Determinants of Shareholders Wealth - Performance Based Study on Merging Companies

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Abstract

Mergers and Acquisitions as a business strategies are widely used to increase the wealth of the shareholders and the corporate performance. Shareholders wealth may be influenced by many factors such as the corporate performance, deal type, geographic location of the company and so on. The study is conducted with three main objectives of assessing the impact of merger announcements on merging companies' share prices, analyse the nature of shareholders' returns of the merging companies and assess the determinants of shareholders returns. NSE listed companies which have made merger announcements during the period of 1st January 2007 to 31st December 2012 shall constitute the sample population for the research, while 40 merger announcements have been taken as sample size. Mean adjusted model has been used for calculating the abnormal returns while the statistical tools of paired samples t-test, ANOVA and multiple regression have been used for analysing data. Results of the research reveal that merger announcements exert significant impact on share prices. Further, shareholders wealth has witnessed an increase after the merger announcements. Finally, shareholders wealth has not been affected by the company's performance.

Keywords: Computer Software Industry, Mergers, Mean adjusted abnormal returns

1. Introduction

India is witnessing numerous merger deals in the recent past. In India, almost 768 companies have made merger announcements during 1st January 2007 to 31st December 2012, which includes 395 listed companies of NSE. Companies belonging to different industries such as Abrasives, Aluminum and aluminum products, Animation content provider, Auto finance services, Banking services, etc. have been listed in NSE. Merger deals have occurred in 395 companies, spread over almost 106 industries during 1st January 2007 to 31st December 2012.

Figure 1 shows the number of merger deals of different industry groups which have undergone mergers during 2007 to 2012. It can be observed that 35 i.e., 9 percent of companies belong to computer software (CS) industry, 6 percent belong to Drugs and Pharmaceuticals, while 5 percent belong to Trading industry. Industries like Abrasives, Animation content provider, Coal and lignite, Computers, peripherals and storage devices, Courier services, Diversified automobile, Diversified cotton textile, etc. accounts for one company each. It can be inferred from the figure that many computer software companies have gone through mergers after the global crisis. Every year, companies in the computer software (CS) industry are frequently involved in merger deals.

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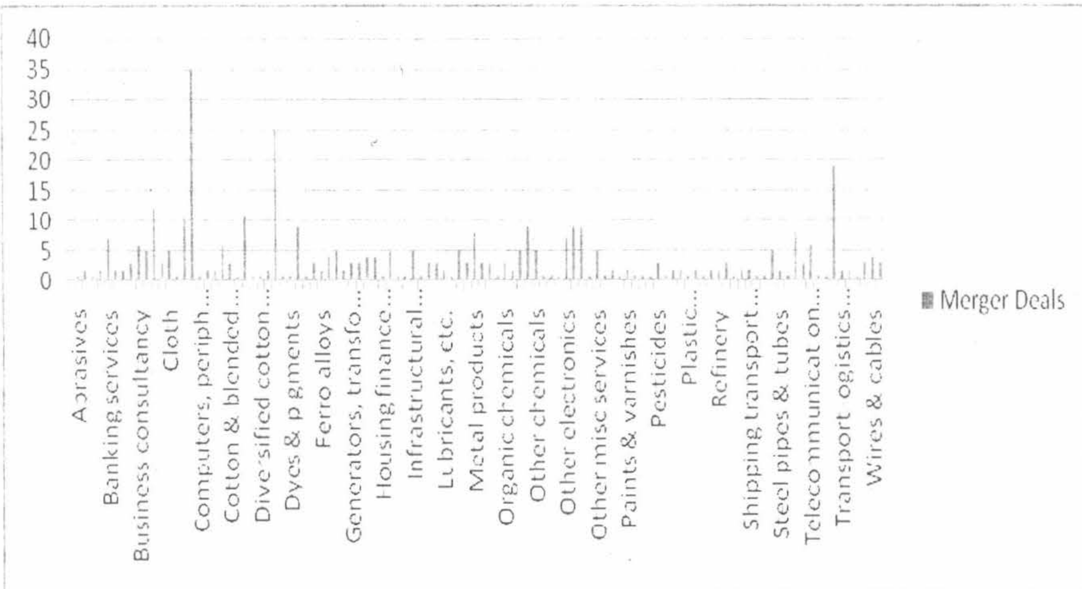
Graph 1: Industry Wise Merger Deals



Source: Compiled from CMIE database

2. Review of Literature

Jayaraman, N., Khorana, A. and Nelling, E. (2002) have analysed the determinants and Shareholder Wealth of mergers. This study has concentrated specially on Mutual Fund Mergers. Delaney, T. and Wamuziri, S C. (2004) have studied the MandA impact on shareholders wealth. This study has considered the UK construction industry. This study has finds that the related construction mergers have created value to the target firms shareholders.

