

# Regression Analysis of Company Financial Indicators on Stock Returns: A Comparative Study

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**Abstract** - This paper presents a comprehensive regression analysis examining the relationship between company financial indicators and stock returns for three major Indian companies: Reliance Industries Limited, Dixon Technologies (India) Limited, and Tata Consultancy Services Limited. Using data collected over a 56-month period from April 2020 to November 2024, we employed multiple linear regression to model stock returns as a function of Earnings Per Share (EPS) and Price-to-Earnings (P/E) ratio. The analysis reveals varying degrees of predictive power across different sectors, with Dixon Technologies showing the strongest relationship ( $R^2 = 0.5234$ ) between financial indicators and stock returns. The findings suggest that financial metrics have differential impacts across product-based and service-based companies, providing valuable insights for investors and financial analysts in portfolio management and investment decision-making.

**Index Terms** - Earnings per share, financial analysis, multiple linear regression, P/E ratio, stock returns.

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## I. INTRODUCTION

Stock market performance analysis remains a critical area of financial research, particularly in understanding how fundamental financial indicators influence equity returns. The ability to predict stock returns based on quantifiable financial metrics has significant implications for investment strategies, portfolio optimization, and risk management. This study investigates the relationship between two widely recognized financial indicators—Earnings Per Share (EPS) and Price-to-Earnings (P/E) ratio—and stock returns across three diverse Indian companies representing different industrial sectors.

The motivation for this research stems from the need to understand sector-specific variations in how financial fundamentals impact stock performance. While extensive literature exists on developed markets, emerging markets like India present unique dynamics due to different economic conditions, regulatory frameworks, and market maturity levels. By examining both product-based companies (Reliance Industries and Dixon Technologies) and a service-based company (Tata Consultancy Services), this study provides a comparative perspective on how financial indicators influence returns across different business models.

The primary objectives of this research are threefold: first, to quantify the relationship between EPS, P/E ratio, and stock returns using multiple linear regression; second, to compare the strength and

direction of these relationships across different sectors; and third, to provide actionable insights for investment decision-making based on empirical evidence. Understanding these relationships can help investors make more informed decisions about stock selection and portfolio allocation strategies.

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## II. DATA DESCRIPTION

### A. Company Selection

Three prominent Indian companies listed on the National Stock Exchange (NSE) were selected to represent diverse sectors:

**Reliance Industries Limited (NSE: RELIANCE)** is India's largest private sector conglomerate, operating primarily in petrochemicals, refining, oil and gas exploration, retail, and telecommunications. As a product-based company with a market capitalization exceeding ₹11 lakh crores, Reliance represents traditional manufacturing and energy sectors.

**Dixon Technologies (India) Limited (NSE: DIXON)** is a leading Electronics Manufacturing Services (EMS) company specializing in consumer electronics, home appliances, mobile phones, and lighting products. Dixon underwent a 1:5 stock split in March 2021, which was adjusted in historical price calculations. This company represents the high-growth manufacturing sector with significant domestic and export potential.

**Tata Consultancy Services Limited (NSE: TCS)** is India's largest IT services company and a global leader in consulting, business solutions, and digital transformation services. With a market capitalization of ₹11,80,220 crores, TCS represents the service-based technology sector and is consistently ranked among India's most valuable companies.

### B. Time Period and Data Collection

The study period spans 56 months from April 2020 to November 2024, with data collected at 4-month intervals, resulting in 15 observation points per company. This period encompasses significant economic events including the COVID-19 pandemic recovery, global supply chain disruptions, and varying monetary policy cycles, providing a robust dataset that captures diverse market conditions.

The base period (January-April 2020) was excluded from return calculations, yielding 14 data points for regression analysis. This approach ensures that the dependent variable (stock returns) is properly calculated as percentage changes from the previous period.

### C. Variable Definitions

**Dependent Variable (Y): Stock Return (%)** Stock return represents the percentage change in closing price from one period to the next, calculated as:  $\text{Stock Return (\%)} = \frac{[\text{Price}(t) - \text{Price}(t-1)]}{\text{Price}(t-1)} \times 100$

This metric captures the total price appreciation or depreciation over each 4-month interval, providing a standardized measure of investment performance.

