Impact of Hindenburg Research Report on Adani Group Listed Companies' Stock Returns: An Event-Based Study Approach

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Abstract

Hindenburg Research, known for forensic financial research, published a report alleging accounting fraud and stock manipulation by the Indian Conglomerate Adani Group and its founder Gautam Adani. The report claimed Adani amassed a $100 billion net worth through stock price manipulation in the past three years. Adani Group, engaged in various infrastructure projects, saw a significant 60% decline in its combined market value, approximately $146 billion, after the report's release on 24 January 2023. To assess the impact of the Hindenburg Research Report on Adani Group Stocks, the paper employed an Event Based Study Approach. The Event Study is a statistical method used in finance to analyse the effects of specific events on a company's stock price. It examines whether there are abnormal stock price effects associated with unexpected events, providing valuable insights to investors and the general public. The release of the Hindenburg Report had a magnified impact on Adani Group's stocks due to investor fear, considering the serious allegations made in the report. This study is useful for the researchers, academicians, policymakers and investors to understand how the financial news affects the financial markets and its dynamics, and thus can make their understanding of the financial markets better.

Keywords: *Adani Group, Hindenburg Research, Event Based Study, Stock Price Manipulation, Stock Returns.*

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INTRODUCTION

A report title "Adani Group: How the World's 3rd Richest Man Is Pulling the Largest Con in Corporate History" was published on 24 January 2023 by the Hindenburg Research cited evidences showing accounting and stock manipulation fraud of INR 17.8 trillion (USD 218 billion) by the Indian Conglomerate Adani Group (Hindenburg, 2023). In the past 3 years, Gautam Adani, founder and chairman of the Adani Group has amassed a net worth of $100 billion through stock price manipulation of 7 listed companies of the Adani Group which had increased 819% in that period (Hindenburg, 2023). Hindenburg stated that if one looks at the financials of the Adani Group listed companies at face value, they have an 85% downside based on the fundamental basis. Adani Group companies have taken debt by pledging their inflated price of shares for loans. Their 5 of 7 listed companies have reported a current ratio below 1 which shows liquidity pressure. Adani family members have created shell entities in Mauritius, UAE, Caribbean Islands, and generated documents in order to siphon off money from the listed companies. Gautam Adani's younger brother Rajesh Adani who was arrested twice for forgery and tax fraud is promoted to serve as the managing director of the Adani Group. Gautam Adani's brother-in-law, Samir Vora who was accused of a diamond trading scam has been promoted as Executive Director of the Australia division. Gautam Adani's elder brother Vinod Adani was managing approx 38 Mauritius shell entities. He also surreptitiously controls entities in Cyprus, the UAE, Singapore, and several Caribbean islands. These shell entities were moving millions of dollars from private companies into listed companies of Adani in India in order to show them financially healthy. In India, it is mandatory to show promoter's holding and about 25% of shares should be held by non-promoters in order to avoid insider trading and stock manipulations. But 4 listed companies of the Adani group are on the threshold of delisting due to high promoters' holdings. Evidence of stock manipulation should not come as a surprise as even SEBI has investigated and prosecuted more than 70 entities and individuals for pumping stock prices of Adani enterprises. As per Hindenburg Research, several undisclosed related party transactions by listed and private companies of the Adani Group are violating Indian disclosure laws. The offshore shell environment is also used for earnings manipulation.

The stock price of 7 listed companies of Adani Group have surged mysteriously in the last 3 years and many have increased multi-fold thus making them the largest companies of India.

Table 1: Market Capitalisation and Stock Returns of Adani's listed companies

Company Name	M-Cap (Million INR)	M-Cap (Million INR)	1 Year Stock % Gain	3 Year Stock % Gain
Adani Enterprises	39,28,558	48,108	101%	1398%
Adani Transmission	30,95,771	37,910	36%	729%
Adani Total Gas	42,75,567	52,357	118%	2121%
Adani Green Energy	30,47,678	37,321	4%	908%
Adani Power	10,62,201	13,007	167%	332%
Adani Ports	16,68,599	20,433	8%	98%
Adani Wilmar*	7,34,123	8,990	149%	149%
Total	1,78,12,498	2,18,127		

*Adani Wilmar's performance since February 2022 IPO

(Source: Hindenburg Report[1])

The 7 listed companies of Adani Group are at least 85% overvalued. Infrastructure companies usually grow at a slow pace but Adani Group companies are growing at the pace of high-growth tech companies. If one compares Adani Group companies with peers, one can see at least 84% downgrade purely basis on financials.

