Journal of Critical Reviews
ISSN- 2394-5125 Vol 7, Issue 8, 2020

EFFECT OF CORPORATE GOVERANCE ON ACQUIRING FIRM PERFORMANCE: EVIDENCE FROM CONSTRUCTION INDUSTRY

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Received: 02.05.2020 *Revised: 01.06.2020* *Accepted: 25.06.2020*

Abstract
The purpose of the study is to examine the impact of the performance of the acquiring firm of construction industries upon merger announcement. The study has used a sample of 27 construction companies of Indian firms gone for mergers and acquisitions during the period from 2004-2014. The abnormal returns of the acquiring firm has been estimated by using market model. The study also examine the factors that influence the returns of the acquiring firm by using cross sectional regression analysis. The study reveals that acquiring firm destroy shareholder value to the shareholder in the window period of [-20,20]. The study also found that price-to- book value ratio and size of the acquiring firm is significant factor that influence the return of the construction industries.

Keywords --- Mergers and acquisitions, Construction industries, Event study, Acquiring firm, Capital market

DOI: http://dx.doi.org/10.31838/jcr.07.08.174

INTRODUCTION

Construction industries are one of the key drivers for the Indian economy. This sector is highly responsible for pushing India's growth story. India has a requirement of Rs 50 trillion to have sustainable growth of the Indian economy. As of now, 24 percent of our national highway is four lanes, there is a complete scope for growth in this sector. The government of India is taken initiative such as housing for all and smart city mission also fuel growth to this sector. India is expected to be the third-largest construction market globally by 2022 and Indian infrastructure witness 91 mergers and acquisition deal worth US 5.4 billion in 2017 (IBEF Report). The extremity of non-performing assets of banks has hit the real estate sector. The implementation of Insolvency and Bankruptcy Code (IBC) provides a favourable environment for financial health companies to look for the inorganic growth opportunity. Construction companies characterized by low profit and high failure rate. The low profit is explained by a high degree of fragmentation in the industry. The prior studies on mergers and acquisition suggest that horizontal acquisition are a growth strategy for the corporate world. Mergers and acquisitions are the common routes for market penetration and growth in size for the construction sector (Male and Mitrovic, 1999). The merger and acquisition in Indian construction industries also increase from 2 deals in the year 2004 to 32 deals in the year 2011 (Venture Intelligence database). The overview of number deals has shown in figure 1 from 2004 to 2014 for the Indian construction sector. There is a great deal of consolidation in the construction sector because of the introduction of RERA, Insolvency law and dwindling balance sheet of the developer. The speed of construction will also be determined by the equity available for investment into real estate by domestic as well as a foreign investor. In this light, the paper tries to examine whether the merger and acquisition of the construction sector create value for the shareholder. As there are a plethora of studies done of value creation for banking and other sector and very limited research done about the construction sector. To explore this the study has formed two objectives are:

To examine the wealth effect of the shareholder for the acquiring companies in the construction sector.

To identify the determinates for the acquiring companies, influence the return in the construction sector.

The rest of the paper is organised as follows, section 2 provides an overview of related studies on merger and acquisition wealth effects in the construction sector. Section 3 provides methodology and sample selection. section 4 presents the result of the study and section 5 concludes the study.

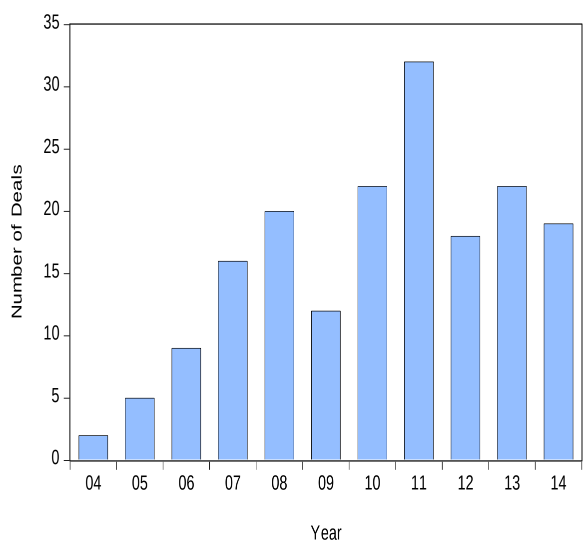

Figure 1. Overview of deals in Indian constriction sector
Source: (Complied from venture intelligence data base)

