

# Stock Market Reaction to Union Budget Announcements: An Event Study

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**Abstract:** Union Budget plays particularly key role in shaping India's economic environment because it presents government's plans related to taxation, public spending, and overall fiscal policy. These announcements strongly influence investor expectations and often lead to noticeable movements in stock market. This study aims to understand how Indian stock market reacts to Union Budget announcements by using Event Study Methodology. Daily stock market data were collected for selected time periods before and after budget announcement dates. analysis was carried out using estimation and event windows to measure market behaviour accurately. Market Model (Regression Approach) was applied to estimate expected returns by regressing index returns on market returns during estimation window. Abnormal returns were then calculated as difference between actual and model-estimated returns, while cumulative abnormal returns (CAR) were used to evaluate market's reaction to budget-related information. results show that stock market experiences increased volatility and significant price movements around budget announcement day. These changes reflect how investors interpret policy decisions and adjust their investment strategies accordingly. findings also indicate that Indian stock market responds quickly to publicly available information, which supports semi-strong form of market efficiency. Overall, study provides useful insights into investor behaviour and demonstrates strong impact of major government policy announcements on stock market performance.

**Keywords:** Abnormal Returns, Cumulative Abnormal Returns, Efficient Market Hypothesis, Event Study, Market Model, Union Budget.

## 1. Introduction

Union Budget is among significant financial and economic events in India. It reveals scheme of government on how it will hold money in country, tax it, spend on and take loans. Each year government introduces budget to provide much information on taxes, way it will use money, amount of money it will require borrowing and amount it will provide to various regions like road, hospitals, school, farms and social assistance. These are highly essential decisions since they determine overall economy of country and influence its growth [17].

The decisions of budget regarding taxation, expenditures, subsidies, and size of deficit will be able to alter rate of economic growth. They also influence number of jobs created, amount of money businesses can earn, amount of money people spends, ease with which one can access money, increase of prices as well as interest rates. By increasing its expenditure,

government can drive economy, and tax adjustments can alter performance of businesses and investor expectations. That is why budget is one of main tools of maintaining economy stable and increasing during long-term period. Due to this fact, stock market is responsive to budget. Market prices are factor of what investors believe will occur in future. Efficient Market Hypothesis (EMH) suggests that stock prices reflect new publicity quickly, thus large announcement such as Union Budget must alter stock values instantly [8]. investors continue to monitor budget about its impact on industries and economy. Positive policy action usually spurs investor confidence and picks market, but surprise or negative news can lead to concern, leading to price falling and rising.

This research is necessary as it is important to observe how announcement of tax and budget changes behaviour of investors and performance of market of developing country such as India. research seeks to determine speed of market response, investor sentiment, and appearance of new information in price of stocks by examining what market responded to in previous budget, and what will happen to market in upcoming budget. outcomes of research ought to present valuable recommendations to investors, policymakers, analysts, and researchers concerning relationship between decisions of government regarding its budget and stock market.

## 2. Literature Review

### A. Theoretical Literature

#### 1) Efficient Market Hypothesis (EMH)

The hypothetical basis of stock markets in response to public announcement is related to Efficient Market Hypothesis (EMH) that was created by Fama in 1970. EMH explains that prices of assets set rapidly by financial markets using all available information. semi-strong variant of market efficiency asserts that prices of stocks react rapidly to all information in market that is publicly accessible, including announcements of government policies, such as Union Budget. In this perception, abnormal returns only occur when there is unexpected new information to participants in market [8].

#### 2) Theory of Information Asymmetry

The other valuable concept is provided by Information Asymmetry Theory. It states that market members possess varying levels of information and perceive announcements

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differently [2]. Budget announcements minimize unpredictability since they provide formal economic predictors, which determines what investors anticipate and manner of trade [2].

### 3) *Rational Expectations Theory*

The Rational Expectations Theory also explains market responses to fiscal announcements. Investors form expectations about future policies using available economic indicators, expert opinions, and historical trends (Muth, 1961; Lucas, 1972). As result, markets may react even before actual announcement if investors anticipate policy measures. This leads to phenomenon known as anticipation effect, where abnormal returns occur prior to scheduled economic events.

