



# REVIEW OF RESEARCH

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## “TO ANALYZE THE IMPACT OF ANNOUNCEMENT OF MERGER AND ACQUISITION ON STOCK PRICE PERFORMANCE OF MERGED HDFC BANK AND HDFC LTD”

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### ABSTRACT:

The merger of HDFC Limited with HDFC Bank is seen as the biggest transaction in India's corporate history. This mega-merger deal is valued at approximately USD 40 Billion in the banking sector and it shake up the Indian financial services sector. The research paper is case study about the same and it helps to understand the share market activities, know how the share market prices fluctuate after the mergers and acquisitions of HDFC Bank and HDFC Ltd. and also to study the impact on stocks price before the merger and after the merger of HDFC bank and HDFC Ltd. and to compare the pre-merger and post-merger effect on stock price of HDFC Bank and HDFC Ltd. This research paper is studying profoundly the impact of this announcement on wealth and stock price of amalgamating (HDFC Limited) and amalgamated companies (HDFC Bank). As event study methodology is followed to find out the impact of announcement on the stock price. The event study methodology has been used to estimate cumulative average abnormal returns (CAR) in a 1-day, 2-day, 5- day, 10-day, 15-day, 20 day, and 40-day window period.

In the study, it is found that the announcement event has created negative significance on stock price and short selling started to gain excess return. The basis for event study analysis is the semi-strong version of the efficient market hypothesis (EMH). It assumes that all publicly available information is incorporated in the stock prices immediately on announcement.

**KEYWORDS:** Voluntary Ventilation (MVV), Vital Capacity (VC), and Forced Vital Capacity (FVC).

### INTRODUCTION OF THE STUDY:

The merger of mortgage giant HDFC Ltd with HDFC Bank, India's second largest bank, had not just helped a chunk of the country's population build dream homes, but also birthed one of the top private lenders of the country. While HDFC brings to the table its domain expertise in real estate and mortgages, HDFC Bank provides scale and distribution with access to low-cost funds.

The reasoning behind any corporate merger is that, two companies together are more valuable than, if they were separate, because they increase shareholders value over and above that of the two separate firms. To a large extent, this M&A strategy is based on a belief that gains can accrue through expense reduction, increased market power, reduced earnings volatility, and scale and scope economies. With the economic reforms and opening of an economy, Indian banking sector had gone



through some considerable out of which two changes are worth monitoring, they are increased competition and falling interest rates. The industry has started restructuring their operations through M&A because their increasing exposure to competition both domestically and internationally. M&A activity results in overall benefits such as improved revenue efficiency related benefits, return on Asset (ROA) which is decomposed into Total Asset Turnover (efficiency) and profit margin (effectiveness), Return on Investment (ROI), cash flows, reserves, liquidity, etc. to shareholders when the post-merger or post-acquired firm is more valuable.

### OBJECTIVES OF THE STUDY

1. To study the impact on stocks price before the merger and after the merger of HDFC bank and HDFC Ltd.
2. To compare the pre-merger and post-merger effect on stock price of HDFC Bank and HDFC Ltd.

**Limitations of the study:** This research paper is based on the database of NSE or BSE reports.

### REVIEW OF LITERATURE

The literature review provides a description, summary and evaluation of each source. There are many research papers available but here include only 3 research papers which is recent one.

**Sonia Singh and Subhankar Das (2018)** has conducted research on Impact of post-merger and acquisition activities on the financial performance of Indian private sector and public sector banks. The study covers the area of performance evaluation of M&A's in Indian banking sector during the period pre and post period of six years of Merger and Acquisition activity. The paper studied the post-merger financial performance of merged banks with the help of financial parameters like, Net Profit margin, operating Profit margin, return on Capital Employed, Return on Equity, earnings per share, capital adequacy ratio, dividend per share etc.

**Naveen Kumara R, Vidhya VJ and Meghana B Reddy (2019)** has conducted research on a Study on the Impact of Pre and Post Bank Merger Announcement on Stock Price Movements. This study aims to examine the quantum of merger announcements impact on banks pre and post stock prices movements.

