

A Comparative Study of the Performance of Selected Trading Strategies during Recent Recovery of Indian Equity Market

Dhanjay Yadav¹ and Girish Jain²

¹ Indira Gandhi Delhi Technical University for Women, GNCT, Delhi

² Birla Institute of Management Technology, Gr. Noida

In this paper, a comparative study has been done on the returns of four equity trading strategies viz. Momentum Strategy, Contrarian Strategy, Value Stocks and Growth stocks during recent recovery of the Indian equity market. The main finding is that the returns from Value Stocks have been highest amongst these four. In Finance literature, the returns from pre-defined rules of making investments in equity have been an interesting topic for research. Returns from different trading rules have been an important part of the study of finance literature. Although The EMH (Efficient Market Hypothesis) neglects any unusual returns from trading strategies which are based on the past information related to stock prices and financials, many researchers have proved otherwise and shown abnormal returns by implementing simple trading rules.

Key Words: Trading Strategies, Momentum Strategy, Contrarian Strategy, Value Stocks, Growth Stocks.

INTRODUCTION

In Finance literature, the returns from pre-defined rules of making investments in equity have been an interesting topic for research. Several researchers have proved abnormal returns can be earned by implementing such trading rules.

Trading Rules or Strategies are defined as buying and selling of securities in a systematic manner. The basic objective of trading rules is to maximize the returns with the given level of risk. This systematic management is based on certain assumptions regarding the particular security, market behaviour and goals of the portfolio. Trading strategies are also related to theoretical philosophies regarding market and investors behaviour e.g. Efficient Market Hypothesis (EMH), rational market theory etc. in his classic statement of this hypothesis Fama (1970) defines "an efficient market is a market where security prices always fully reflect the available information". In 1978, Michal Jensen declared that "there is no other proposition in economics which has more solid empirical evidence supporting it than the EMH". This strong statement ignited a reversal to the EMH and gave birth to the challenges to this hypothesis. The rational market theory is the basis of the modern portfolio theory which consists of assessment of risk and return characteristics of an individual security in a portfolio. The basic objective

of portfolio management is to match the risk and return characteristics of an individual security in the portfolio to minimize risk and maximize the overall gains. For managing a portfolio there are certain rules for determination of level of acceptable risk and required return from the portfolio. The rational market theory forms the basis to reshuffle the portfolio to re-balance the risk and return factors with the help of trade. Various trading strategies are connected with the objective of the portfolio. Because of the unpredictability of the market behaviour, individual and institutional investment behaviour has led to the development of different trading strategies. Further these strategies make some fundamental assumption regarding the nature of market for predictability. The bases of various trading strategies are the level of risk acceptable for investor, time horizon of the investment and the nature of the market in which investments are made. Some important trading strategies are Contrarian strategy, Momentum strategy, Value stocks, Growth stocks, High Beta & Low Beta etc. A growth investor focuses on current and future economic story of a company, with less regard to share valuation. Value stocks are defined as those that are relatively cheap e.g. low P/E and P/BV high yield and modest opportunities e.g. regulated firms. A stock is said to be in momentum, if its price is increasing consistently and in momentum strategy this is believed that this momentum will continue. In a Contrarian Strategy, the stocks whose price is continuously going down are selected in the portfolio on the premise of trend reversal. After touching its three year low in 2008-09, the Indian stock markets have recovered very sharp. In March 2009 the BSE100 index was hovering under 3000 mark and in coming 3 years it touched 6000 and made a remarkable recovery. The objective of this study is to evaluate the performance of index and returns from various trading rules implemented as trading strategies.

LITERATURE REVIEW

Momentum and Contrarian Strategies:

In Contrarian strategy, the investor takes position on the belief that trend reversal would take place and stocks which are losing consistently would do a comeback. In one of the earliest studies on contrarian strategies, Working on stock returns, De-Bondt and Thaler (1985) compared the performance of companies after dividing them in two groups a) Extreme Losers and b) Extreme Winners. They constructed portfolios of the best and worst performing stocks for the last three years since 1933, De-Bondt and Thaler (1985) found that if the US Stocks whose prices had declined for continuous three years i.e. the stocks which have given lowest returns in last three years earn high returns over the subsequent three to five years and vice-versa. De-Bondt and Weber (1999) find that contrarian strategy appears to be profitable in Germany. A very important study by Jegadeesh and Titman (1993) show strategies buying stocks that performed well in past and selling stocks that performed poorly in past, generate higher returns over three to 12 months period thus suggesting strong momentum profits for the US market. Jegadeesh and Titman (1993) point that a contrarian strategy should generate significant abnormal returns if market prices do not adjust appropriately to information. They find that a portfolio formed by buying stocks that performed well and selling stocks that underperformed over the previous 6 months generated an annual abnormal return of 12.01% when held for six months. They report similar results around earnings announcements wherein past losers realize higher returns than past winners. Their evidence supports a delayed stock market reaction to firm-specific information. More recently, Asness (1997) investigates the interaction of value and momentum strategies on a sample of NYSE, Amex and NASDAQ firms for the period July 1963 through December 1994. Asness measures value using the traditional book-to-market ratio (log BV/MV) and