Anand, M. and Singh, J. (2008) have studied the Impact of Merger Announcements on Shareholders' Wealth. This study dealt with the Indian Private Sector Banks. This study uses event study methodology. Five mergers deals have taken as a sample. This study has states that both the bidder and target bank has the positive impact after the merger announcements. Kumar, R. (2009) studied the post merger corporate performance of the acquiring firms involves in mergers between 1999 and 2002 in India.

Bednarczyk,T P., Schiereck, D. and Walter, H N. (2010) have studied the cross-border acquisitions and shareholder wealth of the energy and industry. This study has considered bidder announcements between1995 and 2005. Shukla, A. and Gekara, M G. (2010) have studied the Multinational MandA effects on shareholders wealth and corporate performance. This study has finds that the acquiring company is earning returns in pre announcement periods. Liargovas, P. and Repousis, S. (2011) have studied the MandA impact on the performance of Banking sectors in Greek. This study has adopted event study methodology approach. This study has considered 1996-2009 merger announcements. This study finds that the operating performance has not improved after MandA.

Mann, B. and Kohli, R. (2011) have studied the target shareholders wealth creation. This study has considered both the domestic as well as cross border acquisitions. Event study is adopted in this study. Results reveals that both the domestic as well as cross border acquisitions have created value to the target shareholders. Venkatesan, S. and Govindarajan, K. (2011) have studied the Acquisitions of Public Sector Banks and its impact of shareholders wealth. This study has considers the Banks in India. This study has considers the deals between 1995 and 2006. The abnormal returns were calculated by using market model. This study finds that there is a maximum benefit in the post event period. Zhu, P C. and Jog, V. (2012) find that the acquisitions are reducing the risk of the target firms and increasing the value also.

Shobhana, V K. and Deepa, N. (2012) have studied the MandA Impact on the Shareholder Wealth. This study has considered the Acquirer Banks in India. Event study approach is applied. The sample of the study is six banks merger announcement period between 1991 and 2005. This study has finds that the shareholders value has been declined after the announcements. Rani, N., Yadav, S S. and Jain. P K. (2012) have studied the Impact of MandA on the acquiring firms' shareholders returns. This study has done in India. This study finds that the there is a significant abnormal returns after the announcements of MandA. Rahim, N M. and Ching Pok, W. (2013) have analysed the shareholders wealth. The purpose of this study is to find out short term wealth effects of MandA and its determinants. This study reveals that there is positive wealth creation for both bidding and target shareholders.

3. Research Methodology

Event study methodology has been applied in this research. This study has used the six year period from 1st January 2007 to 31st December 2012 as the study period. Forty merger deals struck by 24 NSE listed companies belonging to Computer Software industry has been taken as the sample units for the research. The Stock Exchange Announcement date has been considered as the merger announcement date. In cases where the stock exchange announcement date is not available, Board of Directors / High Court approval date has been considered as the announcement date. Shareholders of merging companies are the main focus of this research. Data pertaining to merger transactions have been collected from CMIE database while data pertaining to share prices have been collected from NSE webpage. The financial indicators such as Return on Long Term Funds, Current Ratio, Asset Turnover Ratio, Earnings per Share and Book Value of the merging company have collected from money control webpage. Statistical tools such as paired samples t-test, ANOVA and multiple regression have been used to analyse data. SPSS 16.0 package has been used for data analysis. Shareholders wealth has been assessed by calculating the abnormal returns. The abnormal returns are calculated by using mean adjusted abnormal returns models with the procedures followed by Brown and Warner (1985).

$$A_{i,t} = R_{it} - \overline{R_i}$$

Whereas R_{it} refers to daily return

$$\overline{R_i} = \frac{1}{159} \sum_{-179}^{-21} R_{it}$$

Whereas $\overline{R_i}$ refers to the average of the share (i) daily returns during the assessment period starting from the 179th day and ending at the 21st day before the announcement of mergers.

