

## RESEARCH ARTICLE OPEN ACCESS

# Influence of Growth, Capital Structure, Profitability, and Size on FTSE 100 Enterprise Value

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## ABSTRACT

This study aims to examine the influence of growth, capital structure, and profitability on enterprise value (EV) using data from the FTSE 100 companies. It seeks to identify the pivotal elements related to the EV and understand how they interact with each other. The study collects data from the annual reports of FTSE 100 companies for the period of 2019–2023. Regression analyses are conducted to examine the relationships between the variables after robust checks. The analysis reveals that capital structure and business size have a major impact on EV, with larger firms and higher levels of debt financing associated with higher EVs. However, there is no significant relationship between growth rate and EV. The impact of profitability on EV is mixed, with return on assets (ROA) showing a weak negative correlation and return on equity (ROE) showing a weak positive correlation. By offering particular insights into the factors that determine EV within the FTSE 100, this study fills in the gaps in the body of previous research. It offers valuable contributions to both academic research and practical applications by exploring the nuanced dynamics of the connections between EV and growth, capital structure, and profitability.

## 1 | Introduction

Enterprise value (EV) is a commonly employed financial measure that assesses the overall worth of a company by considering both its equity and debt components, as outlined by Zhao and Guo (2023). It is an all-encompassing metric that represents how the organizational market values by considering its operating performance, capital structure, and growth prospects (Wu and Rao 2017). Tobin's Q is another important measure of EV, which evaluates the market worth of a business against the cost to replace its assets (Ibrahim 2017). The assessment of EV is crucial for determining market value, selling price, and insurance activity (Bohnert et al. 2019). Therefore, EV and Tobin's Q provide valuable perspectives on a company's financial well-being and operational efficiency.

Profitability is a key driver of any operation and is often used as a key indicator of its success. It facilitated a measurement of the capacity of the business to make a profit from its equity and assets (Rutkowska-Ziarko 2020). Return on assets (ROA) and return on equity (ROE) are commonly used profitability ratios that evaluate the efficacy and efficiency of a business's activities. ROA measures the return generated from the company's total assets, while ROE measures the return generated from the shareholders' equity (Saputra 2022).

Growth is a fundamental driver of EV and is closely linked to a company's long-term success. Companies that can sustain high growth rates are often valued more highly by the market due to their potential for future earnings (Przychodzen and Przychodzen 2013). Growth might be measured in many

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alternative ways, such as revenue growth, earnings growth, or asset growth. Various internal and external drivers (such as industry dynamics, the competitive environment, and managerial strategic decisions) can impact a company's capacity to attain and maintain development (Collins, Pungaliya, and Vijh 2017).

A company's capital structure may refer to the particular mix of debt and equity finance it uses to support its operations and initiatives (Kumari 2021). This factor significantly influences a company's risk assessment, capital expenses, and general financial robustness. Achieving the optimal capital structure involves striking a careful equilibrium between the advantages and drawbacks of debt and equity financing methods (Binsbergen, Graham, and Yang 2011). Debt financing raises financial risk and might limit a company's flexibility, but it can also have tax benefits and a reduction in the proportion of capital cost. On the other hand, equity financing reduces the present stockholders' ownership stake while providing more financial flexibility and lowering the likelihood of insolvency (Goodhart and Pradhan 2020; Halicek and Karfikova 2022).

The research objectives and questions outlined in this study highlight several key areas where gaps exist in the current literature on EV within the context of the FTSE 100 companies. Firstly, while there is extensive research on the relationship between growth and EV, particularly in terms of revenue or earnings growth, there is a lack of specificity regarding the mechanisms through which growth influences EV within the FTSE 100. Existing studies often overlook sector-specific nuances and moderating factors that may affect this relationship, such as industry dynamics and competitive positioning (Wright and Stigliani 2013; Przychodzen and Przychodzen 2013; Collins, Pungaliya, and Vijh 2017; Petrakis, Valsamis, and Kafka 2020). Therefore, a research gap exists in understanding the nuanced dynamics of the growth-EV relationship within the FTSE 100 companies, including the potential moderating effects of industry-specific factors on this relationship.

The first objective of the study is to examine the connection between the growth rate and its EV. Research Question 1 is developed based on this objective.

**RQ1:** Does a company's growth rate significantly impact its enterprise value?

Secondly, existing studies have predominantly explored the relationship between firm size and enterprise risk management (Iswajuni, Manasikana, and Soetedjo 2018; Silva, Silva, and Chan 2019; Setiany 2021; Sari and Witjaksono 2021) rather than EV. There is limited research on how firm size specifically impacts EV. This gap suggests a need for further investigation into the direct association between EV and firm size, providing insights into the determinants of overall company worth beyond risk management considerations.

The second objective of the research is to investigate how business size affects EV. Research Question 2 is developed based on this objective.

**RQ2:** What is the effect of firm size on its enterprise value?

Thirdly, although there is a substantial body of literature on the relationship between capital structure and EV, there is a lack of empirical research investigating this relationship within the FTSE 100 companies. Lu (2023) investigated the relationship between EV and capital structure based on inhibition and promotion theories. This means that the relationship between them may not be a simple linear. Moreover, there is a limited exploration of how deviations from the optimal capital structure, such as excessive leverage or underutilization of debt, affect EV within the FTSE 100 index. Therefore, a research gap exists in understanding whether there is a linear and empirical connection between EV and capital structure decisions within the FTSE 100 companies.

