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AN INVESTIGATION OF THE FACTORS AFFECTING ECONOMIC VALUE ADDED: EVIDENCE FORM NON-FINANCIAL LISTED FIRMS IN PAKISTAN

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Abstract

The current study aims to examine the impact of liquidity (LIQ), leverage (LEV), size, tangibility (TANG), and risk on the economic value added (EVA) in non-financial listed firms in Pakistan. Data of 100 non-financial firms were obtained from the websites of the respective firms. The span of the study is from 2010 to 2023 covering 13 years. The study employed ordinary least square method (OLS). The findings show that on liquidity (LIQ), leverage (LEV), and tangibility (TANG) has considerable and significance influence on Economic value added (EVA). Whereas Risk has no significance influence economic value added. The current study is novel because it uses a more comprehensive gauge economic value added (EVA) to measure performance. The study suggested that financial sectors should take economic value added (EVA) into account as a key component of financial performance.

Keywords: *Economic Value Added (EVA), Risk, Leverage, Tangibility, Liquidity, Size*

JEL Classification: M40 M21

Introduction

In the realm of contemporary business and finance, the evaluation of a company's financial performance is a critical endeavor for investors, managers, and stakeholders alike. Among the myriad of financial performance indicators, Economic Value Added (EVA) has gained substantial prominence as a measure that assesses a company's ability to generate value beyond the cost of capital (Pasha and Ramzan 2019). The current research endeavors to conduct an empirical investigation to explore the factors affecting the Economic Value Added as a measure of financial performance in Pakistan's non-financial sector.

The concept of Economic Value Added dates back to the late 1900s, when Stern Stewart & Co. first presented it as a financial indicator of a business's potential to create value. EVA essentially surpasses conventional accounting metrics by taking the cost of capital into account as a crucial component when determining profitability. It displays the remaining funds following the deduction of debt and equity capital costs from a company's net operating profit. This method follows the notion that a firm is actually profitable when returns exceed the cost of capital (Pasha, Ramzan, and Asif 2019). Traditional performance measures are mainly focused on shareholder wealth maximization, making it an ineffective measure of true performance. However, Economic Value Added (EVA) has the potential to offer a comprehensive evaluation of a company's financial health (Tariq and Naveed 2016).

EVA has attracted a lot of attention in the academic literature, because it aims to provide an in-depth analysis of a company's financial performance by measuring its ability to generate value above and beyond its cost of capital. In today's rapidly changing world, the significance of accurate economic value added analysis cannot be overstated. It is very essential to examine the sensitivity of Economic Value Added (EVA) with key financial indicators. Thus the current study aims to examine the effect of Firm size, tangibility (TANG), Risk, liquidity (LIQ), and leverage (LEV) on Economic Value Added (EVA).

1.1 Objectives of the Research

The novel study has the following objectives:

1. To explore the effect of Leverage on Economic value added of firms.
2. To explore the effect of Liquidity on Economic value added of firms.
3. To explore the effect of firm Size on Economic value added of firms.
4. To explore the impact of Risk on Economic value added of firms.
5. To explore the effect of Tangibility on Economic value added of firms.

By addressing these objectives the study hopes to further the body of knowledge on financial performance measurement, especially in the context of Pakistani company, and support stakeholders in making decisions that would promote sustainable growth and value creation.

2. Literature

Although the studies indicate that EVA is a reliable and insightful performance metric, a deeper look uncovers important nuances and limitations. The purpose of this review of the literature is to present an interesting and thorough summary of the empirical studies on the applicability of EVA in Pakistan.

2.1 EVA in the Pakistani Context

Nazir and Iqbal (2022) support EVA as a useful instrument for evaluating the financial performance of the Pakistani concrete industry. They make a strong case for the correlation between EVA and financial performance, but find that they don't go nearly far enough in addressing the biases and limits that could be present in EVA. The validity of EVA data is called into question by the subjectivity surrounding industry-specific issues, which has not been well investigated. Sheikh and Khan (2022) in the pharmaceutical business and Ali et al. (2023) in the textile industry both express similar views. Even if they support EVA's superiority over traditional measurements, it is important to examine how they ignore two important issues: the impact of outside variables like inflation and exchange rate fluctuations, and EVA's vulnerability to manipulation of accounting data. Although Butt et al. (2023) show a positive relationship between EVA and financial success in the banking industry in Pakistan, they don't address the idea of supplemental performance measures.

2.2 Dissenting Voices

In contrast to the general optimism, Ismail (2006) examines 2252 UK enterprises in order to cast doubt on the EVA's universal applicability. His research casts doubt on EVA's hegemony by indicating that it does not outperform profits after tax and Net operating profit after tax (NOPAT) when gauging stock returns. While praising EVA's dependability, Mirza and Javed (2023) in the auto industry and Awan and Khan (2023) in the telecoms industry both fall into the trap of equating EVA with conventional measures without analyzing the inherent limitations of such comparisons. Their conclusions' objectivity is called into question by this omission.

2.2 A Broader Perspective

Ahmed et al. (2023) proposed EVA as a performance measure for the food and beverage industries, but give caution against relying solely on EVA due to its inability to account for all aspects driving financial performance. Khalid et al. (2023) investigate EVA in Pakistan's oil and gas sector, shown a favorable link between EVA and other crucial financial indicators of the firms. However, the realization of the significance of outside drivers such as commodity prices and sociopolitical difficulties raises doubts about the completeness of EVA.

