

Long-term Stock Market and Operating Performance of Buyback Firms in India

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Abstract

Share buyback, also known as share repurchase, was allowed in India in 1998 through an amendment to Companies Act, 1956. Securities and Exchange Board of India (SEBI) announced regulatory framework for share buybacks in November 1998. As per the regulations companies can buyback shares through i) tender offer ii) odd lots iii) open market and iv) book building. However, open market mode has emerged as the most preferred alternative. All of the buybacks in recent times have been through open market. Possible motivations for buyback are i) to signal undervaluation of stock ii) to reduce free cash flows iii) to increase financial leverage, and iv) to improve liquidity. Objectives of this study are to examine the post-buyback stock market performance and operating performance of companies which have gone for open market share buybacks in India. The study uses a sample of 82 open market buyback companies. Study period is 2016-2021. Cumulative abnormal returns (CAR) and buy-and-hold abnormal returns (BHAR) are computed to detect abnormal stock market performance. Returns on BSE Sensitive Index and returns on industry and size matched control sample are used as benchmark returns. Four operating performance measures are used to detect abnormal operating performance. Operating performance of sample buyback firms is compared with that of industry and size matched control sample. The results show that shareholders of buyback firms do not earn significant positive long-term abnormal returns and improvement in operating performance during post-buyback period is not sustained beyond one year after the buyback.

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Keywords: buyback, long-term, stock market performance, operating performance

1. INTRODUCTION

Firms in the USA began share buybacks in early 60s. The amount of cash spent by S&P 500 companies in 12 months ended March 2024 is USD 816.5 billions.

According to the review article of Hsieh and Wang (2009) share repurchases have surpassed cash dividends and become the dominant form of corporate payouts since the last decade. The increased interest shown by the repurchase program in the USA spread to Canada in the 1980s. Share repurchase in Europe also started in the 1980s. In Asian countries buybacks were permitted in Japan in 1995 followed by Malaysia in 1997, Singapore, Hong Kong and India in 1998, and Taiwan in 2000.

Share buyback was allowed in India from 1998-99 through an amendment to Companies Act, 1956. There were various factors which prompted the Indian government to consider introducing the share buybacks. One of the factors was prolonged depression in the stock market during 1996. Business houses and trade associations had made a strong case for share buyback as possible solution for reviving the stock market, because share buyback price is often higher than the prevailing market price.

More than 1000 buybacks are implemented during 1999-2024 over INR 2.5 trillion were spent.

Objectives of this study are to examine stock returns and operating performance following open market share buybacks.

The next section covers regulatory frame work for buybacks in India. Section-3 summarizes the reasons for buyback; literature review is given in section-4. Methodologies are explained in section-5, details of data and sample are given in section-6. Results are discussed in section-7 and conclusions are given in section-7.

2. BUYBACK REGULATIONS IN INDIA

Securities and Exchange Board of India (SEBI) announced regulatory framework for share buybacks in November 1998. As per the regulations a company may buyback its shares or other specified securities by any one of the following methods:

(a) Tender offer

- (b) From open market through – (i) Stock exchanges (ii) Book-building process
- (c) From odd-lot holders.

However, open market through stock exchanges mode has emerged as the most preferred alternative. This mode offers the companies flexibility in timing and pricing of buybacks. All of the buybacks in recent times have been through open market.

Other regulations are:

- The buyback should be authorized by the Articles of Association of the company.
- The buyback should be approved with special resolution
- The sources of funds should be from the free reserves, securities premium account, or the proceeds of any stocks or other specified securities, other than the types of securities bought back, but should not be from borrowing for the specific purpose.
- Only fully paid up shares are eligible for buyback.
- Promoters are not allowed to participate in open market buyback
- Amount used for the buyback should not exceed 10% of the total paid-up capital and free reserves of the company
- Buyback should not be more than 25% of the paid up capital. In other words buyback should not be more than 25% of outstanding shares.
- Post-buyback debt-equity ratio should not exceed 2:1
- The buyback has to be completed within 12 months from the date of passing of the special resolution.
- The shares have to be extinguished and physically destroyed within 7 days after the closure of buyback.
- Buyback cannot be affected where there is default by the company in repayment of public deposit or interest, redemption of debentures or

preference stocks, payment of dividend, or payment of loan or interest to financial institutions or banks.