The third objective of the study is to reveal whether there is an influence of companies' capital structure over their EV. Research Question 3 is developed based on this objective.

**RQ3:** How does a company's capital structure affect its enterprise value?

Finally, while there is extensive research on the impact of profitability on EV, there is a lack of research specifically examining this relationship within the FTSE 100 context. Previous research frequently employs general profitability measures, including ROE and ROA, to demonstrate the influence of these ratios on brand value (Ronald and Samuel 2022) and stock performance (Saputra 2022). Therefore, a research gap exists in understanding the nuanced dynamics of the profitability-EV relationship within the FTSE 100 companies and how profitability interacts with other determinants of EV in this context.

The fourth objective of the study is to analyze the influence of companies' profitability on their EV. Research Question 4 is developed based on this objective.

**RQ4:** How does a company's profitability affect its enterprise value?

## 2 | Literature Review

EV stands as a critical metric for assessing a firm's value, addressing the interests of various stakeholders like shareholders and creditors, and furnishing essential insights to investors, buyers, and sellers (Zhao and Guo 2023). Unlike market valuation, EV incorporates a company's debt and other financial obligations, offering a more precise depiction of its actual value (Bohnert et al. 2019). Moreover, it aids businesses in monitoring their financial well-being over time, enabling them to evaluate their performance and make well-informed decisions. When appraising EV, purchasers need to take into account elements like the stability and profitability of the business. (Lorenc 2017).

Organizational growth rate is often highlighted as a significant driver in determining organizational value. Robust and stable

growth, characterized by increasing sales, market position, and innovative products, can enhance a company's overall value (Zhao and Guo 2023). Investors become more interested and confident in a company that demonstrates consistent and successful growth, which positively impacts its stock price and performance (Ataunal, Gurbuz, and Aybars 2016).

However, the relationship between growth rate and business value is not always straightforward. Although rapid growth can increase a company's value in the short term, questions may arise about the sustainability of such growth in the long term (Lorenc 2017; Li, Liao, and Albitar 2020). It is essential to assess the quality and longevity of growth to understand its impact on market perception and valuation. The Gordon Growth Model suggests that a company's growth rate directly influences its value and stock price. A company that experiences rapid growth is expected to have a higher business value and stock price (Ataunal, Gurbuz, and Aybars 2016; Burinskas and Burinskiene 2020).

According to Tan et al. (2020), Penrose's theory of development emphasizes the link between a company's expansion strategy, distinctive resources, and its competitive edge. The capacity of a business relies on to efficiently use and replenish its resources in unique ways is critical to its long-term success. The Porter's Diamond Model further explores the influence of national factors on a company's ability to compete. Environmental factors, such as government regulations, infrastructure quality, and industry competitiveness, impact a company's growth (Kuloglu 2023). Understanding these factors is crucial in assessing how growth affects the value of businesses, particularly in the context of FTSE 100 companies.

The resource-based view (RBV) model asserts that a company's long-term success is contingent upon its internal competencies and skills. Specialized knowledge, highly skilled employees, and a strong market image can give a company a competitive edge, leading to increased growth and higher value (Bardos, Ertugrul, and Gao 2020; Lubis 2022). However, it is challenging to understand how the growth rate directly affects a company's value. The RBV model, combined with Porter's Diamond Model, provides insights into how internal competencies and environmental factors influence growth rates and, consequently, the value of a business.

The value of a corporation is heavily influenced by market sentiment, which further complicates the association between growth rate and value. Market perceptions are influenced by various internal and external factors, such as the economy, investor sentiment, and global trends (Bhagwat et al. 2020). Changes in customer preferences, government regulations, and technological advancements can also impact the link between growth rate and value. Strategic decisions and financial management choices made by managers further influence how growth impacts a company's value.

The size of a company has long been recognized as a factor influencing its market worth. Bigger companies are often observed as more reliable due to their financial stability, diverse investments, and market share (Kyere and Ausloos 2021; Lu 2023). This perception leads to better value measurements and increased investment trust.

Ronald and Samuel (2022) suggest that larger corporations may encounter difficulties like inefficient bureaucracy and extended decision-making processes because of their intricate management structures. The scale and intricacy of their activities may impede their capacity to promptly adapt to shifts in the market. On the other hand, smaller businesses are often praised for their agility and ability to adapt quickly. However, smaller companies may face challenges due to limited resources and market share, making them more vulnerable to market fluctuations (Salvi et al. 2021). The relationship between firm size and EV is multifaceted and requires a comprehensive analysis of internal and external factors.