4. Results and Analysis

4.1 Impact of Mergers on Share Prices – Year Wise Analysis

Impact of mergers on share prices can be assessed by comparing the share prices during the pre and post merger period. This study compares the share price movement 20 days before and after the announcement of merger. The average share price of the merging company in a particular year has been considered as the average share price. This study proposes to analyse the impact of merger announcements made during the six year period, on share prices by using paired samples t test.

Table 1: Impact of Mergers on Share Prices – Year Wise Analysis

Year (1)	Before Mean (2)	After Mean (3)	Difference (4 = 3-2)	t (5)	Sig. (2-tailed) (6)
2007	189.3825	186.14	-3.25	3.442	.003
2008	365.2281	457.3413	92.11	-15.814	.000
2009	329.2883	352.6129	23.32	-11.802	.000
2010	367.543	355.3989	-12.14	3.089	.006
2011	285.4944	294.3581	8.86	-2.765	.012
2012	321.7589	338.6511	16.89	-15.397	.000

Table 1 shows the impact of mergers on share prices. Before mean refers to the average share prices during the 20 days before merger announcement, while the after mean refers to the average share price during 20 days after the announcement. It can be observed from the above table that the share prices have displayed a downward trend during 2007 to 2010 as a response to merger announcements, whereas the prices have increased during the rest of the years. The prices has sharply increased during 2008 and sharply dropped during 2010. The significant value is less than 0.01 which suggest the prevalence of good impact of mergers on share prices, as the share prices have changed significantly after merger announcements.

4.2 Shareholders Abnormal Returns – Year Wise Analysis

The abnormal returns can be calculated by using three models namely mean adjusted model, market adjusted model and market model. This study has adopted mean adjusted model for calculating abnormal returns. In the mean adjusted model the past mean returns of the share prices are adjusted with the current returns. The abnormal returns are calculated for 41 days. 20 days before and after announcement of mergers. Day 0 is the announcement day. The abnormal returns are calculated for all the six years.

Table 2: Shareholders Abnormal Returns – Year Wise Analysis

Days	Abnormal returns					
	2007	2008	2009	2010	2011	2012
-20	0.51	-1.37	0.27	-0.48	-0.94	-0.20
-19	0.36	1.19	-0.08	-0.05	-1.82	-1.66
-18	0.58	-3.48	0.45	0.42	-0.45	-0.57
-17	-1.54	-0.89	-0.06	0.18	0.44	-0.71
-16	-0.42	3.54	0.20	-0.88	0.95	0.58
-15	0.17	2.96	-1.46	-0.22	1.84	-0.45
-14	-0.06	-4.97	1.96	-1.13	0.74	0.58
-13	-1.21	1.67	2.45	1.17	2.51	0.48
-12	-0.60	-3.04	3.59	-0.61	0.13	0.87
-11	-0.56	3.27	-1.47	0.19	-0.64	0.02
-10	0.03	3.18	0.80	-0.77	1.34	-0.72
-9	0.68	0.45	2.27	0.87	1.04	0.14
-8	-0.91	3.23	-1.22	-0.41	-0.06	1.42
-7	-0.29	1.58	1.45	2.00	0.09	-0.34
-6	-0.68	0.84	-1.34	-0.04	2.27	0.37

-5	2.84	4.87	2.57	-0.54	0.87	-0.02
-4	0.64	-1.95	-2.55	1.47	-2.16	-1.09
-3	-0.31	1.36	-1.41	-0.17	0.93	-0.82
-2	-0.61	1.59	-0.73	0.36	1.62	0.29
-1	0.13	0.49	2.01	-0.58	0.81	2.54
0	0.92	-1.93	3.48	-0.11	-0.50	0.79
1	-1.15	4.64	-1.65	-1.21	0.67	3.09
2	-0.79	11.45	-2.08	-0.62	-0.72	0.63
3	0.04	-2.37	-2.06	0.00	0.60	-0.66
4	-2.66	2.99	1.95	0.05	-0.31	-0.65
5	2.19	-0.26	1.27	-7.84	-0.46	-0.25
6	2.53	4.23	0.06	-0.19	-0.04	0.44
7	-1.58	6.22	0.28	1.06	0.46	0.38
8	-0.47	2.37	-0.01	-1.52	-1.02	-0.31
9	1.96	-4.92	0.12	-0.07	1.59	0.73
10	0.40	-3.05	-0.70	-0.33	-0.75	0.01
11	-0.80	-0.04	1.87	-0.64	0.41	-0.80
12	-0.53	-2.95	-0.58	0.14	-1.09	0.22
13	-1.55	1.37	0.65	-0.09	-1.76	-0.10
14	-0.40	0.60	1.72	-0.45	-0.50	0.50
15	3.12	10.63	0.34	-1.01	0.57	-0.49
16	-0.67	1.53	1.44	-0.09	0.58	-0.17
17	-2.65	4.36	-0.01	-1.06	0.61	-1.49
18	1.67	-2.62	2.06	-0.31	0.16	-0.01
19	-0.87	3.05	-2.21	0.03	-0.55	-1.12
20	-0.71	1.73	0.05	0.21	-0.73	0.67

