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Announcement effect of admission to CDR

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Announcement effect of admission to corporate debt restructuring

Anupam Rastogi* & Smita Mazumdar**

Abstract:

The CDR mechanism aims to restructure debt of viable companies facing distress due to internal or external factors. The restructuring process is expected to involve sacrifice by all stakeholders, particularly, equity holders and lenders. If equity holders perceive to have struck a better bargain in the negotiation with lenders, the same is expected to be reflected through excess abnormal returns when compared to returns for the corresponding industry. Equity holders will perceive a good bargain when they perceive that the sacrifice that they have to make is lesser than the haircut that the lenders will bear. Thus, excess abnormal returns around the event date would indicate equity holders have obtained a better deal in the negotiation at the expense of lenders. Our analysis provides evidence that equity holders get excess returns post the announcement of admission to CDR. The market thus perceives admission to CDR as an indicator of better return on equity capital.

Keywords: Event study, announcement effect, restructuring, CDR, abnormal returns, industry adjusted returns

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Introduction

Corporate debt restructuring (CDR) mechanism allows restructuring of debt of companies that are viable and face financial difficulties due to external or internal reasons. Since its inception in 2001 in India, the CDR cell has played increasingly significant role in restructuring syndicated / consortium based loans[1]. It is a forum where creditor banks and institutions combine together to offer restructuring support to viable companies facing financial difficulties. The restructuring package may include business restructuring, sale of assets, reduction in interest rates on loans availed, rescheduling repayment of principal and interest, conversion of working capital limits into term loans, debt to equity swaps, waivers, sacrifices and even issuing fresh loans to admitted firms (corporate debt restructuring cell (CDR cell, 2013).

CDR mechanism aims to restructure corporate debt "for the benefit of all concerned" (CDR cell, 2013). On the one hand it aims to preserve viable companies and on the other, it aims to minimize losses to creditors and other stakeholders through a coordinated restructuring program.

The spurt in the aggregate debt restructured through the CDR cell has been attributed to the unfavourable global situation over the last 5 years. But as pointed out by Chakrabarty (2012),

[1] Aggregate cases approved under CDR shot up from 184 (amounting to `856 million) in 2008-09 to 401 cases (amounting to `2290 million) upto 2012-13 resulting in an increase of over 100% in number of cases admitted and over 260% in terms of aggregate value of debt restructured.

"... any kind of restructuring has to be accompanied by prudence on the part of the lenders and financial discipline on the part of the borrowers. Absence of these conditions results in dead weight loss to the society in general."

The Reserve Bank of India allows restructuring of standard as well as sub- standard assets (loans given by) banks and practices regulatory forbearance when standard assets are restructured. Till March 2015, banks were not required to classify a standard asset that has been restructured as sub standard and could continue reporting it in the same category. Thus, there were possibilities of moral hazard creeping in where borrowers did not want to be categorized in the sub standard category and, therefore, be subjected to higher cost of debt. On the other hand, there were incentives for the borrowers to be admitted under CDR where they could avail of interest concessions/ waivers. Banks too had incentives to admit cases under CDR and retain them under standard category post restructuring despite a possibility of the asset having become substandard.

In the context of rising number of CDR cases, the effectiveness of the CDR mechanism is coming under scrutiny. As lenders in India are primarily banks, there are concerns if CDR mechanism is being misused by them to postpone possible losses from stressed assets and thereby, escape higher provisioning requirements. There are questions if the equity holders (primarily, promoters) are using the mechanism to avail of concessions without themselves sacrificing much. This paper examines movement of stock prices of firms admitted under CDR to gauge if they exhibit abnormal returns around the date of admission to CDR – on the premise that superior abnormal equity returns indicate that equity holders have obtained a better bargain in the negotiation with lenders. The thought process behind restructuring visualizes sacrifice

by both the stakeholders in order to redeem some value of the sinking firm (CDR cell, 2013). Thus, admission to CDR should indicate confirmation of the need for sacrifice by both the shareholders. But if the equity holders perceive an advantage over the lenders in the restructuring process, the stock prices would reflect the same. In this paper, we study the effect of admission to CDR mechanism on shareholder value as reflected in stock returns of listed companies around the date when they are given the letter of acceptance (LOA).

Literature review and hypothesis

An event study is a statistical technique used for understanding the impact of an occurrence/ event on firms. The event may be firm specific (dividend declaration, stock split, merger) or economy wide (change in interest rates, change in economic policy, onset of a new legislation) (Mackinlay, 1997). The impact on firms is measured with respect to change in stock prices, volatility, liquidity or any other performance parameter on or around the event date. While event study as a methodology has been practiced since early 1930s, the paper by Fama, Fisher, Jensen, & Roll (1969) explored this methodology in analyzing the impact of economic and business events. Many authors (Binder, 1998; Mackinlay, 1997; Peterson, 1989; Rao & Sreejith, 2014) have reviewed the event study methodology since then. The methodology essentially revolves around estimating abnormal returns around the event date. Abnormal returns are returns for the security on a specific day/period measured against the expected returns on the security. Abnormal Returns are calculated as :

$$AR_{it} = R_{it} - E(R_{it})$$

a percentage. The abnormal returns so calculated are subjected to statistical tests to conclude on their significance and thus, the impact of the event on the population so represented.

