Linkage Between The Leverage And Profitability Of Manufacturing Industry- An Enquiry

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Abstract

Financial success is important for companies looking to grow in the challenging marketing environment. To increase profitability and remain competitive in the marketplace, businesses must effectively adapt to changes in market conditions. The key operational decision that ultimately affects expectations for performance is to make the three key financial decisions regarding investment, financing, and dividends. This study investigates the link between capital structure and profitability in a sample of manufacturing enterprises, with a particular focus on financing decisions. Over a ten-year period from 2011 to 2020, it examined five industries that produce manufactured goods: iron and steel, metals, oil and gas, medicines, and electricity generation and distribution. Using the "CAPITALINE" database, the National Stock Exchange (NSE) provided the secondary data for this investigation, including sales turnover. The generalized method of moments (GMM) was used to analyze the data within the parameters of a dynamic panel regression model. For the sample of firms, the study's findings demonstrated a strong correlation between capital structure choices and manufacturing environment profitability.

Keywords: Capital Structure, GMM Method, Dynamic Panel Regression, National Stock Exchange (NSE)

Introduction

In the current and highly competitive environment in which companies are competing, a better financial performance is often essential to the long-term survival and sustainable growth of the company. Moreover, financial performance is positively impactful for both the total development and reputation of the organization. To achieve the best results, managers must focus on both operational efficiency and financial stability. There are many problems facing businesses today related to production, profitability, market

demands - and whether it is small or large, global or local, a business must also contend with various other challenges.

Strong financial health will provide businesses with the wherewithal to address these challenges while providing for the needs of those involved, including equally important stakeholders like employees, customers, investors, creditors, and management, to name a few. Improved financial performance will provide a strong basis for shareholder confidence, generating increased expectations for dividends to be paid, as well as a higher share price. Conversely, poor financial performance affects other stakeholders and society because it will affect employment, the environment, and social equity. Therefore, sound financial management is vital in ensuring stakeholders trust and that the long-term goals of the business are met. The finance literature identifies three key decision-making domains that finance managers must address: financing, investment, and dividend decisions.

One of the three main decision areas, capital structure, has to do with a company's or firm's financial choices. The amount of money or money's value that one can invest to launch or expand a firm is what the dictionary defines as "capital." Conversely, "structure" refers to the way something is formed or arranged in an organized manner. It alludes to "the organization of something" or "composition of parts." However, the percentage of debt (fixed-interest bearing securities) and equity capital utilized to operate a corporation is referred to as capital structure in the finance industry. The financing decision of a firm typically involves determining how much of its investments are funded with debt from all sources, and how much is funded with equity. The characteristics of a company's assets are a key factor in this decision-making process.

 Generally speaking, funding decisions involve two factors. The first is the capital structure theory, which examines the connection between a company's debt load and the profits it offers to its investors. Generally speaking, leverage from increased debt can boost shareholder returns. However, taking on extra debt also raises financial risk. "The concept of an optimal capital structure is one that is commonly used in the financial literature," according to Horne and Wackowicz. The ideal capital structure is the best ratio of debt to equity capital in terms of risk and return. However, there may be some practical challenges in figuring out the optimal capital structure. Companies typically strive for a debt-to-equity ratio that shows a responsible use of debt in line with their risk tolerance and corporate strategy. It is difficult to discover the right mix because it needs to fit the particular operational and financial characteristics of that firm.

The second part of finance decisions is figuring out the best capital structure for a company's unique situation. This will require an assessment of the firm's ability to sustain debt, if any, as well as its industry conditions and market surroundings. If a firm does not maintain a well-balanced use of debt and equity, its capacity to earn high investment returns and minimize risk is jeopardized. This reflection may perhaps represent a binary relationship associated with more risk with cost of capital, disincentivizing investor valuation decisions and making it part of a proper valuation. Because of this relationship, the value of firms is higher for stability, efficiency, and low-risk capital structure.

Literature Survey

1.Uchenna and Duru-Uremadu (2009) carried out a study named "The Effect of Capital Structure on Corporate Profitability: An Empirical Analysis of Listed Companies in Nigeria" to determine how "capital structure" affected "profitability" of the nominated manufacturing businesses between 2002 to 2005. The independent variables examined were "ratio of equity to total liabilities" and "long-term debt to total asset," while the dependent variable was "ROCE." "This study employed regression analysis, and the findings indicated a negative correlation between" "ROCE" and debt and equity funding. The "short term indebtedness to total liabilities" ratio, however, was hardly impacted. Business management "plays a critical role in determining capital structure, particularly with regard to" "long term debt," "equities," and "company reserve,".