Table 2 shows the year wise abnormal returns of the merging company shareholders. During 2008, 2011 and 2012, there is a positive abnormal return on the first day after the announcement of mergers, while during 2007, 2009 and 2010; there is negative abnormal return soon after merger announcements. Table 1 shows that during 2008, there is tremendous increase in the share price after announcement of mergers. It can further be observed that during 2008, the abnormal returns have increased tremendously during the first day after merger announcement. During 2009 and 2010, the shareholders are getting meager positive abnormal returns on the 20th day after merger announcements, while during 2007 and 2010, the shareholders are getting negative abnormal return on the 20th day. It can further be inferred from the table that during 2007 and 2010, mergers have resulted in negative abnormal returns during the long run.

4.3 Comparison of Shareholders Abnormal Returns

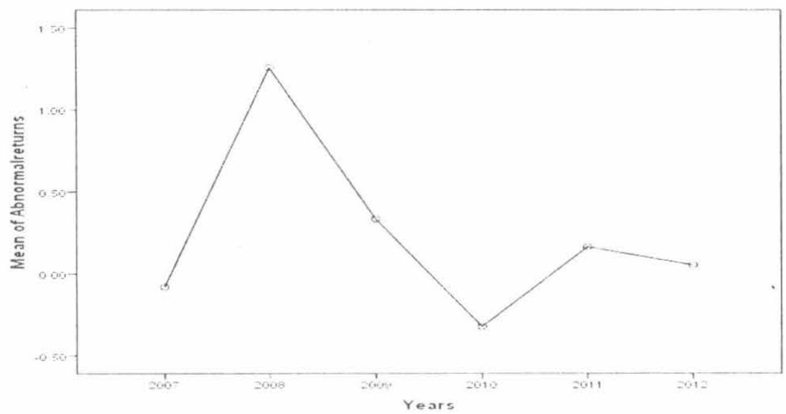
Table 2 shows the year wise results of merging company shareholders abnormal returns. In this section, the six year abnormal returns are compared using ANOVA so as to explore the existence of any difference in abnormal returns during the six year period.

Table 3: Comparison of Shareholders Abnormal Returns

Years	1	2	F	Sig.
2010	-.3237		3.544	.004
2007	-.0793			
2012	.0517			
2011	.1641			
2009	.3339			
2008		1.2573		

Table 3 shows the results of ANOVA. Since the significant value is less than one percent, it can be said that there is a significant difference in the abnormal returns during the six years. The abnormal returns are varying year to year. It can be observed that the shareholders are not getting benefited during all merger announcements. From the post hoc results it is clear that five years abnormal returns are lying in one side, while the Abnormal return in respect of 2008 alone is lying in the other side. There is a meager difference in abnormal returns during 2010, 2007, 2012, 2011 and 2009. In the year 2008, merger announcements have resulted in maximum wealth for shareholders. Figure 2 shows the pictorial representation of the six years abnormal returns of the merging companies' shareholders.

Graph 2: Comparison of Shareholders Abnormal Returns



In the year 2008 there is a great peak in the abnormal returns. There are minor differences in the abnormal returns during 2007, 2009, 2011 and 2012. During 2010, there is a sharp decline in the abnormal returns. Hence, it can be inferred that abnormal returns are fluctuating during the six year period and the shareholders are benefitted in one instance and have to sustain loss at other instances.

