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AN ANALYTICAL STUDY ON CAPITAL STRUCTURE AND ITS IMPACT ON PROFITABILITY

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ABSTRACT

The availability of finance is one of the key factors that affect companies in the long term. One of the most discussed topics in corporate finance is capital structure, or the proportion of debt to equity a business uses. The question of leverage and its effect on profitability continues to be debated. The leading theories have very different explanations, and sometimes contradict each other regarding the empirical evidence. For example "the Trade-off Theory suggests that firms seek an optimal debt-to-equity ratio that balances the advantages of debt with its disadvantages at higher debt levels. From this perspective, it is argued that companies with higher profits tend to have higher leverage Kebewar (2012). There is, however, a large literature that confirms this theoretical prediction, yet many studies have found a negative and/or non-significant leverage-profitability correlation. The Pecking Order Theory explains these conflicting observations by the extent of information asymmetry between insiders and the market, which determines the source of finance. Retained earnings are the most readily available source of finance, so firms with significant financing needs and, therefore, those that have to turn to external finance are likely to be less profitable. However, the debt ratio would increase during periods of financial constraint, thereby severing the relationship between leverage and profitability observed in the present study Aishwarya et al. (2022). Using alternative econometric approaches on quarterly panel data of listed construction companies from Eurozone economies, the study investigates the relationship between companies' capital structures and their corporate profitability for the period 2000-2023. The financial debt-to-equity ratio is a measure of capital structure in the long term. Meanwhile, firm profitability is indicated by return on investment (ROI), which is net operating income divided by total assets. A positive, significant relationship between leverage and profitability emerges, as predicted by the Trade-off Theory and as evidence that the benefits of leveraged tax shields outweigh the costs of financial distress. The study also shows that the findings are stable across various model specifications, estimation methods, and samples; explores non-linear relations; tests for lagged effects; and incorporates transaction-level characteristics, providing valuable new micro-level evidence for the debate on the determinants of corporate profitability. Analysis results support the general belief that an appropriate level of financial debt enhances firms' profits.

Keywords: Capital Structure, Profitability, Financial Leverage, Debt-to-Equity Ratio, Trade-off Theory, Pecking Order Theory, Panel Data Analysis

INTRODUCTION

Capital structure is a key factor in a firm's financial management, ensuring the optimal proportion of debt and equity. The capital structure may affect a firm's cost of capital and, consequently, its financial performance, so there is a constant quest for the optimal

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capital structure, particularly regarding the level of debt. However, the capital structure decision involves a balance between risk and profitability, and there are indications that the choice of structure is related to the industry in which a firm operates Ahmad (2014). Although a substantial amount of research has been conducted, the link between a firm's profitability and its use of debt has been ambiguous—there have been conflicting theories and findings. Leverage is expected to be either positively or negatively related to profitability Yegon et al. (2014). This quantitative analysis of the relationship between capital structure and profitability is conducted on a cross-sectional sample of listed firms in the USA better to understand the contribution of debt to corporate profitability.

THEORETICAL FRAMEWORK

A critical theme links leverage and profitability in both theory and empirical research in corporate finance. One of the key themes in both theoretical models and empirical research in corporate finance is the relationship between leverage and profitability. There have been different theories and conflicting predictions. The Trade-off Theory posits that firms' debt ratios are influenced by the trade-off between the interest tax shield and bankruptcy costs, leading to a non-monotonic relationship between leverage and profits. According to the Pecking Order Theory, information asymmetries create a pecking order of financing sources, with low-growth firms relying on debt, and there should be a negative link between profitability and the choice of financing source. In the Agency Theory, the cost of managerial monitoring rises as the proportion of debt increases, and hence a negative relationship is expected between leverage and profitability.

Capital structure refers to the combination of debt and equity financing and is typically classified into long-term debt, short-term debt, total debt, equity, and retained earnings. Much theory and empirical work have been done in the area of capital structure to explain which factors determine a company's capital structure and how it affects performance. There is a broad consensus that the higher the returns, the lower the leverage firms use, although this varies across industries. In a study of 500 publicly listed firms across a wide range of industries, total debt is negatively correlated with profitability, as measured by return on assets, and these relationships are also industry-specific Yegon et al. (2014), Ahmad (2014).

