



Sale Growth and Profitability Nexus Moderated by Debt Capacity

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Abstract

This study can be conducted to examine the nexus between sales growth and profitability, with debt capacity serving as a mediating variable. In this framework, sales growth is treated as the independent variable, profitability as the dependent variable, and debt capacity as the mediator. The research applies a sample of 230 listed Pakistani non-financial companies on the Pakistan Stock Exchange (PSX) over the period 2017–2022. Using this dataset, the analysis explores how sales growth influences profitability, while also considering the role of debt capacity in shaping this relationship. The findings indicate that sales growth has a significant positive effect on profitability, demonstrating that firms with higher sales growth tend to achieve improved financial outcomes. However, profitability is found to be adversely affected by debt capacity, suggesting that higher reliance on debt can reduce overall profitability. Interestingly, debt capacity itself exhibits a positive effect on sales growth, highlighting its role in enabling firms to finance expansion strategies. These results provide insights into corporate financing and growth strategies within the Pakistani context.

KEYWORD:

Sales growth, profitability, debt capacity

1 | INTRODUCTION

Profitability is the capacity of a company to yield profit at a specific degree of sales, assets and capital. One of the factors that influences firm value is profit. The global financial crisis of 2008, coupled with a sharp fall in interest rates, significantly impacted the profitability of banks. This has created a new wave of concern among policymakers. In response to a July 1, 2016 inquiry as to how the ECB could employ the monetary policy tool to revive the Eurozone economy, the chief economist of the ECB has given an answer in these words, which reads as follows: The profitability of the banking sector has been given a priority consideration in response to a July 1, 2016 inquiry by the ECB in these words, which reads as follows: The profitability of the banking industry will receive an assessment of a key factor. The following reasons suggest that bank profitability can support economic growth by increasing financial stability. The profitable banks can retain earnings on the liability and equity side, enhance core capital, provide high shareholders' return, and achieve targeted capital mobilization easily (Mirza et al., 2025; Flannery and Rangan, 2008; Hussain et al., 2022; Adil et al., 2024).

One of the fundamental things about economic theory is that all firm profit rates are relatively close in perfect competition. Nevertheless, when the consideration of an imperfect market is included, the size of a firm becomes a significant factor in generating a profit. The issue of business profitability is quite essential since it shows the ability of a business to survive. Outside capital would not easily come to the companies if the company is not highly profitable, and creditors prefer to deal with a stable company with a good track record in the market. The profitability can be used to determine how well managers perform in managing all the company's resources, including funds received through debt, to create profit. Managers must develop a business model that can afford to pay interest on the amount and, at the same time, expand their business and make a profit.

The managers should manage the fund well and effectively to reduce debt. In the current environment of globalization and a competitive business environment, the performance of the companies must rise to ensure that they are competitive enough to survive and be in a position to sustain the going concern of their particular business, as well as be able to give optimum returns to the shareholders of any specific company. The amount of company profit can be planned by analyzing the

amount of sales growth, since the greater the sales growth, the greater the likelihood of the company profit. Besides leverage and growth of the sales, there are other determinants of tax avoidance, i.e., profitability (Adil et al., 2025; Hidayat, 2018). Profitability is the company's ability to earn profits in relation to sales, total assets, and its own capital.

In other words, if the company has significant retained earnings, it will use retained earnings first before deciding to use debt (Hidayat, 2018). The profitability of the company is its capacity to gain profits from sales, total assets, and its own capital. The profitability of a firm means the success of a firm at generating profits over a specific time with a particular level of sales, value of assets, and capital stock of the shares. That is, when a company maintains considerable earnings, there is an advantage that the company will resort to retained earnings before deciding on debt usage (Hidayat, 2018). Empirically test the effect of profitability and firm growth. This positive correlation between profitability and growth will hence cause profits to increase due to the provision of both the carrot and greater accessibility of money, either through retained earnings or the capital market, and the motive of a higher rate of new investment returns.

