Factors Affecting Capital Structure Decisions: A Comparative Study of Listed Firms in Egypt and Nigeria

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Abstract

This study aims to investigate factors affecting the Capital Structure Decisions of listed firms in Egypt and Nigeria. The data collection instrument was the financial statements of Nigerian and Egyptian listed firms, which consisted of an unbalanced panel of 60 firms over 11 years. Only 176 observations for 16 Egyptian firms and 165 observations for 15 Nigerian firms were statistically valid and free of missing data. Panel Data analysis was employed to test the research hypotheses through EViews and SPSS programs. The study results indicated that there were significant effects of financial cost (Market book ratio, stock return, and deflated return) on capital structure decisions (book leverage, long-term capital structure, and Short-term capital structure) of the listed firm in Egypt and Nigeria. This effect was found to be a negative effect for the financial costs (market-to-book ratio and stock return) on book leverage, long-term capital structure, and Short-term capital structure of a listed firm in Egypt and Nigeria and a positive for the market-to-book ratio on both book leverage and the short term capital of listed firms in Nigeria. Finally, the results showed that there is an insignificant effect of financial costs (deflated return and stock return) on the long-term capital of listed firms in Egypt and Nigeria.

Keywords: (Financial costs, Capital structure Decisions, Listed firms)

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1.   Introduction

Capital structure decision has been considered a significant financial framework in corporate finance literature that estimates the optimal equity and debt structure that a firm maintains to achieve its stated goal (Hossain, 2021).

Capital structure has been considered contextual construct that was originally researched in the context of studies with a specific focus on a defined way of measuring. In the literature, the capital structure may be defined in three ways (total debt to assets, long-term debt to assets, and Short-term debt to assets).

One of the three financing decisions that must be made by finance managers is capital structure and the others are investment and dividend decisions (Wald, 1999). Capital structure decisions are a way to optimize a company's worth, but it is not an easy task to achieve this goal because it entails balancing the mix of debt and equity securities taking into account the costs and benefits associated with each. A poor choice of securities puts a company in financial trouble and eventually leads to bankruptcy (Sheikh and Wang, 2011).

In transitional economies (like Egypt and Nigeria), the capital structure of publicly traded firms is still a mystery. As a result, researchers and academics have recently focused on the firms that operate in these economies. When analyzing the capital structure of firms in emerging economies, it is noted that empirical research is lacking. In this area, different empirical research has been done, which give some information addressing the drivers of financial leverage, while their conclusions are ambiguous (omarn& Pointon, 2009 Tran & Hoang, 2021).

There is limited research on firm capital decisions dedicated specifically to African countries region. Studies using international samples tend to exclude countries from the region. For instance, De Jong et al. (2008), Fan et al. (2012), Oztekin and Flannery (2012) and Hang et al. (2018) used firms in 37 countries to examine capital structure choices, but none of these countries is from the north Africa such Egypt and sub-Saharan as Nigeria region. This research fills this gap in the literature and shed light on an important firm decision – financing decision – in a growing, but understudied, region.

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Based on the arguments of Cheng and Shiu (2007), Frank and Goyal (2009), Hanousek and Shamshur (2011), Jõeveer (2013), and Öztekin (2015), the deflated return affects the leverage policy of a firm significantly; however, the relationship is unclear and can be both positive and negative.

Additionally, Hovakimian et al. (2004) and Welch (2004) reported mixed results of stock return between a very strong negative relation and no effect. One interpretation of this evidence is that firms do not have strong target capital structures, and are content to allow their leverage ratios to change.

According to Hovakimian et al. (2004) and Adam and Goyal (2008), high market-to-book firms have low target debt ratios, which is consistent with both the trade-off and the pecking order models.

Market leverage is more volatile than book leverage. When it comes to credit choices, book value ratios are frequently the main consideration (Chava and Roberts, 2008). The final measures used in this study are based on short-term debt and long-term debt to explain why some companies have reduced their debt, whilst others have increased their debt. This means that debt does not necessarily increase market value of equity or vice versa. (Omran&Pointon, 2009; Kayo& Kimura 2011; Frank&Goyal, 2009; Le et al,2017).

By reviewing the literature, only few studies have not examined why and how combinations of financial costs at the firm level may predict capital structure decisions.

This research aims to study the relationship between financial costs and capital structure decisions of listed firms in Egypt and Nigeria. Consequently, the researchers are seeking to answer the following question:

- What are the financial costs (Market book ratio, stock return, and Deflated return) that affect the capital structure (total debt, long-term debt, and short-term debt)?

