Obeidat (2016)

investigated the data of 65 manufacturing companies listed on the Amman Stock Exchange over a ten-year period, from 2001 to 2011, in order to investigate the relationship between leverage, profitability, and stock return. They employed the debt-to-equity ratio (DER) and interest coverage ratio (ICR) as proxies for leverage, and the gross profit margin (GPM), net profit margin (NPM), return on equity (ROE), return on assets (ROA) and earnings per share (EPS) as proxies for profitability. The findings showed that, with the exception of the net profit margin, all profitability ratios had a significant link with stock return. In contrast, none of the leverage measures had a significant relationship with stock return.

AlZoubi, Bashatweh & Abu Khader(2020) investigated the impact of capital structure on the stock returns of 60 Jordanian industrial companies listed between 2014 and 2018 on the Amman Stock Exchange. They concluded that leverage, short-term debt to equity, and long-term debt to equity all positively impact stock returns. This is in line with what Al-Manaseer (2020) determined following an analysis of a relationship between the capital structure and stock return of 13 commercial banks in Jordan that were listed between 2009 and 2018 on the Amman Stock Exchange. The results showed that stock returns are positively impacted by capital structure, growth, and profitability. So, both studies took place in Jordan and covered almost the same time frame, and the results remained consistent even though AlZoubi, Bashatweh & Abu Khader (2020) study was on industrial firms and Al-Manaseer (2020) study was on commercial banks. However, additional research may yield different results.

Moreover, a study tested the effects of leverage as measured by debt-to-equity ratio, profitability as measured by return on assets and liquidity as measured by current ratio on the stock return. The study sample was twenty firms listed in the food and beverage sub-sector on the Indonesia Stock Exchange during 2016-2020; profitability showed a positive impact on the stock return, while all other variables, including leverage, showed a negative and insignificant impact on the stock return (Sibarani .et al ,2022). Based on the previous studies that were illustrated, the researcher can develop the first hypothesis of the current research, as follows:

H1: There is a statistically significant positive direct impact of the capital structure on stock returns.

4.2.2 The effect of capital structure on financial performance

Capital structure and performance of firms have recently emerged as study topics in emerging and transitional countries. Previous research has investigated the relation between the capital structure as an independent variable and the firm performance as dependent variable (Shaker & Hassan, 2015).

In Ghana and South Africa, examining a sample of small and medium-sized firms revealed both long-term and short-term debts have a negative relationship to return on assets (ROA) (Abor, 2007). Furthermore, studying the relationship between firm performance and capital structure in 167 Jordanian companies over a fifteen-year period (1989-2003). The results revealed that there is an inverse relationship between capital structure and firm performance (Zeitun & Tian, 2007).

Ahmed & Wang (2013) investigated the influence of capital structure on performance from 2004 to 2009 in Pakistan. The results revealed a negative relationship between debt ratios and return on assets. The researchers also observed a negative relationship between the variables total debt ratio, long-term debt ratio, and Tobin's Q. Furthermore, there is a positive relationship between Short-term debt and Tobin's Q but insignificant relationship. Dawar (2014) examined the influence of capital structure on financial performance in Indian enterprises and discovered that it had a negative impact on financial performance measured by return on assets and return on equity.

However, a different result was obtained by some other researches, one of which is that conducted by Adesina, Nwidobie & Adesina (2015) investigated the impact of post-consolidation of the capital structure on the financial performance of 10 banks in Nigeria. The findings indicate that capital structure has a positive and significant relationship with the profit before tax of the banks listed on the Nigerian stock exchange. Birru (2016) investigated the effects of the debt-to-equity ratio, loan to deposit and bank size on ROA and ROE. The results show that ROA has a negative and significant correlation with the capital structure variable.

The same result was obtained by Le & Phan (2017) investigated the effect that debt ratios have on companies' financial performances in Vietnam, a developing country. The findings show that debt ratios have an inverse correlation with financial performance. Also, Ramli, Latan & Solovida (2019) investigated the mediation effect of leverage in Malaysia and Indonesia and how

it affects firm performance. The findings indicate that the correlation of firm leverage differs with regions or economies. There was a significant positive relationship between firm leverage and financial performance in Malaysia but not in Indonesia. The study is thus important in providing more information to understand the relationship between firm leverage and financial performance in different economic environments. Based on the previous studies that were illustrated, the researcher can develop the second hypothesis of the current research, as follows:

H2: There is a statistically significant negative direct impact of capital structure on financial performance.

4.2.3 The effect of financial performance on stock returns

Financial performance is a measure of a firm's overall financial health over a given period of time. Financial performance is a tool to measure the achievements of the company through its capital structure (Nurlaily, et al., 2013). Empirical study relating to the influence of financial performance on stock returns has been done a lot yet it still offers contradicting findings.

