Exploring Overreaction Hypothesis for Large Cap Stocks in the Indian Stock Market: An Empirical Evidence of Superior Returns in Nifty 50

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Abstract

The stock market usually overreacts to various global, economic, industry or company-specific news. This overreaction leads to the generation of excess returns through momentum for a short period, and contrarian for a longer period. In this regard, most of the previous studies focused on creation of excess returns through momentum and contrarian strategies. The present study aims to explore the overreaction hypothesis with a special focus on large-cap stocks of Nifty 50 stocks from the Indian equity market. The present study also tries to confirm whether the behavioral justification of overreaction occurs due to the traders' activity in the short run, and in the long run, whether the reversal of momentum (De Bondt & Thaler, 1985,1987; Jagadeesh & Titman, 1993,2001) is true or not for the large cap stocks. At the same time, it tries to identify if such profits were created, then was it only signaling any evidence of presence of risk-return trade off, or was it a real case of superior returns? The study tries to find out the reversal point as results of Nifty 50 stock returns were showing momentum followed by contrarian. For this purpose, monthly return data of Nifty 50 stocks for the period from January 2004 to December 2010 had been collected. Analysis was done with the help of ANOVA and inferences were drawn.

Keywords: **overreaction hypothesis, reversal point, contrarian strategy, momentum strategy, Nifty50**
JEL Classification : G14

Overreaction creates momentum in stock prices during different global, economic, or company-specific news. Due to overreaction, price momentum continues in the same direction for a particular time period, and provides an opportunity to the traders for generating abnormal returns. However, in the long run, it tries to match the fundamentals, and thus shows a reversal in trend. Investment strategy based on momentum supports the belief that the "Trend is your friend", which suggests that buying/selling of winners/losers will generate superior returns in the short run. At the same time, contrarian investment strategy suggests that buying/selling of losers/ winners will generate higher returns in the long run. However, the weak form of market efficiency says that investors cannot make any higher returns with the help of trading strategies that are created through past price data. Thus, momentum strategy in the short run, and contrarian strategy in the long run, should not create higher returns as both the strategies are entirely based on past returns. However, much of the empirical evidence supports the absence of weak form of market efficiency in developed and emerging markets. In reality, various studies have shown enough evidence of overreaction. However, it may be possible that overreaction is due to small companies with low market capitalization, which might be controlled by operators (if existing). Thus, the objective of the present study was to attempt to explore the existence of the overreaction hypothesis for large cap companies in emerging markets like India. This study may help portfolio managers of different asset-management companies in creating superior returns than the benchmark (especially who set Nifty 50 as a benchmark) returns set by them.

Literature Review

Overreaction achieved by using momentum/contrarian investment strategy for short/long run to create superior/abnormal/excess return due to inefficient market was documented for the first time by De Bondt and Thaler in 1985. With the help of the U.S. stock market data, their study proved creation of overreaction due to some of the events or big news - positively or negatively - based on the type of events or news. This overreaction leads to abnormal price movements. The findings of the study also confirmed the overreaction hypothesis that suggests use of

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momentum/contrarian strategy for short/long run that leads to the generation of superior returns.

Jegadeesh and Titman (1993) found that significant superior returns could be generated with momentum strategy in the short run over 3-12 months with the help of U.S. market data for the years 1965 to 1989. Not only that, but with the data, they also found significant superior returns through contrarian investment strategies in the long run over 1-3 years. They showed that reversal point of momentum was created about nine months after overreaction starts. These results provided a new direction to the research of De Bondt and Thaler (1985,1987), and it also proved that momentum in the short run is followed by reversal in the long run.