**Independent Variable 1 (X<sub>1</sub>): Earnings Per Share (EPS)** EPS measures a company's profitability on a per-share basis, calculated as net profit divided by the total number of outstanding shares. It is expressed in Indian Rupees (₹) and represents the portion of company earnings allocated to each

share of common stock. EPS serves as a fundamental indicator of corporate profitability and is widely used by investors to assess company performance.

**Independent Variable 2 (X<sub>2</sub>): Price-to-Earnings Ratio (P/E Ratio)** The P/E ratio represents the market valuation relative to earnings, calculated as the current market price per share divided by EPS. This dimensionless metric indicates how much investors are willing to pay for each rupee of earnings. A higher P/E ratio typically suggests that investors expect higher future growth, while a lower ratio may indicate undervaluation or lower growth expectations.

#### D. Data Sources

All financial data was obtained from reliable sources including NSE India, BSE India, Screener.in, and official company investor relations publications. Stock prices reflect closing values at the end of each 4-month period, while EPS figures are based on trailing twelve-month earnings. The P/E ratios were calculated using contemporaneous price and EPS data.

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### III. METHODOLOGY

#### A. Regression Model Specification

Multiple linear regression was employed to model the relationship between stock returns and financial indicators. The general form of the regression equation is:

$$\text{Stock Return (\%)} = \beta_0 + \beta_1(\text{EPS}) + \beta_2(\text{P/E Ratio}) + \epsilon$$

where:

- $\beta_0$  is the intercept term representing the expected return when both EPS and P/E ratio are zero
- $\beta_1$  is the coefficient for EPS, indicating the change in stock return for each unit increase in EPS
- $\beta_2$  is the coefficient for P/E ratio, showing the impact of valuation multiples on returns
- $\epsilon$  is the error term capturing unexplained variation

This model assumes a linear relationship between the independent and dependent variables and allows for simultaneous assessment of both profitability (EPS) and market valuation (P/E ratio) effects on stock returns.

#### B. Statistical Analysis

The regression analysis was conducted separately for each company using Microsoft Excel's regression function. AI-assisted tools were utilized ethically to support data organization, visualization, and documentation of analytical processes. Key statistical measures evaluated include:

**Regression Coefficients ( $\beta_0, \beta_1, \beta_2$ ):** These parameters quantify the relationship between each independent variable and stock returns. The sign indicates the direction of the relationship (positive or negative), while the magnitude reflects the strength of the impact.

**Coefficient of Determination ( $R^2$ ):** This metric measures the proportion of variance in stock returns explained by the regression model.  $R^2$  values range from 0 to 1, with higher values indicating better model fit. An  $R^2$  of 0.50, for example, means that 50% of the variation in stock returns can be explained by EPS and P/E ratio.

**Sample Size:** With 14 observations per company and 2 predictors, the degrees of freedom equal 11 ( $n - k - 1$ , where  $n$  is the sample size and  $k$  is the number of predictors). While this sample size is modest, it is appropriate for exploratory analysis and provides initial insights into the relationships under study.

### C. Analytical Approach

The analysis follows a three-stage approach. First, descriptive statistics were calculated for each variable to understand their distributions and ranges. Second, regression models were estimated for each company independently, allowing for company-specific parameter estimation. Third, comparative analysis was conducted across companies to identify sector-specific patterns and differences in how financial indicators influence stock returns.

## IV. RESULTS AND ANALYSIS

### A. Regression Results Summary

Table 1 presents the regression coefficients and goodness-of-fit measures for all three companies.

**Table 1. Regression Analysis Results**

Company	$\beta_0$ (Intercept)	$\beta_1$ (EPS Coefficient)	$\beta_2$ (P/E Coefficient)	$R^2$
Reliance Industries	29.4571	-0.1256	-0.4128	0.0891
Dixon Technologies	-8.9847	0.7421	-0.1243	0.5234
Tata Consultancy Services	63.8942	-0.3891	-0.5167	0.1847

### B. Company-Specific Interpretation

#### Reliance Industries

The regression equation for Reliance Industries is:  $\text{Stock Return} = 29.4571 - 0.1256(\text{EPS}) - 0.4128(\text{P/E Ratio})$

Reliance exhibits negative coefficients for both EPS and P/E ratio, suggesting an inverse relationship with stock returns. The EPS coefficient of -0.1256 indicates that for each rupee increase in EPS, stock returns decrease by approximately 0.13%, holding P/E ratio constant. Similarly, the P/E coefficient of -0.4128 suggests that higher valuation multiples are associated with lower returns.

