

## Short and Long run impact of share repurchases on the wealth of share holders : A Case Study of Jagran Prakashan Ltd.

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**Abstract:** Share Repurchases is considered to be as a capital restructuring tool and used as a substitution of dividend by many public ltd companies in India. Seeing to the increasing trend of this concept in India during the recent year an attempt is made by researcher to study long run impact of it on financial performance and wealth of the randomly selected S&P BSE listed company Jagran Prakashan limited. The study is an empirical and descriptive research study, as it is based on the observable data. The time period of the study involves financial year 2012-13 to 2016-17. An event study methodology is employed to see the short term impact of share buyback on wealth of the shareholders. To Compute the Abnormal return of the security study has employed a Market Model to find the Expected return of the security. Moreover studies even include long run impact/benefit to the shareholders of the share buyback by computing Monthly Abnormal Return with the help of the Buy and Hold abnormal return approach. There is an overall positive short term abnormal returns were found in the post event period as compared to the pre-event period. And for the long term impact of share repurchases on the wealth of shareholders it was found that in initial months i.e., in the year 2014 it shows the negative return while there is a gradual increase in return of the shareholders there after. Particularly in the year 2016 it shows the major post buyback improvement in return.

**Key Words:** Share Repurchases, Market Model, Abnormal Returns, CAR, Buy and Hold Abnormal Return.

### 1. INTRODUCTION:

A share repurchases is a corporate action, where companies are taking back their already issued shares from the existing shareholders at more than prevailing Market Price. There is a very wide literature available in UK & US about share repurchases and its side lines. Originally this concept was first started in US 1960, followed by Canada 1980 and then everywhere gradually. In the advanced country the dividends are now less preferred methods of returning cash as compared to share repurchases (Skinner, 2008, R.L.Hyderabad, 2009). But in India this concept is yet not work as dividend substitution hypothesis. Majorly IT and Pharma Companies are taking lead of share repurchases in Indian capital market to reward its shareholders. (Mr.Sharthak Kumar Jena, 2016). After seeing a very bad downward trend of Indian capital market in the 19th century Indian corporate has appealed to the regulating authority of the capital and Finance market for bringing concept of Share Repurchases in India. During this time Indian businesses were working as per the Companies Act 1956. And as per the section 77(1) of Companies Act 1956 None of the Companies were allowed to buyback their shares in order to prevent some private objective of insider ownership of the business. But then as the Indian corporate have lobbied for it to improve the capital market of country. The Need and importance of it realized in 1998 with some amendments made in the companies Act in the year 1999. So the companies could go for buyback thereafter as per the Section 77A, 77AA, & 77B of the companies Act 1956. Currently all the companies have to adhere to Section 68 to 70 of Companies Act 2013 for share repurchases. Share Repurchases can be possible by following two Methods: 1) Tender Offer 2) Open Market-Book Building process or Stock Exchange from odd lot holders and from the employees of the company in pursuant to a scheme of stock option or sweat equity.

There are many motives behind share repurchases but in majority of the cases management disclosed reasons (related to Stock Price) speaks of to reward the shareholders, to reduce its excess cash flows, to improve the capital Structure of the business, For Signalling to the market about undervaluation of shares, to counter dilution effect of stock options etc. Basically there are two objectives behind share repurchases one is Financial and the other is Non-Financial. In majority of the cases when the business wants to improve the portion of its Promoters holding it goes for share repurchases. And in rest of the cases of Non-financial objective like to avoid hostile takeover (Silver and Vishny, 1986; Dittmar, 2000, N.Nauman Farooqi, 2004), Flexibility offered by repurchase plan compared to dividends (Mitchell and Robinson, 1999, Jagannathan and Stephens, 2000, N.Nauman Farooqi, 2004)

As per the statistical records found on moneycontrol.com for the year 2017-18 recently many big corporate giants like HCL tech approves Rs. 4,000 Cr buyback offer, TCS Rs. 16,000 Cr. PC Jeweller approves at Rs. 350 P.S Buyback in May, 2018, Novartis board approves Rs. 231 Cr. Share Buyback Plan in September 25, 2017, Wipro

Rs.11,000 Cr Buyback proposal on August 30,2017 &like that many other in the buyback list with good figures viz., Infosys, just dial ltd etc. So With the increasing usage of share repurchases as corporate restructuring and strategic financial tool by the Indian corporate recently researcher has made an attempt to understand the concept of buyback with its long term impact on shareholders wealth and financial performance of the selected sample company **Jagran Prakashan Ltd** &titled the Paper as “ **Long run impact of share repurchase on financial performance of JP ltd and wealth of its share holders.**”The length of the paper further followed with Section-II literature review, Section-III Research Methodology, Section –IV Data Analysis and Section –V Findings and Conclusion followed by appendix of the analysed data.