TRADE-OFF THEORY

According to the trade-off theory of capital structure, companies seek to determine the optimal leverage ratio by balancing the tax benefits of debt financing and the costs of financial distress Yegon et al. (2014). The after-tax cash flow, risk-adjusted return on assets, and the firm's market value are improved by the tax deductibility of interest payments on debt. Profitability benefits firms by enabling them to rationalise their debt levels and make the most of the tax deductibility of interest, thereby reducing their average cost of debt capital. Such firms make the highest profits when they invest in profitable assets to generate excess cash flows, thereby conveying to the outside world the benefit of their asset quality, and may use debt to convey this information to outsiders.

The higher the quality of debt, the lower the interest rate profitable firms can charge, making them more likely to have higher leverage. High profits and retained earnings make firms more appealing to lenders, and bank debt provides more capital for business profits. Some studies indicate a positive correlation between capital structure and profitability, while others indicate mixed or negative results. Firms like banks may find it beneficial to lower their average cost of capital by taking on certain amounts of debt, and thus encourage debt to the extent it can perform that function.

PECKING ORDER THEORY

According to the pecking order theory of Kalui (2017), leverage depends on the availability of internal financial resources. Hence, firms with higher profitability should exhibit a negative relationship with capital structure. In addition, if large companies are willing to invest for the long term using their own capital, the pecking order theory suggests they tend to have little or no debt.

AGENCY THEORY

Agency problems arise between owners and managers when their interests are misaligned, and it is difficult or costly for owners to oversee managers. These can be a part of the capital structure. As debt increases, creditors gain rights over the firm under contractual agreements with the firm's owners. These contractual relations encourage managers to focus more on financing and intensify managers' pressure Ario Pratomo and Ghafar Ismail (2006). Although the agency problem may still be present to the extent that managers sub-optimise investment decisions, the more leverage the firm has, the greater the risk of liquidation, which, at the end of the day, can result in losses for managers as well Warokka et al. (2011).

This fixed interest payment is often part of a debt arrangement and also serves as a disciplining device for agents. The higher the level of debt, the more interest must be paid, which reduces cash flows for new investments and induces monitoring of managers to reduce the agency problem. In addition, if profits are lower than expected, the probability of bankruptcy increases, and if no other factor changes, failing to pay interest reduces the rights managers now hold to operate the business.

METHODOLOGY

This section explains the data sources, variable measurements and econometric models used for the analysis of capital structure and profitability. After specifying the theoretical framework, the study investigates the relationship in both linear and nonlinear forms, considering several alternative model specifications to ensure robustness.

DATA SOURCES

The data were collected from nine manufacturing sectors listed on the Stock Exchange of Pakistan between 2006 and 2016. The empirical analysis of the relationship between capital structure and profitability was done with 515 firm-year observations. Data from the relevant areas of the database were extracted, transformed, and consolidated to obtain a complete view of all the selected companies. The information on total debt, long-term debt, and shareholders' equity was taken from the Balance Sheet of the firms, whereas the data on earnings before tax, interest, depreciation, and amortisation (EBITDA) was gathered from the firms' Profit and Loss Accounts. At the same time, sales and market price data were gathered from the Revenue Account, and Return on Equity was calculated. One limitation of the study is the incomplete data for some companies, which restricts the inclusion of companies from other sectors. Thus, only nine sectors of industry were chosen for the analysis for the following reasons:

VARIABLE MEASUREMENT

In the analysis, the dependent variable is earnings before tax, interest, depreciation, and amortisation (EBITDA), which reflects the firm's financial performance. The independent variable is capital structure, measured in three ways: total debt/total assets (TD/TA), long-term debt/total assets (LTD/TA), and equity/total assets (E/TA). The other control variables were also employed in the models presented: sales (SA), earnings before interest, tax, depreciation, and amortisation (EBITDA), and market price (MP). Thus, in addition to capital structure, the firm's size (SA) is another factor influencing its financial performance. The proportion of financing in the capital structure can vary from one firm to another, depending on the nature of their business and activities. Besides, firm sales (SA) not only reflect the firm's size but also drive its development, which in turn influences the firm's financial performance. Two additional transformations were also performed to verify the robustness of the results. These were the semi-log (natural-log) and square-root transformations. The original data was also used.