In another study, Conrad and Kaul (1993) (who also used U.S. stock market data), found that for a short-period of a week or a month, and for a long term period of 2 to 5 years, the contrarian strategy is beneficial, while for a medium term of 3 to 12 months, the momentum strategy is beneficial. In Asian markets, various studies like Chang (1995) in the Japanese market, Chui (2000) in the Korean and Japanese markets, Hameed and Ting (2000) in the Malaysian market, Kang (2002) in the Chinese market, and Joshipura (2009) in the Indian market found successful results of momentum/contrarian strategies for the short/long run. However, in some of the studies like Hameed and Kusandi (2002), profit through contrarian strategy for six pacific basin markets was found to be not significant. On the other hand, Rouwenhorst (1998) and Griffin and Martin (2005) found significant profits through momentum in many non-U.S. countries, but these profits were very small in value, and insignificant for the Asian markets. Recently, Simlai (2009) found that momentum and contrarian strategies work for the short and long run respectively for technology stocks. However, he also showed that accounting for conditional heteroskedasticity increases the evidence that risk adjusted returns are strongly related to market betas of benchmark returns and NASDAQ composite index returns. Kumar (2012) proved the existence of the Diwali effect using NIFTY 50 returns during Diwali. He also found that one can time the market for better investment.

Although in the abovementioned studies, the absence of market efficiency was quite evident, different results have different explanations for such returns. In the current study, we tried to confirm momentum/contrarian profits in the Indian market for large cap stocks. If overreaction was found, then we aimed to find out the point of reversal for the existing momentum.

Objectives of the Study

1) To check the overreaction hypothesis with the help of momentum/contrarian strategies for superior profits in the Indian equity market with large cap stocks.

2) If overreaction is found, then we aimed to find out the point of reversal for the existing momentum.

Data and Methodology

❖ **Data :** Monthly abnormal return data for Nifty 50 companies (as on January 2011) were considered for the analysis from January 2004 to December 2010. The selection of the period was considered as it provided ample opportunity to observe the changes in the market - from bear to bullish, bullish to bear, and again bear to bullish , with a consolidated period in between during the said period. Closing and opening price of the month was downloaded from www.nseindia.com for the purpose of the analysis. With the help of price data, monthly returns on stocks were calculated and monthly index (Nifty50) returns were deducted to arrive at the monthly abnormal returns (MAR).

❖ **Portfolio Timeline :** Based on Literature Review, it was found that momentum appeared for a 3-12 month period, while contrarian appeared for a 1-5 years period. So, the analysis was performed for a short term (one year), medium term (two years) and long term (six years) period. For one year data, the data of six months were used for formation of winners' and losers' portfolio, and the next six months data were used for the testing. Similarly, for data spread over a two-years period, the data of one year were used for the formation of the portfolio, and the next one year data was used for the testing ; and for the data of six years, three years' data were used for the formation of the portfolio, and the next three years data were considered for testing . 13 six months overlapping periods for one year data, 11 six months overlapping periods for two years data and 13 one month overlapping periods for six years data were used for the analysis. Use of such overlapping data gives double benefits. First, it works for the existence of the overreaction hypothesis that provides thoroughness to the process of hypothesis testing. Secondly, it increases the reliability as it allows the use of large sample periods for a study.

❖ **Methodology :** The methodology used by De Bondt and Thaler in 1985 and 1987; and Jegadeesh and Titman in 1993 was adopted for the present study. Steps in methodology were explained for long run with six years data, first three years data were used for the portfolio formation, and the data of the next three years were used for testing . The winner stocks and loser stocks were determined with the help of past three years cumulative monthly abnormal returns (CMAR). During the formation period, portfolio formation was done by measuring the performance with the help of three years CMAR and just providing the ranking to the stocks. Half of the stocks were assigned to the winner portfolio (W) based on top ranks attained by them, and the remaining stocks that had attained a low ranking were assigned to the loser portfolio (L). Both winner portfolio and loser portfolio were assigned stocks with equal weightage. The repetition was done thirteen times for overlapping one month starting with January 2004 to ending with December 2010 as indicated in the previous section. In past studies -like those conducted by De Bondt and Thaler in 1985 and Conrad and Kaul in 1993 - the same methodology was used for ranking the stocks. Three years CMAR for every ith stock in the sample was calculated as:

$$\text{CMAR} = \sum_{t=-36}^{0} MAR_{it} \qquad (1)$$

For the next three years data that were used for testing, the performance of winner and loser portfolios were measured through average monthly abnormal returns (AMAR) calculation. The AMAR was obtained by taking the mean of MAR of the stocks included in the respective portfolios for each month for both the winner and loser portfolios. The monthly AMAR were used for the calculation of the cumulative average monthly abnormal returns (CAMAR) for each month *t*, where $t = 1, \ldots, 36$ during the test period. This step was repeated thirteen times and the average CAMAR for these thirteen test periods was used to get the mean cumulative average monthly abnormal returns (MCAMAR). Calculation was done by using the following equations :

$$\text{AMAR}_{W,t} = 1/N \sum_{i=1}^{n} MAR_{i,t} \qquad \text{AMAR}_{L,t} = 1/N \sum_{i=1}^{n} MAR_{i,t} \qquad (2)$$

$$\text{CAMAR}_{W,t,k} = \sum_{i=1}^{t} AMAR_{w,i} \qquad \text{CAMAR}_{L,t,k} = \sum_{i=1}^{t} AMAR_{L,i} \qquad (3)$$

$$\text{MCAMAR}_{W,t} = 1/K \sum_{i=1}^{K} CAMAR_{w,t,i} \qquad \text{MCAAR}_{L,t} = 1/K \sum_{i=1}^{K} CAMAR_{L,t,i} \qquad (4)$$

Where,
N = number of stocks included in each portfolio
t = time period (1 to 36 for a thirty six month period)
k = no of times test repetition (13 in this case)

❖ **Test of Significance:** Here, M$CAMAR_W$ (M$CAMAR_L$) shows that on an average, how much CAMAR was created through the stocks in the winner (loser) portfolio during the given test period. Now, as per the overreaction hypothesis, M$CAMAR_W$ should be less than *0* and M$CAMAR_L$ should be greater than 0. Opposed to that, if markets were efficient in its weak form, then M$CAMAR_L$ – M$CAMAR_W$ must be equal to zero. So, we could set null hypothesis as M$CAMAR_L$ – M$CAMAR_W = 0$. So, if the market is in its weak form of efficiency, the null hypothesis should be accepted. In other words, if null hypothesis is rejected, then the market is considered to be overreacting. Thus, our alternative hypothesis was:

H_1: The Indian equity market is overreacting to any positive or negative news.

Or

H_1: There is statistical significance between M$CAMAR_L$ and M$CAMAR_W$

Or

H_1: M$CAMAR_L$ – M$CAMAR_W \neq 0$

ANOVA was used to check the same. Reason for use of ANOVA was the power of the statistical method, else, the same result can also be checked with a simple t - test. Similar procedures apply for short and medium time periods of formation and testing.

❖ Limitations of the Study

1) The study covers the period from January 2004 to December 2010. Hence, the implications of the study are restricted to the said time periods only.

2) The study covers the stocks included in the NIFTY 50 only (contains more than 70 % of the total market cap).

Table 1: ANOVA for Winners' and Losers' Portfolio for each of the 36 month Testing Period