REVIEW OF RELATED LITERATURE ON WEALTH EFFECTS OF MERGER AND ACQUISITION

The existing literature on the merger and acquisition announcement on shareholder wealth effect on acquiring companies in the construction sector is very limited. There is no conclusive evidence that the shareholder of the acquiring companies generates a positive return to the shareholder in the construction sector. The prior literature provides a mixed view on the return generated on the announcement of merger and acquisition in this sector. Rottke et al. (2011) analyzed a sample of 106 companies for the period form1986-2006 by using event study methodologies. The result of the study suggests acquiring companies generate a positive return to the shareholder. The determinants such as size and leverage are important factors form acquiring a firm perspective. Choi & Russell (2004) investigate the sample of 171 mergers and acquisitions with a sample period from 1980- 2002 by using market-based measures. The study has found on average the return to the acquiring firm is nil. The study also evident that size is a significant determinant influences the return of the acquiring firm. Rottke et al. (2011) have empirically investigated and reported the return of the acquiring firm seems to be negative however target firm generates a positive return to the shareholder. Raudszus et al. (2014) has analyzed various merger and acquisition and concluded that vertical merger leads to value creation to the shareholder. In the Indian context, Mohapatra (2016) investigated merger and acquisition of the construction sector and reported a positive return to the shareholder. Ooi et al. (2011) analyzed 228 property acquisition of the Asian market and shows significant positive abnormal return around 0.38% to the acquiring firm. Table 1 presents the summary of emprical studies acquring firm in construction and realted industries.

Table 1. Overview of releted studies on merger and acquisition

Author(s) Years	Sample size	Period	Methodology	Findings
Rottke et al. (2011)	106	1986-2006	Event studies	Acquiring companies generate a highly positive return. The size and leverage factor have an impact on shareholder return.
Choi& Russell (2004)	171	1980-2002	Event studies	Acquiring firms generate no return to the shareholder on an average. The size happens to be a significant factor that influences the return
Rottke et al. (2011)	111	1996-2001	Event studies	The result suggests a positive return to the target firms however market seems to be negative to the acquiring firm.
Raudszus et al. (2014)	119	1988-2007	Event studies	Vertical merger and acquisition have shown value increasing to the acquiring shareholder.
Mohapatra (2016)	17	1995-2012	Event studies	The return to the shareholder found to be positive for the acquiring firm
Ooi et al. (2011)	228	2002-2007	Event studies	Significant positive returns to the shareholder of the acquiring firm.

Theoretical background and hypothesis development

Previous research on construction industry merger and acquisition performance has no conclusive evidence of whether acquiring companies create value to the shareholder not. There are few studies conducted on the determinants of acquiring companies in the construction sector. The construction industries represent a striking filed of research to address the following research questions are;

Do the acquiring firm shareholder gain out of merger and acquisition announcement?

Do factors of acquiring campiness influence the return of the acquiring firm?

The study tries to develop a hypothesis based on prior studies in the construction sector. The hypotheses of the study are:

H_1: Acquiring firm generate positive and significant abnormal return

H_2: Acquiring firm determinants do influence the firm performance

METHODOLOGIES

To analyse the wealth effects of merger and acquisition announcement on acquiring companies the study has employed event study methodologies by following Brown and warner (1985). The market model has been used to estimate the abnormal return of the acquiring firm. First the return of the acquiring firm has been calculated as follows;

$$R_{it} = \frac{P_{it}}{P_{it-1}} - 1 \quad (1)$$

Then we estimate the expected return of the stocks by using market model. The market model has been stated as follows:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \quad (2)$$

Where α_j is a constant term and $\beta_j R_{mt}$ refers to the market return.

The parameters α_j and β_j for each stock j are estimated during a period of 121 days trading days prior to the event window. The parameters are calculated by using OLS model. The abnormal return of a stock j is calculated by the difference of actual return and the expected return as follows:

$$AR_{i,t=}\ R_{i,t-}\ E\ (R_{i,t}) \tag{3}$$

The event window covers 41 trading days. The 41 days is sufficed enough to capture the short-term effect merger and acquisition announcement. Then the CAR is calculated as follows:

$$CAR_{i,T1,T2} = \sum_{t=T1}^{T2} AR_{i,t} \tag{4}$$

Cumulative average abnormal return is calculated (CAAR) as follows:

$$CAAR(T_{1,}T_2) = \frac{1}{N}\sum_{I=1}^{N} CAR\ \ i\ (T_1, T_2) \tag{5}$$

To test the statistical significance of abnormal return both parametric and non-parametric such as cross-sectional test and generalised sign test has been used.

