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Significance of Nifty Index: Mergers in India

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Abstract. In the last decade, corporate of different emerging nations of Asia have shown that they are not far behind in merger and acquisition method for their growth. These mergers are now common in India where researchers are researching on implication, benefit and causes related to merger through different methods. In this article the researcher has compiled the data set from last decade. During this time frame, researcher has identified a presence of wave of merger deals on monthly basis. These merger deals are significantly correlated with NIFTY and have statistically significant effect on deal's number, value and type in 95% confidence level. On top of this, researcher has also found that three important variables like deal value, NIFTY value and NIFTY return have significant effect on the type of deal like share or cash. At last researcher has tried to build a regression model to explain the number of deals per month considering three independent variables like NIFTY and month of successful merger completion. NIFTY and March as month of completion have statistically significant effect on number of mergers.

Keywords: Regression, t-test, F-test, ANOVA.

1. Introduction

"Relative prosperities coupled with a buoyant securities market were major economic environmental factors" (Reid, 1968).

Market valuation and merger activity have positive correlation (Martin, 1996 and Verter, 2002) and this correlation is high for the deals through stocks (Maksimovic and Phillips, 2001). This good market condition can lead to increase the number of deals as the acquirers get the asset from target at an effective discount (Shleifer & Vishny, 2003). Even the stock merger deal in good market position is driven by the misvaluation (Kropf and Viswanathan, 2004) and manager's acquisition decision is also influenced by stock mergers at the good state (Jensen, 1986). This can be interpreted as the managers of acquirers usually pay by stock to target company's owner when they believe those stocks are overvalued at that good market situation.

In this article this correlation is tested to find out whether in India the market timing theory is also followed by the acquirers. Hence the correlation and hypotheses like deals in shares in any month is dependent to deal value, NIFTY has no effect in change in number of deals, NIFTY has no effect in change in deal value, NIFTY has no effect in change in stock deal & number of deals is dependent to the NIFTY and months. These hypotheses are tested through t and F-test in this paper for analysis.

2. Motivation

Indian market has undergone several mergers in this decade. This market may follow any wave like first wave during 1990-1995 for policy-shift under Structural Adjustment Program and foreign competition and Second Wave during 1995-2000 due to large presence of multinational firms (Beena, 2004). Researcher found that this presence of mergers in India has some own distribution of cash, equity or both kind of mergers and also found interesting to go further on researching the past characteristics of the mergers and acquisition. So many hypotheses and reasons are at background to explain mergers but in this paper the specific issues are researched in this scope. Researcher motivated to find out those M&A facts for India. US,

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UK where the developed market is following these developed hypotheses but in India whether any kind of similar pattern is followed is researched in this paper.

3. Literature Review

New holding company is formed through mergers and a new entity is also possible to be created through combination of two or more companies (Gaughan, 2002). Acquisition is also a similar concept to merger, which is to get managerial influence through purchasing assets and shares (Nakamura, 2005). Through merger and acquisitions new holding company can achieve objectives of stakeholders (Sudarsanam, 2003, p.1). Value chain, relationship and economic area are major three types of merger and acquisition. Horizontal, vertical and conglomerate are three types under value chain. Two kinds of relationship in mergers and acquisition, they are friendly and hostile, where as under economic concept the merger and acquisition can be domestic and cross border (Gaughan, 2002). Merger and Acquisition investment has more response than direct investment, because the M&A investment has high fixed cost and low marginal investment cost activity. Along with this another important finding, which is important to this paper is use of cash in M&A instead of internal investment (Rousseau, 2009). Rational model of the merger through stocks is an important concept in merger and acquisition. Consideration of merger-wave is relevant to consideration of stock as medium of exchange because misvaluation is very common related to stock valuation and this can clarify that merger through cash instead of stock considering the rational framework is justified. Here important to note that merger motive and cause of merger wave is different according to Kropf, Robinson, and Viswanathan, 2003. Stock financed mergers are clustered in time of the high aggregate valuation. It is frequent that cash targets are undervalued because of having negative firm specific error while stock targets are slightly overvalued, where as cash acquirers are less overvalued than stock acquirers (Kropf, Robinson and Viswanathan, 2003). Determinants like index of stock price, change of GNP, prime rate of interest are important for mergers but the previous year value has no role (Shughart and Tollison, 1984).