### 4) *Theories of Behavioural Finance*

The behavioural finance theories supplement conventional models with emphasis on investor emotion, overreaction, and investor bias. In this perspective, there may be over reaction or under reaction of investors to announcements due to uncertainty or feelings. Thus, information and behavioural impacts of stock price variations around budget announcements are exhibited [4].

### 5) *Event Study Methodology*

The methodology of research that is investigating market responses is event study. Brown and Warner (1985) demonstrated it that event study methods can determine abnormal stock returns associated with events. MacKinlay (1997) contributed to theory by providing statistical guidelines on expected returns and cumulative abnormal returns to measure reaction of market [11].

## B. *Empirical Literature*

Researchers normally rely on event studies to observe how markets respond to major news. These studies were found to be reliable in measurement of abnormal returns of certain events as demonstrated by Brown and Warner in 1985. procedure is used to compare actual returns and predicted returns whether occurrence resulted in major market actions. Union Budget announcements are ideal in this kind of study since they are carried out on pre-determined dates [11].

Macroeconomic news has been strongly responded to in market in many studies across world. volatility tends to be higher in emerging markets since investors are not certain and their expectations alter owing to policy announcement. There are also fiscal signals which influence sector performance, liquidity and money flows.

In India, numerous studies examine response of stock market to news about Union Budget. other study by Agarwal and Tandon (1994) found out that emerging markets are volatile in major policy events with greater activity and uncertainty on part of investor. Sehgal and Tripathi (2005) also observed abnormal returns on budget days implying that investors closely read fiscal policies when investing [1], [14].

Other studies discover that markets begin moving ahead of budget due to speculation, news and expectations. other adjustment after budget is by markets, which indicates that investors require time to grasp policy.

Looking at sectors, we can see various responses. Industries

affected by tax, subsidies or government expenditure such as banking, infrastructure, manufacturing and capital goods tend to experience larger abnormal returns than another sector [14]. Infrastructure and heavy-industry companies typically rise when governments declare they are going to invest more publicly, yet tax increases or increased regulations may be damaging to some industries.

Other recent research also shows importance of investor mood and volume of trading when budgets are being made. An increased number of trading displays greater volumes of information and greater number of investors, and it contributes to short-term volatility. This helps in behavioural finance concepts that market actions are based on facts and moods and feeling of investors that are not sure.

## 3. Objectives of Study

Numerous research has addressed stock market response to large economic news yet very few have addressed response of entire Indian stock market to announcements of Union Budget based on latest data.

- The findings of literature are inconsistent on question whether market is efficient and investor reaction. We should re-examine issue of whether Union Budget announcements are generating abnormal returns, and altering investor behaviour, by means of an event study.
- The primary objective of given research is to observe Indian stock market response to announcements of Union Budget and to assess way investors act within framework of most significant economic event.
- Union Budget will typically have significant policy changes, tax reforms and government spending proposals which will influence expectations of markets and share prices.
- This paper therefore examines impact of budget announcements on overall performance of market.

## 4. Research Methodology

The research methodology gives systematic procedures employed to conduct research on response of stock market whenever there is announcement of Union Budget in India. research design employed in study is quantitative one, which is based on statistical analysis to establish existence of relationship between Union Budget announcements and stock performance.

To measure market reaction, study applies Event Study Methodology using Market Model (Regression Approach) to estimate expected returns and abnormal returns.

### A. *Data Collection*

1. *Nature of Data:* Study is based entirely on secondary data, as stock market price information is already available through reliable financial databases.
2. *Data Sources:* Daily stock market data were collected from: Official website of National Stock Exchange (NSE)
3. *Data Period:* Daily closing prices of 10 Company stocks



### 5. Data Analysis

#### A. Descriptive Statistics

Table 1 presents descriptive statistics of daily returns for selected companies and NIFTY 500 index during study period.

The mean returns show mixed performance across companies. Infosys, Sun Pharma, and Bharti Airtel recorded positive average returns, while Hindustan Unilever, Maruti, Reliance, and NTPC showed negative average returns. NIFTY 500 index recorded small positive mean return, indicating overall market stability.

Standard deviation values indicate that individual stocks are more volatile than market index. Reliance and Adani Ports show relatively higher volatility, whereas NIFTY 500 exhibits lower volatility due to diversification.