Ngunjiri(2016) Investigate the relationship between financial performance and stock returns for firms registered on the Nairobi Securities Exchange. The study spanned five years, from 2011 to 2015. The study concluded that there was a direct relationship between financial performance and stock returns hence an increase in financial performance increases stock returns of firms listed at the Nairobi Securities Exchange.

Endri et al. (2019) investigated the effects of financial performance on stock returns in the Food and Beverage sector companies listed on the Indonesia Stock Exchange during the period 2013-2017. The study concluded that return on assets (ROA) and earnings per share (EPS) variables have a positive effect on stock returns, while the debt-to-equity ratio (DER) variable has the opposite effect. The current ratio (CR) has no significant effect the stock returns.

However, a different result was obtained by Jun (2019) the impact of financial performance on stock return in china's High-Tech industry from 2013 to 2017. The study concluded that there was a positive relationship between return on equity, operating income growth rate, CSI300 index's return and stock return. There was a negative relationship between return on assets, net asset growth rate, total asset turnover rate and stock return. There was an insignificant relationship current ratio, fixed-asset turnover ratio and stock return. The study

looked at how financial performance affected stock returns in machinery and heavy equipment sub-sector companies listed on the Indonesia Stock Exchange (IDX) between 2014 and 2018. The study revealed that return on assets (ROA) has no significant positive effect on stock returns (Razak et al., 2020).

In a study that took place in Indonesia by Arrazy & Daryanto(2021) to test the effect of financial performance on stock returns using data from food and beverage companies listed on the Indonesia Stock Exchange from 2016 to 2020. The study concluded that the financial performance factors, namely profitability measured by return on equity (ROE) and leverage measured by debt-to-equity ratio (DER) have a significant impact on stock returns of food and beverage companies listed on Indonesia stock exchange. On the other hand, liquidity measured by current ratio (CR) and efficiency measured by inventory turnover have no significant impact on stock returns.

Also, Lasa & Mustafa (2023) investigated the effect of financial performance on stock returns in consumer goods sector companies listed on the Indonesia stock exchange for the 2016-2021 periods. The results of the study have shown that return on assets has a positive effect on stock returns; debt to assets ratio has a negative effect on stock returns, while current ratio, total asset turnover, and size have no effect on stock returns.

Suryaningprang et al. (2024) examine the impact of financial performance on stock returns of non- banking companies in Indonesia for 2015–2023 periods. The study concluded that the overall economic value added (EVA) did not have any impact on the stock returns. However, the current ratio (CR), return on assets (ROA), return on equity (ROE) and the debt-to-equity ratio (DER) were all influential factors.

In addition to the above, another study in Indonesia to investigate the impact of financial performance on bank stock returns. The study concluded that the independent variables, non-performing loan (NPL) and loan deposit ratio (LDR) have a significant impact on the stock returns of Banks listed on the Indonesia Stock Exchange from 2007 to 2021. Conversely, the variables of return on assets (ROA) and net interest margin (NIM) do not exert any influence on the stock returns (Chiang, Sembel & Malau, 2024). Based on the previous studies that were illustrated, the researcher can develop the third hypothesis of the current research, as follows:

H3 : There is a statistically significant positive direct impact of financial performance on stock returns.

4.2.4 The mediating role of financial performance between capital structure and stock returns

Prior studies have discussed the relationship between capital structure and stock returns. Some scholars have emphasized the direct impact of capital structure on stock returns (Bergrren & Bergqvist , 2014 ; Njoki ,2014 ; AlZoubi, Bashatweh & Abu Khader, 2020 ; Al-Manaseer, 2020). Alternatively, some scholars have argued that capital structure does not always impact stock returns directly (Allozi & Obeidat, 2016 ; Sibarani .et al ,2022) . In this study, I proposed that financial performance is an essential conduit that plays a mediating role between capital structure and stock returns. While a negative direct impact of capital structure on financial performance have been established in previous research (Zeitun & Tian, 2007; Birru, 2016 ; Le & Phan , 2017) . Also, a positive direct impact of financial performance on stock returns have been established in previous research (Ngunjiri , 2016 ; Razak et al. , 2020 ; Lasa & Mustafa , 2023 ; Suryaningprang et al., 2024) . Thus, this study proposes that financial performance might act a mediating mechanism through which the capital structure impacts the stock returns of Egyptian banks, the mediating role of financial performance in this relationship is a relatively unexplored area. Based on this empirical foundation, the researcher can develop the fourth hypothesis of the current research, as follows:

H4: There is a statistically significant negative indirect impact of the capital structure on stock returns through financial performance.