Data sources and sample selection

To analyze the wealth effects of construction companies, The CMIE prowess database has been used. The initial sample has been extracted where the acquiring companies have been classified as construction industries by CMIE prowess. The final sample consists of 27 mergers and acquisition taken into the study that matches the following criteria. The transaction must be completed during the period from 2004-2014. The acquiring companies are taken into the study where the trading price available 121 days before the merger and acquisition announcement. The announcement date is taken as a stock exchange announcement date collected from CMIE prowess. The adjusted closing price has been taken to calculate the return of the stock. The BSE Sensex index market closing price taken as a proxy to calculate the market return. To analyze the determinates of acquiring companies such as board size and board independence collected from the annual report of the companies. The other accounting factor such as price to book value ratio, leverage, and size of the acquiring firm collected from CMIE prowess.

RESULTS AND DISCUSSION

Table 2 documented the CAAR of the acquiring firm for different window periods. The acquiring firm in the construction sector shows a negative return in the different window periods. The return of the acquiring firm has found -0.98% and statistically insignificant for the window period [-20...20]. The abnormal return to the acquiring firm seems to be negative in the different post-announcement period as shown in Table 2. This result is consistent in line with the findings of Choi & Russell (2004) that the accruing firm shareholder gains nothing in the construction sector post-merger announcement. Figure 2 illustrates the CAAR of the acquiring firm for the window period [-20, 20].

Table 2. CAAR of acquiring firm (N=27)

Event Window	CAAR	t-test cross-sectional	prob.	corrado rank	prob.
[-20...20]	-0.98%	-0.2487	0.8036	0.8371	0.4026
[-10...10]	0.72%	0.2798	0.7796	0.4463	0.6554
[-5...5]	0.29%	0.1454	0.8844	0.4562	0.6483
[-2...2]	-0.14%	-0.1007	0.9198	-0.0613	0.9511
[-1...1]	-1.01%	-0.9072	0.3643	-0.1057	0.9158
[0...5]	-1.72%	-1.1502	0.2501	-0.0585	0.9534
[0...10]	-1.03%	-0.5278	0.5976	0.2929	0.7696
[0...20]	-2.01%	-0.7206	0.4712	0.8087	0.4187

Note: *, **, *** denote the statistical significance at 1, 5 and 10 percent level, respectively

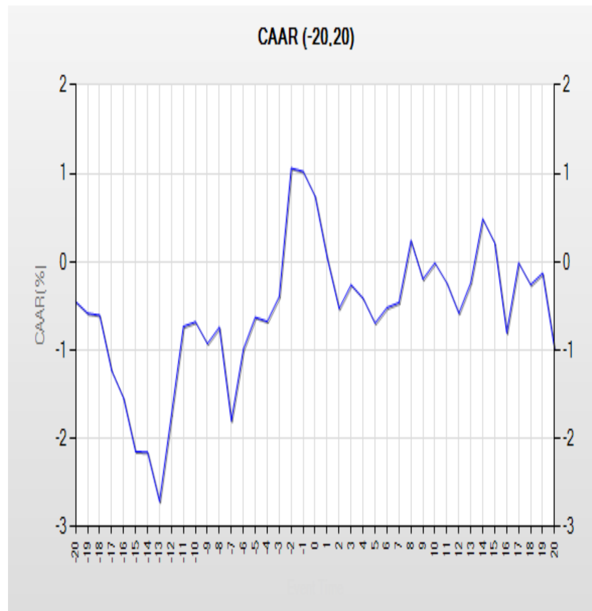

Figure 2. CAAR for the acquiring firm for the window period [-20, 20]

Determinants of the acquiring firm

To analyse the determinants that influence the performance of acquiring companies in the construction sector, these determinants specifically corporate governance variables and acquiring company characteristics related variable. The study examines the determinants such as board size, board independence, size of the acquiring firm, leverage and price-to-book value ratio, cash reserve and stock return of the acquiring firm.

Board size

Larger board size increased asymmetric information problems and communication issues. Board of the director is the highest decision-maker of the firm such as merger and acquisition decision. An effective and appropriate structure of board can able to eliminate agency problem. The relationship between board size and performance is inversely related. Large board size was unable to take timely decisions leading to greater risk Amar et al. (2011). Board size is measured as the total number of directors on the board.

Board Independence

There is enough empirical evidence suggests the presence of an independent director on the board make a corporate decision such as merger and acquisition in the best interest of the shareholder. The number of independent directors presents on the board help in monitoring the management to take any wrong decision. The independent director tries to protect the interest of minority shareholders. It is expected a positive relationship between board independence and acquiring firm performance. The board independence considered as most effective corporate governance instrument available to the shareholder Chan & Emanuel (2011).