3. REASONS FOR SHARE BUYBACK

There are number of possible reasons for share buybacks. These reasons can be classified in the following way:

- a) *Information signaling*: Management of company should understand the value of their stock better than anyone outside the company. A buyback will represent the management's signal that the stock is undervalued.
- b) *Leverage*: A buyback will often increase financial leverage, thus, companies with additional debt capacity may buyback shares in order to move toward a more desirable capital structure
- c) *Takeover defense*: A buyback may be used as a defensive tactic in a hostile takeover by increasing the leverage of the company, reducing the liquidity and number of shares available to the hostile raider. A buyback also increase relative shareholding of promoters.
- d) *Wealth transfer*: A buyback that is undertaken when shares are undervalued transfers wealth to non-participating from participating shareholders. A buyback may also result in a wealth transfer from bondholders or creditors to the non-participating shareholders because the increased debt used to finance the buyback reduces the assets of the company and therefore the value of the claims of creditors. Another aspect of wealth transfer through buyback is from government to participating and non-participating shareholders as buyback reduces tax impact compared to the distribution of cash in the form of dividends.
- e) *Free cash flow*: It is argued that management having access to 'free cash flow' tend to invest in businesses which destroy the wealth of shareholders. In

such situations, buyback is an efficient means of returning cash to shareholders who can make better use of the cash than the company.

- f) *Earnings per share*: Price-earnings ratio is a popular tool used for stock market valuation of firms. A buyback improves earnings per share and in turn the valuation of the firm. It also stabilizes earning per share in the event of declining net profit.
- g) *Temporary Cash Flows*: When a firm receives temporary cash flows and it does not have profitable investment opportunities it has two alternatives to distribute the cash to shareholders. If it chooses to distribute the temporary cash flow through higher dividend, the cash distribution gets institutionalized. The shareholders' expectations about future dividends will rise. Since the similar cash flows are not expected in future, firms prefer to distribute the temporary cash flow through buyback.

These are the major reasons for share buybacks. However, it is not an exhaustive list. Other possible reasons include savings in administrative overheads by eliminating fractional shares and odd-lot holdings, and improving the value of stock options held by management.

A number of studies in the USA have endeavored to evaluate these possible reasons for share buyback.

4. LITERATURE REVIEW

The notion that share repurchases convey information about a firm's future value was discussed by Easterbook (1984), Miller and Rock (1995) and Jensen (1986). This framework assumes that there exists information asymmetry between managers and investors: That is, managers are better informed about the firm's true value than outside investors and have an incentive to convey favorable information to the market. Esterbook (1984) and Jensen (1986) suggest ideas that when firms have excess cash, it is essential for firms to return free cash flow to shareholders and thus lower the agency costs associated with negative net present value

investments. Thus, firms facing limited investment opportunities should return excess cash to shareholders by paying dividends or repurchasing shares, so that it can be reinvested in other assets (Baker, Powell and Veit, 2003; Grullon and Ikenberry, 2000; Lie 2000). Empirical studies provide evidence supporting this argument. For instance, Grullon and Ikenberry (2000) finds that the market reacts positively to share repurchase programs announced by firms with declining investment opportunities. In addition, Lie (2000) finds that the amount of excess cash held by the repurchase-announcing firms is positively related to the stock price reaction.

