

# Volatility and ARCH Effects on Stock Returns : An Event Study of Budget 2021 Announcements in India

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## Abstract

The work examines the impact of budgetary announcements on the overall market, with a specific focus on the selected sectors namely Banking & NBFCs, Infrastructure, and Healthcare. The event study methodologies are employed to analyze the abnormal returns (AR) generated around the Finance Minister's budget day (1st February 2021). AR are calculated using the Market Model, and the significance of the results is tested using the Single Sample T-test. Additionally, an ARCH test is conducted to understand the volatility impact. Data spanning 41 days before the budget day, the budget day itself, and 41 days after are collected. The results reveal that investors experienced positive AR and Cumulative AR on the event day and in the post-event days. However, statistical significance of results varied across different sectors giving insights into the reactions to budgetary announcements and provide crucial information for investors and policymakers in the ISM.

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## I. Introduction

### 1.1 *Role of budget announcements in the stock market*

THE FISCAL POLICY of a country is an important source of understanding the government policies and forecasting the economic growth, which is presented in the form of an Annual Budget. The annual Budget acts as an important tool towards sustainable usage of its scarce economic resources. Union Budget forms an annual financial statement in India, which contains the Government of India's estimated receipts expenditure, laid before the parliament every financial year, i.e., from 1st April to 31st March. To keep in

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4.14% while the other two sectors generated negative returns only, notwithstanding the results were not significant. Nevertheless, the healthcare sector reported significant positive AAR on t1 and t3 days. The above results are in align with the results of extant literature by Rastogi and Mazumdar (2016); Gakhar et al. (2015); Singhvi (2014); M. Venkateswara and S. Babu (2013); Kutchu (2012); Varadharajan and Vikkraman (2011); Singhvi, A. (2014); Thomas and Shah (2002) who examined the effect of the announcements in Union Budget on stock market indices return and volatility. However, the literature mentioned earlier did not address the existence of the ARCH effect on AAR and connecting it with EMH. Nonetheless, the current study reveals that there is no ARCH effect on AAR indicating that the volatility of the abnormal returns does not exhibit any specific patterns over time, and there is no evidence of ARCH in the data. The absence of an ARCH effect on AAR could be seen as supporting the EMH, at least with respect to the specific event being studied. According to EMH, financial markets are informationally efficient, and stock prices already reflect all available information. Therefore, the absence of systematic patterns in the volatility of abnormal returns suggests that the market is efficiently responding to the event, and any new information is being quickly and accurately incorporated into stock prices. Another interpretation could be that the event did not trigger significant market volatility or uncertainty which aligned with results of AAR in post event window. Therefore, it can be inferred that the budget announcement had a relatively limited impact on the overall market or that it was not surprising to investors. If the event was expected or already priced on the market, it may not have caused significant fluctuations in abnormal returns. The overall pattern of abnormal return and cumulative abnormal return support the hypothesis that the Indian stock market is efficient in semi-strong form.

### Notes

- 1 <https://www.investopedia.com/terms/e/efficientmarkethypothesis.asp>
- 2 <https://www.investopedia.com/ask/answers/032615/what-are-differences-between-weak-strong-and-semistrong-versions-efficient-market-hypothesis.asp>

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