2. Literature and Hypotheses Development:

2.1. Financial Costs:

According to the pecking order theory, the cost of funding increases with asymmetric information between management and outside investors. Asymmetric information is used by Jensen and Meckling (1976), Ross (1977), Noe (1988), Diamond (1989), Zwiebel (1996), Berkovitch (2000),

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Douglas (2006), and others to explain the capital structure. Asymmetric information strengthens the free cash flow, pecking order, and market timing theories. The pecking order and market timing theories, in particular, suggest that market issuing prices impact emerging security issues. Corporations increase their worth by issuing equity when stock prices are high. These variables are linked to the financial costs incurred by firms, which are referred to as market-to-book ratio, stock return, and deflated return.

Deflated Stock Return or Real Stock Return is the difference between the stock return and the expected rate of inflation which affect a firm's financial policy (Nelson, 1976; Cheng and Shiu 2007, and Duffee, G. R. 2018). For instance, Frank and Goyal (2009) argue that inflation levels can be considered as a proxy for decreasing the value of investment and, at the same time, high inflation can be a trigger for new debt issuance.

Market-to-book ratio is measured as the market value of assets to book value of assets for a firm (Butt, 2016). This variable is typically found to be a significant determinant of a firm's capital structure and is often interpreted to capture its growth prospects (Kieschnick& Moussawi, 2018). One key challenge in interpreting the extant empirical results in the literature is that the availability of growth opportunities is unobservable to the econometrician. The literature has generally used the market-to-book ratio as a proxy for growth opportunities.

Welch (2004) identified stock returns as the primary component of capital structure and capital structure changes. It is defined as stock return $(SR)_{t-1,t} = (\ln(1 + (P_t - P_{t-1})/P_{t-1})$, P_t: stock price at time t (Welch,2004). Stock returns play an important role in explaining capital structure in comparison with other proxies used in the literature. Stock returns may explain firms' equity issuance. Equity market timing refers to the practice of issuing shares at high stock prices and repurchasing them at low prices. When a firm performs well, its stock returns increase and it uses more equity financing than debt (Yang et al., 2010).

Moreover, the aforementioned costs can be combined into a single index (financial cost) that affects capital structure. That financial costs (deflated return, market-to-book ratio, and stock return) affect the capital

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structure of firms in general without giving particular attention to the individual industry.

Consequently, the capital structure should score well on at least one of the three variables (book leverage, long-term debt to assets, and Short term debt to assets) that contribute to the existing empirical evidence, making capital structure decisions and setting up strategies relevant in their capital financial costs of listed firms in Egypt and Nigeria.

2.2.   Capital Structure

A company's capital structure can be defined as the specific mix of debt and equity used to finance a company's assets and operations. A company can fund itself from two primary sources: debt or equity, or a combination of both at different phases of its development (Ganguli, 2013). Capital structure, as demonstrated by Myers (2001), illustrates how firms finance real investment through the mix of securities and financing sources they use.

Most narrowly, debt consists of only long-term debt. Debt may also consist of both short-term and long-term debt but exclude non-financial liabilities. Thus, the capital structure may be defined in three ways.

The first measure of debt is based on **book leverage** as the book value of debt divided by the total assets of the firm. According to Sharma (2017), book leverage is more stable than market leverage. In addition, when it comes to credit, book value ratios are frequently the focus of financing choices (Chava and Roberts,2008). As a result, a firm's market value of debt may not reflect its underlying value, whether it is in good financial condition or is in financial distress (Welch, 2004). Many empirical capital structure studies such as Welch (2011) and Kieschnick& Moussawi (2018) point out that the increase in the market value of debt does not necessarily increase the market value of equity or vice versa.

The second measure is the **long-term capital structure** measure called **long-term debt to the asset** (Omran&Pointon, 2009; Kayo& Kimura 2011; Frank&Goyal, 2009; Le et al, 2017).

The final measure will be based on **short-term capital structure** as a proportion of short-term finance called short-term debt to asset (Omran &Pointon, 2009; Kayo& Kimura 2011; Frank&Goyal, 2009; Le et al,2017).

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Based on the definition of capital structure, firm finance its assets using one of two methods: debt or equity, or a combination of both at different phases of its development (Ganguli, 2013). This study uses only debt whether total debt, long-term debt, and short-term debt (Omran&Pointon, 2009; Kayo& Kimura 2011; Frank&Goyal, 2009; Le et al, 2017).