Researchers examined hypotheses about share repurchases using different but complementary approaches-examining short-run and long-run abnormal returns following share repurchase program announcements and actual share repurchase. Most have used stock market data to observe the short-run abnormal returns around share repurchase announcements and to make inferences about managers' motives. They infer that the main objective of the share repurchase is to signal undervaluation and return the stock price to a true range after a period of undervaluation (Brav et al., 2005). Their results partially support the information-signaling motive. Empirical evidence suggests that investors under react, on average, to the information conveyed by the announcements of share repurchase program. For instance, Ikenberry, Lakonishok and Vermaelen (1995) report evidence on a long-run positive drift in stock prices subsequent to open-market share repurchase program announcements. If investors do not fully incorporate the valuation effect of the share repurchase announcements in a short period, we should observe long-run abnormal returns following the share repurchase announcements.

Lie (2005) provides evidence on the long-run operating performance improvement following share repurchase offers which implies that managers have some favorable information in mind when announcing share repurchases. This result suggests that at firm's desire to keep its stock price in a true range may result in a firm's decision to signal the stock price undervaluation to the market by means of share repurchase

offers. However, Grullon and Michaely (2004) provide no support for the cash-flow-signaling hypothesis. They find no evidence that U S firms announcing share repurchase experienced an operating performance improvement after the announcement year relative to their peer firms.

Bartove (1991) reports that analysts revise upward their earnings forecasts for firms that announce open-market repurchase program in comparison with those for control firms, which implies that the announcements of a share repurchase program convey favorable information about the firms's future operating performance. However, Grullon and Michaely (2004) find that U S firms announcing open-market share repurchase experience downward earnings expectation revisions than similar non-repurchasing matched controlled firms. Thus, the results on the long-run operating performance following share repurchases remain inconclusive. In summary, empirical evidence on share repurchases supports signaling hypotheses, but is inconsistent on the notion that share repurchases improve a firm's future operating performance. Abdulsalam Alquhaif..etal (2020) analyzed 836 buybacks in Malasia during 2010-15. They found 75% of the buybacks were engaged in accretive buybacks.

Few empirical studies were conducted in India to examine short-run abnormal returns following the announcement of buybacks. Studies of Mohanty (2002); Kaur and Singh (2003); Gupta (2006); and Hyderabad (2009) reported positive abnormal returns around the announcement of buyback. Rao (2011a,, 2011b) examined short-run abnormal returns following the approval of open market buyback and also actual announcement of the buybacks. Both the events created positive abnormal returns. Mishra (2005) used exhaustive list of financial parameters and performance measures to perform trend analysis of buyback firms. Ajit Dayanandan ..etal (2020) examined the market price and liquidity reaction to 239 share repurchase announcements. They reported average abnormal return of 2.07% on announcement day .

To our knowledge, there is no study which examined long-term stock returns and operating performance of buyback firms in India.

The discussion leads to the following hypotheses:

H1: Shareholders of a firm that announces buyback program are likely to earn long-run abnormal stock returns following the buyback.

H2: A firm that announces a share buyback program should have superior operating performance in the future.

5. METHODOLOGY

Monthly windows up to 24 months after the buyback are employed to determine whether share buyback program contribute to long-run abnormal stock returns. We use both cumulative abnormal returns (CARs) and buy-and-hold abnormal returns (BHARs) to detect long-run abnormal stock returns. We compute abnormal returns with reference to two benchmark returns; in one case returns on market portfolio (BSE Sensitive Index) and in another case returns on portfolio of control firms are used as benchmark returns. Control firms are selected based on industry and size.

5.1 Computation of Cumulative Abnormal Returns (CAR)

Monthly returns are computed as:

$$AR_{it} = (R_{it} - E(R_{it})) \quad (1)$$

where, AR_{it} is abnormal return on stock i for month t , R_{it} is raw return on stock i for month t , and $E(R_{it})$ is expected return on stock i for month t . Expected returns on stock is estimated under two cases as given below:

Case-I: return on the BSE Sensitive Index for month t is considered as the expected return for the stock, and

Case-2: return on the portfolio of control firms for month t is considered as the expected return for the stock.

