

## Market Reactions to Foreign Investments in Mergers and Acquisitions: An empirical study of Indian Corporates

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**Abstract**—This paper investigates the short-term stock market reaction to the announcement of outward foreign direct investment (OFDI) related mergers and acquisitions (M&As) by Indian companies. A new trend in India evident since 2005 is the increasing number of Indian corporates becoming global players, acquiring companies through M&A in countries such as the USA, UK, France, Germany and other parts of Europe. Prior research covering Indian cross border mergers and acquisitions is limited to the service and this is expanded to cover seven sectors. The principal aim is to investigate the market reaction on the bidders' stock price and compare this to studies in mature markets relating to a similar time period. The second aim is to determine whether there are industry and locational effects relating to the target companies. An event study approach using both abnormal returns and price-pressure effect analyses is adopted and statistically significant results are obtained. The Value and Volume patterns surrounding the announcement of proposed M&As are examined conjointly, and both affirm of an information effect with price and pressure effects. In general it is found that the market reacted favourably to the announcements, in contrast to other studies using similar time periods, suggesting there may be some interesting behavioural contrasts between emerging market and mature market responses to such announcements

**Keywords**—Outward Forward Direct Investment; Mergers & Acquisition; Event study.

### I. INTRODUCTION

This paper investigates the market reaction for outward foreign direct investment (OFDI) related mergers and acquisitions (M&As) announcements by Indian companies. An event study approach considering share price return reactions and a price-pressure testing of share trade volumes is used.

The Indian experience reflects a new wave of internationalisation from developing economies reflected in

the growing outflows of FDI and surge in cross-border M&A activity. OFDI from developing countries rose from \$6 billion in 1989–1991 (2.7% of global outward flows) to \$253 billion for 2007 (nearly 13 percent of global outflows) (UNCTAD, 2008). This trend is significant particularly in the case of two emerging economies, India and China, which show a marked increase in the magnitude of flows.

A growing number of Indian enterprises are seeing outward investments as important aspects of their corporate strategy to become multinationals. The traditional approach of the Indian firms, until 1999, was confined to seek investments in less developed countries and in lowering the cost of operations. However, from 2000 onwards strategy has changed. Corporations are now becoming global players by establishing their presence in mature markets. The approach adopted is to penetrate global markets through M&A. Changes in fiscal regulatory policy and improved financial performance on the domestic front is motivating them in going global.

The Event Study involves 30 companies engaged in M&A transactions between 2000 & 2007, from seven sectors (Metals & Mining, Oil, Gas and Energy, Chemical/Fertilisers, Food & Beverages; Information Technology, Pharmaceuticals and Manufacturing & Processing).

Event studies have been in use since the early 1930s (MacKinlay, 1997). Most often, event studies assume that markets react immediately and rationally to new information. They may be considered a test of the weak-form Efficient Market Hypothesis (EMH). The process involves a series of steps: define the event, select metric for measuring abnormal returns, determine a pre-event window (period), event dates and post event window.

News relating to an OFDI M&A will affect trading volume if the shareholders rebalance their portfolios based on new information. If the shareholders do not view the announcements favourably, there will be increased trading activity in the market soon after the announcements. In

contrast, if there is a consensus about the effects of new information, trading activity will be normal even when prices change.

The current study investigates the degree of consensus among stockholders, following the M&A announcements, by examining trading volume. The trading activity provides useful information about the actions taken by the stockholders based on acquisition news which the stock returns alone do not provide.

This paper adds value to the existing literature, which predominantly relates to mature markets. It is noted that companies in emerging markets tend to be younger, lack international experience and exposure and operate in the environment of emerging capital markets. The market differ from those in mature economies with less comprehensive oversight and regulation, less sophisticated investors, corporate governance is not well developed and there are likely to be cultural and religious backgrounds that may cause tensions.

Potentially, the Indian firms engaging in OFDI M&As may be surrounded by different forces than those faced by companies listed in mature markets. The share price may react differently to announcements. Cross border M&As may be more risky challenge to the developing-country firms. The stock-market may react differently to the international M&As announced by Indian firms, as the shareholders' expectations and management perspectives may differ for firms in the developed and emerging economies. In addition, this study also adds to the limited literature available on the event studies relating to the OFDI related M&As involving the Indian Corporates across industries.