2. "In his paper" "The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms in Nigeria," Salawu (2009) "sought to determine how the" "capital structure" "of quoted firms on the" "Nigerian Stock Exchange" affected their "profitability" "since 1990 to 2004". The data came from fifty (50) non-financial listed businesses "on the stock exchange market" previously indicated. The data was analyzed using the random effect model (REM), "pooled ordinary least squares (OLS) model, and fixed effect model (FEM)". "Capital structure" has little influence on "profitability," but "short-term debt" and "profitability" need to be positively correlated. "The" investigation's conclusions showed that Nigerian businesses primarily relied on outside finance. In that scenario, "short-term debt" "accounts for a sizable amount of the total debt (60 percent)". When equity was considered in this analysis, "the correlation between" "capital structure" or "profitability" was positive. Effective lending practices have been linked to increased growth and decreased turnover rates in businesses, according to research.

3. In order to ascertain how capital structure influences profitability between 2005 and 2007, Gill et al. (2011) presented a study titled "The Effect of Capital Structure on Profitability: Evidence from the United States" that involved 272 American industrial and service businesses. A correlational, non-experimental study design was employed for this. "The independent variables were debt ratios", "while the dependent variables were the return on equity (ROE)" and "earnings before interest, and tax (EBIT) and it long-term and short-term debts". Industry, firm sales and Company size were control variables that were chosen. In use of data, Regression Model and Pearson Bivariate Correlation Analysis were employed. The analysis indicated that there is a positive relationship between the short-term debt, total debt and profitability. Therefore, more of short-term debts and a low interest rate will lead to more profits.

4. **Eriotis et al. (2011**) examined the relationship between "capital structure" and "profitability" in their study "Profit Margin and Capital Structure: An Empirical Relationship," which examined 53 businesses in a variety of industries between 1995 and 1996. Variables including "degree of market power," "investment," and "level of firms" were taken up in this work. Panel data were used in the investigation. The study's conclusion was that self- funding was far superior to debt financing, and additional research revealed that the chosen companies were given preference when it came to financing fixed assets.

5. Ferati and Ejupi (2012) examined the impact of capital structure on profitability over 10 years in their study, "Capital Structure and Profitability: The Macedonian Case," which involved 150 Macedonian businesses. This particular study aimed at identifying the extent to which capital structures of companies operating in Macedonia affected the identified profitability component. The data used in the course of this work was obtained with the help of financial statements of 150 various companies for the previous ten fiscal years. To evaluate the data, this study has used Ordinary Least Squares (OLS) technique to estimate the "return on equity (ROE)" function "with the long" and "short-term financing indexes", the owner's equity total, and both as "the dependent variable". Consequently, the analysis of the coefficient correlation test proves that return rates and long-term debt have "an inverse relationship" though equity "and short term debt" have a direct relationship.

6. A study titled **"The Relationship between Financial Leverage and Profitability with an Emphasis on Income Smoothing in Iran's Capital Market"** was conducted by **XuFengju et al. (2013)** with sixty (60) listed companies of the "Teheran Stock exchange", which were chosen through a methodical elimination process. This study used income structure data from 2006 to 2010 to look into "the connection between financial leverage and profitability". This study used statistical techniques like "Simple Linear Regression," "Pearson's Correlation Test," Zr, and an ECKEL model to differentiate between organizations that were smoothing and those that weren't. "The results showed a significant relationship between" smoothing and non-smoothing firms and several study hypotheses. They also demonstrated the considerable differences between the two types of firms and the smoothness with which the firm's "Operating profit," "Gross profit," and "Net profit" flowed.

7.To investigate how "capital structure" and "profitability" relate to one another by taking quoted firms in Nigeria from 1996 to 2010, **Arowoshegbe and Idialu (2013)** moved sixty (60) non-financial firms of Nigeria to conduct a study titled **"Capital Structure and Profitability of Quoted Companies in Nigeria".** Two regression models with "the dependent variables" "net-profit margin" (NPM) and "operational profit margin" (OPM) were used for profitability measures. The main accommodating variable for each model was debt-to-equity. This paper established that capital structure played a "key role in the firms' profitability": a direct relationship was revealed. As for the results of the work, it can be stated that the mentioned hypothesis was tested and, instead of the maximum lower bound of leverage, where the gains and costs of debt financing are allegedly equal, it is the pecking order theory. This simply means that Nigerian companies depend on retained earnings or the money market most of the times. These kinds of businesses must pay high taxes and hefty operating expenses. This study made the case for more reliance on capital market institutions, fiscal policy, and the legal system.