The study's proposed research framework, incorporating these relationships and control variables, is depicted in Figure1

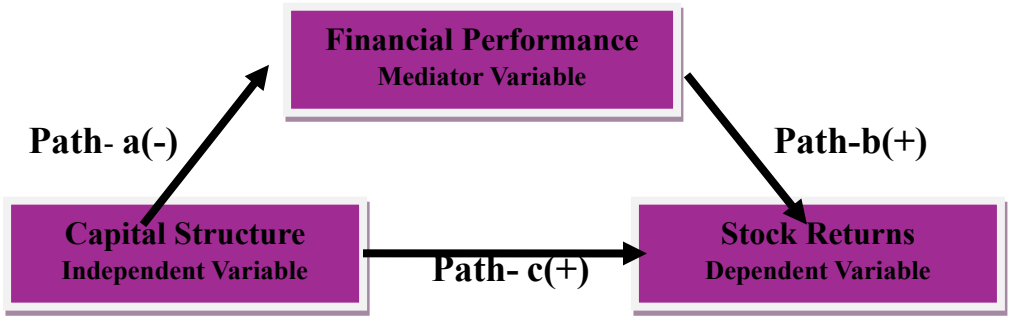

Figure 1. Research framework.

Table (1): Types of Mediation Effect

Types of Mediation	Mediation Effects	Description
Complementary	Partial Mediation	- The sign of path (a x b) and path C at the same direction. In addition, both paths are significant.
Competitive		- The sign of path (a x b) and path C in opposite directions. In addition, both paths are significant.
Indirect - Only	Full Mediation	- Path (a x b) is significant but path c is not significant.
Direct - Only	Non-Mediation	- Path (a x b) is not significant but path c is significant
No - Effect		- Both paths are not significant

Source: Zhao, Lynch & Chen, 2010

5. Methodology

5.1 Sample and Data Collection

According to the Central Bank of Egypt (CBE), the Egyptian banking system consists of 38 banks categorized as commercial, noncommercial public and private sector. Hence, the Egyptian banks are the targeted research population. Yet, all banks that had been publicly traded and were listed in the EGX100 index in 2023 had to be included in the sample to meet the eligibility requirements. The initial sample included 8 banks. These included Commercial International Bank, Egyptian Gulf Bank, QNB Alahli, Housing & Development Bank, Al Baraka Bank Egypt, Credit Agricole Egypt , Faisal Islamic Bank and Abu Dhabi Islamic Bank . The EGX100 tracks the performance of the top 100 companies in terms of Liquidity and activity, which includes the constituents of EGX30 and the constituents of EGX70.

The data covered 13 years from 2010 to 2022. The choice of 2010 as the starting point is associated with the establishment of the EGX 100 index committee in August 2009. Data that will be needed for this study is secondary data and it will be collected from Egyptian Stock Exchange Website (www.egx.com.eg) and Egypt for Information Dissemination (EGID) that is the licensed distributor for the Egyptian Exchange's listed firms' information.

5.2 The Study Variables

5.2.1 Capital Structure

The mixture of a variety of long-term sources of funds and equity shares including reserves and surpluses of an enterprise is called capital structure (Pratheepkanth, 2011). Capital structure is an independent variable and measured by Long term Debt to Capital Ratio (LDC) to assess its impact on stock return and financial performance (Mburu , 2016).

5.2.2 Stock returns

According to Nasrullah et al. (2023), stock returns refer to the future profits that investors acquire based on the amount of funds they have invested. In the realm of stocks, investors accrue profits through two avenues: dividends and changes in the share price of the company, known as capital gains. Dividends represent the distribution of profits generated by the company, which is allocated to investors.

Stock Returns is the dependent variable and calculated by taking the natural logarithm of the closing price in the last trading day plus the dividend paid during the year divided by the closing price in the first trading day for the same year (Al Salamat & Mustafa, 2016). To calculate stock returns I take natural log of returns to bring them in random form, because the random data give reliable results.

5.2.3 Financial Performance

Financial performance is a measure of a firm's overall financial health over a given period of time. Financial performance reveals the ability of the firm to create profit in excess of actual uses from assets. Financial performance is a tool to measure the achievements of the company through its capital structure (Ngunjiri , 2016).

In this study, financial performance is the mediating variable and measured using the most used financial performance indicator such as return on assets (ROA). According to Nurfauziah (2019) ROA is a measure of a company's ability to generate profits using all its assets. High ROA means that the company is more efficient in utilizing its assets to make profit.