Literature enumerates variations on how expected returns are estimated. Brown & Warner (1985, 1980) documented three methods of calculating expected returns- Mean adjusted returns, Market adjusted returns and Market and risk adjusted returns.

Mean adjusted returns calculates expected return of a firm as the mean return on the security during a 'clean' period where there is no likelihood of the impact of the event (usually a historic period called as the estimation window).

Market adjusted returns model also calculates the expected return on the security with the help of an estimation window. Here, the return on security in the estimation window is regressed on the market return during the period. The coefficients so obtained (constant and beta) are applied to the ex post returns of the market in the event window to arrive at the expected returns on the firm.

The market and risk adjusted model calculates the expected return using market returns and the returns on a minimum variance portfolio of risky assets. Market adjusted return model on the other hand, assumes that the ex-ante expected returns are the same across securities, but not necessarily constant over securities (Brown & Warner, 1980). Since the market portfolio of risky securities is a linear combination of all securities, the expected return is the return on the market portfolio.

Market adjusted return model can thus, be viewed as a restricted market model with α constrained to be zero and β constrained to be 1(Mackinlay, 1997). Abnormal return is simply

the difference between the ex post return on the security and the market portfolio. Ikenberry et al (1995), Loughran and Ritter (1995) and Speiss and Affleck-Graves (1995) were a few papers that used market index to calculate expected returns. Ritter (1991), Agarwal et al (1992), Womack (1996), Michaely et al (1995) and Desai and Jain (1996) used a size portfolio as the benchmark return indicator. Michaely et al (1995) also used an industry portfolio. Other variations like industry control firm approach (Ritter 1991, Speiss & Affleck-Graves 1995) have also been used to calculate expected returns. Literature also documents usage of 'buy and hold return' to calculate ex post returns on the security and the benchmark. Thus, 'buy and hold abnormal returns' are the excess buy and hold return of the security over the buy and hold benchmark returns (Barber & Lyon, 1997).

A large body of research exists on the effect of specific events like dividend declaration, announcement of stock splits, announcement of fresh stock issue and mergers. Grinblatt, Masulis and Titman (1984) find a significant increase in the firm's stock price at the announcement of stock splits and dividends. Michaely, Thaler, & Womack (1995) study the immediate and long term impact of dividend initiation or omission on firm return. Mehta, Jain and Yadav (2014) find dividend announcement increases shareholder wealth in India. Joshipura (2009) finds strong positive abnormal returns before and on announcement of stock dividend but find significant negative abnormal returns post the effective date.

Asquith and Mullins (1986) found that announcement of equity issues reduces stock prices significantly. Also, larger size of the issue is associated with larger price reduction. Sehgal, Banerjee and Deisting (2012) find that Russia, India, China and South Korea witness superior pre event return for buyer companies announcing to merge/ takeover another company. Post

event, the superior returns are negative indicating an overreaction hypothesis (overestimation of gains of merger for the acquiring company). Pandey (2001) study the impact of announcement of takeovers on stock prices of 16 target firms and find that the superior return obtained pre event is wiped off post event, indicating that shareholders do not value takeovers as a tool for optimal resource utilization through the market for corporate control. Rani, Yadav and Jain (2013) acquisitions by Indian companies create short term wealth for shareholders of the acquiring companies.

Announcement of asset sell-off results in reduction in direct and indirect costs of distress. Direct costs like legal and administrative expenses are reduced if possibility of bankruptcy is reduced (Gilson et al, 1990 and Weiss, 1990). Indirect costs like opportunity costs of suboptimal decisions (Altman 1984, Gilson et al, 1990) as well as indirect costs associated with other stakeholders like customers, suppliers, employees also reduce with reduction in financial distress (Cornell and Shapiro, 1987). Lasfer, Sudarsanam and Taffler (1996) conclude that higher stock returns of financial distressed firms on asset divestitures was due to reduction in financial distress costs. They find stock returns on distressed firms that were subjected to stringent monitoring by lenders were higher due to lower agency costs in line with Jensen (1989). Veld and Veld-Merkoulova (2008) find positive announcement period abnormal returns on stocks in case of spin offs. They also find higher returns when the interest/ dividend outgo is lesser and also, when the pre spin off leverage is high. On the other hand, Wright and Ferris (1997) find significant negative excess returns accrue to shareholders of South African companies that announced divestments. They attribute these findings to non-economic pressures instead of value enhancing factors leading to divestments.