4.4 Shareholders Cumulative Returns – Year Wise Analysis

The shareholders cumulative abnormal returns are the results of summation of abnormal returns. This study has used four event window periods of -20 to +20, -15 to +15, -5 to +5 and -2 to +2. The event window analysis is used to find out whether the merger announcements are giving short term or long run returns to the shareholders of merging company. The announcement dates of -20 to +20, -15 to +15 and -2 to +2 refers to long run, medium run and short run respectively.

Table 4: Shareholders Cumulative Returns – Year Wise Analysis

Announcement Date	Cumulative Abnormal Returns					
	2007	2008	2009	2010	2011	2012
-20 to +20	-3.27	51.52	13.68	-13.31	6.74	2.11
-15 to +15	0.47	44.49	11.58	-11.28	8.49	6.79
-5 to +5	1.24	20.87	0.81	-9.21	1.35	3.85
-2 to +2	-1.50	16.23	1.04	-2.17	1.88	7.34

Table 4 shows the six years cumulative abnormal returns. Year 2008, 2009, 2011 and 2012 shows the positive CAR in the short, medium and long run. During 2010, there is a negative CAR in all the times. During 2007, negative CAR prevails during short and long run. During 2008, there is a tremendous spurt in CAR during all times. It can be inferred from the table that merger transactions result in the shareholders gaining wealth.

4.5 Overall Impact of Mergers on Share Prices

Table 1 reveals that the mergers announcement is having the impact on share prices of the merging company. To find out the overall impact of mergers on share prices, this study uses paired samples t test. The six years average share prices are taken for this analysis. The average share price is compared between 20 days before and after announcement of mergers.

Table 5: Impact of Mergers on Share Prices – Overall Impact

Before Mean (1)	After Mean (2)	Difference (3 = 2-1)	t (4)	Sig. (2-tailed) (5)
309.724	322.288	12.56	-9.164	.000

Table 5 shows the overall impact of mergers on share prices. The difference between before mean and after mean is 12.56. The significant value is less than one percent. Hence, it can be said that mergers exert significant impact on share prices. Merger announcements lead to a sharp rise in the share prices.

4.6 Shareholders Abnormal Returns – Overall Analysis

Table 2 shows the year wise analysis of shareholders abnormal returns during six years. It can be inferred from the year wise analysis that shareholders are getting positive abnormal returns in the short run during the year 2008, 2009 and 2010. In the years 2008, 2009 and 2010 there is a positive abnormal return on the first day after the announcement of mergers. In the year 2007 and 2010 there is a negative abnormal return in the long run. This study tries to find out the overall shareholders abnormal returns. In the overall analysis, the average of share prices of merging companies during the six years is taken for analysis. 0 shall be the merger announcement day. The abnormal returns are calculated with the help of average share prices.

Table 6: Shareholders Abnormal Returns – Overall Analysis

Days	Avg. Share price	AR	CAR
-20	305.1613	-0.28	-0.28
-19	304.29	-0.26	-0.53
-18	303.5113	-0.23	-0.76

-17	302.5713	-0.28	-1.04
-16	303.5313	0.35	-0.69
-15	304.0925	0.21	-0.48
-14	302.6475	-0.45	-0.93
-13	306.1488	1.19	0.26
-12	306.6225	0.18	0.44
-11	306.8988	0.12	0.56
-10	307.7238	0.30	0.86
-9	310.6275	0.97	1.84
-8	311.2788	0.24	2.07
-7	314.4213	1.04	3.11
-6	314.72	0.12	3.24
-5	318.6875	1.29	4.53
-4	317.1713	-0.45	4.08
-3	316.5813	-0.16	3.93
-2	317.7025	0.38	4.31
-1	320.0938	0.78	5.09
0	321.7488	0.55	5.64
1	323.0275	0.43	6.07
2	325.7988	0.89	6.95
3	323.5713	-0.65	6.30
4	324.4863	0.31	6.61
5	317.4363	-2.14	4.47
6	320.3713	0.95	5.42
7	324.1613	1.21	6.63
8	323.1813	-0.27	6.36
9	322.44	-0.20	6.16
10	320.3275	-0.63	5.54
11	320.0513	-0.06	5.48
12	318.2313	-0.54	4.94
13	317.9675	-0.05	4.89
14	318.7675	0.28	5.17
15	323.6563	1.56	6.73
16	324.925	0.42	7.15
17	324.3438	-0.15	7.00
18	324.5488	0.09	7.10
19	323.7138	-0.23	6.87
20	324.7525	0.35	7.22