The following sections cover a review of earlier empirical findings relating to market behaviour from short-run perspective involving event study methodologies, the methodology and sources of the data collection, the findings and finally the conclusions.

## II. LITERATURE REVIEW

Prior studies investigated M&As announcements, event study methodology, volume of shares traded and value created from the bidding firms' perspective.

Empirical findings relating to the value created for the investors of the bidding firm from the short-term perspective show mixed results. The evidence from event studies, conducted primarily in mature markets, on the efficiency of mergers is extensive. There are studies showing significant abnormal returns around the announcement day. Notable among these are Dodd and Ruback (1977) who observes that in the announcement month, the bidders earn significant positive abnormal returns of 2.83 % and the target companies earn significant positive abnormal returns of 20.58 %.

Likewise, Asquith (1979), Conn (1985), Jensen and Ruback (1983) and Jarrell, G.A., J.A. Brickley and J.M. Netter (1988) conclude that acquiring firms tend to enjoy positive performance. Also studies by Bradley, Desai, and Kim (1983), Jarrell and Poulsen (1987), and Jarrell, Brickley, and Netter (1988), analyse corporate takeovers made through tender offers. With the exception of Jarrell and Poulsen (1987), all studies, covering the pre-1980 era, find that

successful bidders earn significant positive abnormal returns in the range of 2- 4 % and the successful targets earn significant positive abnormal returns in the range of 20-32 %. Mathur, Chhachhi and Sundaram (1992) support the hypothesis that target shareholders receive abnormal positive returns.

Conn, C., Cosh, A., Guest, P.M. and Hughes, A. (2001, 2005), Goergen and Renneboog, (2003, 2004) report statistically significant positive return in the short-run for UK acquirers. Bruner (2002) report that out of 44 studies on acquiring firm performance, 20 studies report negative returns for the bidders and 24 studies report positive returns. Marta (2002) uses a sample of 72 global alliances formed between 1987 and 1997 by Spanish firms listed on the Madrid stock exchange. She finds that Spanish firms gain an average abnormal return of 0.2 %, on the day of the announcement. Cummins & Xie (2009) obtain results showing that acquirers, targets and divesting firms all have significant positive abnormal returns around announcement dates.

There are also studies showing significant negative abnormal returns around the announcement day. They include the analysis of Mandelker (1974) who conducted one of the first merger studies using an event study approach and found no abnormal returns for the bidders. Jarrell and Poulsen (1987), however, suggest that successful bidders (between 1980 and 1985) earned statistically insignificant negative abnormal returns. Using the market model, Mathur et al. (1994), Datta and Puia (1995) report significant negative performance for bidders. Danbolt (1995) analysed bidders from different countries that acquired UK firms using both the market and index models and reported that acquirers earn significant negative abnormal returns. Similar conclusions were drawn by Eun et al. (1996) and Aw and Chatterjee (2004) in their studies of acquirer firm returns using the mean adjusted return model and market model. Their studies find that foreign acquirers earn significant negative abnormal returns ranging between 21.20% and 28.07%. In addition to the studies that have reported positive and negative performance for bidding firms, a number of studies have also reported insignificant bidder returns around the announcement time of M&As (Gregory and McCorrison, 2005; Campa and Hernando, 2004; Yook and McCabe, 1996).

Statistically significant negative abnormal returns are regarded by Aw and Chatterjee (2004), Mathur et al. (1994) and Eun et al. (1996) and Gregory and McCorrison (2005) report negative bidder returns but these are not statistically significant. Among the reasons put forward for positive and statistically significant performance are: internalisation and reverse internalisation (Morck and Yeung, 1992; Eun et al., 1996; Seth et al., 2000, 2002); tax differentials (Manzon et al., 1994) and exchange rate variations (Markides and Ittner, 1994).

Uddin & Boateng (2009) examine the short-run stock price performance of 373 UK acquiring firms engaged in cross border mergers & acquisitions (CBM&As) between the 1994-2003 period and find that UK acquirers do not earn

positive abnormal returns on the announcement of cross-border acquisition decisions.