Table (2): Presents Variables Description and Data Sources

Class	Variable Name	Description	Data Source
Dependent	Capital Structure	LDC=long term debt / (shareholders equity + long term debt)	Banks' Annual Reports
Mediator	Financial Performance	ROA = Net Income/ Total Assets	
Independent	Stock Returns	$\text{Ln } \frac{P_{i,t} + D_{i,t}}{P_{i,t-1}}$	Egyptian Stock Exchange Reports

5.3 Research Design

The study aims to investigate the influence of capital structure on the stock returns of Egyptian banks and explore the mediating role of financial performance achieve these objectives, it paper relies on a multifaceted analytical approach that combines descriptive analysis, Panel Data Unit-Root Tests, and structural equation modeling (SEM). Descriptive analysis provides a comprehensive overview of the data, including measures of central tendency and dispersion, helping to identify patterns and trends in the variables over the study period. This is complemented by correlation analysis, which assesses the strength and direction of associations between variables, offering preliminary insights into potential relationships.

Given the nature of data (cross-sectional and time-series), data was panel data. The panel data approach enhances the robustness of findings by accounting for both individual bank characteristics and temporal changes. Performing unit-root tests is vital in panel data analysis as it ensures the stationarity of the data series, which is essential for producing reliable results and avoiding spurious regressions. To investigate the mediating role of financial performance in the relationship between capital structure and stock returns, employ structural equation modeling (SEM). Structural equation modeling (SEM) is a statistical method that analyzes the connection between observed and latent variables. It explores linear causal relationships, considering measurement errors. SEM uses confirmatory factor analysis to estimate latent constructs, which are inferred common factor of other variables indicating model's causation or effect (Hoyle, 1995).

6. Data Analysis and Results:

6.1 Descriptive Statistics:

Table 3 illustrates the descriptive analysis for the research variables using mean, standard deviation, maximum and minimum. The mean value of LDC is found to be 0.123 with a standard deviation of 0.129 and minimum and maximum values of 0 and 0.481 respectively. In addition, the mean value of ROA is 0.018 with a standard deviation of 0.014 and minimum and maximum values of -0.060 and 0.046 respectively. Finally, the mean value of SR is 0.578 with a standard deviation of 0.551 and minimum and maximum values of -1.84 and 1.89 respectively.

Table (3): Descriptive Analysis of Research Variables

	Mean	Standard Deviation	Minimum	Maximum
LDC	0.123	0.129	0	0.481
ROA	0.018	0.014	-0.060	0.046
SR	0.578	0.551	-1.84	1.89

6.2 Panel Data Unit-Root Tests

The Levin–Lin–Chu test has as the null hypothesis that all the panels contain a unit root. The null hypothesis is accepted if the p-value exceeds the significance threshold of 0.05. Table 4 below shows that the probability value (p-value) is significantly lower than the statistical significance level of 0.05. This indicates that the data for the study variables are stationary and do not contain unit roots, meaning they are stable in the long run.

Table (4): Results of the Levin-Lin-Chu unit root test

Variables	*t* statistic	*p*-value
LDC	-1.75591	0.03
ROA	-2.1117	0.01
SR	-1.72761	0.04

6.3 The direct and indirect impacts of capital structure and its financial performance on stock returns

Table 5 illustrates Panel Data Structural Equation Modeling results for the direct and indirect impacts of capital structure and its financial performance on stock returns. It can be observed that there is a statistically significant positive direct impact of the capital structure on stock returns, with a value of 0.91 and a statistical significance of 0.014, which is significant at a level of less than 5%. However, there is a statistically significant negative direct impact of capital structure on financial performance, with a value of -0.028 and a statistical significance of 0.009, which is significant at a level of less than 1%. Additionally, there is a statistically significant positive direct impact of financial performance on stock returns, with a value of 20 and a statistical significance of 0.00, which is significant at a level of less than 1%. Consequently, there is a statistically significant negative indirect impact of the capital structure on stock returns through financial performance, with a value of -0.56 and a statistical significance of 0.017, which is significant at a level of less than 5%.

Thus, the researcher can accept the hypotheses of the direct and indirect impacts considering the signs of the coefficients. The type of mediation here is known as **'partial mediation'** because of that result which holds the significance of the direct impact even after the mediator is entered to the model (Awang, 2014). Additionally, direct and indirect impacts are of opposite signs, signaling competitive mediation. Summing up, capital structure has a positive direct impact on stock returns. Also, capital structure has a negative indirect impact on stock returns through the mediator variable which is referred to as financial performance.

Table (5): Panel Data Structural Equation Modeling results

Impact	Path	Coefficient	Z	P > |Z|
Direct	LDC → SR	0.91	2.47	0.014
	LDC → ROA	-0.028	-2.60	0.009
	ROA → SR	20	6.10	0.000
Indirect	LDC → ROA → SR	-0.56	-2.39	0.017

Table 6 shows the fit indicators of the Panel Data Structural Equation Modeling. By analyzing the results of this table, it can be observed that the model has an excellent fit based on the different metrics, with RMSEA, CFI, TLI and SRMR all indicating that the model is a good fit to the data, as follows:

Likelihood Ratio

p > chi2: A value of 0.000 indicates that the null hypothesis is rejected, which means that the current model is better than the basic model.