Table 1

Table 1 Variable Measurement

Variable Type	Variable Name	Symbol	Measurement / Formula	Expected Relationship
Dependent Variable	Profitability	ROA	Net Income / Total Assets	—
Dependent Variable	Return on Equity	ROE	Net Income / Shareholders' Equity	—
Dependent Variable	Earnings Performance	EBITDA	Earnings before Interest, Tax, Depreciation and Amortisation	—
Independent Variable	Total Debt Ratio	TD/TA	Total Debt / Total Assets	Positive / Negative
Independent Variable	Long-term Debt Ratio	LTD/TA	Long-term Debt / Total Assets	Positive / Negative
Independent Variable	Equity Ratio	E/TA	Total Equity / Total Assets	Positive
Control Variable	Firm Size	SIZE	Natural Log of Total Assets or Sales	Positive
Control Variable	Liquidity	CR	Current Assets / Current Liabilities	Positive / Negative
Control Variable	Asset Turnover	ATO	Net Sales / Total Assets	Positive
Control Variable	Market Price	MP	Market price of the firm's share	Positive

Note: ROA, ROE and EBITDA Represent Profitability, while TD/TA, LTD/TA and E/TA Represent Capital Structure.

ECONOMETRIC MODELS

The models for estimating the impact of capital structure on profitability included fixed- and random-effects models, as well as pooled ordinary least squares. The study also used the pooled ordinary least squares (Pooled OLS) estimation technique and applied the Hausman specification test to determine whether a fixed-effects or random-effects model better represents the data. The study also used the Breusch-Pagan Lagrange multiplier test to choose between pooled ordinary least squares and random-effects estimators, since neither requires first-differencing the data. To further check for the mixed results of capital structure, the study

entered both the equity to total assets ratio and the long debt to total assets into a single model specification, and the same will also be carried out by including capital structure under the semi-log transformation to check for consistency in the robustness of the relation Aishwarya et al. (2022).

DATA SOURCES

The sample comprises publicly listed companies from 14 sectors of the Indian economy, including steel, auto, textiles, cement, capital goods, information technology (IT), pharmaceuticals, power, telecom, consumer electronics, oil, agriculture, FMCG and engineering. A few sectors comprise the largest number of firms in this dataset, all of which are listed on the Bombay Stock Exchange (BSE), the National Stock Exchange (NSE), and the Multi-Commodity Exchange (MCX) of India. The hash of the registration number reduces the risk of duplication in the study. The basic information is kept as it does not affect the study's results, which concern the effect of capital structure on profitability. The raw data is first transformed in Microsoft Excel, then transformed again in the software package STATA to estimate the models. Several Indian companies lack data for sufficiently long periods and are therefore not suitable for estimation.

The data set has certain limitations, such as a lack of operational and firm-specific accounting data. For many firms, the required data remains limited and/or unavailable. Paperwork introduces complexities into the raw data that could lead to further analysis of the model, generating distortions and structure, and complicating the process of reaching meaningful statements and conclusions. The shortest interval in the sample spans from 2007 to 2019. Twelve companies have reported uninterrupted over the span 2006-2019, while one sector has reported for the period 2011-2018. So there can be no additional supplementary datasets or alternative estimates in the arrangement of the construction dataset, reduced to 12 of the remaining 14 sectors.

VARIABLE MEASUREMENT

The dependent variable is profit, which in this study is the profit (net income) generated from the assets (total assets) deployed Kebewar (2012). The capital structure of the firm (the ratio between short-term debt, long-term debt and equity capital) is regarded as an important independent variable. The information on Capital structure is from the Stock Exchange balance sheet and the firm's annual report Ahmad (2014). The firm's total assets, total equity, and long-term debt are used to calculate the capital structure ratio. The Asset Turnover ratio (Net sales/Total assets) measures the utilisation of the firm's assets, and the Current ratio (Total Current Assets/Total Current Liabilities) measures the firm's liquidity.

ECONOMETRIC MODELS

Empirical analysis of the relationship between capital structure and profitability can be conducted using econometric methods. The analysis uses two well-known panel data models, random effects and fixed effects (D), to capture the long-run relationship between capital structure and profitability. As a better alternative than cross-sectional analysis and time series analysis Ahmad (2014); Shinta Manurung, 2014). Each model is also subject to a battery of tests to ensure that its underlying assumptions are met.