Since, there has been no generally accepted definition of the Capital structure, the definitions used by the researchers in previous studies are usually specific to the studied context. Thus, an operational definition of Capital structure is the book value of debt ratio, long-term capital structure, and short-term capital structure in representing listed companies in Egypt and Nigeria, as emerging countries in the world. The debt ratio is defined as the ratio of book value of debt divided by the total assets of the firm. The long-term capital structure measure is called long-term debt to asset, and the short-term capital structure measure is called short-term debt to asset.

2.3. Hypotheses Formulation:

The relationships between variables are demonstrated clearly in the following figure (1).

The Relationship between Financial costs and Capital structure

According to the pecking order theory, asymmetric information between management and outside investors increases the cost of funding. Asymmetric information is used by Jensen and Meckling (1976), Ross (1977), Noe (1988), Diamond (1989), Zwiebel (1996), Berkovitch (2000), Douglas (2006), and others to explain the capital structure. The free-cash-flow, pecking order, and market timing theories use asymmetric knowledge. The pecking order and market timing theories claim that fresh security issues are influenced by the market's issuing prices. When stock prices are high, firms issue equity. These variables are related to the financial costs of firms in the following way:

- **A deflated stock return or real stock return** may influence business debt decisions, according to Fan et al. (2010). This is because lenders are typically hesitant to provide long-term debt during periods of rising inflation or deflated return.
- **The market-to-book ratio** has always been employed as a proxy for growth opportunities in the literature. The market-to-book ratio can be used as a measure of market efficiency or timing (Baker and Wurgler,

2002). As a result, having too high or too low stock prices is linked to asymmetric information costs.

- According to Welch (2004) and Frank & Goyal (2009), firms do not rebalance the changes of capital structure resulted from stock price shocks. For this reason, **stock returns** are more relevant to understanding debt-equity ratios than all previously established proxies. Similar results are predicted by market timing theories, but managers select the time of the equity markets to take advantage of mispricing, which has the opposite effect. Time-varying adverse selection may also be a cause of the inverse association between stock prices and leverage.

As a result, market-to-book ratio, stock return, and deflated return (financial costs) have a significant impact on capital structure (Total debt, long-term and short-term debt). Based on the above discussion, the following hypothesis can be formulated:

H: Financial costs have a significant effect on capital structure (Total debt, short-term debt, and long-term debt).

This hypothesis is divided into the following sub-hypotheses:

Ha: Market-to-book ratio has a significant effect on capital structure.

Hb: Deflated return has a significant effect on capital structure.

Hc: Stock return has a significant effect on capital structure.

Depending on the previous hypothesis, capital structure as indicated will be measured by total debt, short debt, and long debt. As well as the study developed the conceptual framework that presents in the following figure (1).
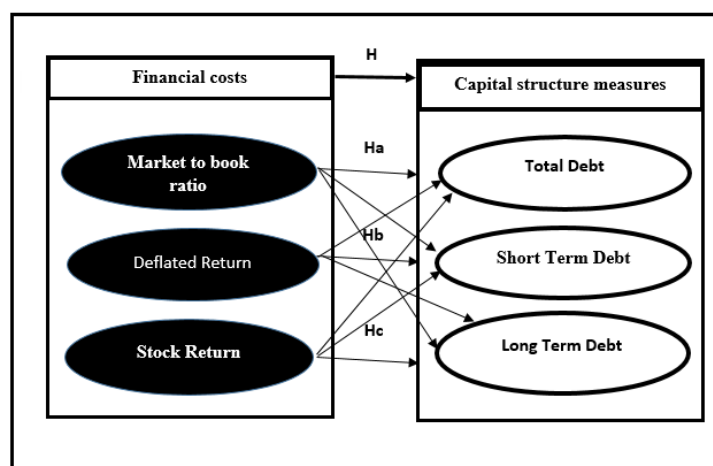

Figure 1. Theoretical framework and hypotheses

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3. Research Method
3.1. Population and sampling

The population of this study is the listed Egyptian and Nigerian firms. The researchers collected data through financial reports of Nigerian and Egyptian firms that were set by an unbalanced panel of 60 firms From EGX30 and NGX30 over 11 years. But 341 observations for 31 firms were statistically valid and free of missing data. Finally, the researcher collected only 341 observations from 30 firms that were statistically valid and free of missing data. Table 1 and Table 2 show the descriptive analysis of the research variables.