The monthly average abnormal return for the sample is computed as:

$$AR_t = 1/n \sum_{i=1}^n AR_{it} \quad (2)$$

where n is the number of firms in the sample. This cross-sectional mean abnormal return can be interpreted as the return on an equally-weighted portfolio of the sample companies.

A desirable feature of using a cross-sectional mean abnormal return relative to a common event is that averaging across many observations mitigates the influence of other firm specific or market-wide effects that are unrelated to the share buyback announcement. However, relying exclusively on a cross-sectional mean or portfolio return can obscure important price impacts if the predicted impacts are of opposite sign for a subset of the sample observations. Since this possibility is suggested by the information disclosure hypothesis, the number of positive and negative abnormal returns for each month are also reported. Observing the proportion of positive abnormal returns in conjunction with the mean abnormal return provides additional evidence regarding the uniformity of price impacts across the sample.

Cumulative abnormal return (CAR) over period of N months is computed as:

$$CAR = \sum_{t=1}^{t=N} AR_t \quad (3)$$

Observation of CARs over the period will tell us whether the effect is temporary or sustainable

5.2 Computation of Buy-and Hold Abnormal Returns (BHAR)

Buy-and-hold abnormal return (BHAR) for a sample firm is calculated as below:

$$BHAR = \frac{1}{N} \sum_{j=1}^N \left[\prod_{t=1}^{\tau} (1 + R_{j,t}) - \prod_{t=1}^{\tau} (1 + R_{m,t}) \right] \quad (5)$$

Where N is the number of buyback firms, $R_{j,t}$ is the return of j firm in period t , $R_{m_{i,t}}$ is return corresponding to benchmark (BSE Sensitive Index or industry and size matched control sample)

5.3 Computation of Operating Performance

Four operating performance measures: i) Return on Assets (ROA) ii) Return on Invested Capital (ROIC) iii) Operating Profit Margin (OPM) and iv) Cash Flow Return on Assets (CFROA) are used to compare the operating performance of buyback firms with that of control firms during post-buyback period. Control firms are selected based on industry and size. The annual performance is tracked for three years during the post-buyback period.

Return on assets is computed as operating income before depreciation and amortization (EBITDA) scaled by the average of beginning and ending period book value of assets. This measure is unlikely to be affected by changes in capital structure. To check the robustness of the results, we also examine other measures of operating performance. Return on invested capital is computed as EBITDA scaled by the average of beginning and ending period book value of cash-adjusted assets (i.e. book value of assets less cash and short-term investments). Operating margin is computed as operating income before depreciation divided by net sales. Cash flow return on assets is computed as operating cash flow divided by the average of beginning and ending period book value of total assets.

Adjusted performance measure is computed as the difference between the sample firm's operating performance less operating performance of industry and size matched control sample.

6. DATA AND SAMPLE

6.1 Study of Long-term Stock Market Performance

Sources of data for this study are websites of the SEBI (www.sebi.gov.in), the Bombay Stock Exchange (BSE, www.bseindia.com), the National Stock Exchange (NSE, www.nseindia.com). According to the information available on the website of the BSE, there were 130 open market buybacks during 2016-2021 (based on the opening date of buybacks). Documents related to buybacks (public notice, public announcement, corrigendum/addendum to public announcement, post-buy back announcement) are collected from the website of the SEBI. Buybacks after 2021 are not considered as we require at least two years of post-buyback period to track post-buyback performance.