dividend yield (D/P) and proxies momentum using average monthly return on stock over the past twelve months (past (2, 12)). Univariate tests reveal that the three variables used for measuring value and momentum strategies are positively associated with future expected return. The difference in average returns between the lowest and highest quintile when the portfolio was sorted by past (2, 12), log (BV/MV), and D/P was .87%, .51% and .31% respectively Rouwenhorst (1998) found that momentum strategies are profitable for equities in 12 European markets Momentum strategies have attracted many investors because of their consistent profitability. The driving force behind momentum profits is still a puzzle. Some attribute it to market underreaction to firm-specific information (Chan et al., 1996). In recent years the researchers have found that some simple trading strategies based on past stock returns yield significant abnormal returns.

Hong, Lim and Stein (2000) focus on stock level momentum and find that momentum strategies perform well among small stocks with low analyst coverage.

Avramov, Chordia, Jostova, and Philipov (2007) find that the winner and loser portfolios in other empirical papers are comprised mainly of high credit risk stocks. Momentum profitability is statistically significant and economically large among low-rated firms, but it is nonexistent among high-grade firms. The influence of momentum is limited to a small sample (4% of market capitalization) of companies with high credit risk.

Rouwenhorst (1999) documents momentum profits across 12 European countries. Chordia and Shivakumar (2002) document the ability of macroeconomic variables to predict stock returns as well as profitability of momentum strategies. The results from their regression model show dividend yield, default spread, term spread and yield on three-month T-bills are the sources of momentum returns in their sample of NYSE - AMEX stocks in

the period from 1926 to 1994. They also include January dummy variable in their regression model. They conclude momentum works only during expansions. Cooper, Gutierrez, Hameed (2004) find that momentum effect exists during expansionary periods but disappears after controlling for macroeconomic variables.

Moskowitz and Grinblatt (1999) document industry momentum and conjecture that industry momentum could be caused by cross-autocorrelation among stocks within the same industry.

Hong, Torous and Valkanov (2007) show that a number of industries lead the stock market by up to two months, which is consistent with cross-industry momentum at the aggregate level.

Grinblatt, Titman, and Wermers (1995) find that 77% of the funds examined are momentum investors. This percentage is higher for growth fund managers compared to balanced and income fund managers.

Burch and Swaminathan (2001) find that institutional investors such as insurance companies, banks, investment advisors and fund managers, adopt momentum trading strategies when allocating equity assets.

Value Stocks and Growth Stocks

Value investment style involves investing in stocks of firms that are underpriced relative to their fundamentals. It is argued that investors frequently react irrationally to information resulting in distorted prices that can be exploited to generate superior returns. Several researchers have investigated and documented the superior performance of value based investment strategies. Fama and French (1992) found that stocks with high earnings-price (E/P) ratio produced higher returns during the 1963-1990 period. They further observe that the positive relationship between firms with positive E/P ratios and average returns can be

attributed to the positive correlation between E/P and book-to-market value equity (BV/MV) ratios. Their results suggest that value investment strategies based on a firm's BV/MV can be used to form superior portfolios. Corroborating evidence is provided by Basu (1973) and Lakonishok, Shleifer, and Vishny (1994) investigated a contrarian investment strategy by comparing the performance of value stocks and glamour stocks. They report that value stocks significantly outperformed the glamour stocks, generating an average annual return of 19.8% compared to 10.5% for glamour stocks. The authors note that the superior returns are due to the ability of the contrarian investment strategy to exploit the suboptimal behavior of investors rather than due to relatively higher systematic risk as argued by Fama and French (1992). There is extant evidence on the superior performance of momentum strategies as well. Furthermore, value and momentum strategies were found to be negatively associated with each other suggesting interaction effects. Further analysis reveals that value strategy is relatively superior among firms with weak momentum (and weaker among firms with strong momentum). Similarly, momentum strategy produces superior return among firms with poor values (relative to firms with high value). For empirical analysis of value and momentum strategies in international markets see Capul, Rowley and Sharpe (1993), Schiereck, De Bondt, and Martin Weber (1999) Rouwenhorst (1997), Scott, Stump and Xu (2003) and Bird and Whitaker (2003). Taken together, the empirical evidence suggests that both value and momentum strategies can be used to predict stock returns and generate abnormal returns. However, there is a lack of consensus about the source of such returns. Several explanations have been offered for the ability of value and momentum investment strategies to outperform the market. One school of thought argues that naive investors tend to be guided by irrational optimism and pessimism. As a result, investors bid up the prices of stocks when they are overly optimistic (such as during the dot