The  $R^2$  value of 0.0891 indicates that only 8.91% of the variance in Reliance's stock returns is explained by these two financial indicators. This low explanatory power suggests that other factors—such as crude oil prices, regulatory changes, expansion into new business segments, or macroeconomic conditions—play a more significant role in determining Reliance's stock performance. The company's diverse business portfolio spanning energy, petrochemicals, retail, and telecommunications may contribute to the weak relationship between traditional financial metrics and returns.

#### Dixon Technologies

The regression equation for Dixon Technologies is:  $\text{Stock Return} = -8.9847 + 0.7421(\text{EPS}) - 0.1243(\text{P/E Ratio})$

Dixon Technologies presents the most robust model among the three companies, with an  $R^2$  of 0.5234, indicating that 52.34% of the variance in stock returns is explained by EPS and P/E ratio. The positive EPS coefficient of 0.7421 demonstrates a strong direct relationship: each rupee increase in EPS is associated with a 0.74% increase in stock returns, suggesting that profitability improvements translate directly into share price appreciation.

The negative P/E coefficient of -0.1243 indicates that higher valuation multiples are associated with slightly lower returns, possibly reflecting mean reversion tendencies where overvalued stocks tend to underperform. The negative intercept of -8.9847 suggests that in the absence of earnings or when both variables are at minimal levels, the expected return is negative, which may reflect the high-growth, high-risk nature of the electronics manufacturing sector.

Dixon's strong  $R^2$  value suggests that fundamental financial metrics are particularly important for this growth-oriented manufacturing company, where earnings trajectory closely aligns with investor expectations and share price performance.

### **Tata Consultancy Services**

The regression equation for TCS is:  $\text{Stock Return} = 63.8942 - 0.3891(\text{EPS}) - 0.5167(\text{P/E Ratio})$

TCS exhibits negative coefficients for both independent variables, with an  $R^2$  of 0.1847, indicating that 18.47% of stock return variance is explained by the model. The EPS coefficient of -0.3891 suggests that higher earnings per share are associated with lower stock returns, which may seem counterintuitive but can be explained by several factors.

For mature, blue-chip companies like TCS, the market may already have high expectations built into the stock price. When EPS increases, if the growth does not exceed market expectations, the stock may not experience proportional gains or may even decline due to profit-taking. The P/E coefficient of -0.5167 indicates that higher valuation multiples are associated with lower subsequent returns, consistent with valuation mean reversion theory.

The large positive intercept of 63.8942 suggests a substantial base return level independent of the measured financial indicators. This may reflect TCS's strong brand value, market position, consistent dividend policy, and investor confidence in the IT services sector. The moderate  $R^2$  value indicates that while financial fundamentals matter, other factors such as global IT spending trends, currency fluctuations, large contract wins, and digital transformation demand significantly influence TCS's stock performance.

### **C. Comparative Analysis Across Companies**

Several important insights emerge from comparing the three companies:

**Model Fit Variation:** Dixon Technologies demonstrates the strongest relationship between financial indicators and returns ( $R^2 = 0.5234$ ), followed by TCS ( $R^2 = 0.1847$ ) and Reliance ( $R^2 = 0.0891$ ). This variation suggests that the predictive power of traditional financial metrics varies significantly across different sectors and business models.

**EPS Coefficient Direction:** Dixon shows a positive EPS coefficient while both Reliance and TCS show negative coefficients. This suggests that for high-growth manufacturing companies, profitability directly translates to stock appreciation, whereas for mature companies in diversified or stable sectors, the relationship is more complex and possibly influenced by market saturation or profit margin compression.