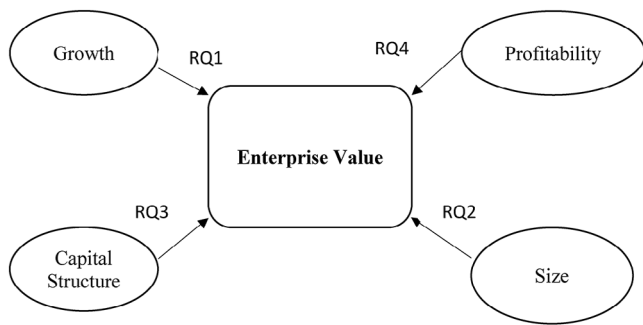
Recognizing the connection between a firm's capital structure and its business value is essential within financial management and market assessment, as emphasized by Kobieliava et al. (2021). The capital structure, which encompasses a company's debt and equity composition, significantly impacts its perceived risk, financial stability, and overall value (Sakawa and Watanabel 2020). Higher leverage ratios indicate a company's reliance on debt financing, which can offer tax benefits and lower capital costs. Well-managed debt can contribute to increased shareholder payouts and overall company value (Kumari 2021). However, excessive debt can increase financial risks, such as the likelihood of bankruptcy and higher borrowing costs.

According to Sakawa and Watanabel (2020), the debt-to-equity ratio is an important factor to consider when studying EV. Organizations who have more debt-to-equity ratios could be perceived as risky by stock buyers, as they may struggle to meet their financial obligations. Conversely, a low EV and effectively managed debt can be viewed as signs of a prosperous company, as suggested by Halicek and Karfikova (2022).

The capital structure of a business is complex and influenced by various factors, making it challenging to determine its impact on business value. Studies have yielded conflicting results regarding the relationship between capital structure and value. Al-Nsour and Al-Muhtadi (2019) suggest a positive link between a company's capital structure and its value, highlighting the benefits of debt financing. On the other hand, El Diri, Lambrinouidakis, and Alhadab (2020) found a negative and statistically significant relationship, emphasizing the potential risks associated with high levels of debt. The optimal capital structure should align with valuation measures and be carefully managed to maximize value.

Brusov et al. (2021) explain that, according to the Modigliani and Miller theory, a company's value remains unaffected by its capital structure given specific assumptions. However, this theory overlooks important factors such as tax breaks, bankruptcy costs, and agency fees. The costs and risks associated with financial distress can significantly impact a company's value, making a lower debt capital structure more favorable (Irawan and Turwanto 2020). The cost of capital and future cash flows are also influenced by the capital structure, affecting a company's share price. A balance between debt and equity is generally considered optimal, as it allows companies to benefit from debt while minimizing financial risks (Husain and Sunardi 2020).

A key component of financial analysis and market valuation, profitability serves as a gauge of a business's ability to produce



**FIGURE 1** | Theoretical framework.

income. Metrics like ROE and ROA are facilitated to capture a valuable perspective into a company's financial health and performance (Ronald and Samuel 2022). Strong profitability indicates effective management and increases investor trust, leading to higher business value. Profitability also influences a company's ability to pay dividends and provides financial freedom (Pina and Dias 2021).

However, the relationship between profitability and business value is influenced by various internal and external factors (Markonah, Salim, and Franciska 2020). Market sentiment, investor expectations, and the company's profitability might be impacted by characteristics unique to its industry and, consequently, its value. High-profit margins may attract competitors and lead to price drops or slower growth (Al-Nsour and Al-Muhtadi 2019). Changes in laws and economic conditions can also affect a company's profitability in specific markets or industries (Saputra 2022).

Financial frameworks like the Economic value added (EVA) model, the Dividend discount model (DDM), and the residual income valuation model (RIVM) illustrate the connection between profitability and the worth of a business (Rodrigues 2021). These models consider company's capability to give returns to shareholders as well as its capacity to produce steady revenue. The EVA method emphasizes the importance of running businesses profitably to increase overall value. Higher EVA indicates increased profitability, which enhances market perception and value. However, the relationship between profitability and value is not always straightforward. Excessive profit margins may hinder growth, especially when competitors enter the market. Factors such as market conditions, industry dynamics, and a company's ability to adapt to change must be considered when assessing the impact of profitability on EV (Husain and Sunardi 2020).

Based on the above literature review, the theoretical framework in Figure 1 was created.

### 3 | Methodology

#### 3.1 | Data Collection

The data for this study were collected from FTSE 100 companies from 2019 to 2023. The FTSE 100 index consists of the 100 largest companies listed on the London Stock Exchange based

on market capitalization. However, finance companies were excluded from the sample due to their different nature of financial statements compared to non-financial companies. This is aligned with Alifiah and Tahir's (2018) study. The data for this study was obtained from the annual reports of the selected companies.

#### 3.2 | Variables

The study focuses on the association among profitability, growth, and capital structure with the EV of FTSE 100 companies. EV, the initial dependent variable, denotes the entire market value of a firm's debt and equity. The second dependent variable is Tobin's Q, which measures the market value of a company's assets relative to their replacement cost. These variables align with Ibrahim's (2017); Bohnert et al. (2019); and Zhao and Guo's (2023) studies.

The independent variables considered in this study are ROA, ROE, growth, capital structure, and size. ROA is a measure of a company's profitability, calculated by dividing net income by total assets. ROE measures the return on shareholders' equity, calculated by dividing net income by shareholders' equity. These variables align with Ronald and Samuel's (2022) and Saputra's (2022) studies. Growth is a measure of a company's expansion in terms of revenue or earnings over a specific period. This variable is suitable with Collins, Pungaliya, and Vijn (2017) and Petrakis, Valsamis, and Kafka (2020) studies. The proportion of debt and equity financing could be used for diagnosing a company's capital structure. This variable is similar to Lu's (2023) study. Size represents the total assets of a company. This variable aligns with Silva, Silva, and Chan (2019) and Setiany (2021) studies. Table 1 represents the variables and measurement methods.