**Divyesh Khushalani and Manish Sinha (2021)** has conducted research on Pre and Post Merger Financial Analysis of Banks. The work intends to inspect the financial performance of our country's banks before and post the merger. For this, a specimen of four bank mergers that happened after liberalization was taken and they were analyzed based on financial parameters, for example, Net Profit Margin (NPM), Dividends per Share (DPS), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Credit Deposit Ratio. Study can conclude whether the merger of the banks involved was beneficial for the banks and the Indian banking industry or not.

### Data Collection Methods:

- 1) Primary data refers to the first-hand data gathered by the researcher himself. Primary data are those which are gathered through the analysis of HDFC Bank and HDFC LTD and used Event Study methodology to EMH (efficient market hypothesis).
- 2) Secondary data: Secondary data refers to data that is collected by someone other than the primary user. The secondary data have been taken from the official website of the National Stock Exchange of India Limited (<http://www.nse-india.com>).

### Analysis and Interpretation of Data

The merger of HDFC Limited with HDFC Bank is seen as the biggest transaction in India's corporate history. This Deal is valued at approximately USD 40 Billion. This mega-merger in the banking sector is expected to shake up the Indian financial services sector.

- 1) This Deal will facilitate HDFC Bank to tap into the large customer base of HDFC Limited's housing portfolio and result in HDFC Bank becoming the 2nd largest bank in India by market capitalization.
- 2) The entire housing finance sector due to increased access to its customers using HDFC Bank's network.
- 3) It increased PSL lending and a higher credit growth in the Indian market since it will allow HDFC Bank to underwrite big ticket loans and sustain large exposures owing to its large balance sheet post-merger.
- 4) HDFC Bank, post-merger will benefit from the positive synergies and economies of scale through wider outreach, larger balance sheet, broader range of products and access to common pool of resources. Both twins of HDFC are listed on BSE and NSE, the ADRs (American Depositary Receipts) issued by HDFC Bank are listed on NYSE.
- 5) The merger of the HDFC twins is seen as a win-win situation for the shareholders of both entities.
- 6) HDFC Bank will emerge as a behemoth in the banking industry being among the top 10 banks in the world in terms of market capitalization and only to increase its footprint in the housing loan market by cross-selling across the customer base of HDFC Limited.

### RESULT AND ANALYSIS:

The following results obtained from the preliminary analysis of the different sectors with the help of event study; the reaction on the stock market can be seen in following table where calculated abnormal return which is calculated with the help of period which we have already shown in Figure , with the help of daily stock prices and combination index price (market price) i.e. Nifty 50 , from the above information we have calculated normal return (examine the impact announcement of M&A). 0 will be our event date as 4<sup>th</sup> April, 2022 this 0 is our event date as announcement of M&A. This event's window period is pre-event 40 days and post-event 40 days, 0 is included in window period so total 81 days window period. Window estimation is for 212 days.

However, this study interested in market model with the help of Brown and Warner (1985) daily excess return as the abnormal returns.

Flowing information and formulas-

1. Event Day is 4th April, 2022 Announcement of M&A
2. vent window or window period (-40, 0, 40) 81 days
3. Window estimation is -212, 0, 212 days
4. BETA ( $\beta$ ) Slope =  $SLOPE(G13:G224, H13:H224) = 1.2735$
5. Alpha ( $\alpha$ ) Intercept =  $INTERCEPT(G13:G224, H13:H224) = -0.001034079$
6. normal return =  $\alpha + (\beta * \text{Market return})$
7. Abnormal return = stock return - normal return
8. Std error =  $STEYX(G13:G224, H13:H224) = -0.0103400229$
9. t-stastics of AR =  $AR / \text{Std error}$
10. t-stastics of CAR =  $CAR / S.D * (\text{no. of days in windows})^{(1/2)}$  Statistical Significance of Event Returns