Table 2: Price-Earning, Price-Sales, and EV-EBITDA ratios of Adani's listed companies

Name	Price/Earning			Price/Sales			EV/ EBITDA		
	Firm	Industry Average	Implied Downside	Firm	Industry Average	Implied Downside	Firm	Industry Average	Implied Downside
Adani Green Energy	815x	24x	-97.10%	60.6x	1.1x	-98.13%	101x	12x	-88.33%
Adani Power	29x	24x	-18.17%	3.9x	1.1	-70.66%	13x	12x	-10.42%
Adani Total Gas	831x	20x	-97.64%	139.3	1	-99.31%	303x	9x	-97.16%
Adani Transmission	312x	24x	-92.43%	27.3x	1.1	-95.84%	69x	12x	-83.01%
Adani Enterprises	508x	12x	-97.68%	5.7x	0.5	-91.33%	66x	8x	-88.16%
Adani Wilmar	90x	30x	-67.12%	1.3x	1.1	-20.90%	37x	15x	-58.26%
Adani Ports	35x	2x	-93.26%	10.5x	0.9	-91.65%	20x	2x	-88.07%

(Source: Hindenburg Report[2])

[1] https://hindenburgresearch.com/adani/

[2] https://hindenburgresearch.com/adani/

Further, the Adani Group was using high leverage which can be a cause of worry for creditors. The current ratio of 5 Adani Group listed entities is less than 1 which indicates short-term liquidity risk. Also, 4 Adani Group-listed entities have negative cash flow which indicates a worsening situation. After the release of the Hindenburg report, the combined market value of 10 listed companies of the Adani Group had slumped to about 60% ($146 billion).

The motivation for this study lies in the recognition of the potential systemic risks associated with fraudulent activities within major corporations. The alleged manipulation of stock prices, use of offshore entities, and related party transactions raise concerns about the credibility of financial disclosures and the efficacy of regulatory oversight. The Adani Group, as one of India's largest conglomerates, has come under scrutiny following a report by Hindenburg Research, alleging widespread financial misconduct. The event study approach has been used to find the effect of news to understand the impact of financial news in the market. An event study is a statistical method to assess the impact of an event (Gupta, 2016).

DATA AND METHODOLOGY

Movements in a company's stock returns or return of indices is triggered by either market or firm-specific events. 'Abnormal Returns (ARs)' are movements in the economic worth of a corporation caused by firm-specific occurrences. When a favourable economic event is disclosed, it is anticipated that abnormal returns will be positive, indicating the market's positive sentiment towards the announcement and its potential to enhance the firm's value. Conversely, if the revelation is negative news, atypical returns are likely to be negative, reflecting the market's negative sentiment towards the news and its potential adverse impact on the firm's value.

This paper has used the event study methodology to analyse the influence of the Hindenburg's Report on Adani Group stock returns and time of abnormal returns for any of their enterprises which includes Adani Enterprises, Adani Green Energy, Adani Power, Adani Port, Adani Total Gas, Adani Wilmar, and Adani Transmission. An event study investigates market reactions to excess market returns associated with a specific piece of information (Binder, 1998). This methodology includes calculation of expected and actual returns of event window and calculating abnormal returns. The objective of an event study is to assess the degree to which investors/arbitrageurs achieve excess or abnormal stock returns due to an event that provides new information for the market. An abnormal return is determined as the disparity between the actual return and the expected return in the absence of the event (Agarwal et al., 2021; Ananda et al., 2023; Boehmer et al., 1991; Chen et al., 2007; Corrado, 2011; Dashdondog, 2021; Dilshad, 2013; He et al., 2020; Javid & Ahmad, 2020; Kim et al., 2020; Peterson, 1989; Rai & Pandey, 2022)