#### 3.3 | Reliability Tests

To ensure the reliability of the data and the statistical analysis, several tests were conducted. The first test conducted was the collinearity test, which examines the correlation between independent variables to identify any multicollinearity issues. When two or more independent variables have a high degree of correlation, this is known as multicollinearity and it results in unstable regression coefficients (Shrestha 2020). The collinearity test helps to identify and address this issue.

The next test conducted for normality distribution is Jarque-Bera, which tests whether the distribution of the residuals in the regression model is normal. Departure from normality can affect the validity of the statistical inference. If the data are not normally distributed, appropriate transformations or alternative statistical methods may be required (Khatun 2021).

Another test conducted was the heteroskedasticity test, which examines whether the variance of the residuals in the regression model is constant across all levels of the independent variables. Heteroskedasticity violates the assumption of homoscedasticity, which assumes constant variance of the residuals. If heteroskedasticity is present, it can affect the efficiency of the coefficient estimates and the validity of statistical tests (Astivia and Zumbo 2019).

TABLE 1 | Variable lists and measurement method.

Variable name	Type	Measurement method
EV	Dependent	Ln (market capital + long-term debt bearing interest—cash and cash equivalent)
Tobin's Q		(market capitalization + preferred stock value + total debt)/total assets
Growth	Independent	Sales revenue <sub>(T)</sub> —sales revenue <sub>(T-1)</sub> /sales revenue <sub>(T)</sub>
Capital structure	Independent	Total debt/total assets
Profitability	Independent	ROA = net income/total assets ROE = net income/total shareholder's equity
Size	Independent	Ln (total assets)

Abbreviations: EV, enterprise value; ROA, return on assets; ROE, return on equity.

### 3.4 | Data Analysis

After conducting the reliability tests, the data were deemed suitable for further analysis. The next step was to perform an analysis of variance (ANOVA) to examine the relationship between the dependent variables (EV and Tobin's Q) and the independent variables (ROA, ROE, growth, capital structure, and size). ANOVA is a statistical technique used to compare means between two or more groups. In this study, ANOVA was used to determine if there were significant differences in the means of the dependent variables across different levels of the independent variables. Furthermore, regression analysis was conducted to estimate the relationship between the dependent variables and the independent variables. Regression analysis was used to account for the potential influence of multiple independent variables on the dependent variables. The regression analysis helps to determine the strength and direction of the relationship between the variables and to identify the significant predictors.

The following econometric model was applied.

$$Y = B_0 + B_1X_1 + B_2X_2 + \dots + B_iX_i + e$$

where,  $Y$  is the dependent variable;  $X$  is the independent variable;  $B_0$  is a constant term;  $B_i$  is a coefficient term for the variables;  $i$  is 1,2,...,5; and  $e$  is the error term.

Based on the above econometric model, Model 1 and Model 2 were created.

#### Model 1:

$$EV = B_0 + B_1 ROA + B_2 ROE + B_3 Growth + B_4 Capital Structure + B_5 Size + \epsilon$$

#### Model 2:

$$\text{Tobin's } Q = B_0 + B_1 ROA + B_2 ROE + B_3 Growth + B_4 Capital Structure + B_5 Size + \epsilon$$

### 4 | Findings

The descriptive statistics provide valuable insights into the key variables under consideration: EV, Tobin's Q, ROA, ROE, Growth, Capital Structure, and Size within the dataset in Table 2.

EV exhibits a mean of approximately 8.68, with a median slightly lower at 8.34, indicating a potential right-skewed distribution. It suggests that there are more companies with lower valuations, while a few companies have significantly higher valuations. Tobin's Q, with a mean of around 0.96, signifies that companies are generally valued close to their asset replacement costs.

ROA and ROE have mean values of approximately 0.06 and 0.14, respectively, indicating moderate profitability. ROA has a positive skewness of 1.96, suggesting a right-skewed distribution. This means that while the majority of companies have relatively modest ROA values, there are some outliers with significantly higher ROA values. Essentially, there are a few companies with exceptionally high profitability compared to the rest. ROE exhibits a negative skewness of  $-1.50$ , indicating a left-skewed distribution with potential outliers on the lower end. This suggests that while the majority of companies have relatively higher ROE values, there are some outliers with notably lower ROE values. In other words, there are a few companies with lower profitability compared to others.

Growth demonstrates a mean of 0.10, with a wider range from  $-4.83$  to 8.10, indicating significant variability in growth rates. The positive skewness of 6.41 suggests a right-skewed distribution with a longer right tail, indicating some companies may be experiencing exceptional growth. Capital Structure displays a mean of 0.65, indicating moderate reliance on debt financing. The positive skewness of 7.67 suggests a right-skewed distribution with a longer right tail, indicating some companies may be heavily leveraged. Size has a mean of 9.71, reflecting the average size of companies in the dataset. The positive skewness of 1.41 suggests a right-skewed distribution, indicating a few larger companies skewing the distribution toward the right.

Table 3 presents the Pearson Correlation Matrix.

EV exhibits a strong positive correlation with Size (0.923\*\*), indicating that larger companies tend to have higher EVs. A weak negative correlation exists between EV and ROA ( $-0.127^*$ ,

TABLE 2 | Descriptive statistics.