Clark and Weinstein (1983) find shareholders suffer large losses starting three years before announcement of bankruptcy with maximum losses occurring during the month in which bankruptcy was announced. In a synthesis of theoretical literature on financial distress, Chen, Weston and Altman (1995) evaluate the key features of any restructuring exercise – 1)automatic stay on actions by creditors as well as debtors is like extending the maturity period of debt and thus, creates an environment for further investment, 2) approval by majority vote allows for reduction in bargaining costs, 3) allowing fresh loans for distressed firms with absolute priority, will stimulate additional investment, though it might be detrimental to the interests of existing creditors. Jog, Kotlyar and Tate (1993), in their study of 4 restructured firms belonging to the steel industry in North America find that shareholders' losses as a percentage of their investments were very large, but their overall contribution in the sacrifices of all stakeholders (debtholders, employees, suppliers, government) is not large. Datta and Iskandar-Datta (1995) evaluate the impact of announcement of bankruptcy filing on stock and bond returns. They studied daily stock and bond excess returns over a 20 day window period calculated using the mean adjusted methodology and concluded that stock holders and unsecured debt holders experienced negative excess returns over the event window. Secured debt holders on the other hand, gain during the event window period. All securities exhibit positive excess return post announcement. We thus see a mixed response of shareholder returns on announcement of bankruptcy or restructuring. No such study has been attempted in the Indian context with reference to companies that are admitted to CDR.

Based on the literature review, we propose the following hypothesis to analyse impact of announcement effect of admission to CDR. The theoretical hypotheses are:

H 1: There are no significant average abnormal returns during the event window surrounding the announcement of admission to CDR

H 2: There are no significant cumulative abnormal returns during the event window surrounding announcement of admission to CDR

Data collection and sample selection

This research required data set of listed companies that have been admitted to CDR. The CDR cell was unwilling to share this information on grounds of confidentiality given the sensitive nature of the data. Since admission to CDR is 'material' information that needs to be disclosed to stock exchange by every listed company, we scrutinized exchange filings of companies listed on the Bombay stock exchange and the National stock exchange. We identified 58 listed companies where exact date of letter of approval (LOA) for admission to CDR was available. 'Prowess' database of CMIE[2] prowess was then used to extract daily stock return data for 90 calendar days before and after the event date as identified above. There are two major stock exchanges in India- the Bombay stock exchange and the National stock exchange. Mean closing prices of CDR companies could have been a good indicator of calculating estimated returns. But many companies do not trade frequently on both the exchanges. As calculation of mean share price required averaging data from both the exchanges, there was a possibility of misleading results specially, in cases where infrequent trading was observed. Thus, data from

[2] Centre of Monitoring Indian Economy (CMIE) is a leader in providing economic and business database in the Indian economy. 'Prowess' provides financial database of listed and unlisted companies in India available on subscription.

only one exchange – the Bombay stock exchange, was used to overcome this issue. Similarly, CMIE's industry classification was used to identify the respective industry to which each of the CDR firm belonged. 56 of the companies identified earlier were listed on the Bombay Stock exchange. Two companies did not trade on a daily basis during the event window. There were thus, periods when the returns from these securities are pegged at 0%. As a result, the industry adjusted returns for such firms were misspecified and would have a downward bias. These two companies were thus excluded, reducing the sample size to 54 firms admitted to CDR and listed on the Bombay stock exchange.

Methodology

Our study pertains to share price performance of firms that were admitted for corporate debt restructuring through the CDR mechanism. Literature review in the previous section indicates event study methodology is most popular in measuring the impact of a company specific event like these on share prices. We follow the same methodology. As at the end of December 2014, there were 288 live cases under the CDR mechanism belonging to 42 different industries (CDR cell, 2014). Our sample of 54 firms is spread over 28 industries (see Appendix 1 for industry wise classification of CDR companies in the sample). Industry classification used by CMIE prowess has been followed. Using a single benchmark (like single market index returns) to calculate normal returns of such diverse companies would not indicate a true picture of the abnormal returns as using a single benchmark implies the expected returns are common across all securities. Industry adjusted returns calculated by adjusting the ex-post return of the firm for any day with the returns for the industry to which it belongs for the same day would be a better indicator. Also, the sample consists of companies admitted to CDR over a period from

year 2003 to year 2014. Finding a 'clean window' as an estimation period for events spread over 11 years is difficult since many non-controllable factors might be affecting stock prices during this period. Thus any methodology requiring an estimation period to calculate expected returns would not give robust results. Thus, we zero in on using corresponding industry returns to calculate expected returns for each firm by a process of elimination. Returns for each firm and the corresponding industry have been obtained using the standard procedure:

$$R_{it} = \frac{\text{Difference in Closing share price of } i^{th} \text{ security on day t from day t-1}}{\text{Closing share price of } i^{th} \text{ security on day (t-1)}} *100$$

$$R_{ind\,t} = \frac{\text{Difference in Market capitalisation of the industry on day t from day t-1}}{\text{Market capitalisation of the industry on day (t-1)}} *100$$

Abnormal return for each firm for day 't' is the industry adjusted return for the firm and is calculated as Return for the firm '(R_{it})' less the expected return for the firm , '$E(R_{it})$' :

$$AR_{it} = R_{it} - E(R_{it})$$

Where, $E(R)_{it}$ is the return of the industry to which the firm belongs in period't', i.e. $E(R)_{it} = R_{ind,t}$. Thus, $AR_{it} = R_{it} - R_{ind,t}$.