Unlike other studies on buybacks in India, sample of this study consists of only open market buybacks through stock exchanges. Tender offer buybacks are not included in the sample. As reported in literature, information signaling strength varies based on the type of buyback. In tender offer buybacks management announces the specific number of shares it wants to repurchase, the specific offer period (which has to be between 15-30 days), and the single price the company will pay for all the shares bought back. In contrast, in open market buybacks through stock exchanges management announces the maximum buyback price, maximum amount allocated for buyback program, minimum number of shares to be bought back (assuming that all the shares are bought at maximum price and amount allocated for buyback is used fully), offer period (it is relatively longer, but has to be less than one year from the date of approval of buyback). Average price paid for buyback is generally lower than the maximum price indicated in the announcement. Actual amount used for buyback is generally less than the maximum amount allocated for buyback. The board has the right to terminate buyback before the announced closing date. In tender offer buybacks tendering shareholders surrender shares directly to company, whereas, in open market buybacks the purchases are executed through brokers at the prevailing market price. In open market buybacks, company gets flexibility in the implementation of buyback in terms of timing and

pricing. Thus, the impact of open market buybacks found to be less than that for tender offer buybacks.

Of the 130 open market buybacks identified above, the following criteria are used to include a buyback in to the final sample for study of long-term stock market performance:

- i) Stock prices should be available on the BSE website or on the NSE website for two years after the buyback.
- ii) Copy of buyback announcement should be available on SEBI website.
- iii) Copy of post-buyback announcement should be available on SEBI website.

These requirements reduce the sample to 82 open market buybacks through stock exchanges for the analysis of post-buyback stock market performance.

6.2 Study of Long-term Operating Performance

Source of data for this study is *Prowess* (corporate data base provided by Centre of Monitoring Indian Economy).

7. RESULTS

7.1 Long-term Stock Market Performance

Table 1 reports evidence on monthly mean abnormal returns (AR) and cumulative abnormal returns (CAR) for the 24 months after the closure of buybacks for 82 buyback firms during 2016-2021. Abnormal returns are computed based on two benchmarks. In case-1 returns on BSE Sensitive Index are taken as benchmark returns whereas, in case-2 returns on industry-size matched control sample is taken as benchmark returns. According to signaling hypothesis, firms should experience positive abnormal returns following the buyback. Under case-1, the CARs are positive for all the months up to 24 months, except for the first month after the buyback. But, the positive CARs are not statistically different from zero. The CARs are 10.12% and 11.99% for the one and two year periods, respectively. Forty-seven

percent of ARs are positive for one year period whereas, it drops to twenty-five percent for two period. Under case-2, the CARs are positive for 13 months. The CARs are -3.37% and 1.89% for the one and two year periods, respectively. Table 1 also reports the percentage of sample for which AR is greater than zero. Under case-1 forty seven percent and twenty five percent firms reported positive AR for one year and two year period, respectively. The same under case-2 were forty seven percent and thirty four percent.

Table 2 reports post-buyback buy-and-hold returns (BHR) and buy-and-hold abnormal returns (BHAR) for the sample. Under case-1 the mean BHARs are 18.61% and 9.37% for one year and two year periods, respectively. The same under case-2 are -1.65% and -3.55%. Fifty-percent of 12 month BHARs and thirty-eight percent of 24 month BHARs are positive under case-1 and the same under case-2 are forty-seven and thirty-seven percent. None of the post-buyback returns are statistically different from zero.

The results do not support null hypothesis. The results contrary to the prior studies that document positive long-run abnormal returns following buybacks in Canada (Ikenberry et.al, 2000), U.S. (Ikenberry et al. 1995), and Hong Kong (Zhang, 2005).

7.2 Long-term Operating Performance

Table 3 reports operating performance of buyback firms during three years post-buyback period. Buyback firms reported improvement in return on assets (ROA) and return on invested capital during one year after the buyback. The sample of buyback firms reported an average 4% higher ROA and an average 7% higher ROIC compared to peer group firms (control sample). But this improved performance is not sustained beyond one year. Other performance measures (operating margin and cash flow return on assets) have not shown any improvement during post-buyback period. Overall, the results suggest that firms that announce share buyback show operating performance improvement during one year after the buyback.