**Table : Pre-Event impact on stock prices of HDFC in Event window**

Pre-Event Impact on stock prices of HDFC in Event window								
Period	Date	Housing Development Finance Corporation Limited (HDFC.NS)	Market Price (Nifty 50)	Stock Return LN	Market Return LN	Normal Return	Abnormal Return	t-statistics of AR
-40	03-Feb-22	2527.80	17560.1992	-0.03313045	-0.012439	-0.01688	-0.01625	1.571945
-39	04-Feb-22	2503.25	17516.3008	-0.00975949	-0.002503	-0.00422	-0.00554	0.535548
-38	07-Feb-22	2428.15	17213.5996	-0.03046028	-0.017432	-0.02323	-0.00723	0.698766
-37	08-Feb-22	2414.60	17266.75	-0.00559593	0.003083	0.002892	-0.00849	0.820885
-36	09-Feb-22	2435.35	17463.8008	0.008556841	0.011348	0.013418	-0.00486	0.470082
-35	10-Feb-22	2476.55	17605.8496	0.016775959	0.008101	0.009283	0.007493	-0.72464
-34	11-Feb-22	2426.35	17374.75	-0.02047837	-0.013213	-0.01786	-0.00262	0.253048
-33	14-Feb-22	2296.80	16842.8008	-0.05487124	-0.031095	-0.04063	-0.01424	1.3768
-32	15-Feb-22	2340.25	17352.4492	0.01874089	0.029810	0.036931	-0.01819	1.759157
-31	16-Feb-22	2363.85	17322.1992	0.010033926	-0.001745	-0.00326	0.01329	-1.28528
-30	17-Feb-22	2411.80	17304.5996	0.02008169	-0.001017	-0.00233	0.02241	-2.1673
-29	18-Feb-22	2441.15	17276.3008	0.012095823	-0.001637	-0.00312	0.015214	-1.47137
-28	21-Feb-22	2436.80	17206.6504	-0.00178348	-0.004040	-0.00618	0.004395	-0.42508
-27	22-Feb-22	2453.95	17092.1992	0.007013228	-0.006674	-0.00953	0.016547	-1.60023
-26	23-Feb-22	2437.05	17063.25	-0.00691064	-0.001695	-0.00319	-0.00372	0.359538
-25	24-Feb-22	2343.05	16247.9502	-0.03993479	-0.048960	-0.06339	0.024053	-2.32614
-24	25-Feb-22	2401.35	16658.4004	0.0245776	0.024948	0.030738	-0.00616	0.595803
-23	28-Feb-22	2364.50	16793.9004	-0.01546454	0.008101	0.009283	-0.02475	2.393339
-22	02-Mar-22	2278.10	16605.9492	-0.03722478	-0.011255	-0.01537	-0.02186	2.113803
-21	03-Mar-22	2273.00	16498.0508	-0.00224126	-0.006519	-0.00934	0.007095	-0.68614
-20	04-Mar-22	2217.50	16245.3496	-0.02472011	-0.015436	-0.02069	-0.00403	0.389551
-19	07-Mar-22	2121.95	15863.1504	-0.04404498	-0.023808	-0.03135	-0.01269	1.227278
-18	08-Mar-22	2151.70	16013.4502	0.01392275	0.009430	0.010976	0.002947	-0.285
-17	09-Mar-22	2194.40	16345.3496	0.019650411	0.020514	0.025092	-0.00544	0.526266
-16	10-Mar-22	2237.95	16594.9004	0.01965163	0.015152	0.018263	0.001389	-0.13431
-15	11-Mar-22	2230.00	16630.4492	-0.00355866	0.002140	0.001691	-0.00525	0.507707
-14	14-Mar-22	2275.70	16871.3008	0.02028609	0.014379	0.017278	0.003008	-0.29092
-13	15-Mar-22	2240.85	16663	-0.01543237	-0.012423	-0.01686	0.001423	-0.13766
-12	16-Mar-22	2292.10	16975.3496	0.022613169	0.018572	0.022618	-4.6E-06	0.000448
-11	17-Mar-22	2415.25	17287.0508	0.052334331	0.018195	0.022139	0.030196	-2.9202
-10	21-Mar-22	2391.90	17117.5996	-0.00971481	-0.009851	-0.01358	0.003864	-0.37373
-9	22-Mar-22	2402.75	17315.5	0.004525926	0.011495	0.013605	-0.00908	0.878062
-8	23-Mar-22	2346.30	17245.6504	-0.02377427	-0.004042	-0.00618	-0.01759	1.701353
-7	24-Mar-22	2310.50	17222.75	-0.01537569	-0.001329	-0.00273	-0.01265	1.223314
-6	25-Mar-22	2303.00	17153	-0.00325133	-0.004058	-0.0062	0.002951	-0.28539
-5	28-Mar-22	2268.25	17222	-0.01520401	0.004015	0.004079	-0.01928	1.864821
-4	29-Mar-22	2337.35	17325.3008	0.030009242	0.005980	0.006582	0.023427	-2.26563
-3	30-Mar-22	2385.45	17498.25	0.020369914	0.009933	0.011616	0.008754	-0.84658
-2	31-Mar-22	2390.40	17464.75	0.00207291	-0.001916	-0.00347	0.005548	-0.5365
-1	01-Apr-22	2452.30	17670.4492	0.025565705	0.011709	0.013878	0.011688	-1.1303