In their opinion, as firms get bigger and bigger, economies of scale could turn into diseconomies, and a firm can become so large that the gain by the last transaction it internalizes can be counterbalanced by management failure or some internal or external force. In addition, they argue that a large firm cannot utilise the options available to a small firm as effectively as the small firm. Therefore, Profitability can decrease as a firm postulates a negative correlation between them. The interdependence between growth and profitability is not well understood, nor are the endurance and the requirements of attaining growth and profitability. This relationship is hard to define.

This relationship is made even more complicated by the endogeneity between growth and profitability, thus making it hard to determine the cause and effect. In a good economic condition, its analysis is of paramount importance. Still, it becomes crucial during periods of financial crisis, as recent studies suggest (Yoo and Kim, 2015), that the correlation between growth and profitability may vary depending on the company's operating economic situation, and the impact of growth-driving factors might change. The primary aim of the paper is to understand the capacity of sales growth and profitability to respond to a poor market environment. The following questions in the research are addressed. The initial goal is to determine whether the relationship between development and sales profits is influenced by the economic environment, thereby affecting the permanence of growth and profits.

The story is that we need to examine the dependence between the profitability and the growth in sales of a sample of non-financial manufacturing firms within the time frame 2017-2022. A new market environment has emerged, with adequate evidence in developed nations. The negative outcome during the COVID-19 period is the reduction in profitability and growth of sales by companies (Zhang et al., 2022). The default rate of most companies is during this time. The debt capacity is scarce as a moderator on one hand, where we have a plenty of leverage. Agency Theory was first put forward by Michael C. Jensen and William Meckling in 1976, who explained that agency relationships. That is, as a contract between two parties, that is, the principal and the agent, to perform some activities on behalf of the principal as a decision maker. Also, the signalling theory influences the relations between profitability and growth in sales. The article is subdivided into five parts. The literature review is given in Section 2. Section 3 explains the methodology and empirical analysis: we explain how we sampled and which variables we employed. The findings of the empirical tests are given in Section 4. Lastly, give the conclusion and implications.

Literature Review

Sales Growth and Profitability

The growth of Sales, the debt policy, the value of the firm, and profitability. The research data involved a sample of 16 companies in the years 2018-2020 listed on the Indonesia Stock Exchange. The finding that incoming sales growth has no impact on the firm's value and profitability suggests that it positively impacts the firm's value. The positive effect of sales growth and profitability is on firm value. Solvency, Company Growth, Dividend Policy, Company Firm, and Profitability. The number of companies was 45, and the number of companies used in research was five companies in the period 2012-2016, listed on the Stock Exchange of Indonesia. The outcome of solvency and profitability, having a direct impact on dividend policy and company growth, does not have a direct influence on dividend policy. Solvency has no direct effect on a firm's value, whereas profitability has a direct impact, as evidenced by leverage, Sales growth, Tax avoidance, and Profitability. The sample size in this study was 181 companies. The research data used a sample of 47 companies from 2017 to 2019 that employed a quantitative approach and sampling method. The finding that the leverage has a detrimental effect on tax avoidance. The lower the company's debt, the lower the risk of tax avoidance. Tax avoidance is not sensitive to growth in sales.

The effect of financial leverage on the sustainable growth, market performance, and Profitability. The research data has applied a sample of 424 Pakistani non-financial listed companies within the time frame

2001-2017 through the generalized method of moments (GMM). The obtained result reveals a relationship between financial leverage and performance, indicating that the growth of financial leverage of Pakistan-listed firms increases their performance up to a specific level, and further development of their economic leverage reduces their performance. Short-term debt (STD) is unfavorable in terms of performance.

The results of Sales Growth, Profitability, Debt Policy, and Firm Value were analyzed. Building on the computed data as a foundation for this work, the panel dynamic fixed effect model is applied to approximately 12001 unique non-financial listed and activity firms between the years 1995-2016, covering 12 emerging industrial enterprises in the Asian Pacific Economic. A positive correlation is proposed between the profitability of the firm and the business cycle and the stock market development variable (Khalid et al., 2025).