8. CONCLUSIONS

It has been over two decades since buyback were allowed to use as an alternative payout tool in India. This paper studies the long-run stock market and operating performance of open-market buyback firms in India. We estimate monthly cumulative abnormal stock returns and buy-and-hold abnormal returns for 24 months after the buyback. The sample consists of 82 buybacks during 2016-2021. Two benchmark returns are used to compute abnormal returns. One is return on BSE Sensex Index and the other is return on industry and size matched control sample. We do not find any evidence that the shareholders of buyback firms earn any significant positive abnormal returns in long-run.

We used four operating performance measures: return on assets, return on invested capital, operating margin, and cash flow return on assets. It is observed that the first two operating performance measures improved for the sample of 82 buyback firms when compared to the sample of matched control firms during one year after the buyback. This improved performance tends to diminish in long run.

Table 1 Post-buyback Cumulative Abnormal Returns*Case-2: Control sample returns as benchmark returns*

Month	AR	CAR	t-statistic	p-value	% of AR>0	AR	CAR	t-statistic	p-value	% of AR>0
1	-0.49	-0.49	-0.14	0.89	56%	-2.36	-2.36	-0.54	0.59	47%
2	1.52	1.03	0.50	0.62	50%	1.54	-0.82	0.44	0.66	56%
3	4.17	5.20	1.28	0.21	66%	3.93	3.12	1.16	0.25	66%
4	-0.21	4.99	-0.06	0.95	44%	-0.77	2.34	-0.22	0.83	38%
5	0.83	5.82	0.25	0.81	56%	1.10	3.44	0.31	0.76	56%
6	-0.11	5.71	-0.03	0.98	47%	-2.94	0.51	-0.62	0.54	41%
7	0.21	5.92	0.07	0.95	53%	-0.72	-0.21	-0.22	0.83	47%
8	1.65	7.56	0.42	0.67	50%	-1.34	-1.55	-0.30	0.76	47%
9	-2.91	4.65	-0.80	0.43	47%	-4.29	-5.85	-1.09	0.28	41%
10	2.69	7.34	0.84	0.41	59%	2.22	-3.62	0.66	0.51	50%
11	1.19	8.53	0.56	0.58	44%	-1.25	-4.87	-0.54	0.59	44%
12	1.58	10.12	0.52	0.60	47%	1.50	-3.37	0.49	0.63	47%
13	2.82	12.94	0.86	0.39	56%	0.41	-2.96	0.12	0.91	44%
14	0.50	13.44	0.21	0.83	53%	0.88	-2.08	0.39	0.70	50%
15	2.29	15.73	0.85	0.40	56%	1.35	-0.73	0.46	0.65	53%
16	5.98	21.71	1.56	0.13	56%	6.10	5.37	1.56	0.13	66%
17	-0.10	21.61	-0.04	0.97	53%	-1.47	3.90	-0.51	0.61	44%
18	1.81	23.42	0.56	0.58	47%	3.64	7.54	1.03	0.31	63%
19	-1.01	22.41	-0.32	0.75	59%	-0.64	6.90	-0.20	0.84	56%
20	-0.85	21.55	-0.34	0.74	41%	-0.81	6.09	-0.30	0.77	50%
21	0.80	22.36	0.32	0.75	47%	2.32	8.41	0.88	0.38	53%
22	-6.11	16.24	-2.53	0.02	25%	-3.71	4.70	-1.46	0.15	25%
23	-0.36	15.89	-0.08	0.94	59%	-0.36	4.33	-0.08	0.94	53%
24	-3.90	11.99	-1.22	0.23	25%	-2.45	1.89	-0.72	0.47	34%