Average abnormal returns for a cross section of firms for each day in the event period is calculated as:

$$AAR_t = \frac{1}{n}\sum_{i=l}^{n} AR_{it}$$

Where AAR_t = Cross Sectional Average Abnormal Return on day't' for 'n' firms

AR_{it}= Abnormal (Industry adjusted) return for firm 'i' on day't'

Since we intended to study the impact of one particular event (admission to CDR) on equity share prices of firms, it was necessary to nullify the impact of other events that happen over the same time along with the incident of interest. One way of reducing the impact of such confounding events in the event period is to reduce the size of the event period (Brown & Warner, 1985; Rao & Sreejith, 2014). Thus, event studies pertaining to daily returns are restricted to ±20 days around the event date. In this paper we have analysed abnormal returns for 58 days before and 61 days after the event date and also examined similar results over varying duration of the event period. This is because the shares of these companies are not very liquid indicating a longer time for information to reach equity investors.

Efficient market hypothesis (EMH) suggests returns adjust quickly to announcement of new information in such a way that investors cannot experience abnormal returns on the event day. The strong form of EMH suggests prices reflect all information from public and private sources, semi strong for of EMH suggests that prices reflect the impact of only public

information. There is a lag in adjustment due information asymmetry in the market. Also, there is a possibility of leakage of information before it is announced in the public domain, and as such, share prices may reflect the same before the incident. In order to capture such possibilities, empirical studies examine cumulative abnormal returns over a period around the event date to draw conclusions on the impact of the event. We also use a similar methodology and study cumulative abnormal (industry adjusted) returns (CAR) around the event date. Cumulative abnormal returns for each firm spread over the event period are calculated by summing the daily abnormal returns for the period:

$$CAR_{it} = \sum_{t=l}^{m} AR_{it}$$

where, CAR_{it} is the cumulative abnormal return of firm 'i' over the event period between days 'l' and 'm', and,

$$CAAR_t = \sum_{t=l}^{m} AAR_{it}$$

where, $CAAR_t$ is the cumulative average abnormal (industry adjusted) return of all firms over the event period starting from day 'l' upto day 'm'

Testing average abnormal returns

Statistical significance of abnormal returns are evaluated using parametric tests or non-parametric tests. The abnormal returns should be normally distributed for parametric tests to be valid. In the sample under consideration, daily abnormal returns (industry adjusted returns)

of 41 of the 54 firms are not normally distributed. Literature also indicates daily stock returns (as against monthly stock returns), and thus, the excess returns of individual firms exhibit substantial departure from normality (Brown & Warner, 1985; Fama et al., 1969). But the Central limit theorem ensures that if the excess returns on a cross section of securities are independent, the distribution of the sample mean excess return converges to normality as the number of securities increase (Billingsley, 1979). Brown & Warner (1985) corroborate this in their study of daily excess returns calculated for event studies. They find that the market adjusted methodology of calculating excess returns is well specified for daily data too. Our sample is of events between years 2003 to 2014 and spans 28 industries (see Appendix Table A-1). Thus we can reasonably conclude that the daily stock and industry returns are independently distributed and, hence, adopt the methodology adopted by Barber and Lyon (1997) and Ritter (1991) for testing the significance of abnormal returns. Both calculate abnormal returns using returns of a reference portfolio and also an industry control firm as benchmark returns. Under the null hypothesis of no average abnormal returns on the date of LOA, both use the same statistic (t stat)[3] to test the significance of average abnormal return.

$$t_{AAR} = \frac{AAR_t}{\hat{\sigma}_{AAR}}$$

where, $\hat{\sigma}_{AAR}$ Standard error of the abnormal returns of 'n' companies on day 't'

[3] 't stat' is used to compare sample results with a hypothesized value. Specifically, a single sample is collected and the resulting sample mean is compared with a value of interest. In our case, our sample consists of abnormal returns of CDR firms over a period. Therefore, the average abnormal return for the period are compared with the hypothesized value '0' as one expects that no abnormal returns should occur on admission to CDR.

But they differ in the 't test' used for cumulative abnormal returns. Barber and Lyon (1997) use cross sectional standard errors to calculate the t stat. It requires calculating CAR_{it} (cumulative abnormal return of firm 'i' over the event period between days 'l' and 'm')

$$CAR_{it} = \sum_{t=l}^{m} AR_{it}$$

And, $\overline{CAR_{it}}$ (average of the cumulative abnormal returns of 'i' firms over 't' days in the event period :

$$\overline{CAR_{it}} = \frac{1}{n} \sum_{i=l}^{n} CAR_{it}$$

t stat used for $\overline{CAR}$ (Barber & Lyon) is:

$$t_{CAR} = \frac{\overline{CAR_{it}}}{\frac{\sigma\ (CAR)_{\ it}}{\sqrt{n}}}$$

where, $\sigma\ (CAR)_{\ it}$ is the standard deviation of cumulative abnormal returns of a sample of 'n' firms.