H1: The effect of the sales growth on profitability is positive and significant.

Moderating Role of Debt Capacity

The moderation of the relationship between intellectual capital (IC) and SMEs' performance through debt financing. The research data utilized SME sample 7293 (3563 high-tech and 3730 low-tech) in Southwestern European countries using a general fixed-effect model and generalized method. The findings conclude that human capital (HC) and structural capital (SC) have significant, substantial positive impacts on performance, with a weak effect of capital employed (CE) in high-tech SMEs. The effect is adverse on SMEs' performance, and the moderating effect of debt financing is also more substantial in low-tech. specifically, debt financing has a positive impact on the level of both human capital and structural capital on the performance of SMEs, which are low-tech (Khalid et al., 2025).

The correlation of profitability as a moderator between sales growth, institutional ownership, company size, and debt policy is the dependent variable. Based on the use of multiple regression techniques, the research population consisted of all of the property and real estate companies listed by the Indonesia Stock Exchange from 2014 to 2017, a total of 61 companies. The findings reveal a high positive influence of firm size on sales growth and debt policy, with institutional ownership having an adverse effect on debt policy. The impact of sales growth and the size of a company on the debt policy is strongly moderated by profitability. The profitability cannot moderate institutional ownership on the debt policy (Hussain et al., 2022).

How does the ownership structure work in relation to a key mediating variable like debt to influence the company's performance? The research data analysed was a sample of 220 manufacturing firms listed on the Indonesia Stock Exchange (IDX) in 2021-2022, using

linear regression. The findings suggest that managerial ownership has a positive influence on company performance, whereas debt has a negative moderating effect. Institutional ownership, on the other hand, does not really influence company performance.

The moderating influence of debt and dividend policy on over-investment. The survey data employed a sample of 669 financial statements in non-financial Vietnamese listed companies on the Ho Chi Minh Stock Exchange and the Hanoi Stock Exchange during the 2008-2018 intervals through the application of the SGMM method. The findings indicate that Overinvestment has a negative impact on the performance of firms. The adverse effects of overinvestment on firm performance include debt and dividend policy. Yet, with the combination of the two policies, there are positive additions to each policy due to the substitution of debt and dividends.

H2: The significant moderate effectiveness of the debt capacity association of sales growth and profitability.

2 | MATERIALS AND METHODS

The study includes non-financial firms listed on the Pakistan Stock Exchange (PSX), subject to the availability of data for five years, ranging from 2017 to 2021. The data were extracted from the Financial Statement Analysis (FSA) of non-financial companies published by the State Bank of Pakistan (SBP). We have taken our data from 230 non-financial firms.

Variable Measurement

Dependent Variable

Profitability: Company performance is related to a company's ability to achieve its business goals and serves as a measure of the company's success in managing its resources to generate profits. Profitability can be calculated through return on assets (ROA).

Return on Assets (ROA): ROA, which is a financial ratio, measures the net profit generated through available assets. In this study, ROA (Rashid, 2020) can be formulated as follows (expressed in ratio scale, namely percentage):

$$ROA = \text{Net Profit after tax} / \text{Total Assets} * 100 \quad (1)$$

Independent Variable

The growth in sales is calculated by reducing.