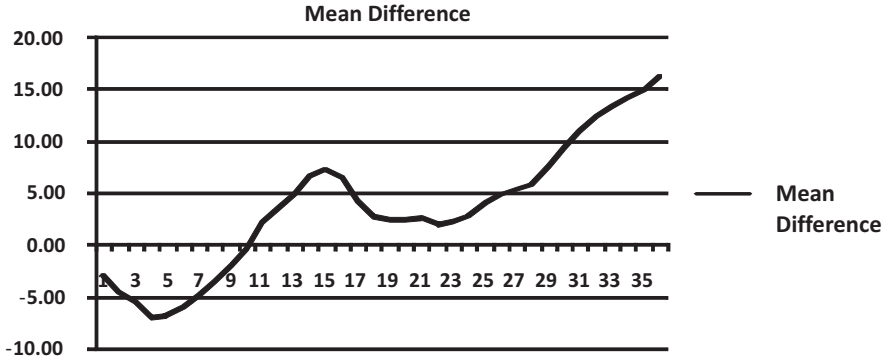
ANOVA							
		Sum of Squares	df	Mean Square	F	Sig.	Mean Difference
Month01	Between Groups	63.24	1	63.24	12.66	0.00*	-3.12
	Within Groups	119.93	24	5.00			
	Total	183.17	25				
Month02	Between Groups	139.57	1	139.57	7.64	0.01*	-4.63
	Within Groups	438.46	24	18.27			
	Total	578.03	25				
Month03	Between Groups	204.34	1	204.34	4.93	0.04*	-5.61
	Within Groups	994.01	24	41.42			
	Total	1198.36	25				
Month04	Between Groups	326.88	1	326.88	5.78	0.02*	-7.09
	Within Groups	1357.68	24	56.57			
	Total	1684.57	25				
Month05	Between Groups	316.33	1	316.33	4.35	0.05*	-6.97
	Within Groups	1746.77	24	72.78			
	Total	2063.11	25				
Month06	Between Groups	244.80	1	244.80	2.83	0.11	-6.14
	Within Groups	2076.85	24	86.54			
	Total	2321.65	25				
Month07	Between Groups	160.01	1	160.01	1.75	0.20	-4.96
	Within Groups	2192.60	24	91.36			
	Total	2352.61	25				
Month08	Between Groups	92.23	1	92.23	1.01	0.33	-3.77
	Within Groups	2200.76	24	91.70			
	Total	2292.99	25				
Month09	Between Groups	30.07	1	30.07	0.32	0.58	-2.15
	Within Groups	2275.67	24	94.82			
	Total	2305.74	25				
Month10	Between Groups	2.33	1	2.33	0.02	0.88	-0.60
	Within Groups	2542.30	24	105.93			
	Total	2544.64	25				
Month11	Between Groups	25.36	1	25.36	0.22	0.65	1.98
	Within Groups	2807.35	24	116.97			
	Total	2832.71	25				
Month12	Between Groups	71.41	1	71.41	0.71	0.41	3.32
	Within Groups	2400.04	24	100.00			
	Total	2471.45	25				

		Sum of Squares	df	Mean Square	F	Sig.	Mean Difference
Month13	Between Groups	152.22	1	152.22	1.58	0.22	4.84
	Within Groups	2315.77	24	96.49			
	Total	2467.98	25				
Month14	Between Groups	278.41	1	278.41	3.24	0.08	6.55
	Within Groups	2059.17	24	85.80			
	Total	2337.57	25				
Month15	Between Groups	332.58	1	332.58	4.01	0.06	7.16
	Within Groups	1990.28	24	82.93			
	Total	2322.87	25				
Month16	Between Groups	266.69	1	266.69	3.69	0.07	6.41
	Within Groups	1734.32	24	72.26			
	Total	2001.01	25				
Month17	Between Groups	112.40	1	112.40	1.88	0.18	4.16
	Within Groups	1432.61	24	59.69			
	Total	1545.01	25				
Month18	Between Groups	46.98	1	46.98	1.02	0.32	2.69
	Within Groups	1103.33	24	45.97			
	Total	1150.31	25				
Month19	Between Groups	35.36	1	35.36	0.76	0.39	2.33
	Within Groups	1119.42	24	46.64			
	Total	1154.77	25				
Month20	Between Groups	38.65	1	38.65	0.69	0.41	2.44
	Within Groups	1347.15	24	56.13			
	Total	1385.80	25				
Month21	Between Groups	40.63	1	40.63	0.55	0.46	2.50
	Within Groups	1759.47	24	73.31			
	Total	1800.10	25				
Month22	Between Groups	22.97	1	22.97	0.24	0.63	1.88
	Within Groups	2316.84	24	96.54			
	Total	2339.82	25				
Month23	Between Groups	33.88	1	33.88	0.28	0.60	2.28
	Within Groups	2917.94	24	121.58			
	Total	2951.82	25				
Month24	Between Groups	48.85	1	48.85	0.35	0.56	2.74
	Within Groups	3329.38	24	138.72			
	Total	3378.24	25				
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**	**Mean Difference**
Month25	Between Groups	100.98	1	100.98	0.70	0.41	3.94
	Within Groups	3454.19	24	143.92			
	Total	3555.17	25				
Month26	Between Groups	149.81	1	149.81	1.03	0.32	4.80
	Within Groups	3483.26	24	145.14			
	Total	3633.07	25				
Month27	Between Groups	182.16	1	182.16	1.35	0.26	5.29