2.3 Beyond Pakistan

Outside of Pakistan, Altaf (2016) shown that EVA is more successful in stock valuation than traditional performance measures. EVA was proposed by Subedi and Farazmand (2020) as a complete tool that emphasizes the importance of context-specific elements.

The literature review concludes that there is conflicting evidence about the effectiveness of EVA as a performance metric in Pakistan's non-financial sector. At first glance, everything seems

promising, but closer inspection shows a maze of limitations and problems. These include the dependence on accounting data, the potential for manipulation, the indifference to outside influences, and the vital requirement for supplementary indicators. As we negotiate the EVA environment in the financial world, it becomes clear that its effectiveness must be examined within the context of each sector, acknowledging both its strengths and limits.

3. Methodology

3.1 Data

The study selected 100 non-financial firms on the basis of the market capitalization. The time frame of the study were from 2010 to 2023. Purposive sampling was used to gather information from certain sectors. The information was generated using financial statements of the non-financial firms listed on Pakistan stock Exchange. For investigating the performance factors of non-financial firms, panel data technique was employed. The reason behind using panel data instead of cross-sectional and time series regression is that panel data regression has more potential for solving heterogeneity issues. Also, it provides the most usable information while minimizing and generalizing collinearity among variables.

Theoretical framework

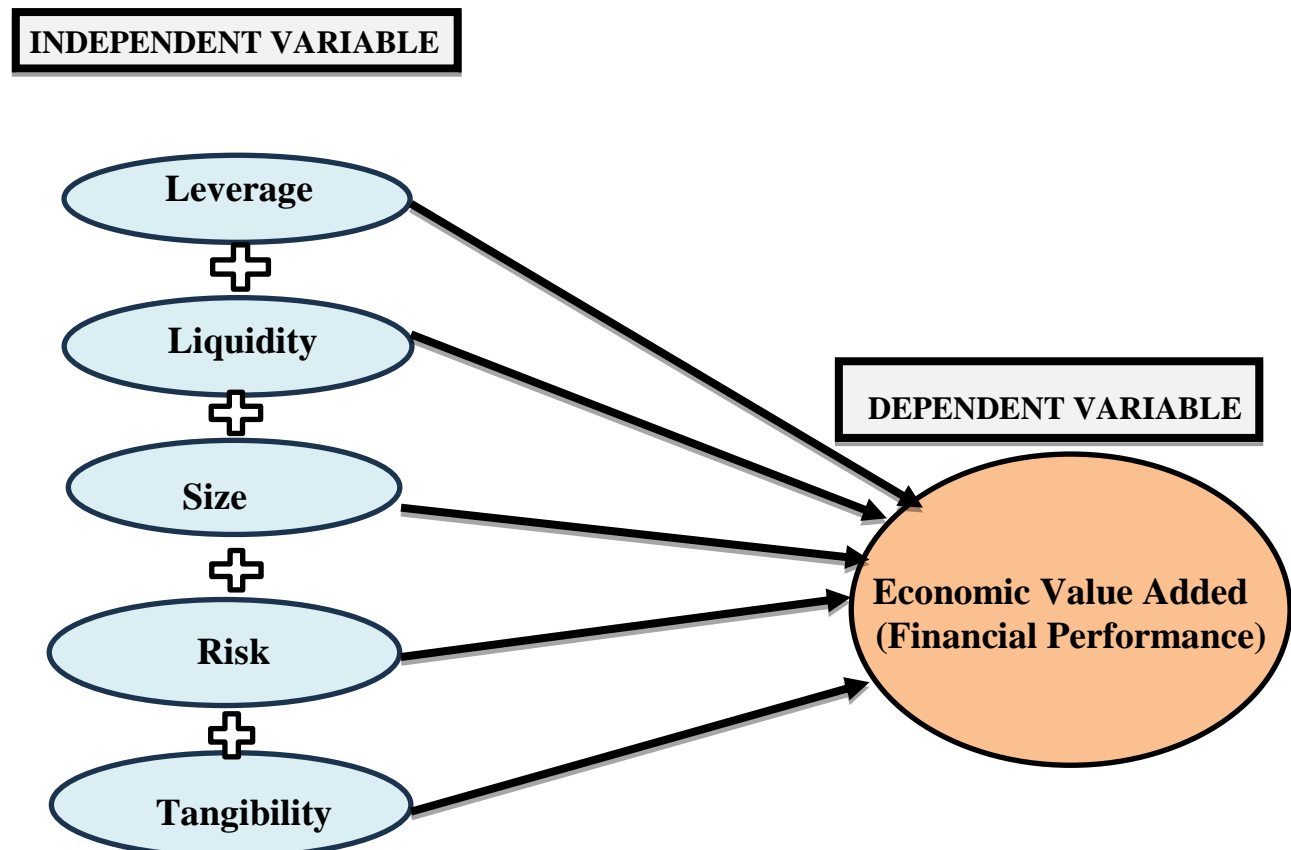


Figure 1: Shows independent variable and dependent variable theoretical framework.