Table 1: Descriptive Analysis of the Research Variables of Egypt

	N	Minimum	Maximum	Mean	Std. Deviation
Deflated Return	176	-0.94	3.45	.3282	.83246
Market to Book Ratios	176	0.00	4.62	1.4813	.99619
Stock Return	176	-0.94	7.30	1.22	1.96
Book Leverage	176	.00	49.01	.4115	.24796
Long-Term Capital Structure	176	.00	10.85	.2264	.84139
Short-Term Capital Structure	176	.00	39.49	.6063	2.99120

Table 2: Descriptive Analysis of the Research Variables of Nigeria

	N	Minimum	Maximum	Mean	Std. Deviation
Deflated Return	165	-0.94	3.45	.3282	.83246
Market to Book Ratios	165	-.10	3.33	2.0594	.68359
Stock Return	165	-.74	7.30	2.0735	2.33886
Book Leverage	165	.00	45.99	.5557	.21033
Long-Term Capital Structure	165	.00	10.02	.2056	.15641
Short-Term Capital Structure	165	.01	35..97	.3784	.21873

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3.2.   Variables measurement

Financial costs are classified into three dimensions which are deflated stock return or real stock return, market-to-book ratio, and stock return. Each dimension with its proxy for measurement and past empirical studies are summarized below as shown in table 3.

Table 3: Variables Descriptions

Variable	Measures	Studies
Deflated stock return or Real return	The difference between the stock return and the expected rate of inflation	Nelson, (1976); Duffee, G. R. (2018); Cheng and Shiu (2007); Frank and Goyal (2009); Hanousek and Shamshur (2011); Jõeveer (2013); Öztekin (2015)
Stock return	stock return$(SR)_{t-1,t}$=(In(1+(P_t-P_{t-1})/ P_{t-1})	Welch,2004; Hovakimian et al. (2004)
Market to book ratio	market value of assets to book value of assets	Butt, 2016; Kieschnick& Moussawi ,2018; Hovakimian et al. (2004); Adam and Goyal (200۹)
Book Leverage	the ratio of book debt to total assets	Chava and Roberts,2008; Kayo and Kimura, 2011; Welch,2004;Sharma,2017
long-term capital structure measure	long-term debt to asset	Keefe, 2016; Kayo& Kimura 2011; Frank&Goyal, 2009; Le et al,2017
short-term capital structure measure	short-term debt to asset a	Omran&Pointon, 2009; Kayo& Kimura 2011; Frank&Goyal, 2009; Le etal,2017

4. Data analysis

This study employs Panel data analysis to test the research hypotheses through the statistical packages of SPSS and EViews.

4.1. Measurement Model:

This part aims to determine whether the researcher could use parametric or non-parametric tests to investigate to the research hypotheses. Table 4 and Table 5 show the formal test of normality, where it could be shown the results of Kolmogorov-Smirnov testing and Shapiro-Wilk tests. This means that the pilot data are not approximately normal if the P-value is less than 0.05. Consequently, the Generalized Least Squares (GLS) method for regression analysis was conducted for the panel data used for these research variables. These results mean that the data under study is not normally distributed, which leads the researcher to use GLS method for regression and to use

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Hausman test for selecting the suitable method of fixed versus random models.

Table 4: Formal Normality Testing for the Research Variables of Egypt

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**Df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Deflated Return	.175	176	.000	.808	176	.000
Market to Book Ratios	.127	176	.000	.924	176	.000
Stock Return	.399	176	.000	.202	176	.000
Book Leverage	.089	176	.002	.964	176	.000
Long-Term Capital Structure	.395	176	.000	.189	176	.000
Short-Term Capital Structure	.420	176	.000	.112	176	.000

Table 5: Formal Normality Testing for the Research Variables of Nigeria

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	**Df**	**Sig.**	**Statistic**	**Df**	**Sig.**
Deflated Return	.175	165	.000	.808	165	.000
Market to Book Ratios	.098	165	.001	.949	165	.000
Stock Return	.212	165	.000	.871	165	.000
Book Leverage	.070	165	.049	.980	165	.019
Long-Term Capital Structure	.120	165	.000	.869	165	.000
Short-Term Capital Structure	.095	165	.001	.958	165	.000

4.2.   GLS model and hypothesis testing

The goal of a GLS model is to examine the analyzed research model. There are three subsequent measures called the Breusch-Pagan test, the Durbin-Watson test, and Variance Inflation Factor (VIF). Those measures were applied to estimate the comprehensive fit of the model fit indices. It is shown that the Breusch-Pagan test was significant if P value is lower than 0.05. The Durbin-Watson test must be less than 2, and the value of VIF must be less than 10. It is confirmed that these measures are located in the fitting model's range for this model. Therefore, a good fit model was accomplished.