Population Error

- RMSEA: A value of 0.000 indicates the root means square error of approximation and is ideal as the value is preferably closer to zero.
- 90% CI, lower bound: A value of 0.000 indicates the lower bound of the 90% root mean square error of approximation.
- Upper bound: A value of 0.000 indicates the upper bound of the 90% interval of the root means square error of approximation.
- pclose: A value of 1.000 indicates the probability that the RMSEA is less than or equal to 0.05, indicating a good model fit.

Information Criteria

- AIC: A value of -572.276 indicates the Akaike information criterion and the lower the value, the better the model.
- BIC: A value of -553.765 indicates the Bayesian information criterion and the lower the value, the better the model.

Baseline Comparison

- CFI: A value of 1.000 indicates a comparative fit index, and a value of 1 indicates an excellent fit.
- TLI: A value of 1.000 indicates the Tucker Lewis Index, and a value of 1 indicates an excellent fit.

Size of residuals

- SRMR: A value of 0.000 indicates a standardized root mean square residual, and a value of zero indicates a perfect fit.
- CD: The value indicates the coefficient of determination, which is the proportion of variance explained by the model.

Table (6): PDSEM Fit Indices

Fit Statistic	Value
Likelihood Ratio	
Chi-Square χ2	39.076
p > Chi2	0.000
Population Error	
RMSEA	0.000
90% CI, lower bound	0.000
upper bound	0.000
pclose	1.000
Information Criteria	
AIC	-572.276
BIC	-553.765
Baseline Comparison	
CFI	1.000
TLI	1.000
Size of Residuals	
SRMR	0.000
CD	0.113

Figure 2 illustrates the estimation of the structural model used to test the research hypotheses.

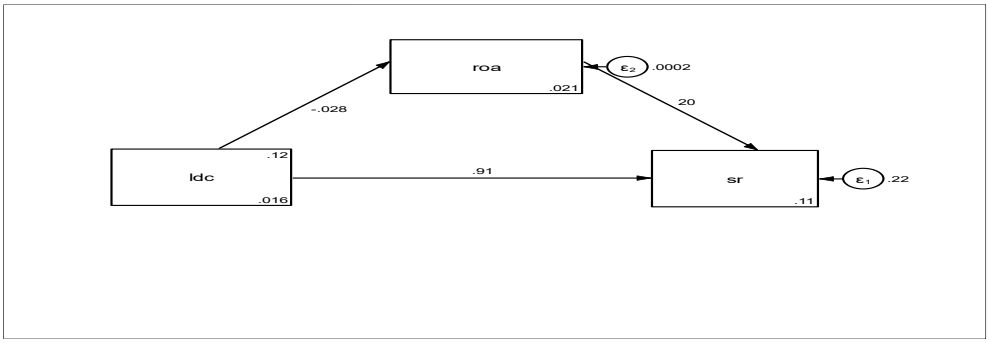

Figure 2: The Estimation of SEM Model

7. Discussions and Conclusion

The data are analyzed empirically to test the research hypotheses by measuring the variables concluded from the literature review through a multifaceted analytical approach that combines descriptive analysis, Panel Data Unit-Root Tests and panel data structural equation modeling. Testing the first

research hypothesis for the direct impact of the capital structure on stock returns, it was found that there is a statistically significant positive direct impact of the capital structure on stock returns. This is consistent with Bergrren & Bergqvist (2014) who examined the impact for capital structure on stock returns in Sweden. Similarly, the result obtained with Al-Manaseer (2020) study was on commercial banks in Jordan.

Testing the second research hypothesis for the direct impact of capital structure on financial performance, it was found that there is a statistically significant negative direct impact of capital structure on financial performance. This is consistent with Dawar (2014), who found a negative significant impact for capital structure on the performance measured by (ROA) in India. Testing the third research hypothesis for the direct impact of financial performance on stock returns, it was found that there is a statistically significant positive direct impact of financial performance on stock returns. This is consistent with Lasa & Mustafa (2023), who found that Return on Assets has a positive impact on stock returns in Indonesia. Thus, testing the fourth research hypothesis for the indirect impact of the capital structure on stock returns through financial performance, it was found that there is a statistically significant negative indirect impact of the capital structure on stock returns through financial performance. Table 7 shows a summary for the conducted analysis.