Ritter (1991) on the other hand, provide for the time series properties of daily stock returns data – daily abnormal returns can exhibit serial dependence. For hypothesis tests over intervals of more than one day, the failure to take into account autocorrelation in calculating the variance in cumulative abnormal return could lead to misspecification (Brown & Warner, 1985). Ritter

(1991) use‘t test’ which adjusts for such a phenomenon. It requires calculation of $CAAR_{it}$ (cumulative average abnormal (industry adjusted) return of ‘i’ firms over the event period)

$$CAAR_{it} = \sum_{t=l}^{m} AAR_{it}$$

where, $CAAR_{it}$ is the cumulative average abnormal (industry adjusted) return of ‘i’ firms over the event period starting from day ‘l’ upto day ‘m’.

‘t stat’ for $CAAR_{it}$ followed by Ritter (1991) is:

$$t_{CAAR} = \frac{CAAR_{it}}{csd_t / \sqrt{n}}$$

where, n = no. of firms in the sample

and, $csd_t = [t.var + 2(t-1).cov]^{\frac{1}{2}}$

Where ‘t’ is duration in days of the event period ‘(m-l+1)’;

‘var’ is the average of the cross sectional variance over the event period;

‘cov’ is the first order auto covariance of the AAR_t series.

We apply both‘t’ tests to assess the significance of cumulative abnormal returns over the event window. The event window is the period for which abnormal returns of firms are being measured. It has the announcement day (in our case, the date of the letter of approval – LOA issued by CDR cell confirming admission to CDR) and a pre- announcement and post announcement period. Thus, an event window of 21 trading days may consist of 20 trading days preannouncement (represented by -11< t<0), the announcement day (t=0) and the post announcement period of 10 trading days (0<t<11).

Empirical results

Our sample consists of 54 companies spread over 28 industries (Appendix Table A-1). Firms belonging to Drugs and pharmaceuticals industry (5 nos.) have the highest representation followed by infrastructural construction, steel, sugar and other electronics (4 nos. each). The sample consists of companies have been admitted to CDR over a period of 11 years from 2003 to 2014 (Appendix Table A-2). Number of cases admitted to CDR each year has been rising since the inception of CDR. The sample composition captures the same trend.

Average abnormal return for the day of admission to CDR (t=0) for varying event windows have been analysed for the sample. Figure 1 shows the daily average abnormal returns for the sample of 54 firms over the window period of 120 days (-58 <t<61).

AARs are positive (>0) on 69 days and are negative on 51 days over the 120 day period. Figure 1 does not show any consistent pattern in the AAR either before or after the date of LOA (Day 0). Table 1 shows AAR for day of LOA (t=0). The equity holders earn -0.376% (negative) average abnormal return on the day of LOA. But the data exhibits high variance (standard

deviation= 3.081). Thus, the negative abnormal return is not statistically significant (t (53) = -0.896) at 95% level of confidence. 25 of the 54 firms in our sample exhibit positive abnormal returns as against 29 firms that exhibit negative abnormal returns on day 0.

Figure 1: Daily Average abnormal returns (AAR) over the event window (-58, 61)