Post-Event Impact on stock prices of HDFC in Event window

Period	Date	Housing Development Finance Corporation Limited (HDFC.NS)	Market Price (Nifty 50)	Stock Return LN	Market Return LN	Normal Return	Abnormal Return	t-statistics of AR
0	04-Apr-22	2680.05	18053.4004	<b>0.08880909</b>	0.021440	0.026271	0.0625378	-6.04801
1	05-Apr-22	2623.70	17957.4004	<b>-0.02124995</b>	-0.005332	-0.00782	-0.013426	1.298386
2	06-Apr-22	2536.05	17807.6504	<b>-0.03397774</b>	-0.008374	-0.0117	-0.022279	2.15457
3	07-Apr-22	2462.70	17639.5508	<b>0.02934948</b>	-0.009485	-0.01311	-0.016236	1.570206
4	08-Apr-22	2458.25	17784.3496	<b>-0.00180857</b>	0.008175	0.009378	-0.011186	1.081805
5	11-Apr-22	2424.70	17674.9492	<b>-0.01374193</b>	-0.006170	-0.00889	-0.004849	0.468984
6	12-Apr-22	2425.70	17530.3008	<b>0.000412337</b>	-0.008217	-0.0115	0.0119118	-1.15199
7	13-Apr-22	2378.50	17475.6504	<b>-0.01965009</b>	-0.003122	-0.00501	-0.01464	1.415784
8	18-Apr-22	2263.50	17173.6504	<b>-0.04955775</b>	-0.017432	-0.02323	-0.026323	2.545667
9	19-Apr-22	2140.20	16958.6504	<b>-0.05601303</b>	-0.012598	-0.01708	-0.038934	<b>3.765339</b>
10	20-Apr-22	2180.20	17136.5508	<b>0.018517334</b>	0.010436	0.012256	0.0062611	-0.60551
11	21-Apr-22	2230.65	17392.5996	<b>0.022876386</b>	0.014831	0.017854	0.0050222	-0.4857
12	22-Apr-22	2206.40	17171.9492	<b>-0.0109308</b>	-0.012768	-0.01729	0.0063635	-0.61541
13	25-Apr-22	2210.50	16953.9492	<b>0.001856551</b>	-0.012776	-0.01731	0.019162	-1.85315
14	26-Apr-22	2230.20	17200.8008	<b>0.008872511</b>	0.014455	0.017375	-0.008503	0.822302
15	27-Apr-22	2218.70	17038.4004	<b>-0.00516983</b>	-0.009486	-0.01312	0.0079455	-0.76841
16	28-Apr-22	2224.00	17245.0508	<b>0.00238596</b>	0.012056	0.014319	-0.011933	1.154069
17	29-Apr-22	2229.70	17102.5508	<b>0.002559649</b>	-0.008298	-0.0116	0.0141611	-1.36952
18	02-May-22	2264.00	17069.0996	<b>0.015266135</b>	-0.001958	-0.00353	0.0187936	-1.81752
19	04-May-22	2206.95	16677.5996	<b>-0.02552171</b>	-0.023203	-0.03058	0.005063	-0.48964
20	05-May-22	2215.40	16682.6504	<b>0.00382148</b>	0.000303	-0.00065	0.0044699	-0.43228
21	06-May-22	2150.65	16411.25	<b>-0.02966285</b>	-0.016402	-0.02192	-0.00774	0.748504
22	09-May-22	2168.30	16301.8496	<b>0.008173397</b>	-0.006689	-0.00955	0.0177256	-1.71424
23	10-May-22	2201.30	16240.0498	<b>0.015104644</b>	-0.003798	-0.00587	0.0209759	-0.28257
24	11-May-22	2219.10	16167.0996	<b>0.008053635</b>	-0.004502	-0.00677	0.0148214	-1.43337
25	12-May-22	2150.45	15808	<b>-0.03142465</b>	-0.022462	-0.02964	-0.001784	0.172515
26	13-May-22	2132.95	15782.1504	<b>-0.00817112</b>	-0.001637	-0.00312	-0.005053	0.488654
27	16-May-22	2172.10	15842.2998	<b>0.018188512</b>	0.003804	0.00381	0.014378	-1.39049
28	17-May-22	2190.55	16259.2998	<b>0.00845819</b>	0.025981	0.032055	-0.023597	<b>2.282011</b>
29	18-May-22	2184.55	16240.2998	<b>-0.0027428</b>	-0.001169	-0.00252	-0.00022	0.02124
30	19-May-22	2136.30	15809.4004	<b>-0.0223345</b>	-0.026891	-0.03528	0.0129468	-1.25208
31	20-May-22	2201.60	16266.1504	<b>0.03010903</b>	0.028482	0.035239	-0.00513	0.496088
32	23-May-22	2175.95	16214.7002	<b>-0.01171909</b>	-0.003168	-0.00507	-0.00665	0.643153
33	24-May-22	2206.80	16125.1504	<b>0.014078196</b>	-0.005538	-0.00809	0.0221653	-2.1436
34	25-May-22	2237.45	16025.7998	<b>0.013793278</b>	-0.006180	-0.0089	0.0226983	-2.19514
35	26-May-22	2287.75	16170.1504	<b>0.022231999</b>	0.008967	0.010386	0.0118461	-1.14563
36	27-May-22	2330.40	16352.4502	<b>0.018471083</b>	0.011211	0.013243	0.0052277	-0.50556
37	30-May-22	2367.25	16661.4004	<b>0.015689059</b>	0.018717	0.022803	-0.007114	0.687981
38	31-May-22	2306.75	16584.5508	<b>-0.02588934</b>	-0.004623	-0.00692	-0.018967	1.83434
39	01-Jun-22	2329.90	16522.75	<b>-0.00985699</b>	-0.003733	-0.00579	0.0157744	-1.52554
40	02-Jun-22	2289.60	16628	<b>-0.01744813</b>	0.006350	0.007053	-0.024501	2.36947