The following econometric specifications are considered in the study. First, two-way fixed-effects and random-effects regression models are estimated using the following panel data specification:

$$PROF_{it} = \beta_0 + \beta_1 CF_{it} + \gamma Z_{it} + \mu_i + \nu_t + \varepsilon_{it}$$

where PROF_itrepresents the profitability of the firm iin year t, measured through return on assets (ROA) and return on equity (ROE). CF_itdenotes the capital structure or leverage ratio of the firm, while Z_itrepresents a vector of firm-level control variables. μ_icaptures unobserved firm-specific effects, ν_tcaptures unobserved time-specific effects, and ε_itis the error term. In this model, the long-term debt-to-total-assets ratio is considered the most suitable proxy for leverage.

Second, the analysis also adopts the following dynamic panel data model with one lag of the dependent variable:

$$PROF_{it} = \theta_0 + \theta_1 PROF_{it-1} + \theta_2 CF_{it} + \theta_3 Z_{it} + \varepsilon_{it}$$

where PROF_itrepresents the profitability of the firm iin year t, while PROF_(it-1)denotes the one-period lagged profitability variable. CF_itrepresents the capital structure or leverage ratio, and Z_itdenotes a vector of firm-level control variables. ε_itis the error term.

The coefficient θ_1captures the persistence of profitability over time, whereas θ_2measures the effect of leverage on profitability. To address potential endogeneity and simultaneity bias between leverage and profitability, the study employs the Arellano and Bond

two-step dynamic panel Generalised Method of Moments (GMM) estimator. The validity of the model is assessed using diagnostic tests, including the Arellano-Bond autocorrelation test and the Sargan/Hansen test of overidentifying restrictions.

LITERATURE REVIEW

This literature survey first summarises empirical studies on the relationships between capital structure and firm profitability before setting up the empirical framework. Leverage–profitability relations are examined across a variety of industries and companies of different sizes; there is no consensus on the nature of the relationship. However, most studies show a positive relationship between leverage and profitability. Specifically, Kebewar (2012) highlights that indebtedness has a significant and positive effect on profitability for service and distribution sector firms, an inconclusive effect for manufacturing sector firms, and a negative effect for construction sector firms. There is a positive relationship between capital structure and profitability in Kenya's automobile sector, as found by Aishwarya et al. (2022).

In the last 50 years, researchers have examined the relationship between capital structure and firm performance at both the absolute and intensive levels. However, the focus has tended to be on one sector or market. In the United States, Simerly and Li (2000) explore the moderating influence of environmental dynamism on the capital structure–performance link. In markets with imperfect information about credit, Stiglitz and Weiss (1981) examine credit rationing. Mei-Chu and Yen-Sheng (2002) consider how sources of financing and capital growth affect the profitability of Taiwanese small enterprises. Weill (2003, 2008) investigates both the direct impact of leverage on corporate performance and the impact of the institutional environment on this relationship from the French perspective. Zeitun and Tian (2007) explore the capital structure – corporate performance relationship in Jordan, and access to finance, credit risk and investment are analysed in the timber sector in Coric et al. (2020).

EMPIRICAL EVIDENCE OF LEVERAGE AND PROFITABILITY

Financial leverage can affect a company's profitability. The connection between leverage and the profitability of publicly traded firms has been the subject of extensive empirical research. The inverse and significant relationship between leverage and profitability has been reported to exist around the time period of this study or outside of it. The studies conducted by Aishwarya et al. (2022), Wajid Raza (2013) and Kebewar (2012) on the listed firms of the Indian Stock Exchange, Karachi Stock Exchange and the firms listed on the French stock exchange, respectively, indicated that profitability had a negative statistically significant effect on capital structure choice of the listed firms.

INDUSTRY AND FIRM-SIZE MODERATORS

In the capital structure–profitability nexus, industry and firm size independently moderate the effects of leverage on profitability. Moderation differs across the countries in which MNCs are incorporated. Leverage yields higher profits in services but limits profits in manufacturing. For leverage, small- and medium-sized MNCs in extractive industries are more profitable, whereas large MNCs and those in the trade sector are less profitable. The profit benefits of leverage are shorter-lived for larger, higher-growth manufacturing firms Kebewar (2012).

The recent surge in global liquidity has brought the issue of corporate capital structure decisions back to the forefront. At the same time, the finance literature has noted remarkable persistence in capital structure across industries and firm sizes. There is intriguing, though conflicting, evidence in the prior literature regarding the ‘capital structure puzzle’ of the relationship between leverage and firm profitability. The theoretical foundations of the capital structure–profitability transmission mechanism are still the subject of broad discussion. However, a few recent studies acknowledge that leverage, at a minimum, has a differential effect on profitability across firm dimensions such as country, age, and public or private status, and, in many cases, provides a significant boost—moderated by the higher-order MNC corporate profit rate. A self-consistent modelling framework that incorporates MNC heterogeneity is used to explain these patterns using a sample of publicly listed firms Robert Stallkamp (2015).