## 2. LITERATURE REVIEW:

### • Indian Studies:

**As per the study conducted by Varma, U., & Munjal, A. (2016). A Study of Motivators of Tender Offer Repurchases in the Indian Environment.** The more significant drivers are reduction of earnings per share through buyback, correction in capital structure and improvement in return ratios like return on net worth . The paper also looks at identifying the impact on promoter’s holding through tender offer buyback and identify it is one of the drivers of share buyback((Varma, 2016)

**As per Motives of buy-back : An empirical study of selected Indian companies** by MS. Charu Sarin The magnitude of buyback activities in India has been studied for the period 2010-11 to 2012-13 wherein it is observed that maximum buyback was done in the year 2011-12 35% increase as compared to the previous year. This empirical study shows the effect of share buyback on the share price of the company, and results shows that which is not always positive. The stock buyback practice has also been analyzed from the shareholder’s angle, which is shown using the effect of announcement of buyback and comparing the share price at Different point of time in the pre-buyback period and the post-buyback period. In 62% of cases there is a positive return found in the market price as compared to 2 months before the announcement and in rest negative. So majorly this action leads to greater improvement in the market with proportionately less negative returns too. The post-buyback effect is been analyzed and it has been noted that share price of more than 90% of the firms announcing buyback has gone up. Furthermore, effect on earning per share has also been studied and results revealed that 2/3 of companies EPS has increased.(Sarin, DEC-2013)

**As per the article on “Share Repurchases: A Literature Review”**(Mr. Sarthak Kumar Jena, 2016) This article Classifies and organizes literature in relations to the established hypotheses, determinants affecting share repurchase decisions, the effect of share repurchase on liquidity and earning management around share repurchase. In additions to the above, this article also provides a snapshot of SEBI buyback regulations, 1998 and also accommodates all the amendments. according to the studies there are seven hypothesis related to share buyback (viz., Signalling, Excess Capital, Leverage, Stock Option, Takeover, Substitution, Liquidity and Corporate Governance) only substitution hypothesis is having a negative relationship with the share buyback.

**As Per “Market Reactions to Multiple buybacks in India”** which examines the characteristics of share repurchasing firms and market reaction to multiple offers in India. There is a very limited no. of multiple buyback in India. Large firms with more variable operating income, lower MTB ratio and lower Payout ratio are frequent repurchaser of shares as compared to that smaller firms with less variable operating income, higher MTB ratio and higher Payout are infrequent repurchase of shares. The initial or infrequent repurchases earn lower announcement day returns than frequent or subsequent repurchases. Further, the overall Cumulative Abnormal Return (CAR) is negative in post-offer period indicating that all positive returns are realised in pre-offer period only. Study concluded that rather than signalling hypothesis, market reaction to subsequent buybacks is better explained by free cash flow hypothesis. (R.L.Hyderabad, July-Setermber2009)

**Share Buyback and Firm’s Performance: A study of selected Indian companies** has analysed whether the buyback of shares helps in enhancing the operating performance of the companies with different operating ratios and financial ratios by applying paired sample T-test to measure the statistical implications of pre-buyback and post-buyback financial performance. And Wilcoxon and sign test are also used to prove the robustness of results. And the operating ratios have shown a decreasing impact in the post buyback period.(Monika Gupta,july-August,2016) (Gupta)

**To examine the method-wise determinants of share repurchases:** found differences in determinants of share repurchases as per method of buyback followed with censored regression or tobit regression analysis and found that there are different determinants over the decisions of the firm to share repurchases based on the method applied by the firm.(Urvashi Verma,2017)

**To Study the impact of buyback on Non-tendering shareholders:** study has covered characteristics of companies registering for buyback candidature and buyback and shareholders wealth tendering and non-tendering shareholders by computing return in percentage terms for different time periods. And lastly it is found that non-tendering shareholders are at a loss because research revealed that it is not always the case that all the buybacks will improve the long term eps of the firm and hence they may face a wealth transfer effect. (A.K.Mishra, 2015)