8.Kalyani and Mathur (2015) in their study titled –**Impact of Capital Structure on Profitability: with reference to Select Companies from Oil and Natural Gas Industry of India"** examined using seventy (70) oil and gas industry companies that are listed on the BSE and NSE to determine how, between 2005 and 2015, "capital structure" impacted "profitability." "Sales," "total assets of the firm," "debt service capacity," "dividends pay-out ratio," "degree of financial leverage," "degree of operating

leverage," and "ROA" & "Net Profit" were the variables in this study that served as dependent variables. Judgmental sampling was employed to get a sample for this study. The data analysis procedure used correlation and regression analysis. According to the investigation, "growth of assets," "degree of operating leverages," and "log sales" were significant variables that affected profitability. In contrast, "ROA," "log assets," "degree of financial leverage," "growth of assets," and "log sales" bear a noteworthy correlation with the selected companies' net present value (NPV).

9.Rasyid (2015) "in his study under the" title "Effects of Ownership Structure, Capital Structure, Profitability and Company's Growth towards Firm Value" analysed the impact of "ownership structure", "financial capital structure", "profitability" and "company growth" on "firm value" by using "managerial ownership" and "institutional ownership", "debt to equity", "return on equity", and "profit growth for nine (9) astral consumer goods and miscellaneous firms for the period 2009 – 2013. In this work, certain terms were used which include the T-test and purposive sampling. The F-test study revealed that the "profit growth "was influential on the "managerial ownership", "institutional ownership", "Debt to equity ratio", "Return on equity" "Firm value". Still, when comparing the actual columns of "managerial ownership," "institutional ownership" and "debt/equity ratio" to "firm value," the t-test values came out as zero; however, a zero t-test value was not obtained when comparing "return on equity" and "firm value." Similarly, the interactive term "profit growth" also had a significant effect on the variable "firm value".

10. Gichuhi (2016) in his paper ‑**The Effect of Capital Structure on Profitability of Firms Listed at The Nairobi Securities Exchange"** conducted an investigation among thirty six (36) firms for 2011-2015 to consider the impact of ‑capital structure‖ on ‑profitability‖ of selected firms. The researcher employed a "descriptive research design" and secondary data in the work. Descriptive and inferential statistics were utilized for data analysis. It was discovered that several businesses turned aprofit while the study was underway. The cost of operations and finance is reduced when debt is used. There were differences amongst the four (4) variables: "capital structure," "firm size," "leverage," and "profitability" of listed enterprises. An additional finding from the independent variables is that the profitability of the businesses varied by eighteen percent (18%). The regression model described a substantial association between "capital structure" and "profitability".

11. Bilbas and Saalih (2017) in the paper ‑**The Impact of Capital Structure on the Firm's Profitability: An Empirical Study on Investment Firms in the Housing Sector in Iraq Kurdistan Region for the Period (2007-2016)"**investigated that how "capital structure" affected "profitability" of the company. "Descriptive statistics" were used by the researcher. Among eighty-one (81) housing sector businesses in the Kurdistan Region, the study was carried out between 2007 and 2016. The data was subjected to "correlations," "descriptive statistics," "simple regression," "multiple regression," and "reverse regression analysis." The study's primary conclusions showed a non-significant negative correlation with one dependent variable, "return on assets" (ROA), and the independent variable, "financial leverage" (FL), and a significant positive relationship with the independent variables, "tangible

asset" (TA), "firm size" (FS), and "duration" (D). The study also backed up the importance of capital structure in guiding the choice of investments to fund projects. The organization should concentrate on various funding sources that provide greater returns.

12.Baah-Acquah et.al (2017) through his paper **"Relationship between Capital Structure and Profitability of Oil Marketing Companies (OMCs)"** made an effort to determine how "capital structure" affects "profitability." Regarding the firm's capital structure, the study examined "short-term debt (STD) to total capital" (TC), "long-term debt (LTD) to total capital" (TC), and "total debt (TD) to total capital" (TC). It also compared how these elements affect the firms' ROA, ROE, and NPM. The following multiple regression analysis was carried out on the secondary data used in the study. The study also revealed that the oil marketing companies' (OMCs) "return on equity" (ROE) and "return on asset" (ROA) are significantly influenced by some factors such as "sales growth" (SG), "firm size" (FS), "long-term debt (LTD) to total capital" (TC), "short-term debt (STD) to total capital" (TC), and "total debt (TD) to total capital" (TC) and their settings have different variations and pattern. As highlighted in the report, it was advised that firms should undertake some research to determine the best financing mix to be used when it comes to decision on debt financing.