The outline of the steps involved in the event-based study are as follows:

1. Determine the event to be investigated and the date on which it was announced. Event studies assume that the timing of the occurrence can be stated with a reasonable degree of accuracy. Because financial markets react to the news of an event rather than the event itself, event studies concentrate on the event's announcement date.
2. Collect data on returns around the announcement date. Two issues must be addressed in this context: What interval should be used to calculate returns - weekly, daily, or some other interval? How many periods before and after the announcement date should returns be calculated?

Estimation window: estimation window ending 6 days before the event was taken by Wiles et. al. (2012) while Gielens et. al. (2008) used 260 to 10 days before or 300 to 46 days before the event. Similarly, Fornell et. al. (2006) used 255 days ending 46 days before the event date.

3. Calculate the abnormal returns for each firm in the sample, period by period, around the announcement date. The anomalous return is the difference between the firm's actual and expected returns, as seen below.

$$AR = R_t - E(R_t)$$

Where:
AR=Abnormal Return
R_t=Actual Return
$E(R_t)$ = Expected Return

4. A one-year timeframe is utilised to calculate the regression coefficients and, as a result, the predicted return. Finally, the AR are calculated over time to get the cumulative abnormal returns (CARs) as follows:

$$CAR\ [t_1, t_2] = \sum_{t_1}^{t_2} AR$$

Where:
$[t_1,t_2]$ = are the time interval
Finally, the statistical significance of these abnormal events is determined. The existence of a statistically

significant t statistic suggests that the event has an impact on returns; the sign of the extra return shows whether the impact is positive or negative.

The Secondary data has been used in this study. The historical stock prices were obtained from the yahoo finance website while Nifty 500 Index data collected from NSE India website. The time frame under study is period from 22 December 2021 to 22 February 2023.

The 'Event date' is the day on which any economic occurrence is announced. In this study, the event date is 24 January 2023 when the Hindenburg Report was published. The period for which we want to evaluate the impact of announced news on stock prices is known as the 'Event Window.'

RESULT AND DISCUSSION

The descriptive statistics have been calculated on the stock returns of group companies during window estimation period and window event period in Table 3 and 4.The maximum event window period is (-20, 20) starting from 27 December 2022 to 22 February 2023.

Table 3: Descriptive Statistics of Adani Group Companies Stock returns during Window Estimation Period

Company	Mean	Maximum	Minimum	Skewness
Adani Enterprises	0.003575	0.068186	-0.08636	-0.48305
Adani Green Energy	0.001808	0.149063	-0.122092	0.368068
Adani Ports	0.000675	0.061540	-0.073369	-0.235304
Adani Power	0.004753	0.140799	-0.11469	0.442160
Adani Total Gas	0.003128	0.197918	-0.095708	0.712115
Adani Transmission	0.000283	0.029885	-0.050406	-0.560843
Adani Wilmar	0.003803	0.199999	-0.095819	1.313524
NIFTY 500	0.000283	0.029885	-0.050406	-0.560843

(Source: Author)

Table 4: Descriptive Statistics of Adani Group Companies stock returns during Event Window Period

Company	Mean	Maximum	Minimum	Skewness
Adani Enterprises	-0.01971	0.20039	-0.28196	-1.05731
Adani Green Energy	-0.02840	0.090909	-0.2	-1.31814
Adani Ports	-0.00807	0.093414	-0.191789	-1.61724
Adani Power	-0.01212	0.04999	-0.05002	0.535572
Adani Total Gas	-0.03144	0.075427	-0.2	-1.28942

Adani Transmission	-0.02594	0.04999	-0.2	-1.2188
Adani Wilmar	-0.006516	0.04995	-0.050018	0.354073
NIFTY 500	-0.000948	0.0116618	-0.019588	-0.664108

(Source: Author)

From Table 3 and Table 4, it can be observed that the mean returns of Adani's Group Companies Stocks had significantly decreased due to Hindenburg's report. The maximum and minimum returns observed by all the companies have widened after the event. The concentration of mean returns from the positive to the negative side can be observed by looking at the skewness coefficient.