com boom) and depress the prices of stocks on other occasions due to panic selling (such as post 911). By trading against naive investors, it will be possible for contrarian investors to generate superior returns. Writings on volatility tests (Shiller, 1981), noise traders (Shleifer and Summers, 1990), social psychology (Shiller, 1984) fad variable (Summers, 1986), heuristic decision making (Kahneman and Tversky, 1986) predictability of stock returns (Jegadeesh, 1990) and short-run speculative motive of investors (Keynes, 1936) suggest market inefficiencies or irrationalities in investor behavior, at least in the short-run. Fama (1992), on the other hand, argues that the higher returns are a compensation for the higher fundamental risk involved in such portfolios. A third explanation for excess returns or predictive ability is the possibility of methodological flaws such as data mining, survivorship bias, and inappropriate modeling (Kleidon, 1986; Black, 1993). In context of Value Stocks and Growth stocks, Fama and French (1992, 1993, 1995, 1996, and 1998) show that the value effect is associated with the degree of relative distress in the economy. They show that some common variation in stock returns (distressed stocks) are not explained by the market return. Therefore, they argue that such value effect is priced in addition to the traditional CAPM-type market risk. The authors suggest a three-factor model with one factor proxied by risk related to fundamental relative distress (high-minus-low book-to-market; HML) and another factor proxied by risk related to the size effect (small-minus-big, SMB). Fama and French find that HML and SMB factors have the greatest explanatory power in explaining the cross section of returns and suggest that such factors omitted from the CAPM. Overall, Fama and French argue that the observed higher returns produced by such value effect are justified by the risk associated with "value stocks". Concurrent to Fama and French studies, Sharpe (1992) found that size and Growth/Value characteristics could explain a large part of the returns from an equity portfolio.

Capaul, Rowley and Sharpe (1993) show that on average value stocks (low P/B ratios) tend to outperform growth stocks (high P/B ratios) in their sample of monthly returns from four developed European markets, the U.S. and Japan. They show in their sample that global value stocks outperform growth stocks by almost 40 percent. The cumulative outperformance of value stocks over growth stocks is 69.5 percent for Japan, 15.6 percent for the U.S. and 31.9 percent for Europe. Importantly, these authors also document the time-varying nature of the value growth return spread in these six developed markets. Their results show the standard deviation of the value-growth spread is lowest for the global series suggesting that there are diversification benefits associated with global tilting given the low correlation across the spreads in different countries. They suggest an investor considering a tilt toward value stocks should implement the policy globally rather within a single country or a single region. However, their sample includes only 12 years of data (1981 to 1992).

A very important study by Lakonishok et al. (1994) argues that value strategies are not fundamentally riskier than growth strategies. They suggest that such value effect arises because future growth rates of "growth stocks" are consistently overestimated relative to "value stocks".

Shleifer and Vishny (1990) and De Long et al. (1990) argue that institutional investors tend to favor a growth strategy that is more likely to yield higher returns in the short run whilst value strategies tend to pay high abnormal returns over 3 to 5 years.

William F. Sharpe (1993) found that "the returns obtained from portfolios of stocks with high price/book ratios (growth stocks) and those obtained from portfolios of stocks with low price/book ratios (Value stocks) were analyzed for six countries over the period from January 1981 through June 1992. Results suggest the existence of a significant "value-growth factor" in each country.

The returns on portfolios formed according to the value - growth factor differ far more from month to month than would be expected if the securities had been selected randomly. Value stocks outperformed growth stocks on average in each country during the period studied both absolutely and after adjustment for risk. Cross - country correlations of monthly value - growth spreads were small suggesting that any decision to "tilt" a portfolio toward value stocks would have been more effective if done globally.