Table 6 shows the average share price, abnormal returns and cumulative abnormal returns of merging companies during the six years. On the first and second day after the merger, there is a positive abnormal return. During the middle period of 8th to 13th day after the merger announcements, there is a negative abnormal return. On the 20th day after the announcements, there is a positive abnormal return. There is a high positive cumulative abnormal return in the 20th day. From the table it is inferred that both in the long as well as in the short run there is a increase in the shareholders wealth after the announcement of the mergers. In the middle there is a slight decrease in the shareholders wealth.

4.7 Shareholders Cumulative Returns – Overall Analysis

Table 4 shows that during 2010, share holders are not getting CAR during the short, medium and long run. The overall cumulative abnormal returns are calculated by using six years mergers announcements. This study tries to find out whether the shareholders are getting long run or short run CAR. The results are shown in table 7.

Table 7: Shareholders Cumulative Returns – Overall Analysis

Announcement Date	Cumulative Abnormal Returns
-20 to +20	7.22
-15 to +15	7.43
-5 to +5	1.23
-2 to +2	3.03

All the event window periods of -20 to +20, -15 to +15, -5 to +5 and -2 to +2 are showing the positive CAR. However, the event window -5 to +5 has witnessed a low positive CAR while the period of -15 to +15 has witnessed a maximum positive CAR. It can be inferred from the above table that the shareholders are getting wealth both in short as well as long run.

4.8 Determinants of Shareholder Wealth

Shareholders wealth can be determined by many factors such as profitability, liquidity, solvency and other financial indicators of the company. This study tries to find out the impact of companies financial indicators such as profitability, liquidity, management efficiency, earnings per share and book value on the shareholders wealth. The dependent variable taken for this study is CAR while the independent variables considered are Return on Long Term Funds, Current Ratio, Asset Turnover Ratio, Earnings per Share and Book Value at the end of the year before the announcement year. Frequent mergers are also considered as an independent variable. Frequent mergers are considered as dummy variable and companies engaging in more than one merger are assigned 1 while those companies engaging in only one merger is assigned 0. The regression equation is as follows:

CAR = α + β_1 Return on Long Term Funds-1 + β_2 Current Ratio-1 + β_3 Asset Turnover Ratio-1 + β_4 Earnings per Share-1 + β_5 Book Value-1 + β_6 Frequent Mergers

Table 8: Determinants of Shareholder Wealth

Variables	CAR (-5 to +5)		CAR (-1 to +1)	
	Coefficient	Sig.	Coefficient	Sig.
(Constant)		.334		.207
Return on Long Term Funds	.087	.672	-.119	.526
Current Ratio	.143	.468	.034	.849
Asset Turnover Ratio	-.073	.697	-.094	.579
Earnings Per Share	-.015	.948	.261	.235
Book Value	.206	.367	.241	.248
Frequent Mergers	.012	.949	.126	.447

Table 8 shows the determinants of shareholders wealth. Two multiple regression equations have been used, one using CAR (-5 to +5) as dependent variable and other equation uses CAR (-1 to +1) as dependent variable. The independent variables used are same for both the regression equations. Table 8 shows that the significant values are greater than 0.05, which means that the independent variable does not exert any significant influence on the dependent variable. From the table it is inferred that the companies' financial indicators are not influencing the shareholders wealth. Even though the companies are involving in frequent mergers, the shareholders are not getting the benefit out of it.

12. Conclusion

This study has revealed that share prices have changed significantly after merger announcements during the six years. Further, it has also been established that mergers exerts significant impact on share prices. Furthermore, the study has revealed that there is a significant change in the abnormal returns during the six years. However, shareholders are not deriving benefits during all merger announcements. CAR analysis has revealed that shareholders have got benefits out of merger announcements. This benefit is at the maximum level in the form of abnormal returns during 2008. Finally the study has revealed that company's financial performance judged based on indicators such as Return on Long Term Funds, Current Ratio, Asset Turnover Ratio, Earnings Per Share and Book Value of shares does not influence the shareholders wealth. Finally, the study also reveals that frequent mergers do not influence shareholders wealth.

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