3.2 Variables of research study

i. Dependent variable

Economic value Added (EVA) is a measure used to estimate the financial performance. For the measurement of Economic value added (EVA), the current study adopted the methodology as adopted by Weaver (2001).

$$EVA_{i,t} = (\text{After tax operating profits}_{i,t} - \text{Capital charge}_{i,t}) / \text{Factor inputs}_{i,t}$$

$$\text{Capital charge}_{i,t} = \text{Capital}_{i,t} * \text{Cost of capital}_{i,t}$$

$$\text{Factor inputs}_{i,t} = \text{Operating costs}_{i,t} * \text{Interest}_{i,t}$$

ii. Independent variables

- **Leverage:**

Leverage measure the firm amount of indebtedness used to finance assets. Leverage is measured by dividing total debt by total equity.

$$\text{Leverage} = \text{Total debt} / \text{Total equity}$$

- **Liquidity:**

Liquidity refers to the short-term obligations that must be paid within a year. This payment will be made with cash on hand or most liquid assets. It can be calculated by the current ratio. This suggests the capacity for speedy money conversion from an asset. More liquidity will help the corporation deal with unforeseen events and manage its responsibilities amid low-profit operations.

$$\text{Liquidity} = \text{Current assets} / \text{Current liabilities}$$

- **Size:**

The market's financial success will be influenced by the firm's size. Large firms have more resources, so they have more capacity to influence the business world and economies of scale. Size of the firms also impacts firm's profitability. Larger the firm, more profitable it is because of having more capacity to add economic value. The proxy used to measure the size is log of sales.

$$\text{Size} = \text{Natural log of Sales}$$