Indian Scenario

The research on prior return strategies has also been extended to emerging markets including India. Studies in emerging markets have been conducted by Claessens et al. (1998); Fama and French (1998); Patel (1998); Rouwenhorst (1999); Barry et al. (2002); and Vander et al. (2003). In general, they found that stock selection strategies that work well in developed markets also provide extra normal returns for emerging markets. Other studies by Frankel and Schmukler (1996, 1998), Froot et al. (2001), Richards (2002) and Kaminsky et al. (2004) conclude that foreign investors in emerging markets tend to employ momentum strategies. Sehgal and Balakrishnan (2002) empirically find in India that there is reversal in long-term returns, once short-term momentum effect has been controlled. They also find short-term continuation in stock returns. Sehgal and Balakrishnan (2004) find that momentum returns that are missed by CAPM are partially explained by Fama-French three-factor model. Ananthanarayanan (2004) does not find any evidence of contrarian and momentum strategies being employed by foreign investors in Indian market. Sehgal and Balakrishnan (2008) report strong momentum profits in India for individual stocks as well as wide range of characteristic-sorted portfolios. The study suggests there are rational sources of momentum profits, which are in contrast to the US market. This paper extends the work to compare the four strategies altogether at one place. There is no study available in our knowledge

reviewing the performance of all these strategies altogether.

IMPORTANCE OF THE STUDY

The importance of this study is related to the comparison of selected trading strategies i.e. Contrarian strategy, Momentum Strategy, Growth Stocks and Value Stocks as applied to the equity market. The study contributes to the asset pricing and behavioral literature from emerging markets. Further the research is done for Indian market and specifically Bombay Stock Exchange (BSE), the oldest stock exchange of Asia. In Indian scenario where the economy is of developing nature, this research provides guidance related to investors approach to the equity investments. The breadth of the Indian equity markets has improved a lot in the last decade with the investor's base. This study will make an impact on the way the trading is done in Indian equity markets.

The important role of this study is to analyze the returns from selected strategies during the period when the market recovered from a bottom. As study has been done on the recent data, its results are significant and can be proved helpful in further analysis.

OBJECTIVES

The objective of this study is to evaluate the performance of four trading strategies viz. Contrarian Strategy, Momentum Strategy, value Stocks and Growth Stocks for short term specifically for one year holding period of any portfolio in Indian Equity Market. The index of Bombay stock exchange i.e. Sensex touched an all time high in late 2007 and early 2008, but soon after peaking, it crashed to form 3 year bottom in 2009. Since then its recovery has been fast and not all types of stocks have recovered in the same manner. In March 2009 the BSE100 index was hovering under 3000 mark and in coming 3 years it touched 6000 and made a remarkable

recovery. The objective of this study is to evaluate the performance of index and returns from various trading rules implemented as trading strategies.

- 1.) To know the performance of four strategies viz. Contrarian, Momentum, Value Stocks, Growth Stocks during recent recovery of Indian Equity Market.
- 2.) To compare the returns of these strategies.
- 3.) To test the significance of the difference in returns of these trading strategies with the Index return.

HYPOTHESIS

1. H0: The return characteristics of Low P/E stocks are not different from BSE 100 stocks in the given period. ($R_{Value} = R_{BSE100}$)
H1: The return characteristics of Low P/E stocks are different from BSE 100 stocks in the given period. ($R_{Value} \neq R_{BSE100}$)
2. H0: The return characteristics of High P/E stocks are not different from BSE 100 stocks in the given period. ($R_{Growth} = R_{BSE100}$)
H1: The return characteristics of High P/E stocks are different from BSE 100 stocks in the given period. ($R_{Growth} \neq R_{BSE100}$)
3. H0: The Return from implementing Contrarian strategy is not different in the given period from index return. ($R_{Contrarian} = R_{BSE100}$)
H1: The Return from implementing Contrarian strategy is different in the given period from index return. ($R_{Contrarian} \neq R_{BSE100}$)
4. H0: The Return from implementing momentum strategy is not different in the given period from index return. ($R_{Momentum} = R_{BSE100}$)
H1: The Return from implementing momentum strategy is different in the given period from index return. ($R_{Contrarian} \neq R_{BSE100}$)

RESEARCH METHODOLOGY

1. Data and their sources:

The data comprises of annual share prices adjusted for stock splits, stock dividends and rights issues of Bombay Stock Exchange, BSE 100 Index from March 2003 to March 2013. The data has been collected through Prowess the CMIE database.