Table (7): Summary of Research Hypotheses Testing

Hypothesis	Description	Results
H1	There is a statistically significant positive direct impact of the capital structure on stock returns.	Fully Supported
H2	There is a statistically significant negative direct impact of capital structure on financial performance.	Fully Supported
H3	There is a statistically significant positive direct impact of financial performance on stock returns.	Fully Supported
H4	There is a statistically significant negative indirect impact of the capital structure on stock returns through financial performance.	Fully Supported

8. Recommendations

Banks generally play a crucial role in the economic development of every country. One critical decision banks face is the debt-equity choice. This research explores the dynamic relationship between capital structure and stock returns of the Egyptian banks, with a particular focus on the mediating role of their financial performance by examining empirical data, financial models, and literature reviews. The research has provided insights into the complex relationship between these variables. Therefore, in this section, the researcher presents a set of recommendations that can guide decision-makers, financial analysts, and policy advisors in decision-making regarding capital structure, financial performance and stock returns. In addition, these recommendations should provide a roadmap for further research on the complex relationship between capital structure and stock returns, helping to understand this aspect of corporate finance better. Based on the results of the study the following recommendations were made.

Firstly, the study showed a negative correlation between capital structure and profitability. This means that an increase in debt of a firm reduces profitability of a firm. The conclusion that borrowing does not always improve a firm's stock returns leads to the recommendation that firms should use shareholders' funds as much as possible before they undertake to borrow, so that they minimize the risks related to borrowing, which include interest in the debt exceeding the return on the assets they are financing. The increase in debt has been found to reduce stock returns over time and increase the risks for the business owners. The capital Market Authorities and the Exchanges should increase the education of the business community in the advantages of listing over borrowing.

Additionally, Top management of every bank should make prudent financing decision to remain profitable and competitive. This means that listed banks intensify their efforts to rely on internally generated funds to finance their operational activities. Even where external debt would be used, the banks should search for low interest-bearing loans so that the tax shield benefit of the loan will exceed the financial distress associated with it.

Finally, Egyptian banks must not be only interested in mobilizing deposits but must also be concerned with utilizing these deposits effectively and efficiently. To achieve this, banks must set competitive lending rates that would not deter customers from accessing loans. Thus, banks' managers need to pursue a policy to expand the profits of their banks to increase the stock return.

9. Research Limitations

The data were collected for a total number of 8 banks in EGX100 using their financial reports, forming a panel data covering the period 2010 to 2022. Consequently, this research has a few limitations. First off, while the study was conducted on a developing market, its findings might not apply to other emerging markets because each one may have unique rules, laws, and characteristics. Moreover, future research could also consider studying the impact of the capital structure on stock returns through financial performance in other markets. In addition, the impact of the capital structure on stock returns through financial performance could be also considered other banks rather than only listed.

Second major limitation of this research investigates the impact of the capital structure on stock returns through financial performance in Egypt; however, there might be other variables that may affect stock returns which are not included in this research. Therefore, future research could study the effect of other variables from financial ratios, for example, such as total asset turnover and earnings per share, to measure the bank's financial performance that can affect stock returns of the banking sector. In addition, by adding control variables such as inflation, growth in GDP, interest rates, and exchange rates, as well as adding a longer research period, it is hoped that the results obtained can produce better and more accurate analysis, especially to determine the impact of the capital structure on stock returns through financial performance of banks.

References

Abor, J. (2007). Debt policy and performance of SMEs: evidence from Ghanaian and South Africa firms. *Journal of Risk Finance*, 8(4), 364-379.

Adesina, J. B., Nwidobie, B. M., & Adesina, O. O. (2015). Capital structure and financial performance in Nigeria. *International Journal of Business and Social Research*, *5*(2), 21–31. https://doi.org/10.14303/jribm.2018.018 .

Ahmed, N. & Wang, Z. (2013). The impact of capital structure on performance: An empirical study of non-financial listed firms in Pakistan International. *Journal of Commerce and Management*, 354-368.

Ali , S. (2017) . Impact of capital structure on stock return in Oil & Gas Sector of Pakistan. *Journal of Energy Technologies and Policy*, 12-20.

Allozi, N.M. & Obeidat, G.S. (2016) The relationship between the stock return and financial indicators (profitability, leverage): An Empirical study on manufacturing companies listed in Amman Stock Exchange. *Journal of Social Sciences*, 5, 408-424. https://doi.org/10.25255/jss.2016.5.3.408.424

Al-Manaseer, S.R. (2020) Relationship between capital structure and stock returns of Jordanian commercial banks. *International Business Research*, 13, 100-112. https://doi.org/10.5539/ibr.v13n2p100

Almazan, A. & Manzano, C. (2005) Intra-Industry capital structure dispersion. *Journal of Economics and Management Strategy*, 263-297.

AlSalamat , W.A. & Mustafa , H.H.(2016) . The impact of capital structure on stock return: Empirical evidence from Amman Stock Exchange . *International Journal of Business and Social Science*, 183-196.