- **Risks:**

A firm's financial success is also influenced by the risk level (Kale et al., 1991). Companies with the most unpredictability and high agency expenses are more likely to go bankrupt than companies with higher earnings. According to Johnson (1997), organizations with variable earnings may have a cash shortage that makes it difficult to repay loans. The proxy used for measuring risks is as follows:

$$\text{Risks} = \text{EBIT} / \text{EAIT}$$

Where EBIT and EAIT represents earnings before and after interest and taxes respectively.

- **Tangibility of assets:**

A large company having a large number of fixed assets can enjoy huge amount of loan with low

interest rates as they have sufficient resource and are able to provide guarantees of property ownership. Companies with more permanent assets may be eligible for a larger credit arrangement with lower interest rates.

Tangibility = Long term assets/Total assets

Regression model

For the estimate of the current study, the regression model listed below was used.

$$EVA_{i,t} = \alpha + \beta_1 Lev_{i,t} + \beta_2 Liq_{i,t} + \beta_3 Size_{i,t} + \beta_4 Risk_{i,t} + \beta_5 Tan_{i,t} + \epsilon_{i,t}$$

Where EVA is performance through economic value added, Lev is leverage, Liq is liquidity, Size is firm's size, Risk is financial risk, Tan is tangibility.

4. Results

This chapter describes the findings of the result in detail that are obtained from the study. The descriptive analysis, correlation analysis and panel regression are presented in the following section.

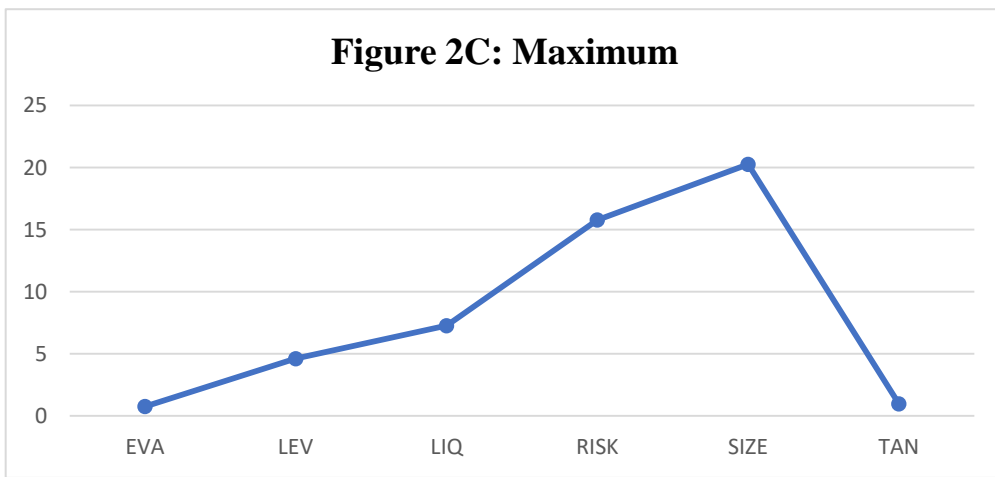
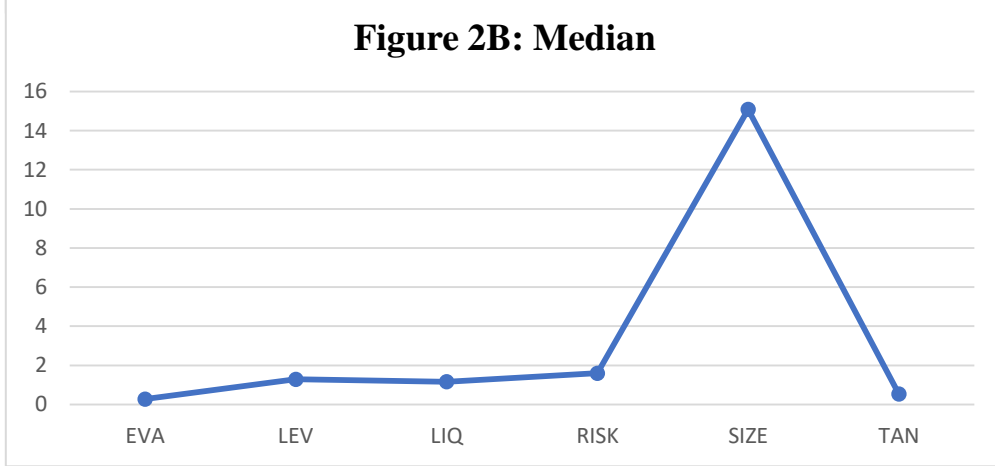
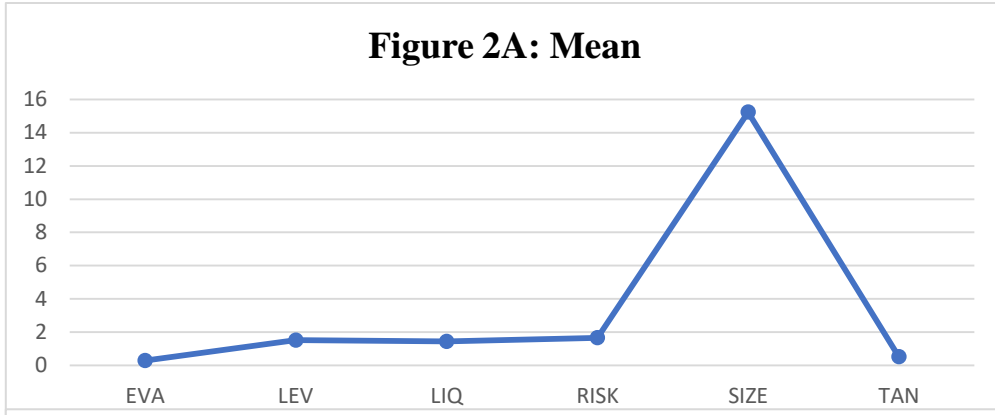
4.1 Descriptive Statistics