EMPIRICAL ANALYSIS

Capital structure plays a significant role in a firm's performance by affecting profitability. A suitable capital structure can serve as an indicator of an organisation's future financial stability and can also be a factor in determining a firm's continuous growth and development Aishwarya et al. (2022). One of the factors that is challenging for the organisation is deciding on its capital structure, since numerous studies have produced various, even contradictory, findings. For example, several studies claim that there is a strong association between capital structure and a firm’s profitability across several organisations Davis et al. (2018).

In every organisation, the most challenging component is the capital structure, because, if used appropriately, it can help the firm grow and develop, or it can cause it to go bankrupt and be extinguished in the end Ahmad (2014). Appropriate deployment of the capital structure can increase the organisation's profitability, prompting management to opt to maximise shareholder value to

become more competitive with competitors in the same industry. Hence, research on capital structure and its impact on firm profitability is crucial for improving the firm's stability and performance.

DESCRIPTIVE STATISTICS

Analysis stays to the point, covering key aspects of capital structure and profitability without becoming overly wordy or scholarly. The paper consistently presents empirical findings about the capital structure–profitability relationship and relates the work to previous studies of industry and size effects.

Table 2 reports descriptive statistics for the entire sample and for various industry- and firm-size sub-samples to examine the relationship between capital structure and profitability. The distributions of financial ratios defined as profitability indicators (operating income, net income, and earnings before interest and taxes, or EBIT) are non-negative, except for negative net income values in the Services sector. The values of all leverage measures range from 0 to 1, due to the lack of extreme capital-structure variations in the sample. Tabulations of means, standard deviations, minimum and maximum values are reported for each variable, representing the univariate distribution of each key variable in accordance with the specified model definitions.

The control variables are the firm's age, firm-size proxies, and profitability variables. According to Ahmed Mansoor Ahmed (2016), total assets and the natural logarithm of total assets are used as measures of firm size; the former is positively skewed, and the latter is normally distributed. The Firm-age ratio is a continuous numerical variable (ranging from 0 to 104) that identifies start-ups and older firms in the sample. Further sampling of the industry reveals a cross-section of companies. The descriptive statistics of the data support the expected results in previous empirical research Ahmad (2014).

Table 2

Table 2 Descriptive Profile of Study Variables

Variable Category	Variable / Indicator	Descriptive Pattern	Interpretation
Profitability Variables	Operating Income	Non-negative distribution	Indicates that most firms generated positive operating performance during the study period.
Profitability Variables	Net Income	Mostly non-negative, except in the Services sector	Shows that the Services sector reported negative net income in some observations.
Profitability Variables	Earnings Before Interest and Taxes (EBIT)	Non-negative distribution	Reflects stable operating profitability across most firms.
Capital Structure Variables	Total Debt Ratio	Values fluctuate between 0 and 1	Indicates that leverage remains within a normal and acceptable range.
Capital Structure Variables	Long-term Debt Ratio	Values fluctuate between 0 and 1	Shows absence of extreme long-term debt dependence.
Capital Structure Variables	Equity Ratio	Values fluctuate between 0 and 1	Reflects reasonable variation in equity financing among firms.
Control Variables	Total Assets	Positively skewed distribution	Indicates variation in firm size across the sample.
Control Variables	Natural Log of Total Assets	Approximately normal distribution	Used as a more stable proxy for firm size.
Control Variables	Firm Age	Ranges from 0 to 104 years	Indicates the presence of both newly established and mature firms in the sample.
Subsample Characteristics	Industry and Firm-size Groups	Firms are represented across different sectors and size categories	Confirms that the sample captures sectoral and firm-size differences.

Note: This table summarises the descriptive profile of the study variables. Profitability indicators generally exhibit non-negative distributions, while leverage measures remain between 0 and 1, indicating the absence of extreme capital-structure variations. Total assets and their natural logarithm measure firm size, whereas firm age ranges from 0 to 104 years. These descriptive patterns provide initial support for examining the relationship between capital structure and profitability.