	Within Groups	3243.49	24	135.15			
	Total	3425.65	25				
Month28	Between Groups	215.48	1	215.48	1.65	0.21	5.76
	Within Groups	3133.27	24	130.55			
	Total	3348.76	25				
Month29	Between Groups	359.35	1	359.35	3.06	0.09	7.43
	Within Groups	2817.75	24	117.41			
	Total	3177.10	25				
Month30	Between Groups	556.71	1	556.71	5.18	0.03*	9.25
	Within Groups	2579.69	24	107.49			
	Total	3136.41	25				
Month31	Between Groups	765.09	1	765.09	7.60	0.01*	10.85
	Within Groups	2415.11	24	100.63			
	Total	3180.20	25				
Month32	Between Groups	994.12	1	994.12	9.59	0.00*	12.37
	Within Groups	2486.72	24	103.61			
	Total	3480.83	25				
Month33	Between Groups	1149.65	1	1149.65	10.83	0.00*	13.30
	Within Groups	2547.04	24	106.13			
	Total	3696.69	25				
Month34	Between Groups	1294.52	1	1294.52	11.49	0.00*	14.11
	Within Groups	2704.03	24	112.67			
	Total	3998.55	25				
Month35	Between Groups	1433.54	1	1433.54	11.44	0.00*	14.85
	Within Groups	3008.23	24	125.34			
	Total	4441.78	25				
Month36	Between Groups	1695.83	1	1695.83	11.99	0.00*	16.15
	Within Groups	3394.83	24	141.45			
	Total	5090.66	25				

Note: * Significant at 5%
Source: Compiled by the authors

Figure 1: Mean Difference between Losers' and Winners' Portfolio for the testing period of 36 months



Source: Compiled by the authors

Results and Analysis

As shown in the Table 1, for the first five months, the result is significant at the 5 percent confidence level with negative mean difference. Thus, our alternative hypothesis accepted with $MCAMAR_L$ negative and $MCAMAR_W$ positive for the first five months, which is a clear indication of momentum profits in the short run. At the same time, from the eleventh month, this mean difference gets converted into positive from negative, indicating a reversal of returns for winners' and losers' portfolio. Furthermore, results show a significant positive mean difference from the 30th month onwards, that continue up to the 36th month. It is also observed that mean difference increases continuously from the

Table 2: ANOVA for Winners' and Losers' Portfolio for each of the 12 month Testing Period

ANOVA							
		Sum of Squares	Df	Mean Square	F	Sig.	Mean Difference
Month01	Between Groups	3.83	1	3.83	0.31	0.58	0.13
	Within Groups	244.62	20	12.23			
	Total	248.45	21				
Month02	Between Groups	0.55	1	0.55	0.04	0.84	0.99
	Within Groups	262.98	20	13.15			
	Total	263.53	21				
Month03	Between Groups	0.30	1	0.30	0.02	0.90	2.26
	Within Groups	368.56	20	18.43			
	Total	368.85	21				
Month04	Between Groups	83.66	1	83.66	1.64	0.21	0.71
	Within Groups	1017.47	20	50.87			
	Total	1101.12	21				
Month05	Between Groups	5.36	1	5.36	0.10	0.76	2.79
	Within Groups	1087.85	20	54.39			
	Total	1093.21	21				
Month06	Between Groups	4.83	1	4.83	0.14	0.72	4.20
	Within Groups	710.40	20	35.52			
	Total	715.24	21				
Month07	Between Groups	183.23	1	183.23	5.84	0.03*	1.28
	Within Groups	627.41	20	31.37			
	Total	810.63	21				
Month08	Between Groups	0.46	1	0.46	0.02	0.89	3.32
	Within Groups	488.59	20	24.43			
	Total	489.06	21				
Month09	Between Groups	2.29	1	2.29	0.07	0.80	4.69
	Within Groups	683.73	20	34.19			
	Total	686.02	21				
Month10	Between Groups	80.33	1	80.33	1.80	0.20	3.74
	Within Groups	895.07	20	44.75			
	Total	975.40	21				
Month11	Between Groups	31.23	1	31.23	0.56	0.46	4.02
	Within Groups	1121.05	20	56.05			
	Total	1152.27	21				
Month12	Between Groups	23.77	1	23.77	0.58	0.45	4.53
	Within Groups	818.22	20	40.91			
	Total	842.00	21				