Table 1 exhibits statistics for a dataset. Descriptive statistics are used to summarize and describe the main characteristics of a dataset, helping to better understand its underlying behavior. The number of observations are same for each period indicating the data is balanced panel. Additionally, the results show that all of the figures fall within an acceptable range and that there are no issues of normality.

Table 1: Descriptive Statistics

	EVA	LEV	LIQ	RISK	SIZE	TAN
Mean	0.2874	1.5135	1.4379	1.6626	15.2351	0.5190
Median	0.2695	1.2813	1.1613	1.5917	15.0846	0.5329
Maximum	0.7665	4.6106	7.2648	15.7809	20.2569	0.9775
Minimum	0.0001	0.1712	0.0477	-40.2478	9.6550	0.0004
Std. Dev.	0.1836	1.0302	0.9231	3.5431	1.5350	0.2095

Obs. 1000 1000 1000 1000 1000 1000



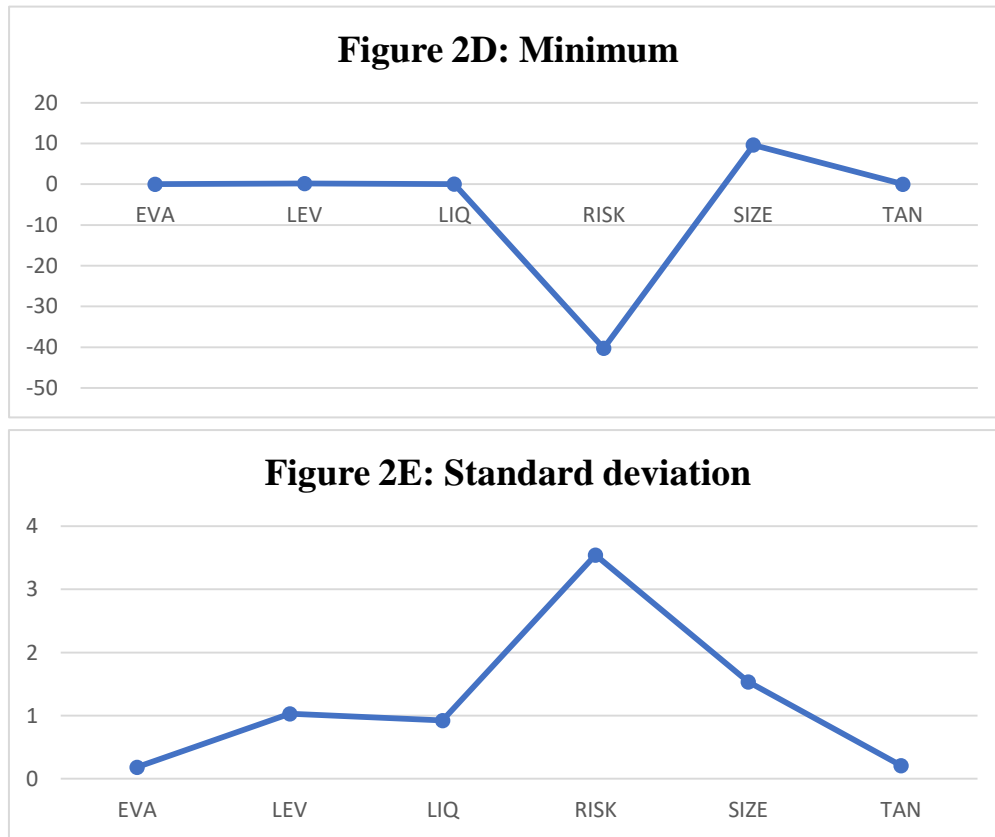


Figure 2A to 2E: Graphical representation of the descriptive statistics.