Skewness and kurtosis values suggest that some stocks experienced extreme price movements, particularly Reliance and Adani Ports, indicating higher risk and presence of outliers.

#### B. Regression Analysis

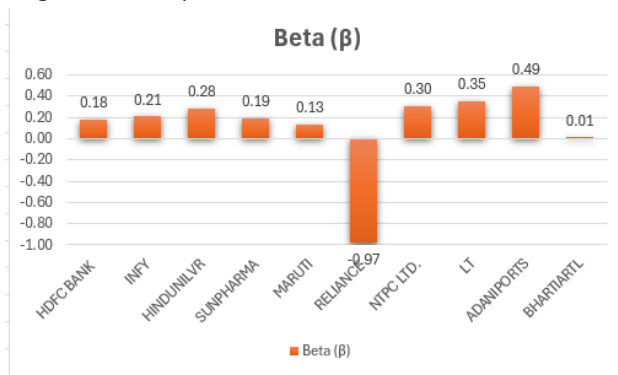


Fig. 2. Beta comparison

The Market Model regression was estimated for each company during estimation window to calculate expected returns. R-squared values are relatively low for certain

companies, suggesting that firm-specific factors also influence stock returns beyond general market movements. variation in Alpha and Beta values confirms that companies respond differently to market conditions and macroeconomic announcements.

In Fig. 2, Beta (β) values show how sensitive each stock is to market movements. Most companies have positive beta, meaning they move in same direction as market. Adani Ports and L&T have higher beta, indicating higher systematic risk. Maruti and HDFC Bank show lower sensitivity. Reliance has negative beta, suggesting an inverse relationship with market during period.

### 6. Result of Event Study

#### A. Analysis of Abnormal Returns

Abnormal returns were calculated for each selected company using Market Model during event window. Results show noticeable fluctuations in abnormal returns across companies during pre-budget, announcement, and post-budget periods.

During pre-budget period (Day -5 to -1), several companies recorded both positive and negative abnormal returns, indicating investor anticipation and speculative trading before Union Budget announcement. On event day (Day 0), mixed reactions were observed. Some companies showed positive abnormal returns, while others recorded slight negative returns, suggesting that investor perception of Budget differed across firms. In post-budget period (Day +1 to +5), abnormal returns continued to fluctuate, indicating gradual market adjustment as investors analysed detailed policy measures.

Additionally, variation in abnormal returns across firms suggests that impact of Budget was sector-specific rather than uniform across market. Companies operating in industries directly affected by taxation, subsidies, or regulatory changes experienced relatively stronger reactions. presence of both positive and negative ARs also indicates that market partially

Table 2

Regression analysis results

| Market Model Regression Results |           |           |           |              |
|---------------------------------|-----------|-----------|-----------|--------------|
| Company                         | Alpha (α) | Beta (β)  | R-Squared | Observations |
| HDFC BANK                       | 0.000055  | 0.183766  | 0.007097  | 100          |
| INFY                            | 0.000420  | 0.209165  | 0.017552  | 100          |
| HINDUNILVR                      | -0.001988 | 0.281502  | 0.020003  | 100          |
| SUNPHARMA                       | 0.000631  | 0.194744  | 0.015112  | 100          |
| MARUTI                          | -0.001434 | 0.134214  | 0.004775  | 100          |
| RELIANCE                        | -0.005486 | -0.974772 | 0.014634  | 100          |
| NTPC LTD.                       | -0.002569 | 0.304776  | 0.016774  | 100          |
| LT                              | -0.000485 | 0.351271  | 0.023443  | 100          |
| ADANI PORTS                     | -0.002713 | 0.487947  | 0.018062  | 100          |
| BHARTIARTL                      | 0.001048  | 0.011734  | 0.000030  | 100          |