The Generalized Least Squares (GLS) method for regression analysis is conducted for the panel data that is used in this research. In addition, the fixed versus random effect models had been fitted, and the Hausman test had been used to select the suitable method of fixed versus random models. The usage of GLS had been determined after testing the data understudy for the Ordinary Least Squares (OLS) method assumptions of normality, and multicollinearity.

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Table 6 and Table 7 show the informal test of normality, where it could be shown that the skewness and kurtosis values are all beyond the accepted level of ±3, which means that the data under study are not approximately normal. Consequently, the Generalized Least Squares (GLS) method for regression analysis was conducted for the panel data used for these research variables. These results mean that the data under study is not normally distributed, which leads the researcher to the usage of the GLS method for regression as well as the Hausman test for selecting the suitable method of fixed versus random models.

Table 6: Informal Normality Testing for the Research Variables of Egypt

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Deflated Return	176	1.953	.183	4.263	.364
Market to Book Ratios	176	1.035	.183	1.013	.364
Stock Return	176	1.327	.134	.685	.268
Book Leverage	176	-.011	.183	-.864	.364
Long-Term Capital Structure	176	11.690	.183	147.374	.364
Short-Term Capital Structure	176	12.717	.183	165.864	.364

Table 7: Informal Normality Testing for the Research Variables of Nigeria

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Deflated Return	165	1.953	.183	4.263	.364
Market to Book Ratios	165	-.856	.189	1.148	.376
Stock Return	165	.514	.189	-1.081	.376
Book Leverage	165	-.174	.189	-.227	.376
Long-Term Capital Structure	165	1.724	.189	4.603	.376
Short-Term Capital Structure	165	.633	.189	.073	.376

Table 8 and Table 9 show the GLS simple regression result for the first hypothesis.

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Table 8: GLS Pooled Regression for the Effect of financial cost variables on Book Leverage of Egypt

Dependent Variable: Book Leverage

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.833157	1.153339	1.589435	0.1139
Deflated Return	0.012488	0.020570	0.607124	0.5446
Market to Book Ratios	-0.169524	0.016706	-10.14763	0.0000
Stock Return	-0.672771	0.454917	-1.478887	0.1404
R-squared	0.459929			
Adjusted R-squared	0.412966			
F-statistic	9.793498			
Prob(F-statistic)	0.000000			

Table 9: GLS Pooled Regression for the Effect of financial cost variables on Book Leverage of Nigeria

Dependent Variable: Book Leverage

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.833157	1.153339	1.589435	0.1139
Deflated Return	0.012488	0.020570	0.607124	0.5446
Market to Book Ratios	0.043966	0.023061	1.906500	0.0586
Stock Return	-0.023130	0.008662	-2.670279	0.0085
R-squared	0.253871			
Adjusted R-squared	0.182811			
F-statistic	3.572637			
Prob(F-statistic)	0.000045			

Using the fixed versus random effect as shown in Table 10 and Table 11, it could be observed that the P-value for the Hausman test is 0.0000 (P-value < 0.05) implying that the fixed effect is the significant effect in the data understudy rather than the random effect

Table 10: Hausman Test for Fixed versus Random Effect of financial cost variables on Book Leverage of Egypt

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	2.532090	0.0013	2.326756	0.0025	
Deflated Return	-0.004633	0.8357	-0.002531	0.9052	0.999
Market to Book Ratios	-0.140577	0.0000	-0.150734	0.0000	
Stock Return	0.166259	0.7795	-0.672771	0.0965	

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Table 11: Hausman Test for Fixed versus Random Effect of financial cost variables on Book Leverage of Nigeria

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	2.532090	0.0013	2.326756	0.0025	
Deflated Return	0.012488	0.020570	0.607124	0.5446	0.000
Market to Book Ratios	-0.377005	0.0000	-0.008375	0.000	
Stock Return	0.110827	0.0012	-0.017848	0.000	

The above result means that regarding Book Leverage, the first hypothesis H1 **"There is a significant effect of financial cost on book leverage of listed firms in Egypt (Nigeria)"** is partially supported.