**Table 3: Post-Event Impact on stock prices of HDFC in Event window HDFC**

Period	Date	HDFC Bank	Market Price (Nifty 50)	Stock Return LN	Market Return LN	Normal Return	Abnormal Return	t-statistics of AR
-40	03-Feb-22	1515.349976	17560.1992	<b>-0.01040529</b>	-0.012439	-0.01441	0.0040076	-0.42182
-39	04-Feb-22	1524	17516.3008	<b>0.005692038</b>	-0.002503	-0.00361	0.00930662	-0.97952
-38	07-Feb-22	1468.150024	17213.5996	<b>-0.03793834</b>	-0.017432	-0.01984	-0.017496	1.841561
-37	08-Feb-22	1461.849976	17266.75	<b>-0.00430038</b>	0.003083	0.002457	-0.006757	0.711208
-36	09-Feb-22	1497.599976	17463.8008	<b>0.02416107</b>	0.011348	0.011439	0.0127225	<b>1.33911</b>
-35	10-Feb-22	1525.099976	17605.8496	<b>0.018196155</b>	0.008101	0.00791	0.0102859	-1.06264
-34	11-Feb-22	1518.849976	17374.75	<b>-0.00410651</b>	-0.013213	-0.01525	-0.011475	-1.17332
-33	14-Feb-22	1473.699951	16842.8008	<b>-0.03017724</b>	-0.031095	-0.03469	0.0045103	-0.47473
-32	15-Feb-22	1517.800049	17352.4492	<b>0.029485738</b>	0.029810	0.031504	-0.002018	0.21242
-31	16-Feb-22	1515.75	17322.1992	<b>-0.00135158</b>	-0.001745	-0.00279	0.0014385	-0.15141
-30	17-Feb-22	1506.5	17304.5996	<b>-0.00612129</b>	-0.001017	-0.002	0.004123	0.433926
-29	18-Feb-22	1512.349976	17276.3008	<b>0.00875637</b>	-0.001637	-0.00267	0.0065483	-0.68924
-28	21-Feb-22	1522.099976	17206.6504	<b>0.006426228</b>	-0.004040	-0.00528	0.0117105	-1.23258
-27	22-Feb-22	1510.699951	17092.1992	<b>-0.00751786</b>	-0.006674	-0.00815	0.0006291	-0.06621
-26	23-Feb-22	1500.900024	17063.25	<b>-0.00650814</b>	-0.001695	-0.00274	0.003772	0.397018
-25	24-Feb-22	1419.400024	16247.9502	<b>-0.05883068</b>	-0.048960	-0.0541	-0.001727	0.181768
-24	25-Feb-22	1456.099976	16658.4004	<b>0.025827348</b>	0.024948	0.026219	-0.000692	0.72837
-23	28-Feb-22	1426.25	16793.8004	<b>-0.02073298</b>	0.008101	0.00791	-0.028628	3.012948
-22	02-Mar-22	1374.25	16605.9492	<b>-0.03714049</b>	-0.011255	-0.01313	-0.024015	2.527684