Prior research concerning the price pressure effect suggests that some abnormal returns may be generated by a sudden market demand/supply shock rather than by the informational effect of the event. Myron S. Scholes (1972) and Kraus and Stoll (1972) propose the price pressure hypothesis which asserts that a sudden imbalance between demand and supply may temporarily cause the security price to diverge from an equilibrium level and generate abnormal returns. Mitchell, Pulvino and Stafford (2004) demonstrate that short term announcement returns to US acquiring firms might have been underestimated, as the price pressure effect is ignored in most of the studies.

Zhu & Malhotra (2008), conclude that the announcement returns in the cross-border M&As are mainly driven by the price pressure effect rather than the informational effect.

Prior studies conducted in mature markets reveal the mixed results relating to the abnormal returns around the event window. The majority of the smaller set of studies reviewed document price pressure affects surrounding the event window. Given the changes in the global economic environment, regulatory framework and the time frames, the present study investigates if the Indian experience would be in any way different from the earlier empirical experiences.

### III. METHODOLOGY AND SOURCE OF DATA

First, the method consists of two components. First, the study deals with the returns, its nomenclature, calculation of the returns and test statistics. Second it deals with the procedures involved in measuring the stock volume traded and test statistics.

The data are obtained from the CMIE data Prowess, Thompson Banker and the BSE portal. The announcement dates are obtained from the daily news papers. The data used involves the company stock returns and market returns on the Bombay Stock Exchange (BSE).

The study uses an event method to analyse short-run share price performance of Indian acquiring companies engaged in OFDI related M&As. Concentration is only on the short-run event, restricting analysis to a short event window (closely surrounding the announcement day). The event date for the study is set to be the date of announcement of respective M&A event. The estimation period of the market model is 100 days. It includes returns on each security in the sample for 100 days prior to the announcement of the event.

Returns are indexed in the event time using  $\tau$ . Defining  $\tau=0$  as the event day,  $\tau=T_1+1$  to  $\tau=T_2$  represents the event window, and  $\tau=T_0+1$  to  $\tau=T_1$  constitutes the estimation window. Let  $L_1=T_1-T_0$  and  $L_2=T_2-T_1$  be the length of the estimation window and the event window respectively. It is important to note that in spite of the event being considered on given date it is typical to set the event window length to be larger than one (McKinlay, 1997). This makes possible the use of abnormal returns around the event day in the analysis. When appropriate, the post event

window will be from  $\tau=T_3$  and of length  $L_3=T_3-T_2$ . The timing sequence is illustrated with a time line in Figure 1.

It is important that the estimation window and the event window do not overlap. This design provides for the parameters of the normal return model which are not influenced by the returns around the event. The study tests the value and volume effects of the OFDI related M&As firm securities transacted on the Indian BSE. To capture the effect of trade following the announcement the study also extends the interval. The movements of the security prices are linked with market-wide information that differentially affects the value of securities. To isolate the announcement effect of the OFDI related M&As on the price of the security, it is necessary to control for the differential effects of market-wide information on individual security returns.

The study tests the stock market reactions to the OFDI related Indian M&As announcements with the following null hypotheses for the one day event window:

$H_0$ : There are no abnormal returns on the announcement day (0) following the announcement of the OFDI related M&As.

$H_0$ : There is no abnormal volume traded on the announcement day (0) following the announcement of the OFDI related M&As.

#### A. Expected Returns – Market model (OLS Model):

The study uses an Ordinary Least Squares (OLS) method for estimating the expected returns. The return on the share is adjusted by subtracting the expected return from the present return, so that any significant difference is considered as abnormal return. The procedure estimates each security's systematic risk relative to the market portfolio. The Bombay Stock Exchange (BSE) Price Index is used as a proxy for the market portfolio. Any variation due to factors not present in the market portfolio will be captured in the disturbance term  $\epsilon_{it}$ . Brown and Warner (1985) describe the Market Model as both well specified and relatively powerful under a wide variety of conditions.

#### B. Measuring AR under OLS Market Model

The market reaction to short run sentiment of acquisition performance is measured by calculating the Abnormal Returns (AR), Cumulative Abnormal Returns (CAR) and Average Abnormal Returns (AAR) and Standardised Average Abnormal Returns (SAAR). Brown and Warner (1980) point out, an event study must clearly define "abnormal" performance. There are three commonly used models for defining abnormal performance which are explained below: market model (OLS model), market adjusted model and average mean model. The market model (OLS model) is the most widely accepted approach reported in the research studies to calculate abnormal returns because the risk is adjusted.