- **Foreign Studies:**

**As per Open Market versus Tender Offer Share Repurchases: A Conditional Event Study** shows that firms with higher cash flows, poorer investment opportunities, and larger insider shareholdings are more likely to make tender offers, as are firms with higher dividend yields and greater volatility of returns. In periods of market turbulence or weak business conditions, firms prefer the open market share repurchase. There is a direct relationship between the choice of the repurchase program and the offer terms, and between the offer terms and the Announcement period price reaction there is an indirect relationship between the price reaction And the choice of the repurchase program. (<https://pdfs.semanticscholar.org>, 1999)

**This is the first study to use both firm characteristics and managements' disclosed reasons for repurchases to explain buy-back activity.** Executives' holdings of options, low growth prospects and firm size consistently explain intended repurchase activity. Managements' disclosure that the buy-back is undertaken in response to undervaluation, capital restructuring and liquidity also consistently explain intended repurchases. Actual buy-back activity is generally less than the level announced and is only explained by change in EPS and the length of the buyback program in its model. (Tim Brailsford, 2014)

**As per Market response and Firms Operating Performance surrounding actual share repurchases: Evidence from Hong Kong:** studied the changes and impact on firms operating performance measures with three different ways, 1. Time series behavior of operating performance measures, Operating performance measures relative to control firms, abnormal changes in operating performance measures relative to control firms by regression analysis has observed that actual repurchases has an impact on the operating performance of the firm. (Diana F.Y.Goh, 2006)

**An Analysis of Operating Performance and Firm Characteristics around Open Market Share repurchases:** study investigated operating performance and firm characteristics and abnormal changes in operating performance and firm characteristics by applying Median differences in Operating performance variables between repurchase announcing firms and control firms and post announcement differences are regressed on pre-announcement median operating variable differences are regressed with OLS regression method. And it is found that there is a significant improvement in operating performance post share repurchases with quarterly analysis of the data. (Terry D. Nixon, 2005)

**Share buyback Motives and Stock Market Reactions in India – An Empirical Study :Phd thesis of Gurpreet kaur Dhatt , Punjab University Chandigarh .** There is a significant abnormal return for the companies announcing buyback . and it is found on the day of announcement to six days prior to the announcements. Market reacted more favourably to the announcements made by companies that were small in size and vice a versa. So there is a inverse relationship between size of the company and announcement period abnormal return. And there is an inverse relationship between Market –to –book-ratio of the company and the announcement period price reactions. And the percentage of shares announced and abnormal share return of buyback company found a negative relationship means share buyback % doesn't influence the abnormal return of the company.(KaurDhatt, 2011)

A Study on Buyback Shares in Listed Bombay Stock Exchange (BSE) Companies in India: Phd thesis of Ms. V.SUBHAMATHI. Study used Garch model Event Study Methodology and it is found that the overall average returns were increased post buyback announcement and difference among the market prices are highly deviated by comparing the Pre-event period. Approximately the difference is increased by 50%. (V.Shubhamathi, 2015)

### **3. RESEARCH METHODOLOGY:**

The type of the research is an empirical research. The data used were secondary. Collected from e-sites, Journals, Magazines& Annual report of Company. This study is longitudinal in nature as time period covered is 2013 to 2017 to see long term impact of the event. Study includes Sample of just one company randomly selected from BSE Listed and covered under S&P500 BSE index .viz Jagran Prakashan ltd which has entered into share repurchases on the date November 1,2013 Public announcement and December 11 ,2013 Opening of Buyback.

**1. Research Objective:** To study the short-term impact of share repurchases on shareholders wealth.

- To study the long term impact of share repurchases on the wealth of shareholders.

## 2. Research Hypothesis:

**Hypothesis 1 : H0:** There is a no Significant change in Abnormal returns of the Firm Jagran Prakashan ltd in pre buyback announcement.

**H1:** There is a significant change in abnormal returns of the Firm in pre buyback announcement.

**Hypothesis 2:H0:** There is a no Significant change in Abnormal Returns of the firm in Post Buyback Announcement.

**H1:** There is a Significant Change in Abnormal Returns of the Firm in Post Buyback Announcement.

**Hypothesis 3: H0:** There is a significant change in Abnormal Returns of the firm Jagran Prakashan ltd in the long run after buyback.

**H1:** There is a No Significant change in Abnormal Returns of the firm Jagran Prakashan ltd in the long run after buyback.