	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis
<b>EV</b>	8.684626	8.344553	14.17489	2.895912	1.830145	0.602650	3.566395
<b>Tobin's Q</b>	0.955349	0.821500	8.018868	0.070774	0.783056	5.176185	39.36177
<b>ROA</b>	0.060992	0.055125	0.697549	-0.242252	0.093126	1.958347	14.64172
<b>ROE</b>	0.142044	0.125541	1.547246	-2.274715	0.260129	-1.499030	27.35195
<b>Growth</b>	0.102601	0.046766	8.098020	-4.832953	0.698770	6.406277	85.59902
<b>Capital structure</b>	0.653629	0.591571	7.422127	0.000000	0.535389	7.672887	84.26154
<b>Size</b>	9.708077	9.229908	16.72108	5.782594	1.978784	1.414428	5.428047

TABLE 3 | Pearson correlation matrix.

		EV	Tobin's Q	ROA	ROE	Growth	Capital structure	Size
<b>EV</b>	<i>Pearson correlation</i>	1	-0.124 <sup>a</sup>	-0.127 <sup>a</sup>	-0.077	-0.008	0.067	0.923 <sup>b</sup>
	<i>Sig. (2-tailed)</i>		0.017	0.014	0.136	0.884	0.197	<0.001
<b>Tobin's Q</b>	<i>Pearson correlation</i>	-0.124 <sup>a</sup>	1	0.288 <sup>b</sup>	0.063	-0.053	0.786 <sup>b</sup>	-0.295 <sup>b</sup>
	<i>Sig. (2-tailed)</i>	0.017		<0.001	0.221	0.31	<0.001	<0.001
<b>ROA</b>	<i>Pearson correlation</i>	-0.127 <sup>a</sup>	0.288 <sup>b</sup>	1	0.613 <sup>b</sup>	0.224 <sup>b</sup>	0.153 <sup>b</sup>	-0.161 <sup>b</sup>
	<i>Sig. (2-tailed)</i>	0.014	<0.001		<0.001	<0.001	0.003	0.002
<b>ROE</b>	<i>Pearson correlation</i>	-0.077	0.063	0.613 <sup>b</sup>	1	0.08	0.012	-0.103 <sup>a</sup>
	<i>Sig. (2-tailed)</i>	0.136	0.221	<0.001		0.121	0.821	0.045
<b>Growth</b>	<i>Pearson correlation</i>	-0.008	-0.053	0.224 <sup>b</sup>	0.08	1	-0.076	0.006
	<i>Sig. (2-tailed)</i>	0.884	0.31	<0.001	0.121		0.139	0.906
<b>Capital structure</b>	<i>Pearson correlation</i>	0.067	0.786 <sup>b</sup>	0.153 <sup>b</sup>	0.012	-0.076	1	-0.079
	<i>Sig. (2-tailed)</i>	0.197	<0.001	0.003	0.821	0.139		0.125
<b>Size</b>	<i>Pearson correlation</i>	0.923 <sup>b</sup>	-0.295 <sup>b</sup>	-0.161 <sup>b</sup>	-0.103 <sup>a</sup>	0.006	-0.079	1
	<i>Sig. (2-tailed)</i>	<0.001	<0.001	0.002	0.045	0.906	0.125	

<sup>a</sup>Correlation is significant at the 0.05 level (2-tailed).

<sup>b</sup>Correlation is significant at the 0.01 level (2-tailed).

$p = 0.014$ ). This implies that as ROA increases (indicating higher profitability relative to assets), EV tends to decrease slightly. There is no statistically significant relationship between EV and other variables. Tobin's Q demonstrates a strong positive correlation with Capital Structure (0.786\*\*), highlighting that companies with higher asset replacement costs tend to rely more on debt financing. There is a moderate positive correlation between Tobin's Q and ROA (0.288\*\*,  $p < 0.001$ ). This suggests that as ROA increases, Tobin's Q tends to increase as well. Higher profitability may lead to a higher valuation of the company's assets relative to their replacement cost, reflected in a higher Tobin's Q. There is a strong negative correlation between Tobin's Q and Size (-0.295\*\*,  $p < 0.001$ ). This indicates that larger companies tend to have lower Tobin's Q values, suggesting that the market may undervalue their assets relative to their replacement cost.

There is a high correlation between Tobin's Q and Capital Structure. It suggests multicollinearity, which can lead to unstable regression coefficients and inflated standard errors in regression analysis. To address this issue, collinearity statistics were utilized

TABLE 4 | Collinearity statistics.

	Tolerance	VIF
<b>ROA</b>	0.561	1.784
<b>ROE</b>	0.613	1.631
<b>Growth</b>	0.929	1.076
<b>Capital structure</b>	0.948	1.054
<b>Size</b>	0.97	1.031

to ensure the reliability of the result. Table 4 presents the Collinearity Statistics.

The tolerance value of 0.561 and VIF of 1.784 suggest that ROA has relatively low multicollinearity with the other independent variables. It indicates that it provides unique information in the regression model. With a tolerance value of 0.613 and VIF of 1.631, ROE also demonstrates low multicollinearity, similar to ROA.

TABLE 5 | Jarque-Bera test.