$sales^t$ with $Sales^{t-1}$ and then comparing them with $Sales^{t-1}$. This refers to research from Pradana et al. (2013)

$$\text{Sales Growth} = (Sales^t - Sales^{t-1}) / Sales^{t-1} \quad (2)$$

Moderator Variable

Debt Capacity (DCAP) can be defined as the borrowing ability of a firm. Following Tse and Rodgers

(2011), we measure debt capacity as fixed assets scaled by the sum of long-term debt and equity. Debt Capacity (DCAP) = [Fixed assets / {long-term debt + equity}] (3)

Econometric Model

We can use two different dependent variables. Therefore, we specify the following two regression equations to estimate the coefficient.

$$DV_1 = \alpha + \beta_1(ROA) + \beta_2(Sg) + \beta_3(dcap) + \beta_4(CR) + \beta_5(AT) + \beta_6(Emzscore) + \beta_7(Covid19) + \beta_8(year\ effects) + \beta_9(firm\ effects) + \varepsilon \quad (4)$$

$$DV_2 = \alpha + \beta_1(ROA) + \beta_2(Sg) + \beta_3(dcap) + \beta_4(Ag2dcap) + \beta_5(CR) + \beta_6(AT) + \beta_7(Emzscore) + \beta_8(Covid19) + \beta_9(year\ effect) + \beta_{10}(firm\ effect) + \varepsilon \quad (5)$$

Where ROA is Return on asset, Sg is Sales Growth, Dcap is Debt Capacity, CR is Current ratio, AT is Asset Tangibility, the z-score model estimates accurate results and is reliable to estimate the profitability of financial distress in the emerging market z-score, α is Constant or intercept, β is Slope and ε is the error term of the model.

3 | RESULT AND DISCUSSION

In this section, we will present the outcome of our study and engage in a comprehensive discussion of its implications. We will begin by laying out the raw data and observations, followed by an analysis that aims to uncover patterns and trends.

Initial Finding

Descriptive statistics is the fundamental part of the data analysis, which assists in exhibiting the dataset's pattern and trend in a single phrase. Table 1 depicts the descriptive analysis of the variable. The total number of observations used to study is 1150. It presents the data from the smallest, most prominent, average, and standard deviation values of all research variables obtained from 231 manufacturing companies for the 2017-2021 periods. The dataset comprises 1150 observations across various financial variables. Table 1 reports descriptive statistics (Means, Minimum, Maximum, and Standard deviation) for the variable. It shows that Profitability (ROA) as a dependent variable range between a mean value of 3.780 and a minimum value of -67.57, with a maximum value of 337.92, and

the value of the standard deviation is 14.6544. Asset Growth (AG) as an independent variable ranges between a mean value of 0.1256 and a minimum value of -0.7413, with a maximum value of 2.3567, and a standard deviation of 0.2374. The mean value of Ag Dcap is -0.012, the minimum value is -104.50, the maximum value is 26.63, and the standard deviation is 3.71. The mean value of Cr is 2.43, with a minimum value of 0.0022, a maximum value of 316.83, and a standard deviation value of 13.36. The mean value of At is 0.78, with a minimum value of 0, a maximum value of 14.022, and a standard deviation of 0.93. The mean value of Emzscore is 1041.123, with a minimum value of -37.24, a maximum value of 11901, and a standard deviation of 35096.63. The mean value of COVID is 0.6, with a minimum value of 0, a maximum value of 1, and a standard deviation of 0.49.

Table 2: The pairwise correlation coefficients are mostly low, with very few in the mid-range, which suggests no reason for multicollinearity. When we do not find high-value correlation among variables, it proves there is no issue of multicollinearity. The result further indicates that Asset Growth (AG), Current Ratio (CR), and Covid have positive correlations with Profitability (ROA). AG Dcap, Asset Tangibility (AT), and Emzscore are found to have negative correlations with Profitability (ROA).

Multi-collinearity is the high degree of association between two independent variables. Table 3 presents the statistics, including the VIF value, which exceeds the threshold level of 0.5 and remains below 3. Here, there is no issue of Multicollinearity.