2. Design/methodology - Portfolio model is implemented to know the returns of different trading strategies. The method of portfolio construction is similar to Jagdeesh and Titman (1993), the difference being that we have not short sell the stocks as short selling is not allowed in Indian markets except for intra-day trading. Following steps have been taken to construct and calculate return of the different portfolios implementing different strategies:

1. An equal amount is assumed to be invested in all those stocks forming the portfolio.
2. J is for ranking period and K stands for holding period, for sorting stocks to include in our portfolio and after sorting, holding the stocks to check the return of the portfolio.
3. To sort the stocks for Momentum and Contrarian portfolios, Here in this study J=24 Months, i.e. stocks are ranked on the basis of last 24 months return and are sorted for the portfolio. Then the stocks are hold for 12 months to know the return of the portfolio i.e. K=12 Months. To form the portfolio, a stock is considered to be in momentum (or contrarian) if its price is rising (or falling) for two consecutive years i.e. J-24 months.
4. After forming the portfolio, the stocks are hold for next 12 months i.e. K-12 months, and the return for a year from the portfolio is calculated with the help of following model:

$$R_p = \frac{\sum [(P1 - P0) / P0]}{N} \quad (1)$$

Where, R_p = Return of Portfolio, $P0$ = Price at the Beginning of the Year, $P1$ = Price at the end of the year, N = No. of stocks in portfolio.

5. For Contrarian and Momentum Strategy the formation period is two years and holding period of the portfolio is one year i.e. a stock is included in the portfolio if it has increased (Momentum) or decreased (Contrarian) for continuous two years. After one year, the portfolio is reconstructed. This practice of portfolio reconstruction is exercise every year. The month of April is taken as beginning period (T0).
6. To construct the Value stocks portfolio and growth stocks portfolio, the 10% stocks with highest P/E and lowest P/E are shortlisted from BSE 100 stocks and are hold for a year to calculate the return of the portfolio.
7. The returns of all these strategies are compared with the return from investing in all stocks of BSE 100.
8. Transaction cost is assumed to be zero.
9. T test has been used to test the significance of the difference in returns.

The t value is outside of the critical region in all four cases hence our H_0 is rejected in all four cases, which means the returns of different trading strategies are significantly different from index returns. The important point to note is that with the average return of 26%, index return is greater than the return of any other strategy but value stocks which is more than 45% during the given time period. Only low P/E stocks have outperformed the index return. Interestingly, low P/E stocks have given highest returns while High P/E stocks have given the lowest returns. The return from contrarian and momentum strategy is lower than the index return. From the above data analysis this is clear that during recovery period the most effective strategy is to invest in low P/E stocks.

DATA ANALYSIS

	t values (BSE100)	2009-10	2010-11	2011-12	2012-13	Average Return
BSE 100		-0.35605	1.328239	0.123763	-0.0556	0.260088
$R_{Contrarian}$	0.92533482	1.244833	-0.11143	-0.21959	-0.07139	0.210605
$R_{Momentum}$	0.9075052	0.524006	0.169088	-0.00091	0.161175	0.156324
R_{Value}	0.77271975	2.0091	0.2816	-0.2683	-0.1991	0.455949
R_{Growth}	0.72443249	0.7974	-0.10146	-0.13754	-0.164	0.098574

$T_{0\alpha} = (10, 0.5, 2) (d.f. = 2)$ & Level of significance 5% = 2.92
Hence H_0 is rejected in all cases.

Average Return (% Return)	Strategy
26.008	BSE100
21.060	Contrarian
15.632	Momentum
45.594	Value (Low P/E Stocks)
09.857	Growth (High P/E Stocks)

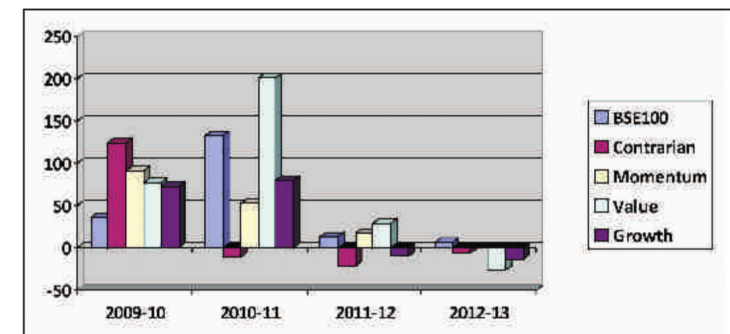


Figure 1

A Comparative Study of the Performance of Selected Trading Strategies during Recent Recovery of Indian Equity Market