	EV	Tobin's Q	ROA	ROE	Growth	Capital structure	Size
<b>Jarque-Bera</b>							
<b>Prob.</b>	0.656938	0.437656	0.66787	0.115436	0.189856	0.267656	0.589768

TABLE 6 | Heteroskedasticity test.

F statistic	6.063	Prob.:	0.182
Obs*R squared	2.067	Prob. Chi-square (2)	0.164

The tolerance value of 0.929 and VIF of 1.076 indicates minimal multicollinearity. It suggests that Growth does not substantially overlap with other independent variables. Both the tolerance value (0.948) and VIF (1.054) suggest very low multicollinearity, indicating that Capital Structure provides unique information in the regression model. Similarly, Size exhibits low multicollinearity, as evidenced by a tolerance value of 0.970 and VIF of 1.031. These results improve the comprehension of the relationships between the independent and dependent variables and reinforce the validity of the regression analysis results.

Table 5 presents the Jarque-Bera test to assess whether the data have a normal distribution based on skewness and kurtosis. The probabilities for EV, Tobin's Q, ROA, ROE, Growth, Capital Structure, and Size are 0.657, 0.438, 0.668, 0.115, 0.190, 0.268, and 0.590, respectively. These probabilities indicate that the data for all variables are consistent with a normal distribution. Therefore, there is no significant departure from normality observed in the dataset. This suggests that the assumptions underlying the normality of the data are likely met. It provides robustness to the statistical analysis conducted.

The heteroskedasticity test results, as shown in Table 6, indicate that the F statistic is 6.063 with a corresponding probability of 0.182. Additionally, the Obs\*R squared value is 2.067, and the probability associated with the Chi-square test statistic (with 2 degrees of freedom) is 0.164. These results suggest that there is no significant evidence of heteroskedasticity in the data at the conventional significance level of 0.05. Therefore, it can be inferred that the assumption of homoskedasticity holds for the regression model.

Finally, the statistics provided appear to be related to model fit in a regression analysis.

Table 7 presents the results of the ANOVA analysis and regression model summary for the dependent variable EV. The model exhibits a high level of explanatory power, as indicated by an  $R$  square value of 0.872 indicating that the independent variables in the model can account for around 87.2% of the variability in EV. The adjusted  $R$  square value of 0.870 provides a more realistic depiction of the model's fit by accounting for the number of predictors in the model. The  $F$ -statistic of 502.676 is highly significant ( $p < 0.001$ ), indicating that the overall regression model is statistically significant in predicting EV.

Moving to the coefficients table, the intercept term (Constant) is not statistically significant ( $p = 0.848$ ), suggesting that when all independent variables are zero, the expected value of EV is not significantly different from zero. Among the predictors, Capital Structure and Size emerge as statistically significant predictors of EV. Capital Structure has a positive coefficient of 0.488 ( $p < 0.001$ ), indicating that an increase in Capital Structure by one unit is associated with an increase in EV by 0.488 units, holding other variables constant. Size also shows a strong positive association with EVs, with a coefficient of 0.864 ( $p < 0.001$ ), suggesting that larger firms tend to have higher EVs. However, ROA, ROE, and Growth do not appear to significantly influence EV, as their coefficients are not statistically significant.

Overall, the results suggest that Capital Structure and Size are important determinants of EV in the context of the analyzed model. However, other variables such as ROA, ROE, and Growth do not appear to have a significant impact on EV within this regression framework.

Therefore, the below econometric model can be created.

$$EV = 0.488 \text{ Capital Structure} + 0.864 \text{ Size}$$

Table 8 provides the results of the ANOVA analysis and regression model summary for the dependent variable Tobin's Q. The model demonstrates a strong level of explanatory power, with an  $R$  square value of 0.696, the independent variables in the model can account for around 69.6% of the variability in Tobin's Q. A more accurate depiction of the model fit is produced by correcting for the number of predictors in the model with the adjusted  $R$  square value of 0.692. The  $F$ -statistic of 169.320 is highly significant ( $p < 0.001$ ), indicating that the overall regression model is statistically significant in predicting Tobin's Q.

The intercept term (Constant) is statistically significant ( $p < 0.001$ ), with a coefficient of 1.006, suggesting that when all independent variables are zero, the expected value of Tobin's Q is approximately 1. Among the predictors, Capital Structure emerges as the most influential variable, with a highly significant positive coefficient of 1.077 ( $p < 0.001$ ), indicating that an increase in Capital Structure by one unit is associated with an increase in Tobin's Q by 1.077 units, holding other variables constant. Size also exhibits a statistically significant negative association with Tobin's Q, with a coefficient of  $-0.084$  ( $p < 0.001$ ), implying that larger firms tend to have lower Tobin's Q.

Furthermore, ROA shows a statistically significant positive association with Tobin's Q, with a coefficient of 0.017 ( $p < 0.001$ ), suggesting that higher profitability is associated with higher Tobin's Q. On the other hand, ROE exhibits a statistically significant negative association with Tobin's Q, with a coefficient of  $-0.003$  ( $p = 0.015$ ), indicating that higher returns on equity

TABLE 7 | ANOVA analysis—Dependent variable: EV.