Multiple regression result without moderation indicates the estimated impact of various independent variables on the dependent variable, Profitability (ROA). The coefficient for "Asset growth (Ag)" is 7.16, suggesting that, holding other variables constant, a one unit increase in "AG" is associated with an increase of 7.16 units in ROA. Similarly, the coefficient for "Dcap" is -0.021, indicating that a one-unit decrease -0.021 units in ROA. The coefficient of "CR" is 0.017, suggesting that a one-unit increase in ROA is associated with a 0.017-unit increase. The coefficient of "At" is -5.16, implying a negative impact on ROA. The coefficient of "Emzscore" is 3.48e-06, and the coefficient of "Covid" is 2.21, suggesting a positive effect on ROA. The intercept or constant term

Table 1: Descriptive Statistics

Variable	Obs	Mean	Min	Max	Std.Dev
ROA	1150	3.780	-67.57	337.92	14.6544
AG	1150	0.1256	-0.7413	2.3567	0.2374
AG Dcap	1150	-0.01263	-104.5083	26.6305	3.7140
CR	1150	2.4324	0.00227	316.8322	13.3626
AT	1150	0.7815	0	14.0225	0.9372
Emzscore	1150	1041.123	-37.2437	11901	35096.63
Covid	1150	0.6	0	1	0.4901

Table 2: Correlation

	ROA	Ag2	Ag2dcap	CR	AT	Emzscore	Covid
ROA	1.00						
AG2	0.2115	1.000					
Ag2dcap	-0.0206	0.0609*	1.000				
CR	0.0035	-0.0692	-0.0162	1.00			
AT	-0.1189	-0.1812*	0.0240	-0.0583*	1.000		
Emzscore	-0.0380	-0.0231	0.0004	-0.0049	0.0427	1.00	
Covid	0.0151	-0.1021*	-0.0401	-0.0211	-0.0051	-0.0361	1.00

Table 3: Multi-Collinearity Analysis

Variable	VIF	1/VIF
Ag2	1.06	0.9465
AT	1.04	0.9598
Covid	1.01	0.9854
CR	1.01	0.9889
Dcap	1.00	0.9950
Emzscore	1.00	0.9964
Means VIF	1.02	

Table 4: Multiple Regression Result without Moderation

ROA	Coefficient	Std. Err	T	P	95% Conf	Interval
AG2	7.168625	1.775677	4.04	0.000	3.683732	10.65352
Dcap	-0.0219385	0.0365397	-0.60	0.548	-0.0936503	0.0497732
CR	0.0177456	0.0619392	0.29	0.775	-0.1038145	0.1393058
At	-5.163963	2.243183	-2.30	0.022	-9.566371	-0.7615555
Emzscore	3.48e-06	0.0000112	0.31	0.756	-0.0000185	0.0000254
Covid	2.218928	1.109836	2.00	0.046	-0.0407958	4.397061
Cons	-6.351928	5.450364	-1.17	0.244	-17.04866	4.3448
Firm Effect	Yes					
Year Effect	Yes					
R-Square	0.4800					
F-Stat	3.53(0.00)					
N	1150					

Table 5: Multiple Regression Result with Moderation

ROA	Coefficient	Std. Err	T	P	95% Conf	Interval
AG2	7.8003127	1.773152	4.40	0.000	4.32039	11.28026
Ag2 Dcap	-0.2885782	0.1210407	-2.38	0.017	-0.5261292	-0.510272
CR	0.281441	0.0617027	0.46	0.648	-0.0929518	0.14924
At	-4.674587	2.236292	-2.09	0.037	-9.06347	-0.2857031
Emzscore	3.58e-06	0.0000112	0.32	0.749	-0.0000183	0.0000255
Covid	2.128249	1.106895	1.92	0.055	-0.0441103	4.300609
Cons	6.235363	2.038088	3.06	0.002	2.235469	10.23526
Firm Effect	Yes					
Year Effect	Yes					
R-Square	0.4830					
F-Stat	3.58(0.000)					
N	1150					

-6.35 is a negative impact on ROA. The R-Square value is 0.480, suggesting that the model explains about 48% of the variance in ROA. The F-stat is 3.53, and the model is based on a sample size of 1150 observations.