AlZoubi, M.J., Bashatweh, A.D. & Abu Khader, L.F. (2020) The influence of capital structure on stock returns: An Empirical study on industrial companies. *Research in World Economy*, 11, 362-370. https://doi.org/10.5430/rwe.v11n6p362

Arrazy , F. & Daryanto , W. (2021) . The effect of financial performance on the stock returns of food and beverage companies listed on the Indonesia Stock Exchange the period of 2016 – 2020. South East Asia *Journal of Contemporary Business*, Economics and Law, 81-92.

Awang, Z. (2014). *Research Methodology and Data Analysis* (2nd ed.). Universiti Teknologi Mara, UiTM Press.

Berggren, S., & Bergqvist, A. (2014). *Capital structure and stock returns-A study of the Swedish large cap companies*. Unpublished Bachelor Thesis, University of Gothenburg.

Birru, M. W. (2016). The impact of capital structure on the financial performance of commercial banks in Ethiopia. *Global Journal of Management and Business Research*, 42-52. DOI:10.2991/amber.k.210507.040

Brealey, R. A., Myers, S. C., & Allen, F. (2011). *Principles of corporate finance*. New York: McGraw-Hill/Irwin.

Brigham, E. F. & Gapenski, I.C.. (1996) *Intermediate financial management*. Fifth Edition. New York: The Dryden Press.

Brigham, E., & Ehrhardt, M. (2001). *Financial management theory and practice*, tenth edition, South-Western College Pub.

Chiang , C. , Sembel , R. & Malau , M. (2024) . The effect of financial performance and market return on stock return with GDP growth as a moderating variable. *International Journal of Business, Economics and Law*, 102-111.

Dawar, V. (2014). Agency theory, capital structure and firm performance: some Indian evidence. *Managerial Finance*, 1190-1206.

DeAngelo, H., DeAngelo, L. & Skinner, D., 2004. Are dividends disappearing? dividend concentration and the consolidation of earnings. *Journal of Financial Economics*, 72: 425-456.

Endri ,E. , Dermawan , D. , Abidin , Z. & Riyanto , S(2019) . Effect of financial performance on stock return: Evidence from the Food and Beverages Sector. *International Journal of Innovation, Creativity and Change*, 335-350.

Erasmus, P. D. (2008). Evaluating value based financial performance measures. *PhD thesis*, Stellenbosch University, South Africa.

Frank, M. Z. & Goyal, V. K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 217-248. Available on: https://www.sciencedirect.com/science/article/pii/S0304405X02002520

Harris, M., & Raviv, A. (1991). The theory of capital structure. *The Journal of Finance*, 46 (1), 297-355.

Hass, M., 2002. Earning management in two-period principle – Agents Model, *GEABA - Discussion Paper*.

Hoyle, R. H. (1995). The structural equation modeling approach: Basic concepts and fundamental issues. *Structural Equation Modeling: Concepts, Issues, and Applications*. R. H. Hoyle, SAGE Publications.

Jun , P. (2019) . The impact of financial performance on stock return in china's High-Tech industry. *Master thesis*, University of the Thai Chamber of Commerce, Thailand.

Lasa , V. & Mustafa , M. (2023) . The effect of financial performance on stock returns in consumer goods sector companies listed on the Indonesia stock exchange for the 2016-2021 period. *International Journal of Social Service and Research*,1939-1951.

Lasher. (2008). *Financial management: A practical approach*, fifth edition, Mason, OH : Thomson South-Western.

Le, T., & Phan, T. (2017). Capital structure and firm performance: Empirical evidence from a small transition country. *Research In International Business and Finance*, 710-726. DOI:10.1016/j.ribaf.2017.07.012

Mburu , A. (2016) . Effect of capital structure on stock returns of manufacturing and allied firms listed at the Nairobi securities exchange. *Master thesis*, university of Nairobi.

Myer, S. C. & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.

Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*. 39 (3), 574-592. Available on: https://doi.org/10.2307/2327916

Myers, S. C. (2003). *Financing of corporations*. Handbook of the Economics of Finance, 1, 215-253.

Myers, S. C., (1984).The capital structure puzzle. *Journal of Finance*, 39(3): 575-592.

Nasrullah,N., Khaliq,A. , Sarda, S. , Aulia ,A. & Julianto, H.(2023). The effect of financial performance on stock returns in manufacturing companies listed on the IDX for the 2018-2022 period. *Jurnal Ilmu Manajemen Profitability*,232-238.

Ngunjiri,N.(2016) . Relationship between firms' financial performance and stock returns for firms listed at Nairobi Securities Exchange .*Master thesis*, University of Nairobi, Kenya.