Merger and Acquisition is now significant event in India and the presence of wave is also found. First wave was found during 1990-1995 which was due to policy-shift under structural adjustment program, foreign competition. Second wave was found during 1995-2000 due to the large presence of multinational firms. Past studies could not find any evidence related to efficiency related factor for Mergers in India, but asset growth and market share growth is related to merger motivation. The main motive of merger is for equity financing or for increasing equity size to borrow resources for modernization. The firms under the same business group and in same product line undergo mergers is dominant in India. The motive and implications of merger wave in later 1990s can also be analyzed (Beena, 2004). Motive of mergers in emerging economies can be modeled up based on occurrence and frequency of mergers instead of value. In India the role of industry level variables in merger activity is important to consider and suggested that low concentration, high cash flow and high Tobin's Q is the explanatory variables for the occurrence and frequency of mergers in industries of India. Again the growth of industries is the motive of mergers but not for restructuring to resist the shocks. Product market competition and corporate strategies is immature in India comparing to the US (Agrawal and Sensarma, 2007).

4. Research Methodology

Here t stat, F-stat testing is applied to test the hypotheses and OLS regression analysis is applied for modeling. In this article the hypotheses and regression analysis is tested based on the transformed data set. Data set is transformed into growth, return or changes by using log. Time series analysis is made through multiple OLS regression assuming the stationary of data.

5. Data Collection

Data is related to either of Indian acquirers or targets for a time span of last decade which is from June 2000 to September 2008. For this huge quantity of secondary data, Zephyr server is used. From 2000 to 2010 total mergers in Indian were 10222 and out of that 2785 mergers were for Indian originated firms as target. In this paper the considered data set is only domestic acquirer and target.

6. Findings and Analysis

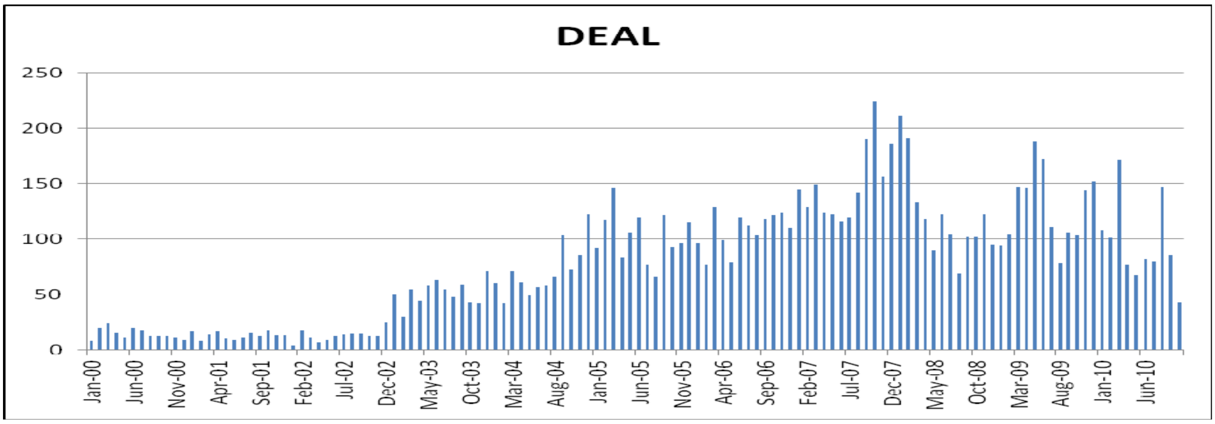

Fig.1: The frequency distribution of the number of deals in month[1]

If the number of deals in moth and NIFTY index is compared graphically then a correlation in the wave in merger deals and index movement is visible. Further t-test can statistically prove this correlation. NIFTY index value and number of merger deals have correlation of 0.88, which are statistically significant in 99% confidence level, which can lead this research to go further on hypothesis testing. This positive and good correlation in between those can lead to in depth research on the effect of NIFTY return on change of merger number, deal value and change in stock deals. NIFTY return has low correlation (0.09) with the changes in deal numbers value and types.

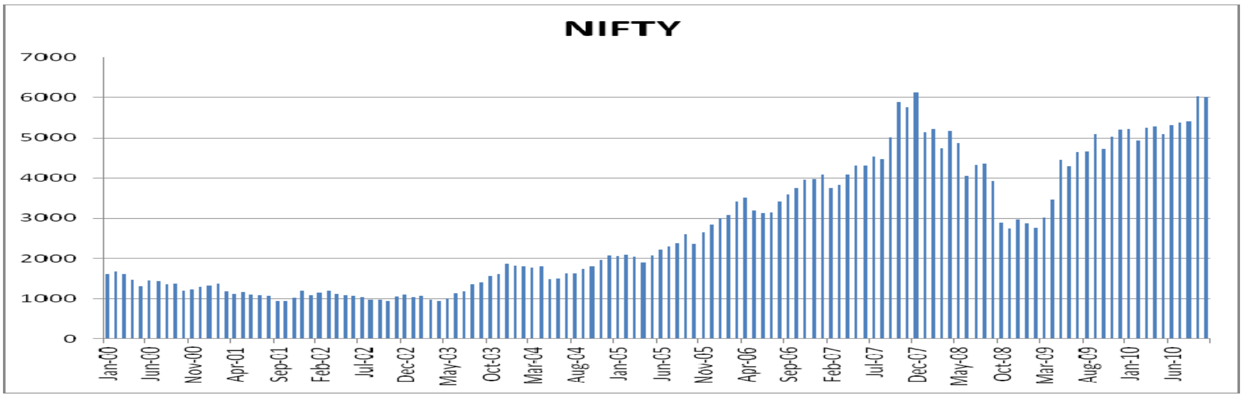

Fig.2: Distribution of the monthly average price of Nifty index[2]