-21	03-Mar-22	1371	16498.0508	<b>-0.00236773</b>	-0.006519	-0.00798	0.0056108	-0.59056
-20	04-Mar-22	1366.5	16245.3496	<b>-0.00828767</b>	-0.015436	-0.01767	0.0143815	<b>1.51372</b>
-19	07-Mar-22	1324.800049	15863.1504	<b>-0.03099118</b>	-0.023808	-0.02677	-0.004223	0.44449
-18	08-Mar-22	1327.800049	16013.4502	<b>0.002261833</b>	0.009430	0.009355	-0.007093	0.746557
-17	09-Mar-22	1371.150024	16345.3496	<b>0.032126347</b>	0.020514	0.021401	0.0107252	-1.12888
-16	10-Mar-22	1392.699951	16594.9004	<b>0.015594458</b>	0.015152	0.015573	2.119E-05	-0.00223
-15	11-Mar-22	1396.800049	16630.4492	<b>0.002989667</b>	0.002140	0.001432	0.001508	-0.15872
-14	14-Mar-22	1442.550049	16871.3008	<b>0.032288474</b>	0.014379	0.014733	0.0174957	<b>1.8415</b>
-13	15-Mar-22	1424	16663	<b>-0.01229426</b>	-0.012423	-0.0144	0.0014529	-0.15293
-12	16-Mar-22	1448.150024	16975.3496	<b>0.016817088</b>	0.018572	0.01929	0.002473	0.260247
-11	17-Mar-22	1480.050049	17287.0508	<b>0.021789008</b>	0.018195	0.018801	0.0029082	-0.3061
-10	21-Mar-22	1486.5	17117.5996	<b>0.004348459</b>	0.009851	-0.0116	0.0159479	<b>1.67859</b>
-9	22-Mar-22	1494.150024	17315.5	<b>0.005133136</b>	0.011495	0.011599	0.006466	0.680534
-8	23-Mar-22	1479.25	17245.6504	<b>-0.0106223</b>	-0.004042	-0.00529	-0.004735	0.498431
-7	24-Mar-22	1442.650024	17227.75	<b>-0.02508349</b>	-0.001329	-0.00234	-0.022715	<b>2.890413</b>
-6	25-Mar-22	1430.900024	17153	<b>-0.00817808</b>	-0.004058	-0.0053	-0.002874	0.302487
-5	28-Mar-22	1432.800049	17223	<b>0.001326872</b>	0.004015	0.003469	-0.002142	0.22547
-4	29-Mar-22	1451.800049	17325.3008	<b>0.03173594</b>	0.005980	0.005605	0.0075682	-0.79658
-3	30-Mar-22	1476.949951	17498.25	<b>0.017174918</b>	0.009933	0.009901	0.0072737	-0.76559
-2	31-Mar-22	1470.349976	17464.75	<b>-0.00447867</b>	-0.001916	-0.00298	0.001503	0.158106
-1	01-Apr-22	1506	17670.4492	<b>0.023956678</b>	0.011709	0.011832	0.0121251	<b>1.27623</b>