Size

Size is considered one of the most important factors in the success of construction industries Hillebrandt and Cannon (1990). The reputation and reliability of the construction firm are highly correlated with size. The overall size of the acquiring firm is a critical factor in the construction industries. The study has taken firm size taken as the natural log of total assets of the acquiring firm.

Leverage

A high level of existence of debt of the acquiring firm will lead to less cash flow available to the manager. The obligation to meet debt service payment on the manager to monitor investment decisions such as merger and acquisition wisely. It is well documented by Masulis et al. (2007) high level of debt creates a positive impact on the performance of acquiring the firm. The study has taken leverage as total debt divided by total equity on the acquiring firm before the merger and acquisition announcement.

Price-to-book value ratio

It is documented that firms with a high price to book value ratio considered as growth firms. High price to book value ratio leads to mergers and acquisitions to capture the potential synergy for growth. The study has taken the price-to-book value ratio as a proxy for growth firms. The price-to-book value ratio is the calculated market price per share divided by book value of equity share before the merger announcement of the acquiring firm.

Stock return

The study has taken the stock return as a proxy for analysing the impact of volatility. The higher volatility leads to a negative impact on the performance of the acquiring firm. The stock return is calculated 12 months before the merger and acquisition announcement of acquiring companies.

Cash reserve

It documented by cash-rich companies are likely to acquire and these acquisitions are on an average value-destroying, Harford (1999). The study has taken cash reserve is calculated as cash and cash equivalent divided by the total assets of the acquiring firm before the merger and acquisition announcement.

Table 3. Results of cross sectional regression of determinats of acquiring companies

	Model (1)	Model (2)	Model (3)
Variables	CAR [0; +10]	CAR [0; +20]	CAR [-20; +20]
Board size	-0.0117*	-0.0129	-0.0184
	(0.00580)	(0.00884)	(0.0119)
Board Independence	0.0225	0.0995	0.226
	(0.0823)	(0.136)	(0.171)
Size	2.51e-06**	3.60e-06**	1.17e-06
	(1.10e-06)	(1.43e-06)	(2.07e-06)
Leverage	0.245*	0.137	0.288
	(0.136)	(0.250)	(0.381)
Price-to-book value ratio	0.0362**	0.0351	0.0708*
	(0.0160)	(0.0243)	(0.0378)
Stock return	-0.00762	-0.0188**	-0.0116
	(0.00713)	(0.00798)	(0.0176)
Cash reserve	-0.215	-0.745**	-0.614
	(0.237)	(0.316)	(0.511)
Constant	-0.0725	-0.0502	-0.139
	(0.0598)	(0.105)	(0.156)
Observations	27	27	27
R-squared	0.397	0.422	0.230

This table summarizes OLS regression of CAR of the acquiring firms.
Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 summarises the results of the cross-sectional regression analysis of determinants of acquiring companies. The study has taken three window period [-20; + 20], [0; + 20], and [0; + 10] as dependent variable. The independent variable is the same such as board size, board independence, size, leverage, price-to-book value ratio, stock return, and cash reserve are the same for the respective three models. Board independence found to be insignificant in all three models and board size found to be insignificant as reported model 2 and model 3 respectively. The result here depicts that two corporate governance variables are not significant determinants of explaining the abnormal return of the acquirer firm. Therefore, the study concluded that board size and representation of independent directors in the board has the least impact on the acquiring firm performance in the construction sector. The size and price-to-book value ratio found to be significant in model 1 and model 2 as depicted in table 3. So, it can be concluded that size and price-to-book value ratio are significant determinants that influence the return of the acquiring firm. The cause is being that size is the most critical factor in the construction sector. The goodwill, reliability and technical abilities are highly related to the size of the firm (Rottke et al, 2011). The price-to-book value ratio can help in growth opportunity and valuation have a positive impact on firm performance. Leverage, stock return, and cash reserve have found to be insignificant determinants to influence the performance of the acquiring firm. The study supports the size and growth factor that can contribute positively to the value of the shareholder in the construction sector and internal corporate governance mechanisms seem to be the least important in contributing the return to the acquiring firm.

CONCLUSION

The merger and acquisition events in the construction sector found to be value-destroying in the overall window period of 41 days. The acquiring firm also seems to be destroying value to the shareholder in the post-announcement period. The capital market reaction to the merger event in the construction sector found to be value-destroying however further study needs to be done up to five years of post-merger announcement effect on the acquiring firm performance. The present study sheds light on the potential determinants in the construction sector, the size and growth factor found to be significant determinants to explain the abnormal return of the acquiring firm.

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