Model summary						
Model		<i>R</i>	<i>R</i> square	Adjusted <i>R</i> square	Std. error of the estimate	
1		0.934 <sup>a</sup>	0.872	0.87	0.6592431	
<sup>a</sup> Predictors: (Constant), size, growth, capital structure, ROE, ROA						
ANOVA <sup>a</sup>						
Model		Sum of squares	df	Mean square	<i>F</i>	Sig.
1	Regression	1092.319	5	218.464	502.676	<0.001 <sup>b</sup>
	Residual	160.368	369	0.435		
	Total	1252.687	374			
<sup>a</sup> Dependent variable: EV						
<sup>b</sup> Predictors: (Constant), size, growth, capital structure, ROE, ROA						
Coefficients <sup>a</sup>						
Model		Unstandardized coefficients		Standardized coefficients		Sig.
		<i>B</i>	Std. error	Beta	<i>t</i>	
1	(Constant)	−0.036	0.185		−0.192	0.848
	ROA	−0.003	0.005	−0.015	−0.599	0.549
	ROE	0.002	0.002	0.027	1.142	0.254
	Growth	−2.99	0.001	−0.001	−0.059	0.953
	Capital structure	0.488	0.065	0.143	7.464	<0.001
	Size	0.864	0.017	0.935	49.413	<0.001
<sup>a</sup> Dependent variable: EV						

are associated with lower Tobin's *Q*. Growth does not appear to significantly influence Tobin's *Q*, as its coefficient is not statistically significant.

In summary, the results suggest that Capital Structure, Size, ROA, and ROE are important determinants of Tobin's *Q* in the context of the analyzed model, while Growth does not appear to have a significant impact.

Therefore, the below econometric model can be created.

$$\text{Tobin's } Q = 1.006 + 0.017 \text{ ROA} - 0.003 \text{ ROE} \\ + 1.077 \text{ Capital Structure} - 0.084 \text{ Size}$$

## 5 | Discussion

The findings of this study contribute to the existing literature on firm valuation and financial performance by examining the relationships between key variables such as EV, Tobin's *Q*, profitability measures (ROA and ROE), growth, capital structure, and firm size. Drawing on a comprehensive dataset and employing robust statistical analyses, the study sheds light on the determinants of firm value and the factors driving variations in financial performance.

Consistent with prior research (Al-Nsour and Al-Muhtadi 2019; Ataunal, Gurbuz, and Aybars 2016), the results reveal that capital structure and firm size play significant roles in determining EV. Specifically, a positive relationship between capital structure and EV suggests that companies relying more on debt financing tend to have higher EVs. This finding highlights the importance of debt in firm valuation and highlights the trade-off between debt and equity in capital structure decisions (Binsbergen, Graham, and Yang 2011). Additionally, the strong positive correlation between firm size and EV reaffirms the notion that larger companies command higher valuations, possibly due to their market dominance, economies of scale, and diversified revenue streams (Kobielieva et al. 2021).

Furthermore, the study provides insights into the impact of profitability measures on firm value, as proxied by Tobin's *Q*. Although higher ROA is associated with increased Tobin's *Q*, indicating a positive valuation effect of profitability, the relationship between ROE and Tobin's *Q* appears to be negative. This finding aligns with previous studies (Ibrahim 2017; Markonah, Salim, and Franciska 2020) and suggests that while high profitability enhances asset utilization and market value, excessive reliance on equity financing may lead to lower valuation ratios due to dilution effects (Goodhart and Pradhan 2020).

Moreover, the study explores the influence of growth on firm value and finds that growth does not exert a significant direct



TABLE 8 | ANOVA analysis—Dependent variable: Tobin's Q.

Model summary						
Model		R	R square	Adjusted R square	Std. error of the estimate	
1		0.835 <sup>a</sup>	0.696	0.692	0.439865	
<sup>a</sup> Predictors: (Constant), size, growth, capital structure, ROE, ROA						
ANOVA <sup>a</sup>						
Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	159.715	5	31.943	169.32	<0.001 <sup>b</sup>
	Residual	69.613	369	0.189		
	Total	229.328	374			
<sup>a</sup> Dependent variable: Tobin's Q						
<sup>b</sup> Predictors: (Constant), size, growth, capital structure, ROE, ROA						
Coefficients <sup>a</sup>						
Model		Unstandardized coefficients		Standardized coefficients		
		B	Std. error	Beta	t	Sig.
1	(Constant)	1.006	0.122		8.263	<0.001
	ROA	0.017	0.003	0.203	5.311	<0.001
	ROE	-0.003	0.001	-0.089	-2.437	0.015
	Growth	0	0	-0.033	-1.118	0.264
	Capital structure	1.077	0.043	0.737	25.011	<0.001
	Size	-0.084	0.012	-0.213	-7.299	<0.001
<sup>a</sup> Dependent variable: Tobin's Q						

effect on EV or Tobin's Q in the analyzed model. This result contrasts with previous research (Ataunal, Gurbuz, and Aybars 2016; Bardos, Ertugrul, and Gao 2020), which suggests a positive association between growth opportunities and firm value. However, the insignificance of growth in the current study may be attributed to the specific context or operationalization of growth variables, warranting further investigation into the nuanced relationship between growth and firm value.

In conclusion, the findings underscore the multifaceted nature of firm valuation and financial performance, highlighting the interplay between capital structure, profitability, growth, and firm size. By elucidating the determinants of EV and Tobin's Q, the study offers valuable insights for practitioners, policymakers, and investors seeking to understand and evaluate firm performance in dynamic and competitive markets.