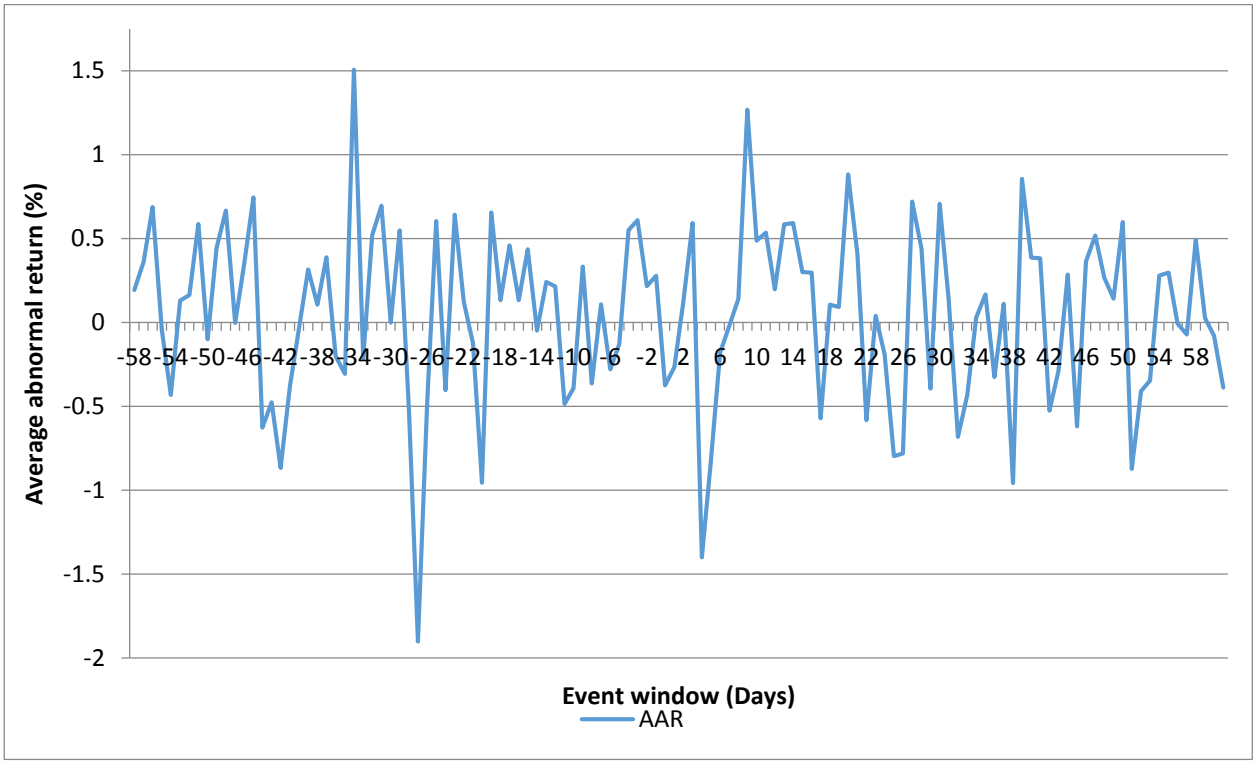
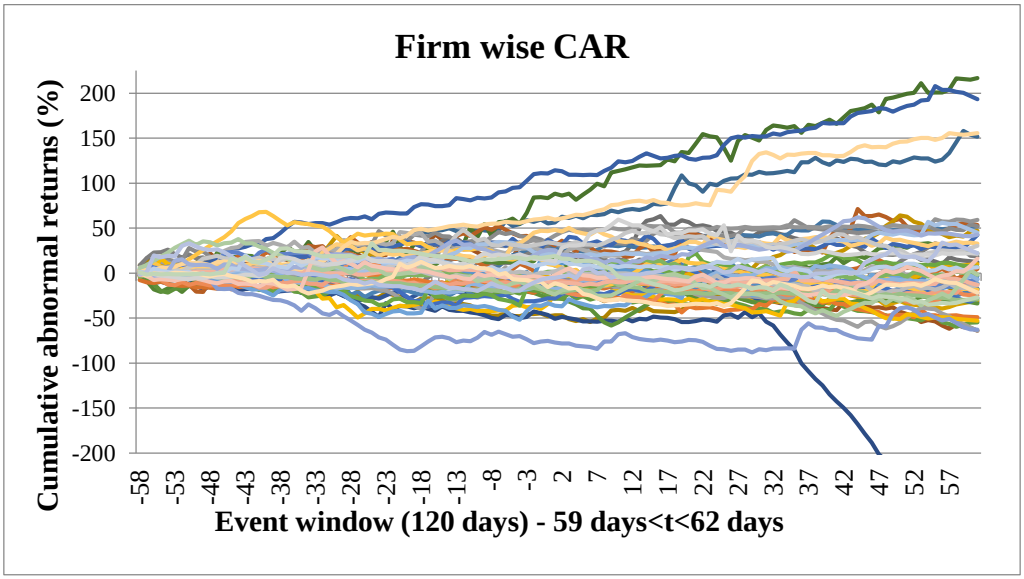


Table 1: Average Abnormal return (%) to the equity shareholder on the day of admission

Sample size	cross sectional average (AAR)	cross sectional standard deviation	no. of firms	t stat AAR	Decision on H0	no. of firms with AR>0	no. of firms with AR<0
54	-0.376	3.081	54	-0.896	Cannot reject	25	29

On the basis of the results of statistical tests, we cannot reject the null hypothesis of no abnormal returns on the LOA day. But there is a possibility of there being either an information leakage (abnormal returns in the pre announcement period) or lag in dissemination of the information (abnormal returns in the post announcement period). Thus, we look at cumulative abnormal returns around the LOA date. Figure 2 shows the cumulative abnormal returns of 54 firms over 120 days (-58<t<61).

Figure 2: Cumulative abnormal returns over 120 days (-58, 61)



CARs of most firms bunch together and are in the range of ±65%. 4 firms display CAR >150% and one firm display negative CAR of 240%.

Table 2 shows the cross sectional average of cumulative abnormal returns over different event window periods and the statistical significance using the Barber-Lyon model.

Table 2: Cumulative abnormal returns during multi day event windows and test of significance using Barber-Lyon model

Event window	Sample size	Cross sectional avg of CAR	Standard deviation	t stat
(-58, 61)	54	5.798	67.510	0.631
(-55, 55)	54	4.584	64.527	0.522
(-50, 50)	54	5.242	60.327	0.638
(-45, 45)	54	1.999	54.679	0.269
(-40, 40)	54	4.373	49.331	0.651
(-35, 35)	54	3.726	42.453	0.645
(-30, 30)	54	2.307	36.009	0.471
(-25, 25)	54	3.968	31.111	0.937
(-20, 20)	54	4.256	28.372	1.102
(-15, 15)	54	3.026	24.033	0.925
(-10, 10)	54	0.460	20.384	0.166
(-5, 5)	54	-0.635	12.884	-0.362
(-3, 3)	54	1.174	11.672	0.739
(-1, 1)	54	-0.365	5.397	-0.497
(0 to 1)	54	-0.643	4.275	-1.105
(-30, 10)	54	-0.273	28.137	-0.071
(6, 22)	54	4.528	16.592	2.005**
(7, 22)	54	4.709	15.696	2.204**
(8, 22)	54	4.734	15.069	2.308**
(9, 21)	54	5.178	14.347	2.652**