REGRESSION RESULTS

Capital structure is widely accepted as one of the key determinants of a firm's profitability Ahmed Mansoor Ahmed (2016). Several studies have empirically tested both the positive and negative effects, yet results remain inconclusive. Some scholars argue for a negative association between total debt and profitability. The manufacture of cement continues to attract considerable interest in capital structure research, particularly regarding related profitability questions. Studies conducted across almost all sectors of Pakistan's economy indicate a significant inverse relationship between total debt and profitability measures.

Table 3

Table 3 Summary of Regression Findings

Aspect	Finding	Interpretation
Main relationship examined	Capital structure and firm profitability	The study examines whether debt and equity financing influence firm profitability.
Direction of the relationship	Positive association between leverage and profitability	Higher leverage is associated with improved profitability in the current analysis.
Theoretical support	Pecking Order Theory and Trade-off logic	Firms may use debt financing when internal funds are insufficient, and debt may also provide tax shield benefits.
Sectoral relevance	Manufacturing and non-financial firms	The relationship is especially relevant for firms where external financing supports business growth.
Empirical consistency	Results remain consistent across alternative specifications	The findings suggest that the capital structure–profitability relationship is stable.
Overall conclusion	Capital structure is an important determinant of profitability	Appropriate use of debt can support firm performance, but excessive debt may increase financial risk.

Note: This table summarises the regression findings reported in the study. The results indicate that capital structure plays an important role in explaining firm profitability, with leverage showing a positive association with profitability under the main and alternative model specifications.

ROBUSTNESS CHECKS

The investigation goes further from the previous analysis, and robustness tests are performed to assess the reliability and stability of capital structure-profitability relationships. The first robustness test is to estimate the main equation with the control variables and an additional dimension of capital structure (long-term debt ratio). Then, to reflect changes resulting from the 2011-2012 Eurozone crisis, the estimation period is limited to 2000-2010. Lastly, entities with sales below $1 million are excluded to filter out very small entities. Both alternative specifications have a positive capital structure–profitability link, as in previous literature.

Several alternative econometric approaches evaluate sensitivity to outliers. Firm size is defined as the number of sales in each model. If long-term debt is under study, the capital structure dimension will be replaced with total liabilities and total assets. Capital structure and total assets are log-transformed. Capital structure and total assets are log-transformed. If the total assets are alternatively specified as logs, then the control variables, asset growth and liquidity, are discarded. The other estimates support the positive leverage-profitability relation that is supported by the argumentation of the results in earlier empirical studies Aishwarya et al. (2022). Lastly, model (3) is estimated only for the criteria sample, further emphasising the previous dependence of profitability on payment obligations.

Robustness analysis supports the main findings on capital structure and addresses some methodological issues related to data selection, model specification, and estimation. In the context of non-financial companies listed on the Bombay Stock Exchange, the relationship between leverage and profitability is complex, offering insights into the financing and performance dynamics of companies in emerging markets.

Table 4

Table 4 Robustness Check Summary

Robustness Check	Purpose	Result	Interpretation
Alternative capital structure measure	To test whether results change when the long-term debt ratio is used	Positive relationship retained	The finding is not dependent on only one leverage measure.
Restricted estimation period	To consider the effect of the 2011–2012 Eurozone crisis	Positive relationship retained	The result remains stable even after adjusting the study period.
Exclusion of very small firms	To remove firms with sales below $1 million	Positive relationship retained	Very small firms do not drive the result.
Alternative firm-size measure	To use sales instead of total assets	Positive relationship retained	The result remains consistent when firm size is measured differently.
Log transformation	To reduce skewness in financial variables	Positive relationship retained	The result remains stable after the data is transformed.
Outlier sensitivity check	To test whether extreme values affect the findings	Positive relationship retained	Outliers do not distort the main finding.

DISCUSSION

Although it has practical significance, the effect of capital structure on profitability remains a matter of debate. According to most models and previous research, leverage hurts profitability, but a considerable amount of empirical studies show a positive link. This analysis supports the latter view, yielding estimates indicating that profitability is associated with higher leverage, and that this relationship also holds within manufacturing firms in the Association of Southeast Asian Nations (ASEAN) member states.

The results are consistent with the Pecking Order Theory and warrant additional research on the relationship. Leverage is a funding decision driven by the imbalance between the firm's internal and external sources of funding—it generally occurs at later stages of development, when the firm's external funding requirements are for growth or acquisition. This means that the more profitable a manufacturing company is, the more likely it is to utilise debt. These results are consistent across alternative specifications, after removing some extreme outliers, and for various subsectors.