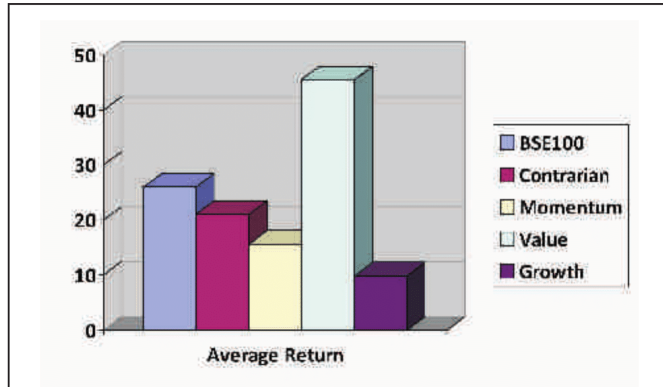


Figure 2

R value- BSE100 &	
Contrarian	-0.54299
Momentum	-0.3931
Value Stocks	-0.35506
Growth Stocks	-0.5115

Very interestingly the correlation between the index return and different trading strategies is negative in all cases and it is more than 50% in case of contrarian strategy and Growth Stocks.

CONCLUSION

The Comparison of the four strategies above shows the best result is shown by Value Stocks. All other strategies have not performed better than BSE100 stocks. The result of our study supports the findings of Fama and Lakonishok study where they say the Value stocks outperform the growth stocks. This is even most effective during the recovery period. But the results of our study is in contradiction of Jegadeesh and Titman (1993) findings where they have shown abnormal returns from Momentum Strategy.. This may be due to short time horizon or

because of the recovery phase that Momentum and Contrarian are underperforming the Index.

REFERENCES

- Ananthanarayanan, S. (2004). Foreign Institutional Investors and Security Returns: Evidence from Indian Stock Exchanges, CRISIL, Mumbai.
- Antoniou, A., Lam, H.Y.T and Paudyal, K. 2007. "Profitability of momentum strategies in international markets: the role of business cycle variables and behavioral biases", *Journal of Banking and Finance*, 955-72.
- "Avramov, D., Chordia, T., Jostova, G., Philipov, A., 2007. Momentum and credit rating. *Journal of Finance* 62, 2503-2520."
- Asness C. 1997. "The Interaction of Value and momentum Strategies". *Financial Analysis Journal*, 53,29-36.
- Ball, R., S.P. Kothari and J. Shanken. 1995. "Problem in Measuring Portfolio Performance: an Application to Contrarian Investment Strategies." *Journal of Financial Economics*, 38,79-107.
- Barry, C.B., Goldreyer, E., Lockwood, L. and Rodriguez, M. 2002, "Robustness of size and value effects in emerging markets, 1985-2000", *Emerging Markets Review*, 3, 1-30.
- Basu, S. (1973) "Investment performance of common stocks in relation to their price earning ratios: A test of efficient market hypothesis," *Journal of Finance*, 663.
- Basu, S. 1977, "Investment performance of common stocks in relation to their price-earnings ratios: a test of the efficient market hypothesis", *Journal of Finance*, 32, 663-82.
- Basu, S. 1983, "The relationship between earnings yield, market value and return for

A Comparative Study of the Performance of Selected Trading Strategies during Recent Recovery of Indian Equity Market