Note: * Significant at 5%

Source: Compiled by the authors

Table 3: ANOVA for Winners' and Losers' Portfolio for each of the 6 month Testing Period							
ANOVA							
		Sum of Squares	Df	Mean Square	F	Sig.	Mean Difference
Month01	Between Groups	32.93	1	32.93	2.87	0.10	2.25
	Within Groups	274.98	24	11.46			
	Total	307.91	25				
Month02	Between Groups	30.69	1	30.69	1.97	0.17	2.17
	Within Groups	373.41	24	15.56			
	Total	404.10	25				
Month03	Between Groups	71.38	1	71.38	2.20	0.15	3.31
	Within Groups	779.90	24	32.50			
	Total	851.29	25				
Month04	Between Groups	3.78	1	3.78	0.06	0.81	0.76
	Within Groups	1579.82	24	65.83			
	Total	1583.60	25				
Month05	Between Groups	0.90	1	0.90	0.01	0.92	0.37
	Within Groups	1915.47	24	79.81			
	Total	1916.37	25				
Month06	Between Groups	65.89	1	65.89	0.66	0.43	3.19
	Within Groups	2402.70	24	100.11			
	Total	2468.59	25				
Note: * Significant at 5%							
Source: Compiled by the authors							

30th month, indicating contrarian profits. The Figure 1 shows the pattern of how mean difference is created between losers' and winners' portfolio. For the first five months, the momentum strategy works. From the ninth month onwards, the losers' portfolio performs better than the winners' portfolio. However, results show significant successes of contrarian strategy from the 30th month onwards.

However, the 12 month and 6 month formation period is not enough for formation of trading strategy for the short or long run. The Tables 2 and 3 clearly show that the mean difference for winners' portfolio return and losers' portfolio return created for a short period of 6 months and medium period of 12 months is insignificant, except for the 7th month in case of the 12 month formation. Again, this significant result confirms the success of the contrarian strategy as the mean difference is positive. The results clearly indicate that for getting superior returns through momentum/contrarian strategy, it requires a longer period for portfolio formation (in our case, 36 months).

Conclusion

Strong evidence has been found for superior returns with the help of buying underperforming stocks (loser portfolio). For the formation of the portfolio, using a short period of six months and using a medium period of one year, there is no significant difference between the returns offered by the winners' and losers' portfolio. For the longer duration portfolio formation, using past three years CMAR and testing for the next three years shows strong evidence of short term momentum for around the fifth month and long term contrarian profit from the 30th month. Again, these superior returns created through momentum and contrarian strategies were not due to additional risk. Creation of reversal in the winners' portfolio seems to be slower than it was in the losers' portfolio.

Scope for Further Research

In the present study, we found strong evidence of success of momentum and contrarian strategies for higher returns in large cap stocks. However, one can use the same methodology to evaluate middle cap and small-cap stocks as well.

Thus, further research on contrarian and momentum strategy for other stocks can generate results regarding effect of size on the success of momentum and contrarian strategies.

References

Bachelier, L. (1900). "Theory of Speculation." In Cootner, P. (Ed.). *"The Random Character of Stock Market Prices."* MIT Press, Cambridge, MA, 1964; Reprint, pp. 17-78.