Correlation matrix

Table 2: Correlation Matrix

	EVA	LEV	LIQ	RISK	SIZE	TAN
EVA	1					
LEV	0.4067	1				
LIQ	0.2335	-0.5541	1			
RISKS	-0.0231	0.0058	-0.0146	1		
SIZE	0.0775	-0.0228	0.0869	0.0015	1	
TANG	0.0362	0.1175	-0.4424	-0.0381	0.0635	1

Table 2 shows the pairwise correlations of several variables in a dataset. The strength and direction of a linear link between two variables is measured by correlation. The matrix values vary from -1 to 1, with -1 representing a perfect negative correlation, 1 representing a perfect positive correlation, and 0 representing no linear connection. The finding indicates that Economic Value Added (EVA) has a positive association with all variables except Risk. This indicates that as Firm size, tangibility (TANG), liquidity (LIQ), and leverage (LEV) increases the firms EVA also increases, with the exception of Risk, which negatively affects EVA. The indicator Leverage (LEV), has a negative association with Size and Liquidity (LIQ) and a

positive association with Risk and Tangibility (TAN). This implies that higher Leverage increases the risk and tangibility but adversely affects the firm liquidity and size.

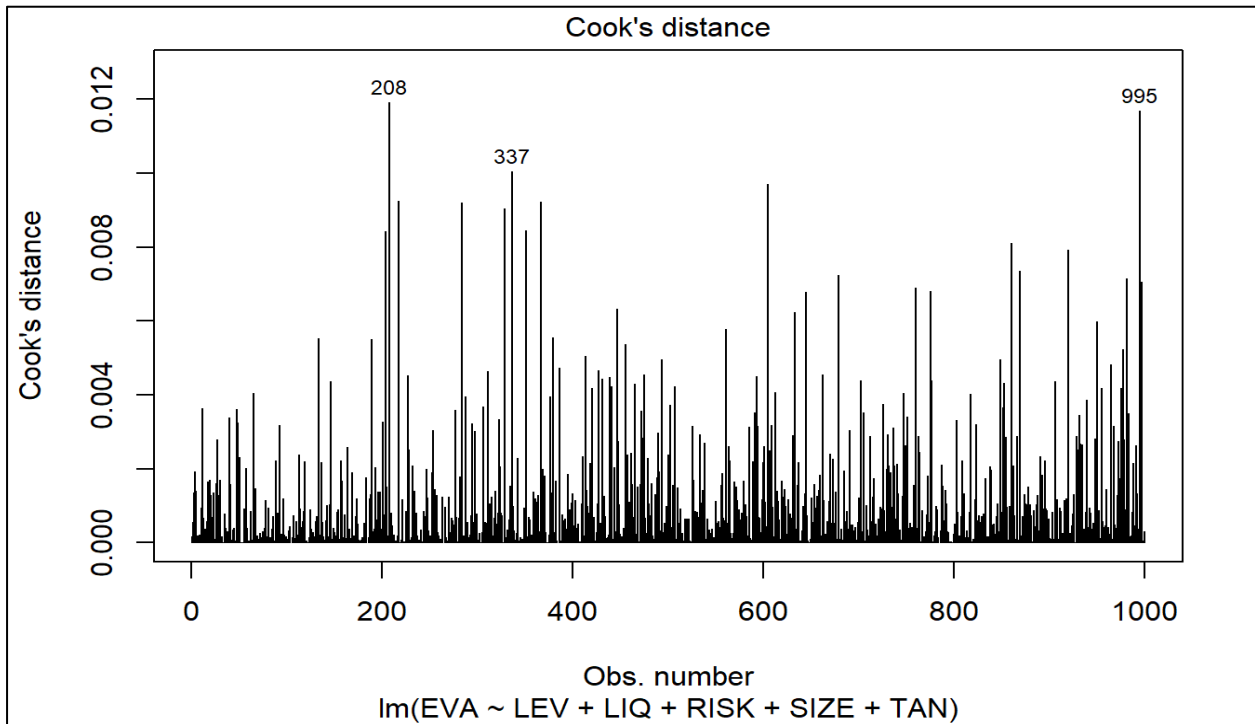
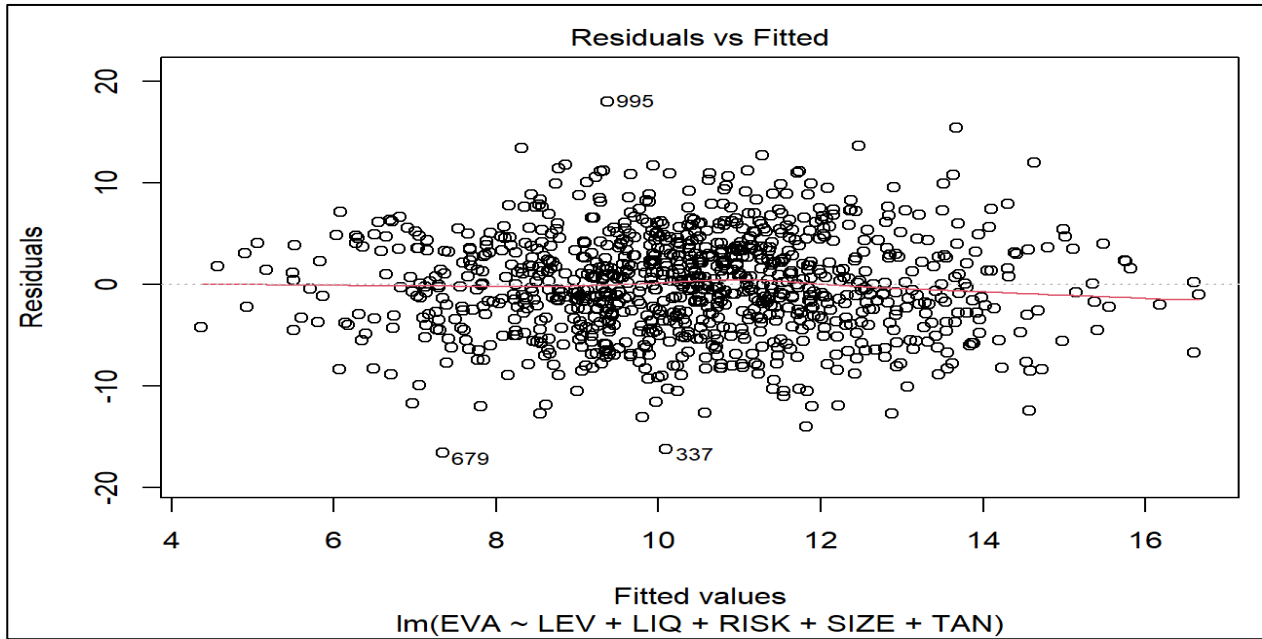
Conversely, Liquidity (LIQ) has a negative association with firms Tangibility and Risk but a positive association with Size. This indicates that as firms increase its liquidity, its positive reflects in the firm size, whereas lower liquidity increase Risk level firms and become less Tangibility. Firm size, also has a positive association with Tangibility, indicating that larger firms are usually tangible. Lastly, Tangibility (TAN) has a negative association with Liquidity (LIQ), indicating that as Tangibility increases it reduces the firm liquidity. The correlation matrix indicates that none of the variables has strong correlation among themselves, indicating multicollinearity is not a problem in the data.