** indicates significance at 5percent

Table 3: Cumulative average abnormal return during multiday event windows and test of significance using Ritter model

Event window	Sample size	CAAR	Ritter t stat
(-58, 61)	54	5.798	1.043
(-30, 30)	54	2.307	0.573
(-20, 20)	54	4.256	1.310
(-15, 15)	54	3.026	1.103
(-10, 10)	54	0.460	0.197
(-5, 5)	54	-0.635	-0.360
(-3, 3)	54	1.174	0.808
(-1, 1)	54	-0.365	-0.446
(0, 1)	54	-0.643	-1.050
(-30, 10)	54	-0.273	-0.084
(6, 22)	54	4.528	2.226**
(7, 22)	54	4.709	2.372**
(8, 22)	54	4.734	2.459**
(9, 21)	54	5.178	2.865***
** and *** indicate significance at 95% and 99% respectively			

Our analysis does not find any misspecification by using the simpler t stat (Barber and Lyon, 1997) that only accounts for cross sectional variance in the abnormal return as compared to the more detailed t stat put forth by Ritter (1997) which corrects for possibility of serial correlation between daily stock prices.

Results of both the t tests provide similar results. Barber Lyon test takes into account the cross sectional variation in abnormal returns and the Ritter test accounts for serial dependence that may arise due to daily data. Our results thus, corroborate the findings of Brown and Warner,

(1985) that tests of significance which only account for cross sectional variation are well specified and autocorelation does not play a major role.

Table 2 and table 3 indicate that CARs for larger window periods (event windows from t±58 to t±15) spanning pre- announcement and post announcement periods are not significantly different from zero (-2 < t stat <2). Even shorter event windows (t±10 to t±1 and 0<t<1) do not exhibit significant abnormal returns at 95% confidence level. But significant excess abnormal returns are observed in the period starting a week after the LOA date spanning a fortnight.

Conclusion

This chapter examines the short run equity price performance of 54 firms admitted to CDR in the period during 2003 through 2014. The study finds evidence that shareholders of such companies experience statistically significant positive abnormal returns in multi day event windows starting about a week after announcement of admission to CDR and spanning up to 21 days after announcement. It does not find evidence for abnormal (positive or negative) returns on the day of announcement or in the pre-announcement period.

References

Agrawal, A., Jaffe, J. F., & Mandelker, G. N. (1992). The post-merger performance of acquiring firms: a re-examination of an anomaly. *The Journal of Finance*, *47*(4), 1605-1621.

Altman, E. I. (1984). A further empirical investigation of the bankruptcy cost question. *The Journal of Finance*, 39(4), 1067-1089.

Asquith, P., & Mullins, D. W. (1986). Equity issues and offering dilution. *Journal of Financial Economics*, 15(1), 61-89.

Barber, B. M., & Lyon, J. D. (1997). Detecting long run abnormal stock returns: The empirical power and specification of test statistics. *Journal of Financial Economics*, *43*, 341–372.

Billingsley. P. (1979). Probability and measure. Wiley, Newyork

Binder, J. J. (1998). The Event Study Methodology Since 1969. *Review of Quantitative Finance and Accounting*, *11*, 111–137. doi:10.1023/A:1008295500105

Brown, S. J., & Warner, J. B. (1980). Measuring security price performance. *Journal of Financial Economics*, *8*.

Brown, S. J., & Warner, J. B. (1985). Using daily stock returns. *Journal of Financial Economics*, *14*, 3–31. doi:10.1016/0304-405X(85)90042-X

CDR cell[1]. (2013). Final report format. Retrieved from http://www.cdrindia.org/formats.htm

CDR cell[2]. (2013). Objectives.Retrieved from http://www.cdrindia.org/index.htm

CDR cell. (2014). Retrieved from http://www.cdrindia.org/downloads

Chakrabarty, K.C. (2012). Corporate debt restructuring- Issues and way forward. Corporate Debt Restructuring conference, 2012. Retrieved from Reserve Bank of India http://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=716

Chen, Y., Weston, J. F., Altman, E. I., & Altman, I. (1995). Financial Distress and restructuring models. *Financial Management*, *24*(2), 57–75.

Clark, T. A., & Weinstein, M. I. (1983). The behavior of the common stock of bankrupt firms. *The Journal of Finance*, 38(2), 489-504.

Cornell, B., & Shapiro, A. C. (1987). Corporate stakeholders and corporate finance. *Financial management*, 5-14.

Datta, S., & Iskandar-Datta, M. E. (1995). The information content of bankruptcy filing on securityholders of the bankrupt firm: an empirical investigation. *Journal of Banking & Finance*, 19(5), 903-919.