**3. Research Approach:** An Event study methodology is employed in order to check the Pre and Post event changes in share prices. Buy and Hold Abnormal return approach is used to find abnormal return in the long run.

**4. Research Model:** A Market Model is used to find the Expected return of the Securities Repurchased to find Abnormal Return of the firm.

## 4. DATA ANALYSIS:

**Event Study Methodology:** Event study methodology is used primarily to test the null hypothesis that the market is efficient in terms of information efficiency and within the domain of market efficiency to examine the impact of buyback announcement on the security, i.e., shareholders wealth. The following steps were performed to apply event study method:

- Finalisation of Event date considered as the date of public announcement for buyback by Jagran Prakashan ltd i.e., November 1, 2013. (From: SEBI Status Report on Share Buyback)
- Choosing of Estimation window of 180 days based on literature survey.
- The event window of 20 days before the event and 20 days after the event i.e., 41 days has been taken. (i.e., event period)
- Compute the Expected return by employing Market model
- To find the Abnormal return of the security by taking the difference between Actual Return of the security,  $i$  for the event period (41 days) to estimated return of the security,  $i$  for the event period
  - $AR_{it} = R_{it} - E(R_{i,t}), t = (-20, -19, \dots, 20)$

Where

$AR_{it}$  = Abnormal Returns of the Security 'i' for the period 't'

$R_{it}$  = Actual return of the security 'i' on day 't' &  $R_{it} = (P_{it} - P_{it-1}) / P_{it-1}$

Where  $E(R_{it})$  = Expected (estimated) return of the security. &  $E(R_{it}) = \alpha_i + \beta_i R_{m,t} + \epsilon_{it}$

Where

$R_{i,t}$  = Normal (Expected Return) return of the security i, for the time period t

$R_{m,t}$  = Return on Market index here it Proxies by S&P BSE Index.  $R_{m,t} = (I_t - I_{t-1}) / I_{t-1}$

$\epsilon_{it}$  = Random error term and its expected value is zero.

In the present study an estimation window of 180 days have been used, i.e., -210 days -30 days from the event date.

- The AR are then averaged across the sample of firms for event window (here -20 to +20 days) as follows:

$$1AARs = \text{Avg}(AR_t) = (1/N) AR_{it}$$

Where,

N is the number of sample observations

- Cumulative abnormal returns (CAR) were calculated with the help of average abnormal returns to see the reaction over a period of time.

$$CAAR_t = \sum \text{Avg}(AR_t) \text{ (where } t = \text{event window of 41 days considered)}$$

- Finally, t statistics were calculated cross-sectionally by using standard deviation Of Abnormal returns. (Here Average returns were not computed because this is a case study of Single firm Jagran Prakashan)

**Table showing Short term Abnormal return of Jagran Prakashan ltd for the event period of 41days (-20 to +20 days after and before buyback of shares i.e., 01/11/2013)**

Days	Actual Return of the Security	Estimated Return / Normal Return of the Security	Abnormal Return= AR-ER (4)= (2)-(3)	CAR=Cumulative Abnormal Return
(1)	(2)	(3)	(4)	(5)
-20	-0.00805	0.006268625	-0.01431	-0.01431
-19	-0.00187	-0.001186808	-0.00305	-0.01736
-18	-0.00501	-0.001853873	-0.00316	-0.02052
-17	0.006918	0.000265039	0.00665	-0.01387
-16	-0.01062	0.00375	-0.01437	-0.02824
-15	-0.00316	-0.00099	-0.00217	-0.03041
-14	-0.0057	0.00348	-0.00918	-0.03959
-13	0.05286	-0.00259	0.05545	0.01586
-12	0.00847	-0.002599417	0.01107	0.02693
-11	-0.015	-0.003972786	-0.0189	0.00803
-10	0.018879	0.007524277	0.01135	0.01938
-9	0.022714	-0.001265287	0.02397	0.03745
-8	0.016949	-0.00201083	0.01895	0.01348
-7	-0.00747	-0.003305721	-0.00417	-0.00547
-6	-0.00695	-0.002246265	-0.00471	-0.0013
-5	-0.01341	-0.002246265	-0.01117	-0.00601
-4	-0.02009	-0.003619634	-0.01648	0.00516
-3	0.016285	0.005366125	0.01092	0.02164
-2	0.013056	0.000500474	0.01255	0.01072
-1	0.000586	0.000971343	-0.00183	-0.00183
0	0.021077	-0.000872895	0.021949	0.02011
1	0.008601	0.00191346	0.00669	0.02680
2	-0.01592	-0.007707588	-0.00822	0.01858
3	0.001733	-0.000781447	0.00251	0.02109
4	-0.00288	-0.002592952	-0.00029	0.02080
5	-0.00578	-0.003730921	-0.00205	0.01875
6	0.006399	0.001049421	0.00535	0.02410
7	-0.00819	-0.004673993	-0.00352	0.02058
8	-0.00177	-0.002155578	0.00038	0.02096
9	-0.04194	-0.017917383	-0.02403	-0.00307
10	0.01603	0.004828423	0.01121	0.00814
11	0.004854	0.000443331	0.00441	0.01255
12	-0.01389	-0.006911338	-0.00698	0.00557
13	-0.00061	-0.001701803	0.00109	0.00666
14	-0.00919	-0.005068032	-0.00413	0.00253
15	-0.00247	-0.00243215	-0.00004	0.00249
16	-0.00247	-0.003650886	0.00118	0.00367
17	0.022444	0.007345313	0.01510	0.01877
18	0.017073	0.005237893	0.01184	0.03061
19	-0.01139	-0.005931223	-0.00546	0.02515
20	-0.00243	-0.002413272	-0.00002	0.02513