Table 3

Abnormal returns (Event window)

| Day | Abnormal Return (AR) (Event window) |        |            |           |        |          |           |        |             |            |
|-----|-------------------------------------|--------|------------|-----------|--------|----------|-----------|--------|-------------|------------|
|     | HDFC BANK                           | INFY   | HINDUNILVR | SUNPHARMA | MARUTI | RELIANCE | NTPC LTD. | LT     | ADANI PORTS | BHARTIARTL |
| -4  | 2.47%                               | 0.37%  | 0.01%      | -0.15%    | 1.22%  | 1.02%    | -0.99%    | -1.24% | 0.12%       | 0.88%      |
| -3  | 0.13%                               | 2.45%  | -0.44%     | -0.66%    | -1.27% | 2.13%    | 0.73%     | 0.56%  | 1.03%       | -1.23%     |
| -2  | 0.80%                               | -1.23% | 1.17%      | 0.11%     | 0.30%  | 2.21%    | 0.73%     | -0.87% | -1.66%      | 2.41%      |
| -1  | 0.18%                               | 0.75%  | 2.32%      | -0.04%    | 2.55%  | 2.81%    | 0.16%     | 3.86%  | 1.69%       | -1.00%     |
| 0   | -0.47%                              | -1.56% | 1.71%      | -0.16%    | 5.06%  | 0.51%    | -1.69%    | -3.31% | -1.12%      | -0.29%     |
| 1   | -0.62%                              | 0.78%  | -2.13%     | 0.01%     | 1.98%  | -1.74%   | -1.52%    | -4.25% | 0.75%       | 1.70%      |
| 2   | 2.27%                               | 1.55%  | -0.39%     | 1.06%     | -0.29% | 5.18%    | 2.32%     | 4.07%  | 3.24%       | 0.43%      |
| 3   | 0.93%                               | -0.19% | -1.80%     | -0.82%    | -0.07% | 0.26%    | 0.33%     | -1.67% | 1.85%       | -0.17%     |
| 4   | 0.44%                               | 1.05%  | -0.42%     | -0.58%    | 0.11%  | 0.31%    | -1.71%    | -0.67% | 2.24%       | -2.55%     |
| 5   | -0.62%                              | -0.64% | -0.14%     | 0.41%     | -0.03% | -0.73%   | 1.62%     | -0.38% | -1.21%      | 3.42%      |

Table 4  
Result of one sample t-Test

| One sample t-Test                               |                                       |
|---|---------------------------------------|
| Particulars                                     | Value                                 |
| Null Hypothesis, $H_0$ (Mean CAR = 0)           | Budget date has no impact             |
| Alternate Hypothesis, $H_1$ (Mean CAR $\neq$ 0) | Budget affects stock returns.         |
| Level of Significance                           | 5% (0.05)                             |
| Sample Size (N)                                 | 10                                    |
| Mean CAR  | 3.60%                                 |
| Standard Deviation                              | 0.04983                               |
| Calculated t-value                              | 2.28593                               |
| P – value                                       | 0.04809                               |
| Decision  | 0.04809 < 0.05 Reject Null Hypothesis |
| Conclusion                                      | Budget affects stock returns.         |

anticipated certain policy measures, while unexpected announcements triggered immediate price corrections.

**B. Cumulative Abnormal Return (CAR)**

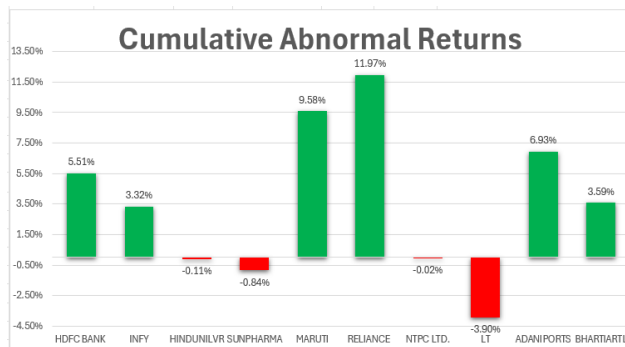


Fig. 3. Cumulative abnormal returns

Fig. 3, shows Cumulative Abnormal Return (CAR) of chosen companies during event window (Day -5 to Day +5), which shows total effect of Union Budget announcement on stock price. CAR is cumulative product of all abnormal returns during event period and assists in comprehending cumulative market response as opposed to daily changes.