Chang, R. P., McLeavey, D. W., & Rhee, S. G. (1995). "Short-term Abnormal Returns of the Contrarian Strategy in the Japanese Stock Market." *Journal of Business Finance and Accounting, 22* (7), pp. 1035-1048.

Chen, A. (2000). *"Momentum Does Not Matter Consistently: The Evidence from Taiwan Stock Returns."* National Sun Yat-sen University, pp. 1-20.

Chen, Y., Fortnow, L., Nikolova, E., & Pennock, D. (2007). *"Betting on Permutations."* Proceedings of the 8th ACM conference on Electronic Commerce, 8(1), pp. 326 - 335, ISBN 978-1-59593-653-0.

Chui, A.C.W., Titman, S., & Wei, K.C. J. (2000). *"Momentum, Legal Systems, and Ownership Structure: An Analysis of Asian Stock Markets."* Working Paper, Hong Kong University of Science and Technology, pp. 1-17.

Conard, J., & Kaul, G. (1998). "An Anatomy of Trading Strategies." *Review of Financial Studies, 11* (3), pp. 489-519.

Conrad, J., & Kaul, G. (1993). "The Returns to Long Overreaction or Biases in Computed Returns." *Journal of Finance, 48* (1), pp. 39-63.

Data accessed on January 27, 2011 from www.nseindia.com

De Bondt, W., & Thaler, R. (1985). "Does the Stock Market Overact?" *Journal of Finance*, *40* (3), pp. 793-808.

De Bondt, W., & Thaler, R. (1987). "Further Evidence on Investor Overreaction and Stock Market Seasonality." *Journal of Finance, 42* (3), pp. 557-581.

Griffin, J., Ji, X., & Martin, S. (2005). "Global Momentum Strategies: A Portfolio Perspective." *Journal of Portfolio Management, 31* (2), pp. 23-39.

Hameed, A., & Kusnadi, Y. (2002). "Momentum Strategies: Evidence from Pacific Basin Stock Markets." *Journal of Financial Research, 45* (3), pp. 383-398.

Hameed, A., & Ting, S. (2000). "Trading Volume and Short-Horizon Contrarian Profits: Evidence from Malaysian Stock Market." *Pacific-Basin Finance Journal, 8* (1), pp. 67-84.

Hong, H., & Stein, J.C. (1999). "A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets." *Journal of Finance, 54* (6), pp. 2143-2184.

Jegadeesh, N., & Titman, S. (1993). "Return to Buy Winners and Selling Losers: Implications for Stock Market Efficiency." *Journal of Finance, 48* (1), pp. 65-91.

Jegadeesh, N., & Titman, S. (2001). "Profitability of Momentum Strategies: An Evaluation of Alternative Explanations." *Journal of Finance, 56* (2), pp. 699-720.

Joshipura, M. (2009). *"Does the Stock Market Overreact? Empirical Evidence of Contrarian Returns from Indian Markets."* Published at ISM national stock exchange, pp. 217-244.

Kang, J., Liu, M. H., & Ni, S. X. (2002). "Contrarian and Momentum Strategies in the China Stock Market: 1993-2000." *Pacific-Basin Finance Journal, 10* (3), pp. 243-265.

Kumar, U. (2012). "Is There any Diwali Effect?" *Indian Journal of Finance, 6* (3), pp. 43-53.

Liu, W., Strong, N., & Xu, X. (1999). "The Profitability of Momentum Investing." *Journal of Business, Finance, and Accounting, 26* (10), pp. 1043-1089.

Rouwenhorst, K.G. (1998). "International Momentum Strategies." *Journal of Finance, 53* (1), pp. 267-284.

Simai, P. (2009). "Evaluating Momentum and Contrarian Strategies for Technology Stocks during Excessive Speculation." *Indian Journal of Finance, 3* (1), pp. 3-8.

Thaler, R. H. (1999). "The End of Behavioral Finance." *Financial Analysts Journal, 55* (6), pp. 12-17.