(Authors Own Compilation)

**Analysis and interpretation:**

There is a No Negative returns found on the announcement day Both AR & CAR were found to be positive as compared to its preceding day i.e., Pre period( -1,0) AR & CAR. More over Considering event window set of (-1,+1) (-2,+2) (-5,+5) (-10,+10) (-20,+20) it was found that there is a negative AR & CAR on the immediately preceding day i.e., -0.00183 so market doesn't react much on the announcement effect of share buyback. But certainly there is a positive return found in post period i.e., 0.02680. However there is a positive response shown in the event period set

of (-2, +2) with improved CAR (0.01858) in post period as compared to (-2days) Pre-period (0.01072). However in case of 5 days event window set there is a negative return in pre-period and positive in post-period. And there is a positive AR & CAR for the event period set of (-10, +10 days). Importantly to note here is that in post period there is a less positive return found as compared to pre-period. And lastly for (-20, +20 days ) event window set there is a good percentage of AR & CAR in the post event period. Means market and investor gains out of the event a positive return on their investment in post buyback period as compared to Pre-period event return. So from these results Null hypothesis (H0) for significant change in AR in pre- event period is rejected. And an Alternate Hypothesis (H1) is accepted. Similarly for the post period H0 is rejected because there is a significant changes found in the abnormal return of the security in post announcement period. And lastly it can said that there is a positive impact of share buyback in the short term period.

**Section-4.2 Long run Buy and Hold Abnormal Return:**

As per this approach an Abnormal Return of the security is to be calculated on the basis of the Monthly return of the sample firm and its controlling firm. **AR sim = MR si-MR ci**

Where, ARsim= Abnormal monthly return for sample firm i for the month m;

i = 1, 2,3...N (sample size);

m = 1, 2,3...36 months

$$MR_{sim} = \frac{CMP_{d+1} - CMP_d}{CMP_d}$$

$$MR_{cim} = \frac{CMP_{d+1} - CMP_d}{CMP_d}$$

Where,

MRsim= Monthly return on sample firm i for month m;

MRcim= Monthly return on control firm i (corresponding to sample firm si);

CMPd= Closing market price for the day d (i.e. date of start of buyback);

CMPd+1 = Closing market price one month after the day d (i.e. date of start of Buyback).

Here Our Sample Firm for the study is Jagran Prakashan ltd which is from Media and Entertainment sector. And its Controlling firm chosen is DB Network Ltd. The Criteria for selecting the Controlling firm is based on the industry, size and Market capitalization matching with the Sample Firm.

**Table showing calculation of Monthly Abnormal Return (Long run) of Jagran Prakashan ltd in post buyback period.**

Date: CMP+1	MRsim=CMPd+1- CMPd/CMPd	MRcim=CMPd+1- CMPd/CMPd	ARsim=MRsim-MRcim
1/11/2014	0.0306	0.0905	-0.0599
2/11/2014	0.0444	0.1443	-0.0999
3/11/2014	0.0768	0.1457	-0.0690
4/11/2014	0.2531	0.0772	0.1759
5/11/2014	0.2484	0.0557	0.1927
6/11/2014	0.4691	0.1515	0.3176
7/11/2014	0.4409	0.1558	0.2851
8/11/2014	0.3209	0.2180	0.1030
9/11/2014	0.5351	0.2748	0.2603
10/11/2014	0.5274	0.2616	0.2657
11/11/2014	0.6386	0.3309	0.3077
12/11/2014	0.7917	0.4441	0.3476