#### C. Measuring AR, CAR and AAR

##### 1) Abnormal Returns

According to the market regression model abnormal returns are defined as the returns over the event window minus the normal returns, i. e. the returns that would be

expected if the event did not take place (Campbell, Lo, MacKinlay, 1997). Intuitively, an abnormal return indicates the market response to the announced event.

$$AR_{i,t} = R_{i,t} - \hat{\alpha}_i - \hat{\beta}_i R_{m,t} \quad (1)$$

Under null hypothesis ( $H_0$ ) the distribution of abnormal returns in the event window is assumed to be normally distributed with zero mean and constant variance as shown below:

$$AR_{i,t}(t_1, t_2) \sim N(0, \sigma^2(AR_{i,t})) \quad (2)$$

### 2) Cumulative Abnormal Returns

The daily abnormal returns are summed up over the event window to derive the cumulative abnormal returns (CARs).

$$CAR_i(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_{i,t} \quad (3)$$

### 3) Average Abnormal Returns (AAR)

Average Abnormal Returns (AAR) are obtained by averaging the residuals across firms on a day  $t$ .

$$AAR_t = \frac{1}{N_t} + \sum_{i=1}^{N_t} \epsilon_{i,t} \quad (4)$$

Where  $N_t$  is the number of companies under consideration with a return in event window  $t$ . The AAR minimises the impact of other information, except the announcement about the OFDI related M&As, because they are calculated across the sample for the given day.

### 4) Standardised Abnormal Returns (SAR):

Portfolio Abnormal returns are standardised in order to produce independent and identically distributed abnormal returns (Asquith, 1982). The procedure is as follows:

AR obtained from (7) above should be divided by its estimated standard deviation to yield a standardised abnormal returns,  $A'_{i,t}$ .

$$A'_{i,t} = AR_{i,t} / \mathcal{S}(AR_{i,t}) \quad (5)$$

Where

$$\mathcal{S}(AR_{i,t}) = \sqrt{\frac{1}{N} \sum_{t=-105}^{-6} (AR_{i,t} - \overline{AR}_{i,t})^2} \quad (6)$$

The resulting portfolio standardised abnormal returns are for a given day are averaged cross-sectional to obtain standardised average abnormal returns (SAAR).

Further, the sum of the standardised abnormal returns (through time-series) is referred as standardised cumulative abnormal returns (SCAR).

### D. Measuring Abnormal Volume Traded

The study measures the trading volume for each firm in the sample during the estimation period of 100 days prior to the event to examine the announcement effect on the volume traded. The study considers the method of Michaely, Thaler and Womack (1995) who calculate abnormal trading volume. Normal volume is defined as the portfolios's average turnover with  $L_i = T_i - T_0$  in  $\mathcal{T} = T_0 + 1$  to  $\mathcal{T} = T_i$ . The portfolio's abnormal volume ( $AV_i$ ) is defined as the ratio of daily turnover to normal turnover. It is expressed as follows:

For each stock the daily turnover  $TO_{it}$ , defined as the number of shares traded over the number of shares outstanding:

$$TO_{it} = \frac{\text{Number of shares traded}_{it}}{\text{Number of shares outstanding}_{it}} \quad (7)$$

Where  $TO_{it}$  represents the daily turnover for stock  $i$  on day  $t$ .

The average daily turnover for stock  $i$  is calculated using the turnover in days - 105 to - 6:

$$\overline{TO}_{it} = \frac{1}{N} \sum_{t=-105}^{-6} TO_{it} \quad (8)$$

The portfolio daily turnover for day  $t$  is the simple average turnover for all stocks in the sample:

$$TO_{it} = \frac{1}{N} \sum_{i=1}^N TO_{it} \quad (9)$$

Finally, the abnormal volume for day  $t$  is defined as

$$AV_t = TO_t - 1 \quad (10)$$

and the standard deviation is

$$\sqrt{\text{Var}(AV_t)} = \frac{1}{N} \sum_{t=-105}^{-6} (AV_t - \overline{AV})^2 \quad (11)$$