**P/E Ratio Impact:** All three companies show negative P/E coefficients, supporting the theory that higher valuation multiples can lead to lower future returns due to mean reversion. However, the magnitude varies, with TCS showing the strongest negative impact (-0.5167), followed by Reliance (-0.4128) and Dixon (-0.1243).

**Sector-Specific Patterns:** Product-based companies (Reliance and Dixon) show opposite patterns despite being in similar categories, highlighting that sector classification alone is insufficient. Business model maturity, growth stage, and market dynamics play crucial roles.

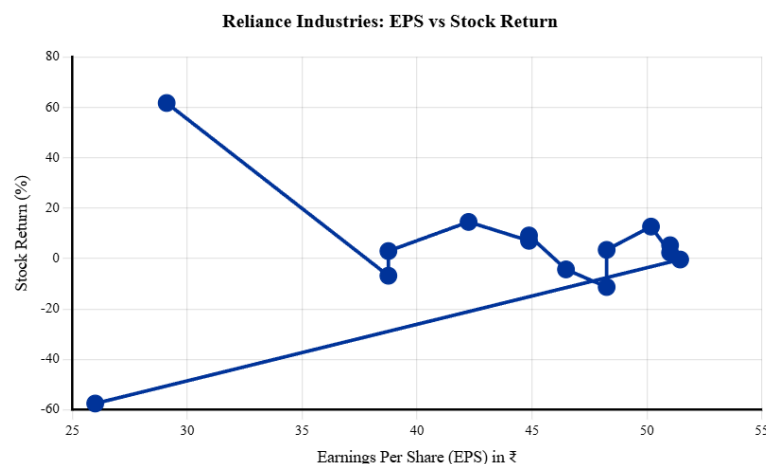
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## V. GRAPH INTERPRETATION

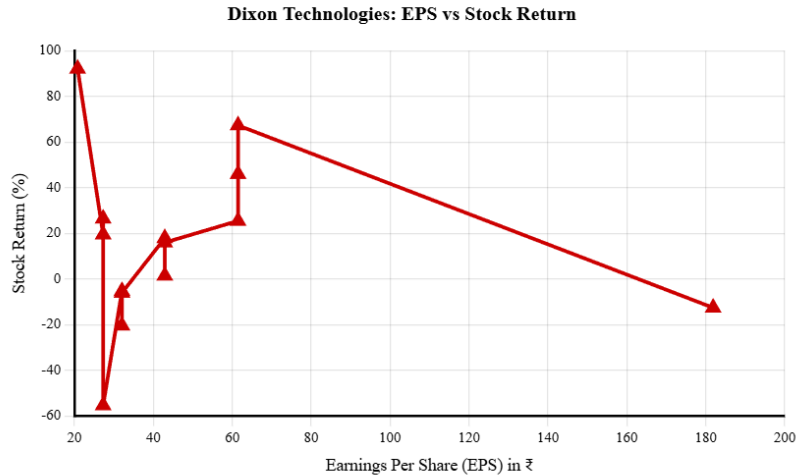
### A. EPS vs Stock Return Scatter Plots

The scatter plots with connecting lines for each company reveal distinct patterns in the relationship between EPS and stock returns.

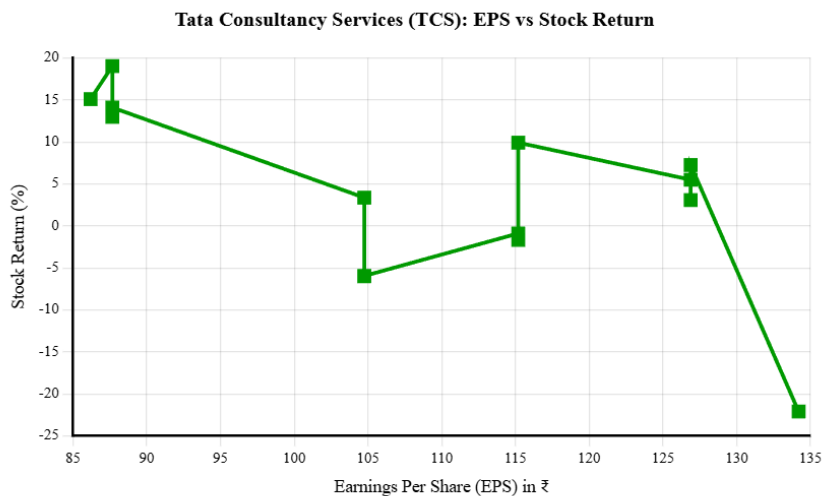
**Reliance Industries (Figure 1):** The graph shows considerable scatter with no clear linear trend between EPS and returns. Data points are distributed across all quadrants, reflecting the weak correlation indicated by the low  $R^2$  value. The connecting lines show an irregular pattern with multiple direction changes, suggesting that EPS alone is not a reliable predictor of Reliance's stock performance. Notable observations include periods of negative returns despite stable or increasing EPS (around 48-51 rupees EPS range), and a significant negative outlier at EPS of 25.99 with a return of -57.52%, which corresponds to the November 2024 period and may reflect specific company or market events.