Desai, H., & Jain, P. C. (1995). An analysis of the recommendations of the "superstar" money managers at Barron's annual roundtable. *The Journal of Finance*, *50*(4), 1257-1273.

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review*, *10*(1), 1–21.

Gilson, S. C., John, K., & Lang, L. H. (1990). Troubled debt restructurings: An empirical study of private reorganization of firms in default. *Journal of financial economics*, 27(2), 315-353.

Grinblatt, M. S., Masulis, R. W., & Titman, S. (1984). The valuation effects of stock splits and stock dividends. *Journal of Financial Economics*, 13(4), 461-490.

Ikenberry, D., Lakonishok, J. & Vermaelen, T. (1995). Market underreaction to open market share repurchases. *Journal of Financial Economics, 39*(2), 181-208.

Jensen, M. (1989). Active investors, LBOs, and the privatization of bankruptcy. *Journal of Applied Corporate Finance*, 35-44

Jog, V. M., Kotlyar, I., & Tate, D. G. (1993). Stakeholder losses in corporate restructuring: Evidence from four cases in the North American steel industry. Financial Management, 185-201.

Joshipura, M. (2009). Price and Liquidity Effects of Bonus Announcements: Empirical Evidence from Indian Stock Market. The IUP Journal of Applied Finance, 15(11), 5-23.

Lasfer, M. A., Sudarsanam, P. S., & Taffler, R. J. (1996). Financial distress, asset sales, and lender monitoring. Financial Management, 57-66.

Loughran, T., & Ritter, J. R. (1995). The new issues puzzle. *The Journal of Finance, 50*(1), 23-51.

Mackinlay, A. C. (1997). Event studies in Economics and Finance. *Journal of Economic Literature*, *35*(1), 13–39.

Mehta, C., Jain, P. K., & Yadav, S. S. (2014). Market Reaction to Stock Dividends: Evidence from India. VIKALPA, 39(4), 55.

Michaely, R., Thaler, R. H., & Womack, K. L. (1995). Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift? *Journal of Finance*, *50*(2), 573–608. doi:10.2307/2329420

Pandey, A. (2001). Takeover Announcements, Open Offers, and Shareholders' Returns in Target Firms. Vikalpa, 26(3), 19-30.

Peterson, P. P. (1989). Event Studies: A Review of Issues and Methodology. *Quarterly Journal of Business and Economics*, *28*(3), 36–66.

Rani, N., Yadav, S. S., & Jain, P. K. (2013). Market response to the announcement of mergers and acquisitions: an empirical study from India. Vision: The Journal of Business Perspective, 17(1), 1-16.

Rao, S. V. D. N., & Sreejith, U. (2014). Event Study Methodology: A Critical Review. *The Macrotheme Review*, *3*(1), 40–53.

Ritter, J. R. (1991). The long-run performance of initial public offerings. The journal of finance, 46(1), 3-27.

Sehgal, S., Banerjee, S., & Deisting, F. (2012). The Impact of M&A Announcement and Financing Strategy on Stock Returns: Evidence from BRICKS Markets. International Journal of Economics and Finance, 4(11), p76.

Spiess, D. K., & Affleck-Graves, J. (1995). Underperformance in long-run stock returns following seasoned equity offerings. *Journal of Financial Economics*, *38*(3), 243-267.

Veld, C., & Veld-Merkoulova, Y. V. (2008). An Empirical Analysis of the Stockholder-Bondholder Conflict in Corporate Spin-Offs. Financial Management, 37(1), 103-124.

Weiss, L. A. (1990). Bankruptcy resolution: Direct costs and violation of priority of claims. Journal of Financial Economics, 27(2), 285-314.

Wright, P., & Ferris, S. P. (1997). Agency conflict and corporate strategy: The effect of divestment on corporate value. Strategic management journal, 18(1), 77-83.

Womack, K. L. (1996). Do brokerage analysts' recommendations have investment value?. The *Journal of Finance*, *51*(1), 137-167.

Appendix

Table A-1: Industry wise analysis of sample firms

Sr no.	Industry	No. of firms
1	Boilers & turbines	1
2	Ceramic products	1
3	Cloth	1
4	Computer software	3
5	Computers, peripherals & storage devices	1
6	Cotton & blended yarn	2
7	Diversified	2
8	Diversified cotton textile	1
9	Drugs & pharmaceuticals	5
10	Hotels & restaurants	1
11	Industrial construction	1
12	Infrastructural construction	4
13	Man-made filaments & fibres	2
14	Other agricultural products	1
15	Other chemicals	2
16	Other electronics	4
17	Other textiles	1
18	Other transport equipment	2
19	Paper & newsprint	1
20	Readymade garments	1
21	Refinery	1
22	Retail trading	1
23	Steel	4
24	Sugar	4
25	Telecommunication services	2
26	Textile processing	2
27	Trading	2
28	Wires & cables	1
	Total	**54**

Table A-2: Breakup of sample according to year of admission to CDR

Year of admission	No. of firms
2003	2
2004	3
2005	3
2008	4
2009	2
2010	5
2011	4
2012	13
2013	15
2014	3
Total	**54**