Where

$$\overline{AV} = \frac{1}{N} \sum_{t=-105}^{-6} AV_t \quad (12)$$

The study follows the approach used by Davidson et al (1996) and tests the price pressure effect. This is done by isolating the information content of the M&A announcement from the price pressure. Accordingly, the

volume at the announcement period as a percentage of total period volume,  $V_T$  is regressed against the abnormal returns at the OFDI related M&A announcement and expiration and the percentage of shares traded. This volume statistic is a measure of how much trading activity occurs during the days around the announcement relative to the whole sample period from -105 to +1. The model is:

$$V_T = \delta_0 + \delta_1 CAAR_{A+E} + \delta_2 PCT \quad (13)$$

Where  $CAAR_{A+E}$  = the sum of the AAR on days -1 to 0 relative to the announcement and the AAR on days 0 to 1 relative to the expiration;  $PCT$  = the percentage of the number of shares traded to outstanding represented by the announcement and  $\delta_i$  = regression coefficients.

If there is an information effect and a price pressure effect, then  $AAR_A$ , the announcement period AAR will have both effects embedded in it. That is, the stock price increase will be the result of both an information effect and a price pressure effect. The reversal of the price pressure occurs at expiration and should be represented by the AAR at expiration,  $AAR_E$ . Therefore the sum of  $AAR_A$  and  $AAR_E$  ( $CAAR_{A+E}$ ) should represent the price effect due only to information. If there is an information effect,  $\delta_1$  will be positive.

After controlling for the information contained in the abnormal returns and the percentage of shares to be purchased, a significant intercept,  $\delta_0$ , would suggest evidence in favour of a price pressure effect. A significant intercept presents the volume increase above the average volume unexplained by the variables proxying the information content of the M&A announcement. Richardson, Sefcik and Thompson (1986) used this approach in their tests.

The expiration volume,  $V_E$  is regressed against the expiration abnormal returns,  $AAR_E$ , and a variable measuring oversubscribed subsample, so the statistical test controls for this with the dummy variable. The model employed is as follows:

$$V_E = \delta_1 + \delta_2 AAR_E + \delta_3 D(\text{Oversubscribed}) \quad (14)$$

The volume, at the expiration is an information effect, should be negatively related to the dummy variable and positively related to  $AAR_E$ . However, if it is unrelated to this information released at expiration, then it may be a reversal of the price pressure as portfolios are readjusted. In addition, if the model is properly specified and the intercept  $\delta_0$  is significantly positive, then the reversal is caused by more than the information available at expiration.

#### E. Test statistics under the null hypothesis

The statistical significance of the event period abnormal returns is assessed for the one day event window. The null hypothesis to be tested is that the mean day '0' abnormal return is equal to zero.

### IV. FINDINGS OF THE STUDY

The results obtained through an OLS market model method are displayed in Table 1. The returns and the tests of significance relating to 30 companies are presented. It is

evident from the table that the OFDI related M&As announcement has a positive effect in the stock market. The abnormal returns are positive through out the event window (-1, 0, -1). The AAR on the event day (0) increases substantially. The increase in AAR is statistically significant at 1% a day prior to announcement and on the announcement day and AAR is statistically significant at 10% on the post event day.

The Cumulative Abnormal Returns over the event window (-1, 0, -1) are statistically significant at 1% level. This indicates the creation of wealth to the stock holders of the bidding firms following the OFDI related M&As. The results support the rejection of the null hypothesis.

The wealth effects following the announcements are also tested by using the second approach. It is through standardising the abnormal returns with the estimated standard deviation. This approach provides more robust results as this method assumes that the event induced increase in the variance is proportional for each firm. The results obtained are presented under the heading standardised abnormal returns. It is evident from the table that the stock market reacts positively to the news of the OFDI related M&As announcement. The average standardised abnormal returns are positive through out the event window (-1, 0, -1). The SAAR on the event day is at maximum. The SAAR are statistically significant in all the cases of pre-announcement day (-1), announcement day (0) and post-announcement day (+1).

Likewise, the SCAR over the event window (-1, 0, -1) is statistically significant at 1% level. This indicates the creation of wealth to the stock holders of the bidding firms following the OFDI related M&As. The results support the rejection of the null hypotheses.

A three day event window was also tested (-3, 0, +3) and the findings do not alter. However, when a longer estimation period of 240 days is used the results are no longer statistically significant. The 100 day period, as discussed under method is more prevalent in current research papers.