The findings show that Reliance (11.97) and Maruti (9.58) reported maximum positive CAR, meaning that there were strong investor sentiments positivity and expectations about provisions of Budget that impacted on companies or their industries. These increased CAR values suggest that Budget announcements were interpreted to be positive by investors, which resulted to long-term pressure to buy throughout event window. Adani Ports (6.93%), HDFC Bank (5.51%), Bharti Airtel (3.59%), and Infosys (3.32%) were also expressing positive CAR, which was largely positive, but in relatively moderate scales.

Conversely, L&T (-3.90%) had lowest positive CAR which also indicated relatively poor investor response or disappointments on sectoral allocations or policy actions. Likewise, Sun Pharma (-0.84%), Hindustan Unilever (-0.11%), and NTPC (-0.02%) have registered insignificant negative CAR, which may be due to lack of direct payoff to Budget, or reluctance of investors to allocate funds in those industries.

**C. One Sample t-Test**

A t-test is statistical method used to determine whether results obtained from data analysis are meaningful and dependable or whether they occurred simply due to random market fluctuations. t-test helps by statistically testing whether

difference between expected returns and actual returns is large enough to be considered significant.

Although abnormal returns and cumulative abnormal returns were calculated, these values alone cannot confirm whether observed market reaction is statistically meaningful, hence t-test is used here.

Table 4 shows result of one sample t-test performed in study.

The one-sample t-test results indicate that abnormal returns observed around Union Budget announcement are statistically significant. Since p-value (0.04809) is less than 0.05, null hypothesis is rejected. This confirms that Union Budget announcements have significant impact on stock market returns. findings suggest that investors actively respond to fiscal policy announcements, and stock prices adjust according to new information released during budget presentation. These results are consistent with Efficient Market Hypothesis, which states that financial markets quickly incorporate publicly available information into stock prices [8]. Similar studies using event study methodology also report significant market reactions to major economic announcements and policy events [5], [14].

**7. Discussion**

The paper demonstrates that presentation of Union Budget alters stock market behavior. changes in strange or aberrant gains and losses in announcement period reflect clearly that investors respond to news about policies. speculations before announcement of gains and losses suggest that investors place bets by using forecasts and news, as well as initial indications.

On announcement day, most companies recorded higher than normal gains and investors favored them. However, not all companies had gains, which implies that reaction is based on company specifics and industry it is part of. This indicates that prices of stocks in semi-strong efficient market are swift to take into account all public information.

The market is likely to fluctuate after announcement since investors have time to research about specifics. Research indicates that markets change rapidly in short run following large news.

The total abnormal gains reveal that most companies outperform normal, that is, investors in general liked Budget. Statistical test indicates that gains are factual as it is consistent with other Indian studies.

Although Budget causes immediate responses, long-run performance is determined by larger economic aspects such as earnings of company, interest rates, inflation, and global occurrences. benefits observed surrounding announcement are

therefore only temporary emotions and do not generate any long-term value.

### 8. Conclusion

The study examined stock market reaction to Union Budget announcements in India using Event Study methodology and Market Model (Regression Approach). Expected returns were estimated using regression analysis, and abnormal returns, cumulative abnormal returns (CAR), and t-tests were applied to evaluate statistical significance.

The findings indicate that stock prices react during budget announcement period. Abnormal returns observed in pre-announcement period suggest that investors form expectations and adjust their trading strategies in anticipation of policy measures. On announcement day, both positive and negative abnormal returns were recorded across different companies, indicating that market response varies depending on firm-specific and sectoral exposure to fiscal policy decisions.

The CAR results show that majority of selected companies experienced positive cumulative abnormal returns, reflecting overall favourable investor sentiment. one-sample t-test confirmed that these abnormal returns are statistically significant, indicating that Union Budget has measurable short-term impact on stock returns.

Overall, study concludes that Union Budget is significant economic event that influences investor behaviour and generates short-term firm-level market reactions in Indian stock market.

### 9. Limitations

The research is also limited in some respects which can be considered whilst viewing findings. First, it relies solely on current data of Stock index which demonstrates performance of market in general but not of areas or stock as well. Secondly, research is limited to just budget year and very minimal time prior to and after budget, hence cannot be related to extended durations. Third, external factors such as world economic

developments, monetary policy variations and unforeseen market occurrences within said short period may also influence stock returns. Thus, results indicate short-term markets responses to announcements of Union Budgets.

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