13.**Yazdi and Mohammadian (2017)** conducted a study through a paper –**Effect of Profitability Indices on the Capital Structure of Listed Companies in Tehran Stock Exchange"** among the one hundred thirty-eight (138) –Tehran Stock Exchange‖ listed businesses between 2011 and 2014. This study showed how the profitability index affects "the company's capital structure". "The study's independent variables" were "effective tax rate," "size," "tangibility," "growth," "and return on assets (ROA)", whereas "the dependent variable under" examination was leverage. Descriptive statistics and correlation were used in this study, and other appropriate statistical techniques were looked into. "The results of the study" show a statistically "significant" unfavorable association between "capital structure" and profitability metrics. Additionally, studies have demonstrated a "negative correlation between debt and profitability in both the short and long term".

Research Gap

On the basis of above literature survey a research gap came forward that each and every study not gave the consistent result in case of leverage and profitability. Some gave positive outcome and some were negative outcome. So there is a dilemma arises among researchers, academicians and industrialist.

Objective

This paper mainly focused on how the leverage of the firm are linked with profitability of some collected manufacturing industries.

Hypothesis of the study

This paper goes though on the basis of the objective-

"H0 – There is no significant relation between leverage and profitability"

"H1- There is a significant relationship between Leverage and profitability".

Design of Dataset

Data collection for the research is very crucial part of the research work. In this particular study the dataset which were used, fully secondary based. The data set consist fifty(50) company from five(5) manufacturing industries such as Pharmaceutical, Metal, Oil and Gas, Power Generation and Distribution and Iron and Steel industries of "National Stock Exchange(NSE)". "The duration of the work" was from 2011 to 2020. The entire data collected from 'CAPITALINE 2000' database, Money Control and the "annual reports of some companies". The collection was based on annual sales turnover of the company.

The study has used dynamic "panel regression to examine the impact of capital structure on profitability". Leverage (LEV), Tangibility (TAN), Liquidity (LIQ), Uniqueness (UN), Size (SZ), Growth (GR), and Firm Quality (FQ) have been used as independent variables, and "Return on Invested Capital (ROIC)" has been used as a dependent variable.

The formula which are used for measuring the independent variables are as follows

Independent Variables	Measuring formula
Leverage (LEV)	Long-Term Debt/Total Assets
Tangibility	Total Fixed Assets/Total Assets
Liquidity	Current Assets/ Current Liabilities
Uniqueness	Selling Expenses/Sales
Size	Log of Total Assets
Growth	Year after Year Change to Total Average Assets
Firm-Quality	Altman Z –Score
Return on Invested Capital	ROIC=[(PAT+Interest)/ Capital Employed]*100

Here, $ROIC_{it} = \alpha_0 + \beta_1 LEV_{it} + \beta_2 SZ_{it} + \beta_3 GR_{it} + \beta_4 LIQ_{it} + \beta_5 TAN_{it} + \beta_6 UN_{it} + \beta_7 FQ_{it} + \beta_8 ROIC_{it-1} + e_{it}$ is the dynamic regression equation that has been used. When i = 1, 2,..... 100 companies, t = 1, 2...., 10 years, α_0 is the intercept term, and e_{it} is the residual term. "The coefficients of independent variables" are $\beta_1, \beta_2,... \beta_8$. Panel data was utilized in this case because it allowed for the consideration of the diversity of firm-specific attributes. Combining the two time series of cross-sectional data increases efficiency and informational value, provides more degrees of freedom, and decreases variable collinearity.

Major Findings of the Study

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
LEVERAGE	500	.0000	1.9470	.235161	.2042989
SIZE	500	3.7926	15.0000	8.822492	2.3022932
TANGIABILITY	500	-1.1475	1.0000	.561992	.2818901
LIQUIDITY	500	.0000	55.0000	3.230726	3.9160645
UNIQUENESS	500	.0017	23.0000	.251615	1.2525204
GROWTH	500	-92.3847	1115.5463	14.708990	67.2781090
FIRMQ	500	-37.8961	44.4818	3.347706	4.6308517
ROIC	500	-352.6588	3088.3212	21.904802	151.9860828
Valid N (listwise)	500				