Table 12 and Table 13 show the GLS simple regression result for the second hypothesis

Table 12: GLS Pooled Regression for the Effect of financial cost variables on Long-Term Capital Structure of Egypt

Dependent Variable: Long-Term Capital Structure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.343740	0.161320	2.130799	0.0341
Deflated Return	-0.209097	3.444428	-0.060706	0.9517
Market to Book Ratios	-0.215274	1.734045	-0.124146	0.9014
Stock Return	-0.017377	0.161726	-0.107447	0.9145
R-squared	0.975906			
Adjusted R-squared	0.973836			
F-statistic	471.3250			
Prob(F-statistic)	0.000000			

Table 13: GLS Pooled Regression for the Effect of financial cost variables on Long-Term Capital Structure of Nigeria

Dependent Variable: Long-Term Capital Structure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.343740	0.161320	2.130799	0.0341
Deflated Return	-0.209097	3.444428	-0.060706	0.9517
Market to Book Ratios	-0.038525	0.018362	-2.098110	0.0376
Stock Return	-0.008660	0.006855	-1.263382	0.2085
R-squared	0.975906			
Adjusted R-squared	0.973836			
F-statistic	471.3250			
Prob(F-statistic)	0.000000			

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Using the fixed versus random effect as shown in Table 14 and Table 15, it could be observed that the P-value for the Hausman test is 0.0000 (P-value < 0.05) implying that the fixed effect captures the significant effect in the data understudy rather than the random effect. It could be observed that there is a significant effect of Market-to-Book Ratios on Long-Term Capital Structure using the fixed effect as the corresponding P-values are less than 0.05.

Table 14: Hausman Test for Fixed versus Random Effect of financial cost variables on Long-Term Capital Structure of Egypt

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	-0.167364	0.7080	0.278991	0.1295	
Deflated Return	-0.230480	0.3145	-0.133984	0.4718	0.999
Market to Book Ratios	-0.000151	0.0000	-0.845360	0.0019	
Stock Return	0.170903	0.4259	0.117533	0.4827	

Table 15: Hausman Test for Fixed versus Random Effect of financial cost variables on Long-Term Capital Structure of Nigeria

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	-0.167364	0.7080	0.278991	0.1295	
Deflated Return	-0.230480	0.3145	-0.133984	0.4718	0.000
Market to Book Ratios	-0.103397	0.0928	-0.038525	0.0207	
Stock Return	0.009562	0.7011	-0.008660	0.1611	

The above result means that the second hypothesis **"There is a significant effect of financial cost on Long-Term Capital Structure of listed firms in Egypt (Nigeria)"** is partially supported.

Table 16 and Table 17 show the GLS simple regression result for the third hypothesis.

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Table 16: GLS Pooled Regression for the Effect of financial cost variables on Short-Term Capital Structure of Egypt

Dependent Variable: Short-Term Capital Structure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.791790	0.389424	2.033231	0.0431
Deflated Return	-0.209097	3.444428	-0.060706	0.9517
Market to Book Ratios	-0.000262	5.31E-05	-4.941265	0.0000
Stock Return	-0.655394	0.390406	-1.678751	0.0944
R-squared	0.380649			
Adjusted R-squared	0.322585			
F-statistic	6.555662			
Prob(F-statistic)	0.000000			

Table 17: GLS Pooled Regression for the Effect of financial cost variables on Short-Term Capital Structure of Nigeria

Dependent Variable: Short-Term Capital Structure				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.791790	0.389424	2.033231	0.0431
Deflated Return	-0.209097	3.444428	-0.060706	0.9517
Market to Book Ratios	0.013644	0.024849	0.549105	0.5838
Stock Return	-0.026157	0.009276	-2.819743	0.0055
R-squared	0.354797			
Adjusted R-squared	0.293349			
F-statistic	5.773940			
Prob(F-statistic)	0.000000			

Using the fixed versus random effect as shown in Table 18 and Table 19, it could be observed that the P-value for the Hausman test is 0.0000 (P-value < 0.05) implying that the fixed effect captures the significant effect in the data understudy rather than the random effect. It could be observed that there is a significant effect of Market Book Ratios on Short-Term Capital Structure using the fixed effect as the corresponding P-values are less than 0.05.