The sector wise results of positive AAR (%) on the announcement day and positive CAR (%) over the event window are presented in Table 2. The 30 companies are grouped under seven sectors, however as the number of companies in each sector are low these can only be interpreted as indicative. It is evident from the table that the shareholders belonging to Manufacturing and Processing, Pharmaceuticals, IT services, Chemicals & Fertilisers and Food & Beverages sectors experienced substantial positive wealth effects on the announcement of the OFDI related M&As. While the shareholders of metals and mining and Oil, Gas and Petroleum sectors do not experience substantial wealth effects relatively.

TABLE I. AVERAGE ABNORMAL RETURNS AND CUMULATIVE ABNORMAL RETURNS

Event Day	AAR	t-test
-1	0.0047	3.9732 ***
0	0.0081	6.8842 ***
1	0.0016	1.3804 *

Event Day	CAR	t-test
-1,0,1	0.0048	4.0793 ***
Standardized Abnormal Returns		
Event Window	ASAR	t-test
-1	0.1742	6.6335 ***
0	0.2505	9.5375 ***
1	0.0979	3.7265 ***
Event Window	SCAR	t-test
-1,0,1	0.1742	6.6325 ***

\*\*\*1% Significance; \*\*5% Significance; \*10% Significance

TABLE II. AAR (%) AND CAR (%) OF THE SEVEN SECTORS

No.	Sectors	Number of Firms	ARR (%) Event day (0)	CAR (%) Event Window (-1, 0, +1)
1	Metals and Mining	4	6%	6%
2	Oil, Gas & Petroleum	4	6%	6%
3	Chemicals & Fertilisers	3	11%	6%
4	Food & Beverages	3	11%	12%
5	Pharmaceuticals	6	22%	24%
6	IT services	4	17%	18%
7	Manufacturing and Processing	6	28%	29%

From the sample of thirty companies, eighteen companies registered positive AAR and twelve companies registered negative AAR. It is further observed that the six companies with positive AAR and four companies with negative AAR are statistically significant at 1% level.

On the other hand, out the thirty companies, sixteen companies registered positive CAR and fourteen companies registered negative CAR. It is further observed that fifteen of companies with positive CAR and eleven of the companies with negative CAR are statistically significant at 1% level.

#### V. PRICE PRESSURE HYPOTHESES

Unlike the informational effect of an event the price pressure effect only generates temporary abnormal returns. In most of the cases, the return trend will reverse in the following few days. A price pressure effect is also accompanied by extraordinarily high trading volume, a consequence of the excess demand/supply shock in the market (Myron S Scholes, 1972).

The results of the abnormal trading volume in the event window following the OFDI M&As are shown below in Table 3. It is evident from the table that the volume traded prior to the announcement day (-1) is insignificant. On the announcement day (0) the abnormal volume traded increased substantially and the rise is statistically significant at 1% level. The abnormal volume traded declines in the post announcement day (+1) and the drop is statistically significant at 1% level. The findings are in line with the argument of Myron S. Scholes., (1972), the price pressure effect is accompanied by an extraordinarily high trading volume which is a consequence of the excess demand/supply shock in the market.

TABLE III. ABNORMAL TRADING VOLUME AROUND M&A ANNOUNCEMENT

Event Day	Abnormal Trading Volume	t-test
-3	17.61	0.23
-2	19.62	0.71
-1	20.87	1.01
0	45.81	6.97 ***
1	40.54	5.71 ***
2	31.63	3.58 ***
3	19.18	0.61

\*\*\*1% Significance; \*\*5% Significance; \*10% Significance

Of the thirty companies, twenty three companies registered an increase in the volume traded and seven companies showed a decline in the volume traded on the announcement day when compared to a day prior to the announcement. However, when the trading activity of announcement day (0) and post announcement day (-1) are compared, it is evident that twenty one companies registered a drop and nine companies registered an increase in the volume activity. The results are in line with the price pressure effects.

The regression results, presented in Table 4, show the relationship between the independent variables  $CAAR_{A+E}$  and PCT and the dependent variable  $V_t$ . The regression results are measured, using equation 13, above, demonstrate that the coefficient of  $CAAR_{A+E}$  is negatively related to the announcement period volume while the coefficient of PCT is positively related to  $V_t$ . The negative  $\delta_1$  indicates that there is no information effect in  $V_t$  and the positive  $\delta_2$  indicates larger repurchases and a sudden imbalance between demand and supply in generating abnormal returns. The positive  $\delta_0$  is indicative of a price pressure effect. The results presented in the Table 6 are consistent with price pressure effect. All the three variables are statistically significant and P-values support the rejection of the null hypothesis.