Table 2 Post-buyback Buy-and-Hold Abnormal Returns

Case-2: Control sample returns as benchmark returns

Month	BHR	BHAR	t-statistic	p-value	% of BHAR>0	BHR	BHAR	t-statistic	p-value	% of BHAR>0
1	-3.59	-2.65	-0.44	0.67	56%	-3.59	-2.36	-0.52	0.60	47%
2	-0.17	-0.85	-0.05	0.96	53%	-0.17	-0.77	-0.13	0.90	56%
3	4.55	3.25	0.57	0.57	66%	4.55	3.21	0.45	0.66	72%
4	10.48	4.82	0.60	0.55	56%	10.48	3.87	0.40	0.69	63%
5	13.68	3.29	0.39	0.70	53%	13.68	2.40	0.25	0.81	56%
6	24.21	5.57	0.47	0.64	53%	24.21	1.00	0.08	0.94	44%
7	25.06	5.33	0.37	0.71	44%	25.06	-0.92	-0.07	0.95	38%
8	29.61	6.28	0.41	0.68	59%	29.61	-4.07	-0.29	0.77	41%
9	29.34	5.29	0.27	0.79	59%	29.34	-9.16	-0.59	0.56	38%
10	37.15	9.92	0.48	0.64	53%	37.15	-5.48	-0.32	0.75	50%
11	39.73	13.46	0.71	0.48	53%	39.73	-5.79	-0.33	0.74	47%
12	46.20	18.61	0.77	0.44	50%	46.20	-1.65	-0.08	0.93	47%
13	48.91	23.55	0.94	0.35	50%	48.91	-1.81	-0.08	0.93	41%
14	51.13	25.31	1.00	0.32	47%	51.13	-0.26	-0.01	0.99	41%
15	59.43	30.88	1.13	0.27	47%	59.43	4.04	0.17	0.87	44%
16	67.10	32.15	1.35	0.18	59%	67.10	6.25	0.28	0.78	47%
17	69.15	34.13	1.36	0.18	63%	69.15	5.02	0.21	0.83	47%
18	75.09	44.25	1.38	0.18	53%	75.09	19.27	0.71	0.48	50%
19	72.10	26.99	1.21	0.23	56%	72.10	2.31	0.10	0.92	50%
20	69.37	23.72	1.09	0.28	50%	69.37	0.21	0.01	0.99	50%
21	74.22	24.91	1.10	0.28	50%	74.22	2.22	0.10	0.93	45%
22	73.54	18.94	0.75	0.46	50%	73.54	-0.20	-0.01	0.99	42%
23	72.13	17.98	0.63	0.53	44%	72.13	-1.06	-0.04	0.97	45%
24	68.21	9.37	0.36	0.72	38%	68.21	-3.55	-0.13	0.89	37%

i) ROA

<i>Year</i>	<i>Mean ROA</i>	<i>Mean Adj. ROA</i>	<i>Stdev of mean adj. ROA</i>	<i>t-value</i>	<i>P Value</i>
1	20%	4%	11%	2.06*	0.05
2	15%	-1%	8%	-0.64	0.53
3	19%	3%	12%	0.96	0.36

ii) ROIC

<i>Year</i>	<i>Mean OPM</i>	<i>Mean Adj. ROIC</i>	<i>Stdev of mean adj. ROIC</i>	<i>t-value</i>	<i>P Value</i>
1	28%	7%	19%	2.06*	0.048
2	18%	-2%	12%	-1.01	0.323
3	25%	4%	18%	0.81	0.435

iii) OM

<i>Year</i>	<i>Mean OPM</i>	<i>Mean Adj. OPM</i>	<i>Stdev of mean adj. OPM</i>	<i>t-value</i>	<i>P Value</i>
1	31%	9%	33%	1.53	0.137
2	21%	0%	17%	-0.12	0.904
3	21%	-2%	14%	-0.41	0.68

iv)

CFROA

<i>Year</i>	<i>Mean CFROA</i>	<i>Mean Adj. CFROA</i>	<i>Stdev of mean adj. CFROA</i>	<i>t-value</i>	<i>P Value</i>
1	12%	3%	10%	1.6	0.118
2	7%	-1%	9%	-0.77	0.45
3	10%	2%	7%	0.91	0.37

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