Table 5 is describing the actual stock returns of selected companies after the event date. Results reported in table 5 show the stock returns of all companies from the period 25th January 2023 to 22nd February 2023. The results report that stock returns of all companies had significantly decreased after the release of Hindenburg's report showing the severity of allegations in the report on group stocks. The decline in the value of Nifty 500 is 4.46 % whereas the decline in the stock returns of companies listed under it is approximately 50%, evidencing the presence of abnormal returns due to firm-specific characteristics.

Table 5: Impact of Hindenburg's Report on 20 days Stock Returns of Adani Group stocks (25th Jan- 22nd Feb, 2023)

Company	20 days stock returns (in %)
Adani Enterprises	-59.185
Adani Green Energy	-71.877
Adani Ports	-28.126
Adani Power	-40.85
Adani Total Gas	-78.595
Adani Transmission	-71.42
Adani Wilmar	-31.84
NIFTY 500	-4.46

(Source: Author)

Table 6 showing the coefficient measuring the effect of market returns on stock returns of Adani Group companies listed in S&P CNX Nifty-500 index is positive and statistically significant in all the companies indicating that a significant portion of company's stock returns is explained by market returns.

Table 6: Estimation of Stocks Returns with OLS-Market Model

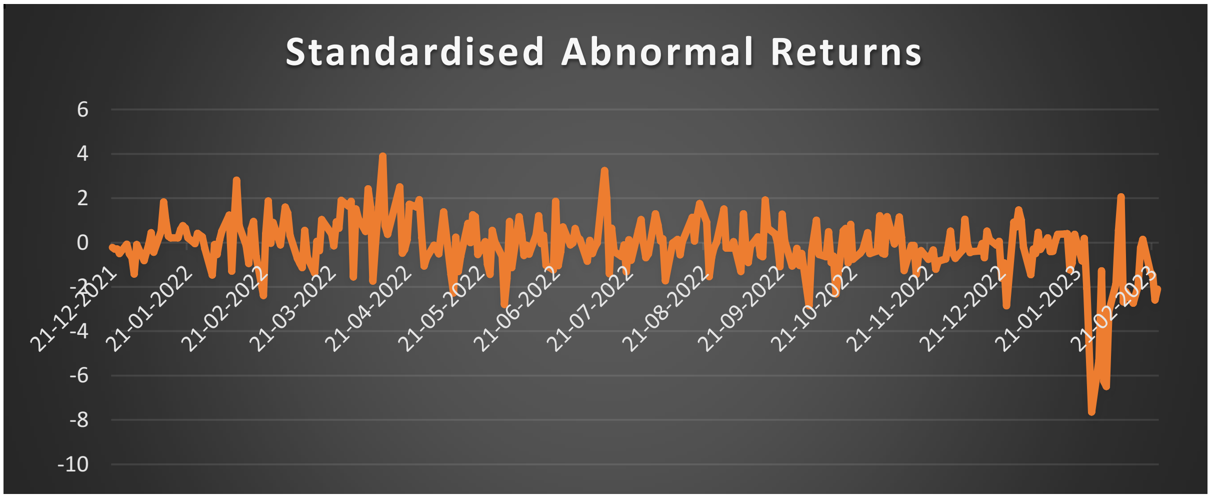
Company	β	Adjusted R^2
Adani Enterprises	0.325	0.481
Adani Green Energy	0.119	0.1407
Adani Ports	0.379	0.554
Adani Power	0.1303	0.1930
Adani Total Gas	0.173	0.238
Adani Transmission	0.169	0.207
Adani Wilmar	0.112	0.150

(Source: Author)