TABLE IV. CROSS SECTIONAL REGRESSION RESULTS WITH VOLUME TRADED ( $V_t$ ) FOLLOWING ANNOUNCEMENT AS DEPENDENT VARIABLE

Model	Co-efficient	t-test	P - value
1- $\delta_0 (V_t)$	1.37	2.70***	0.0119
2- $\delta_1 (CAAR_{A+E})$	-22.29	-3.00***	0.0058
3- $\delta_2$ Turnover	0.01	2.22***	0.0353

\*\*\*1% Significance; \*\*5% Significance

The results of the regression for expiration period volume are presented in Table 5. The volume traded on the expiration day is negatively related to the  $\delta_1$  (AAR<sub>E</sub>) and positively related to the  $\delta_2$  Oversubscription (Dummy variable). The intercept  $\delta_0 (V_E)$  indicates that the reversal in the volume is due to more information being available at expiration. All the variables are statistically significant. They are not in line with the information effect. These observations favour the price pressure effect.

TABLE V. CROSS SECTIONAL REGRESSION RESULTS WITH VOLUME TRADED ( $V_E$ ) FOLLOWING ANNOUNCEMENT AS DEPENDENT VARIABLE

Model	Coefficients	t-test	P - value
1- $\delta_0 (V_E)$	-0.54	-6.53***	0.0000
2- $\delta_1 (CAAR_E)$	-1.60	-1.34*	0.1904

3- $\delta_2$ Dummy variable	1.00	6.60***	0.0000
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\*\*\*1% Significance; \*\*5% Significance; \*10% Significance

## VI. DISCUSSION AND CONCLUSIONS

### A. Discussion

It is evident from the results that the OFDI related M&A announcement has a positive effect on the returns in the stock market. The stockholders of the acquiring firms experience abnormal returns on the event window (-1, 0, +1). The substantial increase in the abnormal returns prior to announcement and on the announcement day indicates the presence of an information effect (Harris, 1986). The sectoral analysis demonstrates substantial positive market reaction in terms of abnormal value and cumulative abnormal value in the case of four sectors which include: Food and Beverage, Pharmaceuticals, IT services and Manufacturing and Processing. On the other hand Metals and Mining, Oil, Gas and Petroleum and Chemicals and Fertilisers showed trivial positive reactions. This variation in the market reactions and value addition across sectors signify that the synergy is striking in case of low end players who go global and have the advantage of acquiring the value-adding branded-product company. This synergy is very marginal in the case of sectors involved in natural resources which derive their advantages from price and productivity.

The results of previous studies have been mixed, some confirming (Bradley (1980), Bradley, Desai, and Kim (1982), Zhu and Malhotra (2008) and Jose, Pagan and Chu (2009). Georgen. and Renneboog (2004)) but others (Asquith (1983), Jarrell and Poulsen (1989), Campa and Hernando (2004), Georgen and Renneboog (2004), and Kirchhoff, Schiereck & Mentz (2006)) contrasting with the findings of the present study. Factors causing their variation in results include: Location and institutional differences; Regulatory environments, and Estimation periods.

Results in the current study are in line with the earlier investigations of Bradley, Desai, and Kim (1982), Zhu and Malhotra (2008) and Georgen and Renneboog (2004). These studies emphasise the importance of location, institutional and regulatory environments. Georgen and Renneboog (2004) find that bids involving UK targets generate significantly positive short-term wealth effects for both the bidder and target shareholders: the abnormal returns for the target increase by 7–9.6% and those for the bidder increase by around 3.3%. In bids involving German, Austrian and Swiss targets, wealth effects are also positive but lower (between 0.6 and 2.1%). They find that the location is an important determinant due to institutional differences which are an amalgam of ownership patterns (with the UK having a higher free float than Continental Europe), protection of shareholder rights (with the UK having a higher degree of protection than Continental Europe according to La Porta, R., Lopez-de-Silanes, F., Schleifer, A. and Vishny, R (2000) and takeover regulation (with higher transparency in the UK). Hence, the location of bidder and target firms also seems to have an important impact on short-term wealth effects: both UK bidders and targets generate significantly higher returns than their Continental European counterparts.