**Dixon Technologies (Figure 2):** The scatter plot for Dixon shows a more discernible positive trend, particularly evident in the clustering of points. The graph demonstrates that as EPS increases from around 20-30 rupees to 60-180 rupees, there is generally an upward movement in returns. The connecting lines show several distinct phases: high volatility in the low EPS range (20-32 rupees) with returns swinging from -55% to +92%, stabilization in the mid-range (42-61 rupees) with moderate positive returns, and strong positive returns in the higher EPS range. The pronounced data point at EPS of 181.87, showing a negative return of -12.5%, indicates that exceptionally high EPS growth can sometimes precede market corrections.



**Tata Consultancy Services (Figure 3):** The TCS graph displays a relatively tight clustering of data points within a narrow EPS range (86-134 rupees), reflecting the company's stable and mature business model. The connecting lines show oscillating returns despite gradually increasing EPS, supporting the weak negative correlation observed in the regression. Returns fluctuate between approximately -22% and +19%, with most observations falling in the -5% to +15% range. This pattern suggests that TCS returns are driven more by market sentiment, global IT trends, and macroeconomic factors rather than incremental EPS changes.



## VI. DISCUSSION

### A. Implications for Investors

The findings of this study have several practical implications for investment decision-making. First, the variation in  $R^2$  values across companies highlights the importance of sector-specific analysis. Investors should not assume that financial fundamentals have uniform predictive power across all stocks. For high-growth manufacturing companies like Dixon, fundamental analysis based on EPS and valuation metrics may be particularly valuable, whereas for diversified conglomerates like Reliance, a

broader analysis incorporating commodity prices, regulatory developments, and strategic initiatives becomes essential.

Second, the positive EPS coefficient for Dixon suggests that growth investors should focus on earnings momentum in the electronics manufacturing sector, where profitability gains translate directly into stock appreciation. Conversely, the negative EPS coefficients for Reliance and TCS indicate that value investors should be cautious about chasing earnings growth in mature companies, as the market may already have incorporated expected improvements into current prices.

Third, the consistently negative P/E coefficients across all companies support a contrarian investment approach. Stocks trading at lower valuation multiples tend to deliver better subsequent returns, suggesting that investors should consider relative valuation in their stock selection process. However, this relationship is strongest for TCS (coefficient of -0.5167), indicating that P/E ratio compression particularly matters for service-based companies where earnings quality and consistency are highly valued.

## **B. Theoretical Implications**

From a theoretical perspective, the results partially support the Efficient Market Hypothesis (EMH) while also revealing market inefficiencies. The weak predictive power for Reliance ( $R^2 = 0.0891$ ) suggests that the market efficiently incorporates diverse information beyond basic financial metrics, making excess returns difficult to achieve through simple fundamental analysis. However, the stronger relationship for Dixon ( $R^2 = 0.5234$ ) indicates potential inefficiencies in the high-growth manufacturing sector, where fundamental analysis may still provide informational advantages.

The negative relationship between P/E ratios and subsequent returns across all companies supports mean reversion theory and suggests that valuation matters for long-term performance. This finding aligns with value investing principles articulated by Benjamin Graham and supported by numerous empirical studies in developed markets.