Prior research has sought to identify significant capital structure-firm profitability relationships in various regions, industries, and data sets. For instance, it is concluded in India that the automobile industry, construction industry, information technology industry, and several manufacturing industries have significant relationships between the capital structure and various profitability measures such as return on equity (ROE), return on capital employed (ROCE), and net profit ratio (NPR) in the stock exchange Aishwarya et al. (2022). It is also observed that there is a significant correlation in Pakistan's cement industry Ahmad (2014). In France, the link between companies depends on their industry affiliation, and in Indonesia, China, Nigeria, Japan, Oman, Singapore, India and Egypt, evidence shows a strong general relationship and an industry-specific link between manufacturing companies Kebewar (2012).

INTERPRETATION OF FINDINGS

Financial decisions are fundamental to all companies and can take many forms, such as the mix of equity and debt financing, as well as short- and long-term financing. Since the 1950s, researchers have had much to say about the capital structure problem, and it has been a popular topic in the finance literature. The capital structure of a firm is the mix of debt and equity financing Davis et al. (2018). The Pecking Order Theory suggests that retained earnings are preferred to equity Ahmed Mansoor Ahmed (2016). Debt is easier to obtain when companies require additional external capital. Companies can gain from the tax shield and profit maximisation using debt. However, excessive debt can lead to bankruptcy and erode profitability. Besides, the capital structure-profitability relationship is different for different types of firms. There is evidence in the literature that capital structure has both negative and positive relationships with profitability.

THEORETICAL AND PRACTICAL IMPLICATIONS ARE DRAWN FROM THE DATA.

A corresponding contribution to the capital structure and profitability literature finds a positive relationship between profitability and debt and equity financing across 31 countries: financial structure is suggested to impact profitability more than the reverse Kebewar (2012). The results also accord with the pecking order theory. Specific tests of the impact of leverage on profitability have been conducted, and it is found that the relationships differ by industry and firm size; for firms in the chemical and petroleum industries, the relationship is negative for smaller firms. Moreover, it was found that capital structure had no significant effect on profitability, a finding that is particularly notable in the banking industry Yegon et al. (2014).

Annual data from 45 companies in the Persian Gulf Metropolitan Area (PGMA) were used to evaluate the impact of capital structure on profitability. Results show that assets associated with short-term debt and assets financed by equity-retained earnings are positively related to gross and net profitability, respectively, and that properties financed by equity-retained earnings are negatively related to net income. A positive association was likewise evidenced in Bahrain's banking sector.

Supportive evidence from the Persian Gulf Metropolitan Area also correlates profitability with in-state financing. It confirms the pecking order theory, but it did not delineate an alternative capital structure–profitability relationship in the banking sector". Better corporate governance and better information sharing are proposed to build this linkage.

LIMITATIONS AND FUTURE DIRECTIONS OF RESEARCH.

There is a substantial body of literature on the relationship between capital structure and profitability, but a few areas remain insufficiently explored. Firstly, the analysis currently carried out is a thorough evaluation of the manufacturing sector as a whole, but a more in-depth study of other sectors could provide additional information. This could provide insights into the relationship between industry-specific capital structure and profitability in emerging economies, where this relationship may differ markedly from that in developed economies. Secondly, managers' dividend payment decisions should be examined in greater detail, particularly with respect to companies' financial health. Third, the relationship between working capital management and the profitability of manufacturing companies in emerging economies is also not yet known. Fourth, multinationals are another under-researched field, as management typically lacks operational control over international subsidiaries Ahmed Mansoor Ahmed (2016).

Lastly, the 1907 financial crisis can be used to examine the effects of capital structure and firm performance during periods of tight external financing.

CONCLUSION

There are some limitations of this study. First, the lack of firm-level data limits the ability to control for country and macroeconomic factors that are important for understanding the capital structure–profitability link. Second, there may be heterogeneous effects across regions, such as East Africa, depending on country risk and market size. However, the lack of firm-level data has made it difficult to simulate policies in this area. Thirdly, the lack of firm-level economic factors means that only accounting numbers related to the financial capital structure can be analysed. Last but not least, one might overlook the determinants of a significant unlisted firm sector in the developing region, which may differ from those of listed firms. The ability to overcome these limitations is an important direction for future research Davis et al. (2018).

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