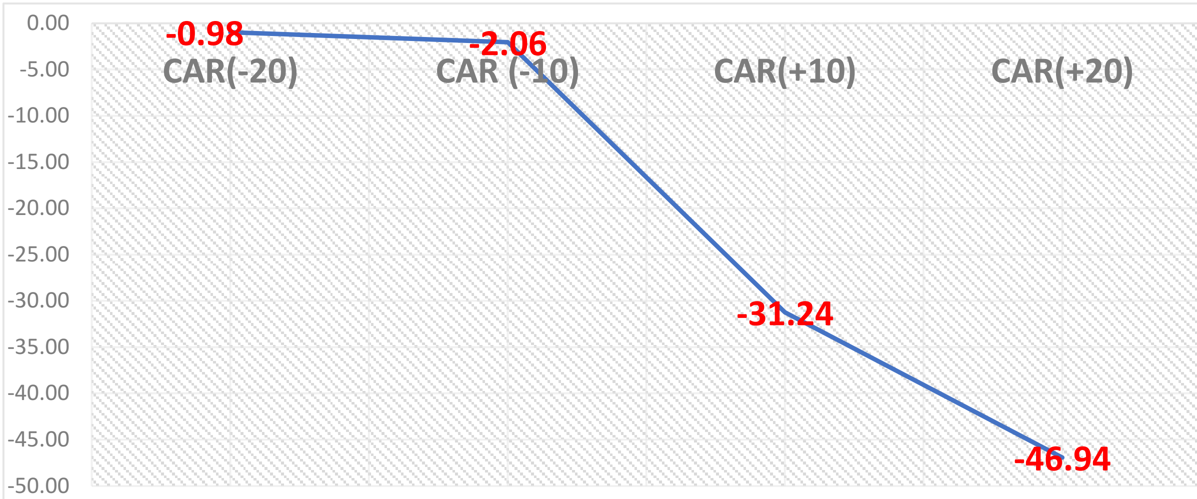
Table 7: Standardized Cumulative Abnormal

Event Window	Standardized Cumulative Abnormal Return	t-statistics
-10 days	-2.06346	-0.62216
+10 days	-31.2446	-9.4206*
-20 days	-0.9814	-0.21416
+20 days	-46.9421	-10.2436*

Note: * indicates significant at 5% (Source: Author)



Picture 1: Standardized Abnormal Returns for the period 21st December 2021-22nd February 2023



Picture 2: Cumulative standardized abnormal returns during event windows

In table 7, the CARs were estimated for the event windows (-10,0) and (0,10) and (-20,0) and (0,20). From table 7 and picture 1, it can be observed that the ARs and CARs were positive on the event day which immediately turned to negative after the announcement of the event i.e. release of Hindenburg's report. The magnitude of the impact is found to be higher after the release of the Hindenburg's report and CARs were negative. As depicted in picture 2, the cumulative abnormal return was negative 31.2% within 10 trading days of the market. Similar results were obtained for the event windows of 20 days. The cumulative abnormal returns were statistically significant at 5% and were negative by 46.9421 percent

SUMMARY AND CONCLUSION

This event study approach provides general people and investors with insights on how the stock returns get affected by any firm-specific events. Because of fearful investors, the impact of events like the release of the Hindenburg Report got amplified as serious allegations were made towards Adani Group companies.

This paper has analysed the impact of Hindenburg's report on Adani's Group listed company's stock performance. A significant decrease was observed in the mean returns of 7 Adani listed companies while the variance in returns has increased. The decline in stock returns of Adani companies was about 50% which indicated the presence of abnormal returns. Based on this finding investors can formalize their study in order to maximize gains and minimize losses.

LIMITATIONS

This study has a limitation as to the influence of other events in the concerned time frame. The event window was not isolated and several events were happening simultaneously which may have their effects as well. While this study aims to analyze the impact of the Hindenburg Research report on Adani Group stock prices during the specified event window, it is important to acknowledge that other significant events, such as the presentation of the Indian Union Budget on February 1, 2023, may have concurrently influenced stock movements. The inclusion of the Union Budget within the event window introduces the possibility of confounding effects, making it challenging to isolate the singular impact of the Hindenburg report. Potential influence of concurrent events is outside the scope of this study, and future research may explore these factors in more detail for a comprehensive understanding of stock price dynamics during the specified period.

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