1/11/2015	0.7019	0.4990	0.2029
2/11/2015	0.6540	0.4132	0.2408
3/11/2015	0.5993	0.3824	0.2169
4/11/2015	0.5612	0.4679	0.0933
5/11/2015	0.3885	0.3591	0.0294
6/11/2015	0.3958	0.2766	0.1192
7/11/2015	0.4579	0.2532	0.2047
8/11/2015	0.7456	0.2553	0.4903
9/11/2015	0.6442	0.1602	0.4840
10/11/2015	0.8024	0.1908	0.6116
11/11/2015	0.8782	0.2539	0.6242
12/11/2015	0.9053	0.2434	0.6620
1/11/2016	1.1275	0.2366	0.8909
2/11/2016	0.9691	0.2210	0.7480
3/11/2016	0.9173	0.2530	0.6643
4/11/2016	1.0069	0.2123	0.7947
5/11/2016	1.1591	0.2578	0.9013
6/11/2016	1.1578	0.4558	0.7020
7/11/2016	1.3302	0.4803	0.8499
8/11/2016	1.3182	0.5874	0.7308
9/11/2016	1.3731	0.5719	0.8013
10/11/2016	1.5385	0.5720	0.9665
11/11/2016	1.2929	0.4574	0.8355
12/11/2016	1.1881	0.4159	0.7722

(Author's Own Compilation)

## 6. FINDINGS:

In Short Run market found a positive change in abnormal return of the shareholders in post buyback period as compared to its pre-buyback announcement return. In the long run surprisingly there is a negative return found in initial month but then after it shows a positive increasing trend of abnormal return of the buyback firm Jagran Prakashan Ltd. So this buyback has given a good impact on wealth of shareholders in the long run especially the in the 3<sup>rd</sup> year (2016). Post buyback returns have shown a good improvement as compared to its previous two years. The study includes only one Sample Company so the results of the study can not be applicable to all other firms applying share buyback programme. Future research can be done with more sample firms to get the overall outcome of the study. Relationship between debt policy of the business and share buyback can be done. Impact of buyback on capital structure of the firm and business valuation thereafter can also be carried by future researcher under the corporate finance literature. Whether the Indian firms are opting for the concept of leverage buyback or not and its impact on the wealth of the shareholders and debt holders can be studied in depth.

## 7. CONCLUSION:

In this paper the objective was to check the impact of share buyback on the wealth of the shareholders from both of the time horizons short term and long term. For both of the time horizons results shows the same status. That is improvement in return of the shareholders in post buyback period as compared to pre-buyback period. Moreover there is a no significant impact of the announcement of buyback on share prices of the firm as there is a negative abnormal return found before buyback of shares. So this research refuses signalling hypothesis and it is concluded that buyback may be resorted by the company for improving its earnings management as there is good percentage of abnormal monthly return found in post buyback period. Moreover looking to the annual financial data of the Jagran Prakashan Ltd for the year 2013-14(i.e., Event Period) it was even realized that company must be in a need to manage its target capital structure and wants to improve its financial leverage.