- NYSE common stocks: further evidence", *Journal of Financial Economics*, 12, 129-56.
- Bird, R. and Whitaker, J. 2003. 'The Performance of Value and Momentum Investment: Portfolios: Recent Experience in the Major European Markets', *Journal of Asset Management*, 4, 221-246.
- Bird, R. and Whitaker, J. 2004. 'The Performance of Value and Momentum Investment Portfolios: Recent Experience in the Major European Markets Part 2', *Journal of Asset Management*, 5(3), 157-175.
- Black, F. (1993) "Beta and return," *Journal of Portfolio Management*, Fall 1993, 8-18.
- Burch, T.R., Swaminathan, B., 2001. Are institutions momentum traders? Working paper series. Graduate School of Business, University of Chicago.
- Capaul, C., Rowley, I. and W. F. Sharpe (1993) "International value and growth stock returns," *Financial Analysts Journal*, 27-36.
- Chan, K. 1988. "On Contrarian Investment Strategy". *Journal of Business*, 61, 147-163.
- Chan, L., Jegadeesh, N. and Lakonishok, J. 1996, "Momentum strategies", *Journal of Finance*, 51, 1681-713.
- Chui, A., S. Titman and K.C.J. wei. "Momentum Ownership structure, and Financial Crisis: An Analysis of Asian Stock Markets." Working Paper, University of Texas at Austin, 2000.
- Chordia, T. and Shivkumar, L. 2002, "Momentum, business cycle and time, varying expected returns", *Journal of Finance*, 57, 2, 985-1019.
- Claessens, S., Dasgupta, S. and Glen, J. (1998), "The cross section of stock returns: evidence from emerging markets", *Emerging Markets Quarterly*, Vol. 2, pp. 4-13.
- Conard, J., and G. Kaul. 1998. "An Anatomy of Trading Strategies." *Review of Financial Studies*, 11, 489-519.
- Cooper, M.J., Gutierrez, R.C., & Hameed, A. (2004). Market states and momentum, *Journal of Finance*, 59(2), 1345-1365.
- DeBondt, W., and R. Thaler, 1985, "Does the Stock Market Overreact? *Journal of Finance*, 40, 793-808.
- De Bondt, W.F. and Thaler, R. 1987, "Further evidence of investor overreaction and stock market seasonality", *Journal of Finance*, 42, 557-81.
- De Long, J.B., A. Shleifer, L. Summers and R. Waldmann. 1990. "Noise trader risk in financial markets, *Journal of Political Economy*", 98, 703-738.
- Fama, E. 1970, "Efficient Capital Markets: A review of Theory and empirical Work", *Journal of Finance*, 25, 383-417.
- Fama, E. and French, K. 1992. "The cross-section of expected stock returns". *Journal of Finance*, 46: 427-466.
- Fama, E. and French, K. 1993 "Common risk factors in the returns

- on stocks and bonds", *Journal of Financial Economics*, 33: 3-56.
- Fama, E. and French, K. 1995. "Size and book-to-market factors in earnings and returns". *Journal of Finance*, 50: 131-155.
- Fama, E. and French, K. 1996 "Multifactor explanations of assets pricing anomalies". *Journal of Finance*, 51: 55-84.
- Fama, E. and French, K., 1998. "Value versus growth: the international evidence". *Journal of Finance*, 53: 1975-1998.
- Frankel, J.A. and Schmukler, S.L. (1996), "Country fund discounts, asymmetric information and the Mexican crisis of 1994: did local residents turn pessimistic before international investors?", *Open Economics Review*, Vol. 7, pp. 511-34.
- Frankel, J.A. and Schmukler, S.L. (1998), "Country funds and asymmetric information", Policy Research Working Paper No. 1886, The World Bank.
- Froot, K., Connell, O. and Seasholes, P. (2001), "The portfolio flows of international investors", *Journal of Financial Economics*, Vol. 59, pp. 2515-47.
- Griffin, J. M., X. Ji, and S. Martin, 2003, Momentum investing and business cycle risk: Evidence from pole to pole, *Journal of Finance*, 58, 2515-2547.
- Grinblatt, M., Titman, S., Wermers, R., 1995. Momentum investment strategies, portfolio performance and herding: a study of mutual fund behavior. *American Economic Review* 85, 1088-1105.
- Grundy, B. and Martin, S. 2001, "Understanding the nature of risks and the sources of momentum investing", *Review of Financial Studies*, 14, 29-78.
- Gupta, L.C. 2000, "Returns on Indian equity shares reviewed", *ICFAI Journal of Applied Finance*, 6.
- Hameed, A. and S. Ting, 2000. "Trading volume and short-horizon contrarian profits: Evidence from Malaysian stock market", *Pacific-Basin Finance Journal*, 8, 67-84.
- Hong, H., T. Lim, and J. Stein, 2000, Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies, *Journal of Finance*, 55, 265-295.
- Hong, H. and J. Stein, 1999, A unified theory of underreaction, momentum trading, and overreaction in asset markets, *Journal of Finance*, 54, 2143-2184.
- Hong, H., Torous W., Valkanov, R., 2007. Do industries lead stock markets? *Journal of Financial Economics* 83, 367-396.
- Jegadeesh, N. (1990) "Evidence of predictable behavior of security returns," *Journal of Finance*, 881-898.
- Jegadeesh, N., and S. Titman. 1993. "Returns to Buying Winners and selling sellers : Implications for Stock market Efficiency." *Journal of Finance*, 48, 65-91.
- Jegadeesh, N., and S. Titman. 2001. "Profitability of Momentum Strategies: An Evaluation of Alternative Explanations." *Journal of Finance*, 56, 699-721.