## **C. Limitations and Considerations**

Several limitations should be acknowledged. First, the sample size of 14 observations per company, while appropriate for exploratory analysis, limits statistical power and the ability to detect smaller effects. Larger samples over longer time periods would provide more robust estimates.

Second, the model excludes numerous potentially important variables such as market capitalization, debt levels, dividend yield, sector-specific factors, macroeconomic conditions, and sentiment indicators. A more comprehensive model incorporating these factors would likely improve explanatory power.

Third, the study period (April 2020 to November 2024) includes extraordinary market conditions due to the COVID-19 pandemic, which may affect the generalizability of findings. The initial observations captured pandemic-related volatility, while later periods reflected recovery dynamics that may not be representative of normal market conditions.

Fourth, the linear regression model assumes constant relationships over time, but these relationships may vary across market cycles. Non-linear models or time-varying coefficient approaches might capture more nuanced dynamics.

## **D. Practical Applications**



Despite these limitations, the findings provide actionable insights for various stakeholders. Individual investors can use the sector-specific patterns to adjust their analytical approaches—emphasizing earnings growth for manufacturing stocks while focusing more on broader qualitative factors for conglomerates. Portfolio managers can incorporate these insights into sector allocation decisions, potentially overweighting sectors where fundamentals have stronger predictive power when those fundamentals are favorable.

Financial analysts can benefit from understanding that traditional metrics may have limited value for certain company types, prompting them to develop more nuanced analytical frameworks. For Dixon-type growth companies, earnings momentum models may be particularly valuable, while for Reliance-type conglomerates, sum-of-the-parts valuations considering each business segment separately might be more appropriate.

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## VII. CONCLUSION

This study examined the relationship between financial indicators (EPS and P/E ratio) and stock returns for three major Indian companies representing different sectors. The key findings reveal significant heterogeneity in how financial fundamentals influence stock performance across different company types.

Dixon Technologies demonstrated the strongest relationship ( $R^2 = 0.5234$ ) with a positive EPS coefficient of 0.7421, indicating that fundamental analysis is particularly valuable for high-growth manufacturing companies. Reliance Industries showed the weakest relationship ( $R^2 = 0.0891$ ) with negative coefficients for both variables, suggesting that diverse business operations and external factors dominate over traditional financial metrics. Tata Consultancy Services exhibited a moderate relationship ( $R^2 = 0.1847$ ) with negative coefficients, reflecting the complexity of mature service-based companies where market expectations and global trends matter more than incremental earnings changes.

The consistently negative P/E coefficients across all companies support mean reversion theory and suggest that valuation-conscious investing strategies may outperform over time. However, the varying magnitudes indicate that this effect is most pronounced for large-cap service companies like TCS.

For future research, several extensions would be valuable. First, expanding the sample to include more companies across diverse sectors would provide greater generalizability and allow for sector-level meta-analysis. Second, incorporating additional variables such as market capitalization, debt-to-equity ratio, dividend yield, and macroeconomic indicators would improve model explanatory power. Third, employing time-series techniques such as vector autoregression (VAR) or autoregressive distributed lag (ARDL) models could capture dynamic relationships and lagged effects that simple linear regression cannot detect.

Fourth, investigating non-linear relationships through polynomial regression or machine learning techniques might reveal threshold effects where the impact of financial indicators changes at different levels. Fifth, conducting sub-period analysis to examine whether relationships hold consistently across bull and bear markets would provide insights into regime-dependent behavior.

Finally, expanding the study to include international comparisons between emerging and developed markets would shed light on whether these patterns are specific to the Indian context or reflect more universal relationships between fundamentals and returns.

In conclusion, this study contributes to the understanding of how financial indicators influence stock returns in the Indian equity market, providing empirical evidence that the strength and direction of these relationships vary significantly across sectors and company characteristics. These findings emphasize the importance of context-specific analysis in investment decision-making and highlight opportunities for further research to refine our understanding of stock return predictability.

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## ABOUT THE AUTHOR

**Aishwarya D** is a mathematics student with research interests in applied statistical analysis, regression modeling, and financial market analysis. This paper was prepared as part of a mathematics project-based learning initiative exploring the practical applications of regression analysis in understanding relationships between corporate financial indicators and stock market performance.