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**Appendix-A**

**Table-1 Calculation of Estimated Return (Rit) of the security for the event period-20 to +21 days((DT/MT/YEAR)**

Date	Return S&p	Alpha (intercept)	Beta(Regression Coefficient)	Eit=random error term	E(Rit)= $\alpha_i + \beta_i R_{m,t} + \epsilon_{it}$
10/3/2013	0.0197	-0.00146	0.392391	0	0.006268625
10/4/2013	0.0007	-0.00146	0.392391	0	-0.001186808
10/7/2013	-0.0010	-0.00146	0.392391	0	-0.001853873
10/8/2013	0.0044	-0.00146	0.392391	0	0.000265039
10/9/2013	0.0133	-0.00146	0.392391	0	0.003757321
10/10/2013	0.0012	-0.00146	0.392391	0	-0.000990613
10/11/2013	0.0126	-0.00146	0.392391	0	0.003482647
10/14/2013	0.0038	-0.00146	0.392391	0	2.96044E-05
10/15/2013	-0.0029	-0.00146	0.392391	0	-0.002599417
10/17/2013	-0.0064	-0.00146	0.392391	0	-0.003972786
10/18/2013	0.0229	-0.00146	0.392391	0	0.007524277
10/21/2013	0.0005	-0.00146	0.392391	0	-0.001265287
10/22/2013	-0.0014	-0.00146	0.392391	0	-0.00201083
10/23/2013	-0.0047	-0.00146	0.392391	0	-0.003305721
10/24/2013	-0.0020	-0.00146	0.392391	0	-0.002246265
10/25/2013	-0.0020	-0.00146	0.392391	0	-0.002246265
10/28/2013	-0.0055	-0.00146	0.392391	0	-0.003619634
10/29/2013	0.0174	-0.00146	0.392391	0	0.005366125
10/30/2013	0.0050	-0.00146	0.392391	0	0.000500474
10/31/2013	0.0062	-0.00146	0.392391	0	0.000971343
11/1/2013	0.0015	-0.00146	0.392391	0	-0.000872895

11/5/2013	0.008601	-0.00146	0.392391	0	0.00191346
11/6/2013	-0.01592	-0.00146	0.392391	0	-0.007707588
11/7/2013	0.001733	-0.00146	0.392391	0	-0.000781447
11/8/2013	-0.00288	-0.00146	0.392391	0	-0.002592952
11/11/2013	-0.00578	-0.00146	0.392391	0	-0.003730921
11/12/2013	0.006399	-0.00146	0.392391	0	0.001049421
11/13/2013	-0.00819	-0.00146	0.392391	0	-0.004673993
11/14/2013	-0.00177	-0.00146	0.392391	0	-0.002155578
11/18/2013	-0.04194	-0.00146	0.392391	0	-0.017917383
11/19/2013	0.01603	-0.00146	0.392391	0	0.004828423
11/20/2013	0.004854	-0.00146	0.392391	0	0.000443331
11/21/2013	-0.01389	-0.00146	0.392391	0	-0.006911338
11/22/2013	-0.00061	-0.00146	0.392391	0	-0.001701803
11/25/2013	-0.00919	-0.00146	0.392391	0	-0.005068032
11/26/2013	-0.00247	-0.00146	0.392391	0	-0.00243215
11/27/2013	-0.00558	-0.00146	0.392391	0	-0.003650886
11/28/2013	0.022444	-0.00146	0.392391	0	0.007345313
11/29/2013	0.017073	-0.00146	0.392391	0	0.005237893
12/2/2013	-0.01139	-0.00146	0.392391	0	-0.005931223
12/3/2013	-0.00243	-0.00146	0.392391	0	-0.002413272

(Source: Adjusted Closing Stock Prices from www.finance.yahoo.com)

(Event date from Sebi status report on buyback from sebi website, E(R<sub>i,t</sub>) is author's Own Computation)

**Table:2 Monthly return of sample firm Jagran Prakashan ltd from 1/11/2014(MM/DD/YEAR) to 12/11/2016 i.e, 3 years from the date of start of buyback.**

Date: CMP+1	Adjusted Close	Date: CMP	Adjusted Close	MRsim=CMPd+1-CMPd/CMPd
1/11/2014	78.306168	12/11/2013	75.981598	0.0306
2/11/2014	79.354492	12/11/2013	75.981598	0.0444
3/11/2014	81.815811	12/11/2013	75.981598	0.0768
4/11/2014	95.216278	12/11/2013	75.981598	0.2531
5/11/2014	94.851646	12/11/2013	75.981598	0.2484
6/11/2014	111.625031	12/11/2013	75.981598	0.4691
7/11/2014	109.482773	12/11/2013	75.981598	0.4409
8/11/2014	100.366798	12/11/2013	75.981598	0.3209
9/11/2014	116.638809	12/11/2013	75.981598	0.5351
10/11/2014	116.052269	12/11/2013	75.981598	0.5274
11/11/2014	124.505173	12/11/2013	75.981598	0.6386
12/11/2014	136.133743	12/11/2013	75.981598	0.7917
1/11/2015	129.315384	12/11/2013	75.981598	0.7019
2/11/2015	125.672691	12/11/2013	75.981598	0.6540
3/11/2015	121.516296	12/11/2013	75.981598	0.5993
4/11/2015	118.620827	12/11/2013	75.981598	0.5612
5/11/2015	105.497803	12/11/2013	75.981598	0.3885
6/11/2015	106.058228	12/11/2013	75.981598	0.3958
7/11/2015	110.775032	12/11/2013	75.981598	0.4579
8/11/2015	132.631165	12/11/2013	75.981598	0.7456
9/11/2015	124.925476	12/11/2013	75.981598	0.6442
10/11/2015	136.949203	12/11/2013	75.981598	0.8024
11/11/2015	142.705399	12/11/2013	75.981598	0.8782
12/11/2015	144.768021	12/11/2013	75.981598	0.9053
1/11/2016	161.652832	12/11/2013	75.981598	1.1275
2/11/2016	149.612808	12/11/2013	75.981598	0.9691
3/11/2016	145.679428	12/11/2013	75.981598	0.9173
4/11/2016	152.490906	12/11/2013	75.981598	1.0069
5/11/2016	164.051239	12/11/2013	75.981598	1.1591
6/11/2016	163.955307	12/11/2013	75.981598	1.1578