Table 18: Hausman Test for Fixed versus Random Effect of financial cost variables on Short-Term Capital Structure of Egypt

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	-0.446374	0.6702	0.791790	0.0209	
Deflated Return	0.151677	0.7776	0.776627	0.0425	0.0000
Market to Book Ratios	-0.000497	0.0000	-0.000262	0.0000	
Stock Return	-0.004645	0.9926	-0.655394	0.0561	

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Table 19: Hausman Test for Fixed versus Random Effect of financial cost variables on Short-Term Capital Structure of Nigeria

Variable	Fixed Effect		Random Effect		Hausman Test
	Coefficient	Prob.	Coefficient	Prob.	
C	-0.446374	0.6702	0.791790	0.0209	
Deflated Return	0.151677	0.7776	0.776627	0.0425	0.0000
Market to Book Ratios	-0.285510	0.0001	0.013644	0.4627	
Stock Return	0.076918	0.0068	-0.026157	0.0002	

The above result means that the third hypothesis **"There is a significant effect of financial costs on Short-Term Capital Structure of listed firms in Egypt (Nigeria)"** is partially supported.

Moreover, the results show that there is a significant effect each three dimensions of financial costs at the firm level and capital structures as mentioned previously in Table 3, where there is a negative effect of the financial costs (deflated return, market to book ratio and stock return) on book leverage. As well as a negative effect on long-term capital and short-term capital. However, the result show that there is an insignificant effect of financial costs (deflated return and stock return) on both the long-term capital and the short-term capital. Thus, the research hypothesis was partially supported.

5. Discussion

This study aimed at investigating the three measures of financial cost and capital structure of listed Egyptian and Nigerian firms. The study adopted the deductive approach, and the quantitative research method, and the data collection instrument utilized in the study was the financial reports. The researcher conducted the Generalized Least Squares (GLS) after testing the data understudy for the Ordinary Least Squares (OLS) method assumptions of normality, and multicollinearity. The measurement model showed an acceptable level of validity and reliability. Further, this model was developed and the research hypothesis was tested, the results confirmed that the research hypothesis was partially accepted.

In addition, the findings of this study showed that deflated stock return has a significant negative effect on the long-term capital structure of listed firms in Egypt and Nigeria. In addition, the deflated return has a significant positive effect on short -Term capital structure of listed firms in Egypt and Nigeria. But, there is an insignificant effect of the deflated return on the book leverage of listed firms in Egypt and Nigeria. Thus, the deflated return has a

strong negative effect with leverage ratios. The findings are in line with the results of M'ng, Rahman & Sannacy (2017); Kieschnick& Moussawi,2018; Uysal (2011); Chung et al., (2018) ,and Vortelinosa et al., (2016). When the present deflated return is high, managers will be hesitant to issue more debt because of the uncertainty about the future which might be a trigger for additional debt issuance while also acting as a proxy for reducing the value of the investment. Furthermore, the deflated return may influence business debt decisions. This is because lenders are typically hesitant to provide long-term capital structure and more confidence to provide short-term capital structure during the periods of rising inflation.

The current study indicated that market to book ratio has a significant negative effect on the capital structure (book leverage and short-term capital) of listed firms in Egypt. In addition, market to book ratio has a significant positive effect on the capital structure (book leverage and short-term capital) of listed firms in Nigeria. The findings are in line with the results of M'ng, Rahman & Sannacy (2017); Kieschnick& Moussawi, 2018; Uysal (2011); Chung et al., (2018), and Vortelinosa et al., (2016). A higher market-to-book ratio reflects a reduction in leverage as Egyptian firms use equity issues to take advantage of equity mispricing. But, a higher market-to-book ratio reflects an increase in leverage as Nigerian firms use financial leverage to take the advantage of tax benefits. Market value incorporates the discounted cash flows that the firm is expected to earn both with existing assets and with optimal growth, whereas book value of assets is more likely to reflect returns from existing assets. When a company faces greater growth opportunities, agency conflicts between shareholders and debtholders become more important. The presence of such prospects in this situation will allow management to regulate their current degree of financial debt to be used later. Low-growth firms with substantial free cash flows employ high debt levels to avoid overinvesting in risky projects.