The majority of the Indian bidding companies preferred European companies as targets of the sample thirty Indian companies 44% of M&As are in continent of Europe, 23% to UK, 13% to US and 20% to others. The preferences for these destinations are not consistent with the findings above and may be driven by other motives.

Campa and Hernando (2004) examine M&A deals in the European Union for 1998-2000 and find acquirers' CAR to be nil in the event window. Their analysis indicates that the shareholder value creation from M&A activity in industries that had previously been under government control or operating in heavily regulated environments generate lower value than M&A announcements in unregulated industries. This low value creation in regulated industries becomes significantly negative when the merger involves two firms from different Euro area countries and is primarily due to the lower positive return that shareholders of the target firm enjoy upon the announcement of the merger.

The results, reported in this study, contrast with conclusions of some studies from mature markets which document significant negative abnormal returns to the shareholders of the bidding firms on the announcement day. Notable among them are Asquith (1983), Jarrell and Poulsen (1989), Campa and Hernando (2004), Georgen and Renneboog (2004), and Kirchhoff, Schiereck & Mentz (2006). Upon further examination it is evident that the differences could be due to the different estimation periods. Asquith (1983) used an estimation period of -480 days until -20 days, Kirchhoff, Schiereck & Mentz (2006), used an estimation window of 252 days and an event window of 161 days, while the study of Jarrell and Poulsen (1989), looked into the tender offer announcement effects which is considered as a unique form of acquisition. Under this form the acquiring firm offers to purchase a stated percentage of outstanding shares of a stock of a target firm for a specific price on or before a specified bid.

The bid usually represents a substantial premium over the current selling price of the shares. The announcement of the offer by the bidding firm often comes as a surprise to the managers, directors and shareholders of the target firm. In contrast, acquisitions in a form other than the tender offer are generally the result of negotiations among the managers and directors of the acquiring and target firms (Flower & Schmidt, 1988). Infact, several researchers (Bradley, Jensen & Ruback, 1985) suggest that the tender offer form of acquisition deserves a separate theoretical and empirical attention.

Uddin & Boateng (2009) found that the UK acquirers do not earn positive abnormal return on the announcement of cross-border acquisition decisions. However, the estimation period of the study is shown to be crucial. They find that the results are significantly positive when the event window is (-1, 0, +1) and tend to become insignificant as the window size increase (-10, 0, +10). The present study concurs.

### B. Conclusion

This paper examines the announcement effect of the outward foreign direct investment (OFDI) related Indian

mergers and acquisitions (M&As) on the share price performance from a short term perspective.

The results indicate large increases in the abnormal volume traded on the announcement day (0) which continues until expiration (-1) and the substantial drop in the abnormal returns on the post announcement day (+1) is consistent with the price pressure effect that operates simultaneously with the information effect. Likewise, it is evident from the results that the volume traded prior to the announcement day (-1) is insignificant. The substantial increase in the abnormal volume traded on the announcement day which is statistically significant at 1% level over the prior day (-1) also indicates the price pressure effect. The results are in line with the findings of Davidson, Chhachhi and Glascock (1996) and Zhu and Malhotra (2008). The coincidence of results based on return movements and volume movements strengthens the robustness of the results.

The findings relating to the OFDIs concentration are in contrary to the literature from the mature markets. The theory considers UK as the congenial destination point in terms of investors protection, transparency and location wise due to the Institutional differences when compared to the European countries. However, our findings show that 44% of the total Indian OFDI is concentrated in Europe followed by 23% of UK. This indicates that the destination points are chosen based on sectoral preferences, motives behind M&As and the behavioural pattern of the Indian Investors.

As discussed above there are favourable reactions to the announcements and this differs from findings of other studies relating to similar periods based on mature market activities. This suggests that OFDI related M&A are different. The favourable reaction indicates the market believes in the merit in acquiring companies in Europe, including the UK. The preference for continental Europe refutes ideas that market supports reverse colonialism, which if it were the prevailing sentiment would have seen more UK oriented bidders. It does appear the market support intellectual property acquisition through OFDI M&As. There is also a plausible explanation that these actions circumvent non-tariff trade barriers and broaden the market opportunities for Indian goods and services.

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