**Bank**

**Table 4:Pre-Event Impact on stock prices of HDFC Bank in Event window**

Period	Date	HDFC Bank	Market Price (INR)	Stock Return LN	Market Return LN	Normal Return	Abnormal Return	T-statistics of AR
0	04-Apr-22	1656.800049	18053.4004	-0.005430931	0.021440	0.022407	0.0730235	-2.586608
1	05-Apr-22	1608.25	17957.8004	-0.02974143	0.005332	-0.00669	0.023053	-2.42644
2	06-Apr-22	1550.849976	17807.6504	-0.03684348	0.008374	-0.00999	0.026349	-2.723116
3	07-Apr-22	1516.75	17639.5508	-0.02228826	0.009485	-0.0312	0.033032	-1.161125
4	08-Apr-22	1513.650024	17784.3496	-0.001388548	0.008175	0.007993	0.009176	0.986914
5	11-Apr-22	1496.150024	17674.9492	-0.01228925	-0.006174	-0.0076	-0.004689	0.493569
6	12-Apr-22	1493.5	17530.3008	-0.00477228	0.008217	-0.00592	0.0080518	-0.84749
7	13-Apr-22	1464.949951	17475.6504	-0.01980128	-0.003122	-0.00429	-0.015014	-1.500290
8	18-Apr-22	1395.449951	17173.6504	-0.04860417	0.017432	0.01984	-0.028265	-1.027651
9	19-Apr-22	1342.199951	16958.6504	-0.03890689	-0.012598	-0.01459	-0.024321	-2.659938
10	20-Apr-22	1354.300049	17136.5508	0.00897973	0.016836	0.01847	-0.001493	0.155914
11	21-Apr-22	1374.349976	17392.5996	0.014696123	0.014031	0.015225	0.000526	0.055619
12	22-Apr-22	1355.599976	17171.9492	-0.01378673	0.012768	0.01477	0.001031	-0.10872
13	25-Apr-22	1365.75	16953.9492	0.007459985	0.012776	-0.01478	0.0222408	-2.34078
14	26-Apr-22	1372.050049	17200.8008	0.004602279	0.013455	0.014836	-0.010213	1.075033
15	27-Apr-22	1372.550049	17036.8004	0.009364852	-0.009486	-0.0312	0.0315679	-1.21750
16	28-Apr-22	1371.349976	17245.0508	-0.0087472	0.012056	0.01208	0.013083	-1.377023
17	29-Apr-22	1384.599976	17102.5508	0.009615633	0.008298	0.00991	0.0195273	-2.05534
18	02-May-22	1403.699951	17069.0996	0.019700801	-0.00158	-0.00302	0.016722	-1.76007
19	04-May-22	1356	16677.5996	-0.03429288	0.023203	0.02611	-0.008461	0.890583
20	05-May-22	1352.949951	16603.6504	-0.00225183	0.000303	-0.00076	-0.001683	0.177567
21	06-May-22	1337.599976	16411.25	-0.02647848	0.016402	-0.01872	-0.007256	0.036227
22	09-May-22	1319.849976	16301.8496	-0.001706194	0.006689	0.00816	0.0098691	-1.03877
23	10-May-22	1341.050049	16240.8498	0.01598485	0.003798	-0.00502	0.009566	-2.00578
24	11-May-22	1348.599976	16167.0996	0.005614074	-0.004502	-0.00579	0.0114009	-1.59999
25	12-May-22	1303.050049	15808	-0.03435920	0.022462	0.02531	-0.009954	0.952936
26	13-May-22	1291.349976	15782.1504	-0.00901954	0.001637	-0.00267	-0.006347	0.668056
27	16-May-22	1305.099976	15832.2998	0.019591484	0.003894	0.00324	0.0073512	0.77375
28	17-May-22	1314	16259.2998	0.006798272	0.025981	0.02743	0.020546	2.162688
29	18-May-22	1313.900024	16240.2998	7.8088E-08	0.001169	0.00216	0.002085	-0.21903
30	19-May-22	1287.050049	15809.8004	-0.02064702	0.026891	-0.03012	0.009472	-0.99697
31	20-May-22	1320.949951	16266.1504	0.025988822	0.029402	0.03006	0.004061	0.427407
32	23-May-22	1304	16234.7002	-0.01291487	0.003168	-0.00434	0.008578	0.902851
33	24-May-22	1316.949951	16126.1504	0.011989485	0.005538	0.00691	0.008121	-1.92744
34	25-May-22	1328.800049	16025.7998	0.007440888	0.006180	0.00761	0.015051	1.584139
35	26-May-22	1366.699951	16170.1504	0.028122723	0.008967	0.008851	0.0192712	-2.02839
36	27-May-22	1392.050049	16352.4502	0.038878477	0.011211	0.01129	0.007885	0.7461
37	30-May-22	1401.550049	16661.8004	0.008803286	0.018717	0.019448	0.012666	1.333082
38	31-May-22	1388.949951	16504.5508	-0.00903077	0.004623	0.00592	0.003113	0.327606
39	01-Jun-22	1394.849976	16522.75	0.004238835	0.003733	-0.00495	0.0091901	-0.96731
40	02-Jun-22	1385.099976	16628	-0.00701454	0.006350	0.006007	-0.013022	-1.370585