Njoki , N. (2014). The relationship between capital structure and stock returns of firms quoted in the Nairobi Securities Exchange . *Unpublished master thesis*, University of Nairobi.

Nurfauziah, U.R.(2019). The effect of financial performance and market performance on the stock prices. *Asian Journal of Entrepreneurship and Family Business*,65-79.

Nurlaily, F., Suhadak, S., Rahardjo, K., & Hsu, W.-H. L. (2013). The influence of macroeconomic and microeconomic variables on capital structure and financial performance. PROFIT: *JURNAL ADMINISTRASI BISNIS*, 7(1),113-126.

Prathecpkpanth, P. (2011). Capital structure and financial performance: evidence from selected business companies in Colombo Stock Exchange Sri Lanka. *Journal of Arts, Science and Commerce* 2(2): 171 – 183.

Ramlah, R. (2021). The effect of profitability and leverage on stock return of Food and Beverage Companies. *Point of View Research Management*, 2, 139-150.

Ramli, N., Latan, H., & Solovida, G. (2019). Determinants of capital structure and firm financial performance A PLS-SEM approach: Evidence from Malaysia and Indonesia. *The Quarterly Review of Economics and Finance*, *71*, 148-160.

Razak , A., Nurfitriana , F. , Wana , D. , Ramli , Umar , I. & Endri , E. (2020). The effects of financial performance on stock returns: Evidence of Machine and Heavy Equipment Companies in Indonesia. *Research in World Economy*, 131-138.

Shaker, A. & Hassan, M. (2015). The effect of capital structure on profitability: An Empirical analysis of listed firms in Iraq. *European Journal of Accounting, Auditing and Finance Research*, 61-78.

Sibarani,A. , Yunita, R. , Siregar, K. , Panggabean , B.& Sitanggang, T. (2022) The effect of liquidity, profitability, activity and leverage on stock returns in Food and Beverage Sub-Sector Companies listed on the Indonesia Stock Exchange for the 2016-2020 period. *Budapest International Research and Critics Institute -Journal (BIRCI -Journal)*, 5, 12696-12710.

Suryaningprang , A. , Sudaryo , Y. , Siddiq , A. & Supiyadi , D. (2024). The effect of financial performance on stock returns of non- banking companies in Indonesia. *Greenation International Journal of Economics and Accounting* , 151-161, DOI: https://doi.org/10.38035/gijea.v2i2 .

Yegon, C. , Cheruiyot, J. , Sang, J.& Cheruiyot , P.K.(2014) . The effects of capital structure on firm's profitability: Evidence from Kenya's Banking Sector. *Research Journal of Finance and Accounting*, 152-159.

Zeitun, R. & Tian, G. (2007). Capital structure and corporate performance: evidence from Jordan. *Australasian Accounting Business and Finance Journal*, 40-53

Zhao, X., Lynch, J. & Chen, Q. (2010). Reconsidering Baron and Kenny: myths and truths about mediation analysis. *Journal of consumer research*, 197-206, https://doi.org/10.1086/651257.

أثر هيكل رأس المال على عوائد الأسهم للبنوك المصرية : الدور الوسيط للأداء المالي للبنوك

المستخلص:

تهدف الدراسة إلى فحص تأثير هيكل رأس المال على عوائد الاسهم مع الدور الوسيط للإداء المالي للقطاع المصرفي في مصر. وهو أحد أكبر الصناعات في مصر. يقتصر البحث على الصناعة المصرفية نظرًا لاختلاف مصادر التمويل في الصناعات المختلفة . اعتمدت الدراسة على بيانات سنوية لثمانية بنوك مصرية مدرجة بمؤشر EGX100 في الفترة من ٢٠١٠ إلى ٢٠٢٢. وقد اعتمدت المنهجية على المدخل الكمي من خلال جمع البيانات الزمنية المقطعية لاختبار فروض الدراسة. وقد تم استخدام نمذجة المعادلة الهيكلية (SEM) لتحليل البيانات المجمعة . أظهرت النتائج أن هناك تأثيراً ايجابياً مباشر لهيكل رأس المال على عوائد الأسهم . كما أن هناك تأثيرا سلبياً غير مباشر لهيكل رأس المال على عوائد الأسهم من خلال الاداء المالي. وبالتالي فإن الأداء المالي يتوسط هذا التأثير جزئيًا. وتقترح الدراسة إجراء دراسات مستقبلية حول تأثير هيكل رأس المال على عوائد الأسهم من خلال عوامل وسيطة أخرى.

الكلمات المفتاحية : هيكل رأس المال , عوائد الأسهم , الاداء المالي , الدور الوسيط , المؤشر المصري ١٠٠ , بيانات زمنية مقطعية , نمذجة المعادلة الهيكلية (SEM) , مصر.