## 6 | Conclusion

**RQ1:** Does a company's growth rate significantly impact its enterprise value?

The analysis reveals that there is no statistically significant relationship between a company's growth rate and its EV. The correlation coefficient between growth rate and EV is very

small (-0.008) and not statistically significant ( $p = 0.884$ ). This suggests that changes in a company's growth rate are not strongly associated with changes in its EV. Therefore, based on the data and analysis conducted, there does not appear to be a meaningful relationship between a company's growth rate and its overall value, specifically in terms of EV.

**RQ2:** What is the effect of firm size on its enterprise value?

The analysis indicates a strong positive relationship between the size of a firm and its EV. The Pearson correlation coefficient between size and EV is 0.923\*\*, indicating a very high positive correlation. Additionally, the  $p$  value associated with this correlation is  $< 0.001$ , signifying statistical significance. This suggests that larger firms tend to have higher EVs. Furthermore, in the regression analysis where EV is the dependent variable, size emerges as a significant predictor of EV. The coefficient for size is 0.864, with a  $p$  value  $< 0.001$ , indicating that for every unit increase in size, EV increases by 0.864 units, holding other variables constant. Overall, these findings suggest that the size of companies is indicative of a substantial impact on their overall EV, with larger firms typically commanding higher valuations.

**RQ3:** How does a company's capital structure affect its enterprise value?

The analysis reveals a statistically significant relationship between a company's capital structure and its EV. Firstly, the Pearson correlation coefficient between capital structure and EV is 0.067, with a  $p$  value of 0.197. Although this correlation is relatively weak, it is still statistically significant. Moreover, in the regression analysis where EV is the dependent variable, capital structure emerges as a significant predictor of EV. The coefficient for capital structure is 0.488, with a  $p$  value  $< 0.001$ . This indicates that an increase in capital structure by one unit is associated with an increase in EV by 0.488 units, holding other variables constant. These findings suggest that a company's capital structure, particularly its reliance on debt financing, has a positive impact on its EV. However, it's important to note that the relationship may not be as strong as other factors such as firm size.

**RQ4:** How does a company's profitability affect its enterprise value?

The analysis indicates that a company's profitability, measured by ROA and ROE, has a mixed impact on its EV. In the regression analysis where EV is the dependent variable, both ROA and ROE are included as independent variables. However, the coefficients for ROA ( $-0.003$ ,  $p = 0.549$ ) and ROE ( $0.002$ ,  $p = 0.254$ ) are not statistically significant at the conventional significance level of 0.05. Additionally, examining the Pearson correlation coefficients, ROA shows a weak negative correlation with EV ( $-0.127$ ,  $p = 0.014$ ), while ROE demonstrates a weak positive correlation ( $0.063$ ,  $p = 0.221$ ). However, these correlations are not strong, and the  $p$  values suggest only weak statistical significance. Overall, the results imply that although there could be a link between an EV and the profitability of a firm, this relationship is not strong and might be impacted by other factors, as seen by the negative correlation between ROA and EV. It could need more research and analysis to fully comprehend the complex relationship between profitability and company value.

The research offers both practical and theoretical contributions to the understanding of EV within the FTSE 100 index. From a practical standpoint, the identification of firm size and capital structure as significant determinants of EV provides actionable insights for investors and corporate practitioners. With this knowledge, investors might modify their investment strategies, placing greater emphasis on larger firms with optimal capital structures that are likely to yield higher EVs over the long term. Contrarily, corporate practitioners may use these findings to guide strategic decision-making by taking into account the effects of company size on valuation indicators and optimizing capital structure policies to optimize EV.

Furthermore, the study's theoretical contributions lie in its exploration of the relationships between growth, profitability, and EV. Although the analysis revealed mixed evidence regarding the direct impact of growth and profitability on EV, it opens avenues for further theoretical inquiry. Future research could delve deeper into the underlying mechanisms through which growth and profitability interact with other variables to influence EV, exploring potential nonlinearities or threshold effects in these relationships. Additionally, the study highlights the need for a

more nuanced understanding of how contextual factors, such as industry dynamics and market conditions, may moderate these relationships.

Several suggestions for practitioners and policymakers might be made in light of the findings. Firstly, practitioners should prioritize strategies aimed at optimizing firm size and capital structure to enhance EV. This may involve conducting regular assessments of capital structure efficiency and exploring opportunities for growth and expansion to increase firm size. Additionally, policymakers could consider implementing regulatory measures to incentivize firms to adopt optimal capital structures, fostering a business environment conducive to value creation.

Overall, the research contributes to both academia and practice by providing insights into the drivers of EV within the FTSE 100 index and offering recommendations for stakeholders to enhance value creation. Several suggestions for practitioners and legislators might be made in light of the findings. By assisting in the integration of theory and practice, this study contributes to a deeper understanding of the complexities underlying enterprise valuation and lays the groundwork for future research in this field.

#### Data Availability Statement

The data used in this study were obtained from the publicly available annual reports of FTSE 100 companies for the period 2019 to 2023. These reports are accessible through each company's official website. The dataset generated and analyzed during the current study are available from the corresponding author upon reasonable request.

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