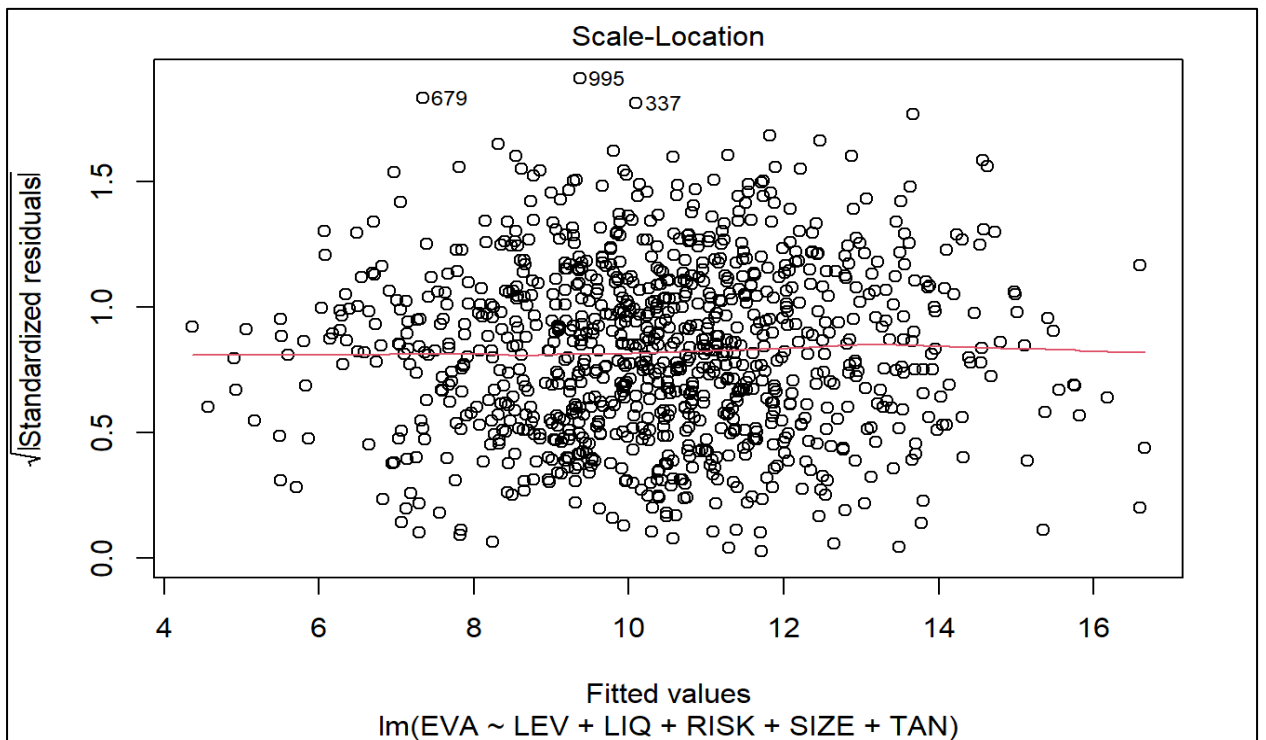
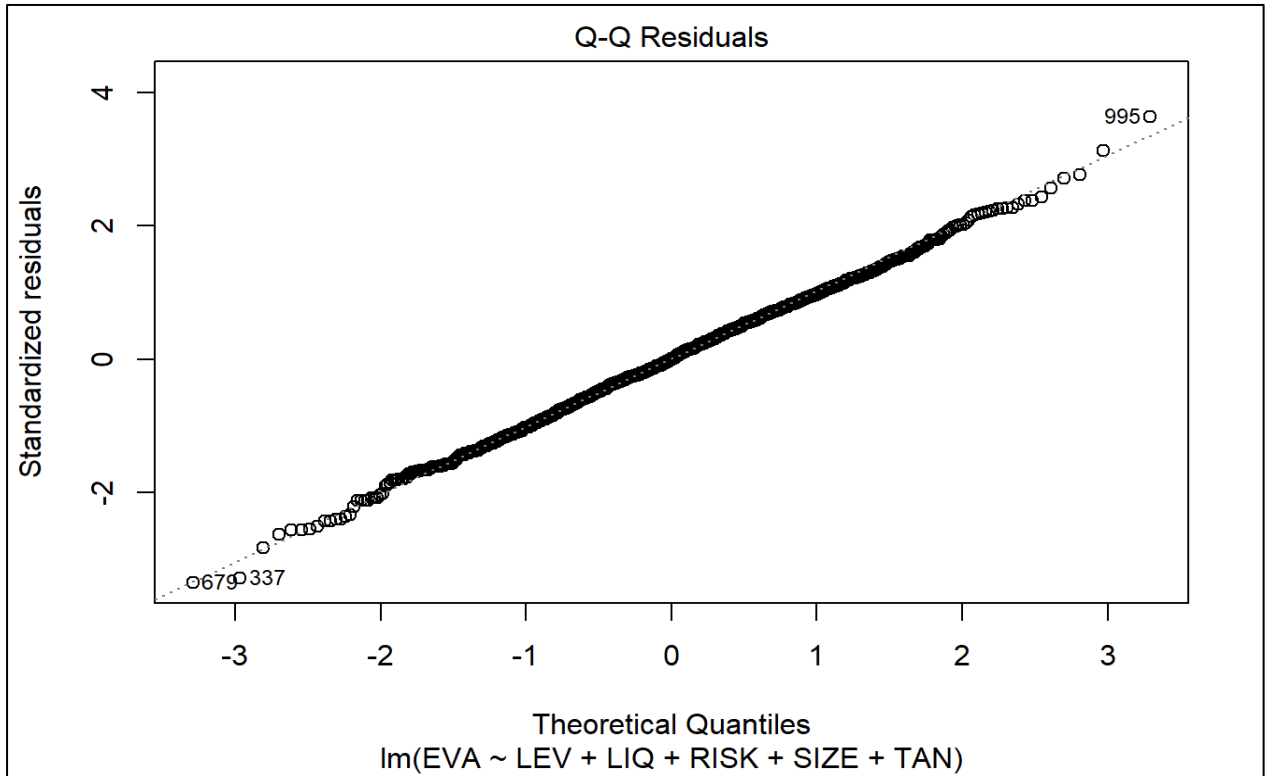
4.2 Regression Analysis