Both "the independent and dependent variables" descriptive statistics are displayed in this table. In this case, the average leverage is 0.235161, or 23.52 percent. It indicates that the total assets of the chosen companies are "equal to the average liabilities" "of the company". "The leverage ratio's arithmetic mean", which varies substantially between 0.00 and 1.94, typically explains 23.53% of the time. This explains that, on average, the study's enterprises tended to finance 23.51 percent of their assets through debt. The average level of size is 88.2 indicating relatively the low level of assets across the industries. The average tangibility was 59.19%, indicating the chosen Indian companies' total fixed assets are sufficient. The average liquidity was 32.30% which was inadequate to meet the firm's liability. The selected firms average growth was 14.71 which indicates the growth of the selected firms were much better position.

CORRELATION MATRIX AND MULTICOLLINEARITY TEST

CORRELATION MATRIX

	LEV	SZ	TAN	LIQ	UN	GR	FQ	ROIC
LEV	1							
SZ	0.277**	1						
TAN	.104*	0.507**	1					
LIQ	-0.259**	-0.394**	-0.180**	1				
UN	-0.145**	0.062	0.176**	0.065	1			
GR	-0.025	-0.072	-0.045	-0.04	-0.117**	1		
FQ	-0.282**	0.019	-0.145**	0.001	-0.082	0.035	1	
ROIC	0.162**	-0.030	-0.153**	-0.026	-0.019	-0.015	-0.011*	1

*significant at 0.05 level, ** significant at 0.01 level*

"The correlation coefficient" is "displayed in the above table" along with descriptive statistics. The link between each pair of study variables is mainly measured by the correlation matrix. This matrix is useful for checking the Multicollinearity problem in regression. This correlation matrix shows that the degree of correlation among the variables is meager except **Size** and Leverage and Size and Tangibility whose correlation coefficient is 0.277** and 0.507** respectively. So, it is necessary to verify whether it contains a Multicollinearity problem or not.

MULTICOLLINEARITY TEST

Measure	LEV	SZ	TAN	LIQ	UN	GR	FQ	ROIC
TOLARANCE VALUE	0.765502	0.587481	0.69397	0.803464	0.935737	0.979848	0.851358	0.98995
VIF	1.31	1.7	1.44	1.24	1.07	1.02	1.17	1.01

Among the explanatory factors, the Multicollinearity test is displayed in the above table. Using the variance inflation factor (VIF) test, multicollinearity is examined. Gujrati (2003) states that a multicollinearity issue must exist if "the VIF value is greater than 10". Nevertheless, every VIF number in the table above is less than 5. Therefore, it can be concluded that multicollinearity issues do not exist.

PANEL UNIT ROOT TEST

variables	t-statistics	p-value
Leverage (LEV)	-2.9356	0.0017
Size (SZ)	-4.3386	0.0000
Tangibility (TAN)	-7.4082	0.0000
Liquidity (LIQ)	-160.00	0.0000
Uniqueness (UN)	-10.8587	0.0000
Growth (GR)	-11.843	0.0000
Firm quality (FIRMQ)	-11.1216	0.0000
Return on Invested Capital(ROIC)	-92.1427	0.0000

"The Levin, Lin, and Chu (LLC) Test (2002)", which uses unit root testing, has validated the test for stationarity for every variable considered in the study. "The null hypothesis" of a panel "unit root at the" series level "(p-value < 0.05)" at various lag lengths was rejected by the test results in this table, which unequivocally showed that "the series is stationary and has no unit root". Time-series features transferred by the panel data are stable over time since all "variables are stationary" at a "consistent level according to the LLC test".

SELECTION OF APPROPRIATE MODEL

The dynamic panel is used in this work to manage the endogeneity problem among the variables. Here, Arellano and Bond's (1991) GMM methodology under the dynamic panel method was used. We used the system GMM, difference GMM, pooled OLS, and fixed effect methods in the STATA statistical software. Here, the following process comes after the model selection process.

Step 1:Estimation of regression output by pooled OLS methods (upper boundary)

Step 2: Estimation of regression output by fixed effect methods (lower boundary)

Step 3: Estimation of regression output by difference GMM method

Step 4: Since the estimators of both "one-step difference GMM" and "two-step difference GMM" are

above the fixed effect estimator, the Difference GMM method can be preferred for the estimation of regression outcomes (if the estimate obtain is close to or below the FE model, system GMM should be preferred).