Multiple regression result with moderation indicates the estimated impact of various independent variables on the dependent variable, Profitability (ROA). The coefficient for "Asset growth (Ag)" is 7.80, suggesting that, holding other variables constant, a one unit increase in "AG" is associated with an

increase of 7.80 units in ROA. Similarly, the coefficient for "AG2Dcap" is -0.288, indicating that a one-unit decrease -0.288 units in ROA. The coefficient of "CR" is 0.281, indicating that a one-unit increase in ROA corresponds to a 0.281-unit increase. The coefficient of "At" is -4.674, implying a negative impact on ROA. The coefficient of "Emzscore" is 3.58e-06, and the coefficient of "Covid" is 2.128, suggesting a positive effect on ROA. The intercept or constant term is 6.235, which has a positive impact on ROA. The R-Square value is

0.4830, indicating that the model explains about 48.30% of the variance in ROA. The F-stat is 3.58, and the model is based on a sample size of 1150 observations.

Conclusion and Implications

In this paper, the study was conducted during the period 2017-2022 with 231 samples of non-financial firms. The data is collected from the State Bank of Pakistan (PSX). Profitability and sales growth have a moderate effect on debt capacity. Our exploration of the relationship between profitability and sales growth provided crucial insights into corporate landscapes. We are closely examining the impacts of various variables, including Asset growth, Emzscore, Current ratio, and Asset tangibility are the effects of Profitability. The findings in this study indicate that agency theory and sampling theory are applied in a research paper. The implications of profitability, sales growth, and debt capacity. When companies obtain loans from banks and other financial institutions, it negatively impacts their profitability. It means profitability decreases, but sales growth and debt capacity increase. When sales growth increases, it positively affects the company's profitability, enabling it to repay its loan to the bank easily. However, this growth also results in a significant portion of the profit being allocated to loan payments. The manager should develop strategies to control and increase sales growth and profitability, while also trying to decrease debt capacity. After taking a loan, managers should devise strategies that can either excel in their profitability and sales or pay loans in a way that maintains their profitability.

REFERENCES

- Adil, M., Hussain, R. Y., Irshad, H., & Awais, M. Unveiling the financial leverage-profitability nexus in Pakistan's textile sector: a moderating role of growth considering the influence of COVID-19. *Adv Bus Commerce*, 3(1), 114-142.
- Adil, M., Hussain, R. Y., Rassas, A. H. A., Hussain, H., & Irshad, H. (2025). Assessing the impact of economic policy uncertainty on corporate leverage structure: do foreign ownership act as buffer?. *Cogent Economics & Finance*, 13(1), 2476100.
- Hussain, R. Y., Adil, M., Tumwine, G. N., Hussain, H., & Irshad, H. (2025). Balancing green and growth: do innovation and contribution drive sales and environmental performance?. *Discover Sustainability*, 6(1), 257.
- Mirza, H. H., Hussain, H., Hussain, R. Y., Ahmed, M. W., & Adil, M. (2025). Corporate Disclosure and Transparency as a Tool of Socially Responsible Risk Management. In *Corporate Risk Mitigation through Socially Responsible Governance* (pp. 91-104). IGI Global Scientific Publishing.
- Khalid, F., Qadeer, M., Shah, A. T., Mukthar, N., & Rehman, P. (2025). Navigating uncertainty: How economic policy uncertainty shapes the impact of growth and renewable energy on CO2 emissions. *Journal of Applied Linguistics and tesol (JALT)*, 8(2), 1025-1044.
- Khalid, F., Mukthar, N., & Abbass, J. (2025). The impact of firm growth on firm performance with the moderating role of economic policy uncertainty. *Contemporary Journal of Social Science Review*, 3(1), 1107-1125.
- Zhang, T., Zho, J. Y., Hussain, R. Y., Wang, M., & Ren, K. (2022). Research on the cultivation of green competitiveness among chinese heavily polluting enterprises under country/district environmental regulations. *Frontiers in Environmental Science*, 10, 955744.