**Table 5: Post-Event impact on stock prices of HDFC Bank in Event window**

**Table : Significance of Post event T-statistics of CAR**

HDFC				HDFC Bank					
window	CAR	t (no.of days in window)	t-statistics of CAR	Significance	window	CAR	t (no.of days in window)	t-statistics of CAR	Significance
2	-0.0357044		-2.02831103	Significant	2	-0.049402		-3.06867	Significant
5	-0.0679762		-2.44230505	Significant	5	-0.074499		-2.92677	Significant
10	-0.1297		-3.29509747	Significant	10	-0.13602		-3.77857	Significant
20	-0.0691552		-1.24233238	slightly Significant	20	-0.098904		-1.94278	Significant
40	-0.0113505		-0.14418238	Non-Significant	40	-0.053975		-0.7497	Non-Significant

It is found that both HDFC and HDFC Bank have negatively significant of post event t-statistics i.e. announcement of M&A of both twins of HDFC

**FINDINGS**

A study on market efficiency is in fact a study investigating how events in the financial market shift returns from their estimated equilibrium such that an abnormality occurs. It is a misconception that an efficient market would equal a return-generating process that is totally random. Rather, researchers try to understand whether market efficiency imperfections can be exploited to gain excess returns. In the study, it is found that the announcement event has created negative significance on stock price and short selling started to gain excess return.

**SUGGESTIONS**

Every investor has all the information about stock. But when event occurs it depends on the people behaviour. In this case, it has shown negative significance. So with this information we can predict that investors can earn abnormal return with the people behaviour as if they have sell the

stock they could earn abnormal return. Further any event occurs there is opportunities of abnormal return for investors either by selling or buying the stocks of HDFC Bank and HDFC Ltd.

## CONCLUSION

The basis for event study analysis is the semi-strong version of the efficient market hypothesis, (EMH). It assumes that all publicly available information is incorporated into the stock prices immediately on the announcement. One of the assumptions of efficient market theory is that investors always act rationally when confronted with new information. Research findings in the psychological literature show that individuals have limited information-processing abilities, are often biased and prejudiced, are prone to making mistakes, and tend to rely on the opinions of others in their decision-making.

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