Finally, this study indicated that stock return has a significant negative effect on book leverage of listed firms in Egypt and Nigeria. But, there is an insignificant effect on the long and short terms of the capital structure. In addition, the deflated return has a strong negative association with leverage ratios. The findings are in line with the results of M'ng, Rahman & Sannacy (2017); Kieschnick& Moussawi,2018; Uysal (2011); Chung et al., (2018) and Vortelinosa et al., (2016). Stock returns were found to have a substantial role in explaining book leverage of capital structure long and short terms of the capital structure with no impact. When a company does well, its stock returns rise, and it employs more equity financing rather than debt financing. So, book debt ratios will fall.

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5.1.   Theoretical and practical implications

This study contributes to the understanding of capital structure in two key African countries like Egypt and Nigeria, which suffers from a lack of a unified definition and a theoretical framework and an insufficient evidence and a lack of consensus on the drivers of the capital structure literature particularly in an emerging market context that is different from the western economies where the capital structure theories were developed based on the experiences of firms operating in the western economies. Specifically, this study examines the theoretical model of financial cost on capital structure in the Nigerian and Egyptian contexts.

In addition, it is recommended by this study that corporate managers of listed firms in Egypt and Nigeria may consider the different measures of the capital structure when choosing their capital structure policy. This will not only enhance the financial flexibility in the capital structure of Egyptian and Nigerian corporates but also be of great value to policymakers and other stakeholders.

From investors' point of view, this study will show the nature of Nigerian and Egyptian-listed companies which assist investors in making decisions regarding companies in which they hold investments and in making comparisons with other companies. The study contributes to the existing literature on the empirical study of capital structure.

Moreover, the results of the study will be valuable for firm regulators and academicians. The study would enable the concerned stakeholders to manage their scarce resources and capital effectively in a better way to make informed decisions. It will facilitate managers of young companies to identify and regulate the factors that are more pertinent for them to make flexible financial decisions concerning the capital structure.

Finally, this study can be helpful for companies making capital structure decisions and setting up strategies relevant to their financial costs. The study will also have significant assistance to bring to light corporate issues to policymakers, especially in the areas of debt financing, particularly the stock market.

5.2. Limitations and Future Research

The current study provided useful theoretical and practical implications and it also recommended that future studies could investigate another technique of the quantitative method. For example, a questionnaire can be used to obtain more relevant results concerning the behavioral aspect of capital structure decisions.

Furthermore, the researchers suggest that future research should focus on the developing countries of the Gulf Cooperation Council (GCC) like Saudi Arabia and the Emirates because their economies confront difficult challenges and pressures from the variations of world oil prices.

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العوامل المؤثرة في قرارات هيكل التمويل: دراسة مقارنة بين الشركات المدرجة بالبورصة المصرية والنيجيرية

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ملخص البحث:

يهدف هذا البحث إلى دراسة العوامل المؤثرة في قرارات هيكل التمويل في الشركات المدرجة بالبورصة المصرية والنيجيرية. تم استخدام القوائم المالية لجمع البيانات من ١٦ شركة مصرية و١٥ شركة نيجيرية. وأظهرت نتائج البحث أن متغيرات التكلفة المالية (العائد المنكمش، ونسبة القيمة السوقية إلى الدفترية وعائد الأسهم) لها تأثير معنوي على قرارات هيكل التمويل (إجمالي المديونية هيكل التمويل قصير الأجل، وهيكل التمويل طويل الأجل) في كل من الشركات المدرجة بالبورصة النيجيرية والمصرية. وكان هذا التأثير سلباً للتكاليف المالية (نسبة القيمة السوقية إلى الدفترية وعائد الأسهم) على إجمالي المديونية وهيكل التمويل طويل الأجل وهيكل التمويل قصير الأجل للشركات المدرجة في مصر ونيجيريا باستثناء التأثير الإيجابي لنسبة القيمة السوقية إلى الدفترية على كل من إجمالي المديونية وهيكل التمويل قصير الأجل للشركات المدرجة في نيجيريا. وكان التأثير السلبي الوحيد هو لعائد الأسهم على إجمالي المديونية للشركات المدرجة في كل البلدين، في حين أن التأثير الإيجابي الوحيد للعائد المنكمش على هيكل التمويل قصير الأجل للشركات المدرجة في كلا البلدين. أخيرًا، أظهرت النتائج أن هناك تأثيرًا ضئيلًا للتكاليف المالية (العائد المنكمش وعائد الأسهم) على هيكل التمويل طويل الأجل للشركات المدرجة في مصر ونيجيريا.

الكلمات الرئيسية: (العوامل المؤثرة، التكلفة المالية، قرارات هيكل رأس المال، الشركات المدرجة بالبورصة).