Methods Name (Estimators)	Estimation value (coefficient)
Pooled OLS Model	-0.1025776
Fixed effect Model	-0.193408
One-step difference GMM	-0.2661278
Two-step difference GMM	-0.2684348
One-step system GMM	-0.2298728 (selected)
Two-step system GMM	-0.2299841

The board clearly shows that the coefficient of difference for "the fixed effect model is" less than "that of the" GMM. Therefore, the difference GMM methods can be used to estimate the regression result by following the above mentioned approach. Ultimately, because the two-step difference GMM approach produces more reliable and robust regression output, it has been taken into consideration.

"GMM REGRESSION ANALYSIS"

"The results of the two-step difference GMM estimation to look into the relationship between capital structure and company profitability are shown in Table 6.6".

ONE-STEP SYSTEM GMM REGRATION OUTCOME

ROIC: Dependent Variable				
Variables	Coefficient	Standard Error	t	p-value
ROIC.L1	-0.229072	0.0172013	-13.36	0.000
LEV	**125.0416**	**52.42189**	**2.4**	**0.016**
SZ	3.089	5.1129	0.6	0.546
TAN	-148.773	48.956	-3.04	0.002
LIQ	-0.7966	1.2862	-0.62	0.536
UN	3.083	2.6746	1.15	0.249
FQ	-0.0043	0.0955	-0.05	0.964
GR	79.6933	47.9409	1.54	0.124
CONS	79.6933	47.9409	1.54	0.124
F(7) =815.42		Prob>F =0.000		
Arellano-Bond test for AR(1) in first differences:		z = 0.79	Pr > z = 0.430	
Arellano-Bond test for AR(2) in first differences:		z = -0.78	Pr > z = 0.435	
Sargan test of overid. restrictions:		chi2(9) = 1073.78	Prob > chi2 = 0.000	
Hansen test of overid. restrictions:		chi2(9) = 22.31	Prob > chi2 = 0.100	

"The impact of leverage on" company "profitability" is captured by the regression results that are appended. Leverage has a statistically significant and beneficial effect on business profitability as determined by ROIC at a 10% significance level, according to the coefficient of LEV. The analysis of the regression results "show that out of the control variables" TANGIBILITY "has a negative significant relationship with profitability". Other antecedents that can explain its sales performance are firm quality, liquidity,

uniqueness, size and growth, all of which display positive correlations with its profitability, although statistically insignificant.

Arellano and Bond (1991) provided two crucial diagnostic tests to assess the consistency of the approach and the applicability of GMM estimators: the Arellano's and Bond's test for auto correlation in the residuals and the Hansen J test for overidentifying limitations. "First-order serial correlation (AR (1)) in the mistakes" is permitted by "the Arellano-Bond test", while "second-order serial correlation (AR (2))" is not permitted for correct results. "This assumption is based on the fact that" the residuals in a regression model should not be sequentially correlated beyond the first order, and this makes the GMM estimations viable. Furthermore, over-identifying limitations in the GMM model must be valid for the former test to pass. If the instruments are not included in the GMM model or the instrument variables are endogenous, the Hansen J test's first hypothesis—which assumes that the over-identifying limitations are valid—can be rejected.

The table above displays the results of the two diagnostic tests. According to the findings, the Arellano-Bond serial correlation tests' p-values are greater than 0.1 and are 0.430 for AR(1) and 0.435 for AR (2). Consequently, it is not possible to rule out the original premise "that there is no serial correlation in the residuals". Furthermore, the validity of the instrument variables is revealed by the Hansen J test results. The Hansen J-statistics' probability values are 0.100, or more than 0.1. Therefore, we cannot rule out such a theory because the instruments are legitimate.

CONCLUSION

"This paper explores the role of capital structure for firm profitability based on the" empirically applied reliable regression estimation method and dynamic panel regression. "The purpose of this paper is to review critically the effects of capital structure decisions on the profitability of the firm hence the need to plan for the financial managers". The approximation of the coefficients further supports the idea that "firms capital structure" influences the size of profitability a firm earns. Conversely, although firm size and quality presented an inverse relationship with profitability, both the correlation coefficients were insignificant. Similar to the measures of profitability, they also exhibited positive correlations with asset tangibility, liquidity, product differentiation, and growth opportunity, but they did not pass the level of statistical significance as well. From the above, it may be "concluded that capital structure is an important factor that influences profitability". It is therefore imperative upon the part of a finance practitioner to ensure that the firm strikes the right balance in the capital structure; it does so that it can enhance the financial development of the firm and create wealth for all the interested parties.

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