A Comparative Study of the Performance of Selected Trading Strategies during Recent Recovery of Indian Equity Market

- Jensen, M., 1978, "Some Anomalous Evidence Regarding Market Efficiency", *Journal of Financial Economics*, 6, 95-101.
- Kahneman, D. and A. Tversky (1986) "Choices, values, and frames," *American Psychologist*, 34, 1-35.
- Kaminsky, G., Lyons, R.K. and Schmukler, S.L. (2004), "Managers, investors, crises: mutual fund strategies in emerging markets", *Journal of International Economics*, Vol. 64, pp. 113-34.
- Keynes, J.M. [1936] *The General Theory of Employment, Interest, and Money*. Cambridge University Press.
- Kleidon, A.W. [1986] "Variance bounds tests and stock price valuation models," *Journal of Political Economy* 94, 953-1001.
- Lakonishok, J., Shleifer, A. and Vishny, R.W. 1994. "Contrarian investment, expectation, and risk". *Journal of Finance*, v 49: 1541-1578.
- Moskowitz, T., Grinblatt, M., 1999. Do industries explain momentum? *Journal of Finance* 54, 1249-1290.
- Patel, S.A. (1998), "Cross-sectional variation in emerging markets equity returns, January 1988-March 1997", *Emerging Markets Quarterly*, Vol. 2, pp. 57-70.
- Richards, A.J. (2002), "Big fish in small ponds: the momentum investing and price impact of foreign investors in Asian equity markets", IMF and the Reserve Bank of Australia.
- Rouwenhorst, K.G. (1997), "International momentum strategies." Working Paper.
- Rouwenhorst, K. G. (1998) "International Momentum Strategies. 1998." *Journal of Finance*, 53, 267-284.
- Rouwenhorst, K.G. (1999), "Local return factors and turnover in emerging markets", *Journal of Finance*, Vol. 54, pp. 1439-64.
- Schiereck, D., De Bondt, W. and M. Weber (1999) "Contrarian and momentum strategies in Germany," *Financial Analysts Journal*. 104-117.
- Scott, J., M. Stumpp, and P.Xu (2003) "Overconfidence bias in international stock prices," *Journal of Portfolio Management*, 80.
- Sehgal, S., and Sakshi Jain. 2011. "Short-term momentum patterns in stock and sectoral returns: evidence from India." *Journal of Advances in Management*, 8, 1, 99-122.
- Sehgal, S. and Balakrishnan, I. 2002, "Contrarian and momentum strategies in Indian capital market", *Vikalpa*, 27, 13-19.
- Sehgal, S. and Balakrishnan, I. 2004, "Momentum profits, portfolio characteristics and asset pricing models", *Decision*, IIM Calcutta, 31, 2.
- Sehgal, S. and Balakrishnan, I. 2008, *Rational Sources of Momentum Profits: Evidence from the Indian Equity Market*, ICFAI University Press, Hyderabad, 5-40.
- Sehgal, S. and Balakrishnan, I. 2010, "Multi-factor explanation of CAPM anomalies: a reexamination for Indian stock market", working paper, Department of Financial Studies, University of Delhi, Delhi.
- Shiller, R. I. (1981) "Do stock prices move too much to be justified by subsequent changes in dividends?," *American Economic Review*, 421-435.
- Shiller, R. I. (1984) "Stock prices and social dynamics," *Brookings Papers on Economic Activity* 2, 457-498.
- Shleifer, A. and R. Vishny. 1990. "Equilibrium short horizons of investors and firms", *American Economic Review Papers and Proceedings*, 80, 148-153.
- Summers, L.H. [1986] "Does the stock market rationally reflect fundamental values?," *Journal of Finance* 41, 591-601.
- Vander Hart, J., Slagter, E. and Van Dijk, D. (2003), "Stock selection strategies in emerging markets", *Journal of Empirical Finance*, Vol. 10, pp. 105-32.

BRIEF PROFILE OF THE AUTHORS

Dhanjay Yadav is Assistant Professor in management and soft skills at Indira Gandhi Delhi Technical University for Women, New Delhi. He is pursuing PhD through BIMTECH from MLSU Udaipur, Rajasthan. He has done MBA from IET, Lucknow. He has more than 7 years of experience in academics and 3 years of experience in industry. His research interest area is investment management.

Girish Jain is Associate Professor in finance area at BIMTECH Gr. Noida. He has done PhD on "Risk Disclosure by Indian Banks: Critical Study" from CCS University, Meerut. He did MBA in finance and M.Com from DAVV, Indore. He has more than 20 years experience in academics. His research papers have been published in various esteemed Journals. His research interest area is corporate finance, risk management and investment management.