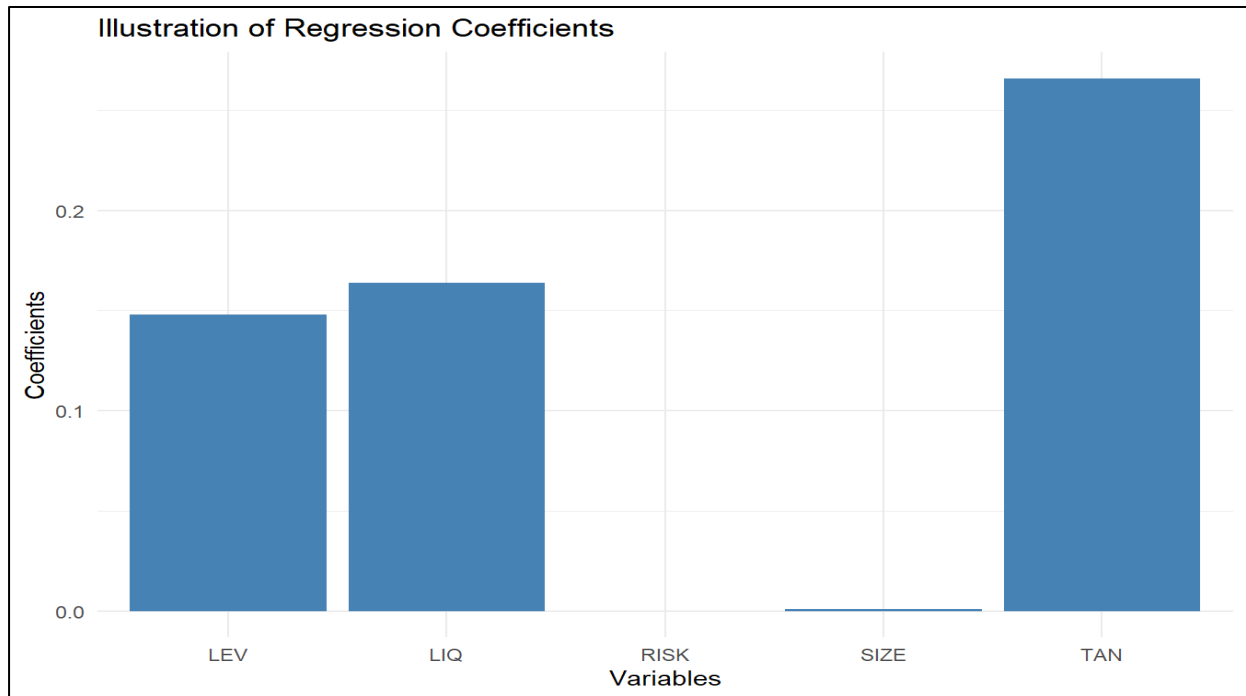
Table 3: Regression Analysis

Dependent Variable: EVA			
Variables	Coefficient	T-stat	Prob.
LEV	0.148	51.877	0.000
LIQ	0.164	46.324	0.000
RISK	-0.000	-0.324	0.745
SIZE	0.001	0.391	0.695
TAN	0.266	20.343	0.000
R ²	0.542	F-stat	632.05
Adj R ²	0.541	Prob.	0.000

Table 3 shows the regression analysis. The values of R-Square and Adjusted R-Square are also presented in the table. Results reveal that the impact of, LEV, LIQ and TANG on EVA is significant and positive. Moreover, the impact RISKS and TAN on EVA is insignificant. The value of R² is 54.19% and adjusted R² is 54.10%, which means that the independent variable causes 54.10% variance in the dependent variable. The F-statistic's statistical significance also emphasizes the model's overall quality of fit. The model's predictions and the links it establishes between EVA and the financial variables under consideration are more likely to be accurate given the considerable likelihood associated with the F-statistic.







In summary, results reveal that EVA aligns with the unique characteristics and dynamics of this specific industry, which is essential for financial practitioners and policymakers, and it substantiates the practicality and relevance of EVA in real-world financial analysis, offering concrete insights into the financial health of companies. EVA offers unique insights into existing industry standards. Furthermore, the impact of liquidity, leverage, asset tangibility, firm size, and risk, Tangibility on Economic value added provide guidance to companies aiming to optimize their financial strategies and helps us understand that EVA influences managerial actions, which is essential information for both practitioners and academics. The results can reveal that EVA serves as a useful tool for decision-makers and captures a more comprehensive picture of a company's financial well-being.

Conclusion

The idea of Economic Value Added (EVA) has frequently been misunderstood in the context of corporate finance. EVA proponents assert that because it closely resembles an enterprise's actual economic profit, it stands out as a superior financial success indicator when compared to other indicators. Additionally, they contend that EVA is more capable than alternative metrics of empowering managers to make better decisions, which will lead to higher performance. However, Panigrahi et al. in a study done in 2015 pointed out that the lack of mandatory disclosure of EVA within companies' annual reports has led to its comparatively low popularity. Notably, the authors contend that if businesses calculated and disclosed their EVA values in their annual reports, it might boost shareholder confidence, hence supporting the organization's long-

term existence.

Surprisingly, EVA has gained support from many well-known and well-run businesses all around the world as a performance measurement system. As noted by Bhasin in 2016, this includes market leaders including AT&T, Bausch & Lomb, Briggs and Stratton, Coca-Cola, DuPont, Eli Lilly, General Electric, General Motors, Herman Miller, IBM, Pepsi, Quaker Oats, Siemens, the US Postal Service, and others. More than 500 companies have used the EVA technique since it was first introduced by the Stern & Stewart Company in 1982, demonstrating the clarity that EVA has given to the effort to increase shareholder value.

In light of the foregoing, this study aims to thoroughly examine the effects of key financial indicators on the Economic value added, including leverage, liquidity, size, risk, and tangible assets. To do so, data gathered from Pakistan's non-bank sector was carefully analyzed. The dataset covers a sizable period from 2010 to 2019, enabling a thorough evaluation of trends and correlations.

The study's findings portray a convincing picture. The results demonstrate that the tangible assets (TAN), liquidity (LIQ), and leverage (LEV) all positively and statistically significantly affect that EVA. This demonstrates that in the investigated firms, greater levels of debt, liquidity, and tangible assets are associated with higher EVA levels. Interestingly, though, the effect of risk (RISK) on EVA is shown to be statistically insignificant, suggesting that risk does not appear to have a major influence on EVA. When looking at the statistical analysis more closely, it's worth noting that the computed R-squared (R²) value of 54.19% and the corrected R-squared (adjusted R²) value of 54.10% are both noteworthy. These figures indicate that the study's independent variable is responsible for approximately 54.10% of the observed variance in the dependent variable EVA. The notion that is a primary driver of changes in EVA is in leverage, liquidity, size, physical assets, and, to a lesser extent, risk. In conclusion, this study highlights both the underutilized potential of EVA and its sensitivity with important financial variables within the context of Pakistan's non-financial sector.

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