6.1. Hypothesis Testing

Null: Deals in shares in any month is dependent to deal value, NIFTY value and NIFTY return

Alternative: Deals in shares in any month is independent to deal value, NIFTY value and NIFTY return

ANOVA test is done with deals in share to total deals in month as dependent variable and Deal value, NIFTY return, NIFTY value are predictors to prove above hypothesis. F-stat value from findings is 3.279, which is higher than the critical value to get P of 0.024 lower than 0.05. Hence it can be inferred that the deals in stocks as decision of payment in mergers of Indian companies is highly dependent to deal value, NIFTY value and return.

Null: NIFTY return has no effect in change in number of deals

Alternative: NIFTY return has positive effect in change in number of deals

[1] Source: Own analysis based on data collected from Zephyr server

[2] Source: Own analysis based on data collected from NSE, 2011

From the t-test, it can be inferred that above null hypothesis is rejected as t-stat value is -1.718 and P is 0.044, which is lower than 0.05 in 95% confidence level. This statistical finding can help to prove the assumption that NIFTY return has positive effect in change in number of deals.

Null: NIFTY return has no effect in change in deal value.

Alternative: NIFTY return has positive effect in change in deal value.

Again using t-test, where t stat is -1.869 and P is 0.032 can reject the null hypothesis. Hence it can be inferred that NIFTY return has positive effect on merger deal value.

Null: NIFTY return has no effect in change in stock deal.

Alternative: NIFTY return has positive effect in change in stock deal.

Here t stat value is -1.871 and P value is 0.032 which can reject the null hypothesis or Nifty return has positive effect on change in number of stock deals positively in 95% confidence level.

6.2. Regression analysis

R square value of 88%, F stat is 25.401 with P=0.000 can prove the significance and goodness of fit of this model. From t-test result, it is clear that only the month of March variable taken as dummy is statistically significant in this model. Hence number of deals is function of NIFTY value, NIFTY return and month of March. Using t-test it can be inferred that only March has t-stat value of 2.055 which is higher than the critical value with P below 0.05. Hence March as dummy variable is significant in 95% confidence level.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-13.470	9.721		-1.386	.169
	NIFTY value	.032	.002	.862	17.502	.000
	NIFTY return	.872	.389	.120	2.241	.028
	Jan	21.694	12.920	.110	1.679	.097
	Feb	10.209	12.735	.052	.802	.425
	Mar	26.397	12.848	.134	2.055	.043
	Apr	3.785	12.782	.019	.296	.768
	May	2.595	12.806	.013	.203	.840
	Jun	11.983	12.358	.064	.970	.335
	Aug	-3.484	12.347	-.019	-.282	.779
	Sep	15.315	12.340	.082	1.241	.218
	Oct	12.266	12.728	.062	.964	.338
	Nov	-2.355	12.792	-.012	-.184	.854
	Dec	5.470	12.873	.028	.425	.672

a. Dependent Variable: Deal number

Source: SPSS findings

Number of merger deals in a month= 0.3(NIFTY) + .872(NIFTY return) + 26.4(March)

In India the merger is positively impacted by NIFTY value and return. 3.3% increase in NIFTY value can increase 1% of merger and 1.25% of return from index as well. 26 more Merger deals are expected in March but other months have no significant impact. May be, annual result is the reason.

7. Conclusion

From the above findings and analysis, it can be summarized that in India, the correlation between NIFTY index value and number of merger deals are significant in 99% confidence level. Deals in stocks as decision of payment in mergers of Indian companies is highly dependent to deal value, NIFTY return and value. NIFTY return has positive effect in merger value or deal value and deal type. In India increase in NIFTY return increases the number of deals, deal value and deal in shares which are expected and complying with other developed countries. The NIFTY and NIFTY return is important to researchers and analyst. Number of merger is mainly dependent to the nifty return because return has positive effect on management and valuation of target. This will be benefited in valuation through the considering of the stock index in monthly basis but the consideration of lag in effect on mergers is not considered in this article is also important and varies from one industry to another.

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