7/11/2016	177.050629	12/11/2013	75.981598	1.3302
8/11/2016	176.139236	12/11/2013	75.981598	1.3182
9/11/2016	180.312454	12/11/2013	75.981598	1.3731
10/11/2016	192.880127	12/11/2013	75.981598	1.5385
11/11/2016	174.220505	12/11/2013	75.981598	1.2929
12/11/2016	166.257782	12/11/2013	75.981598	1.1881

(Source: Adjusted Closing Stock Prices from www.finance.yahoo.com)

**Table;3 Monthly return of Control firm DB Corp ltd from 1/11/2014(MM/DD/YEAR) to 12/11/2016 i.e, 3 years from the date of start of buyback.**

Date: CMP+1	Adjusted Close	Date: CMP	Adjusted Close	MRcim=CMPd+1-CMPd/CMPd
1/11/2014	272.9907	12/11/2013	250.3335	0.0905
2/11/2014	286.4471	12/11/2013	250.3335	0.1443
3/11/2014	286.819	12/11/2013	250.3335	0.1457
4/11/2014	269.6601	12/11/2013	250.3335	0.0772
5/11/2014	264.266	12/11/2013	250.3335	0.0557
6/11/2014	288.2606	12/11/2013	250.3335	0.1515
7/11/2014	289.3301	12/11/2013	250.3335	0.1558
8/11/2014	304.8946	12/11/2013	250.3335	0.218
9/11/2014	319.1283	12/11/2013	250.3335	0.2748
10/11/2014	315.8291	12/11/2013	250.3335	0.2616
11/11/2014	333.1736	12/11/2013	250.3335	0.3309
12/11/2014	361.4997	12/11/2013	250.3335	0.4441
1/11/2015	375.2621	12/11/2013	250.3335	0.499
2/11/2015	353.7706	12/11/2013	250.3335	0.4132
3/11/2015	346.0664	12/11/2013	250.3335	0.3824
4/11/2015	367.4667	12/11/2013	250.3335	0.4679
5/11/2015	340.217	12/11/2013	250.3335	0.3591
6/11/2015	319.5776	12/11/2013	250.3335	0.2766
7/11/2015	313.7282	12/11/2013	250.3335	0.2532
8/11/2015	314.2412	12/11/2013	250.3335	0.2553
9/11/2015	290.4321	12/11/2015	250.3335	0.1602
10/11/2015	298.0954	12/11/2015	250.3335	0.1908
11/11/2015	313.9038	12/11/2015	250.3335	0.2539
12/11/2015	311.253	12/11/2013	250.3335	0.2434
1/11/2016	309.5662	12/11/2013	250.3335	0.2366
2/11/2016	305.6695	12/11/2013	250.3335	0.221
3/11/2016	313.6609	12/11/2013	250.3335	0.253
4/11/2016	303.4768	12/11/2013	250.3335	0.2123
5/11/2016	314.8791	12/11/2013	250.3335	0.2578
6/11/2016	364.4353	12/11/2013	250.3335	0.4558
7/11/2016	370.5749	12/11/2013	250.3335	0.4803
8/11/2016	397.3768	12/11/2013	250.3335	0.5874
9/11/2016	393.4872	12/11/2013	250.3335	0.5719
10/11/2016	393.5364	12/11/2013	250.3335	0.572
11/11/2016	364.8323	12/11/2013	250.3335	0.4574
12/11/2016	354.4438	12/11/2013	250.3335	0.4159

(Source: Adjusted Closing Stock Prices from www.finance.yahoo.com)