

Performance evaluation of Multicap equity Schemes

Jivanjot Singh*

*Assistant Professor
Mittal School of Business
Lovely Professional University
Jalandhar-India
jivanjot.25163@lpu.co.in*

Abstract

Mutual fund is a professionally managed in which the professional managers who pool the money through various sources and invest the money into equity, debt and other sources. These managers are professional and have all the knowledge about the market, the risks and returns involved which is the major drawback of the investment being made by an individual investor. These investments are spread across the industry which leads to diversification of risk. The mutual fund offers number of schemes and thus making it easy for investor to choose the fund on basis of his risk and return perception. The present study aims to compare and analyse performance of Multicap equity schemes and their benchmarks, competitors and other avenues of investment. Hence it seeks to find out whether the returns of selected equity schemes of Reliance mutual funds are able to outperform their benchmarks. Then it seeks to determine how these schemes fare against their competitors. Results showed mutual funds of all 7 companies are higher than their benchmark. Investors can get higher returns by investing in mutual funds than their self-managed portfolio.

Keywords:- *Mutual funds, Multicap Equity, Investors*

Introduction

Investing into different kinds of assets is an intriguing action that pulls in the individuals from varying backgrounds independent of their occupation, monetary status, instruction and family foundation (Gupta1974). An individual with more cash in hands can fulfil his utilization prerequisites just as put something aside for the lean time is figured to be the potential financial specialist who can place his cash in protections, bank stores, land, gold or in some other resources of his/her advantage. Thus, the individual who have additional money put it into various sorts of assets so as to improve their wealth. This cycle of wealth creation proceeds with which is named to be the interest in more extensive sense.(Agrawal, 2011)

Investment is made with a point of expanding present wealth and includes two significant components, in particular, the time and Risk. Current utilization might be pruned in hope to get extra return later on this shows the risk component of any investment made. All investments include certain component of risk and their risk profiles shift as indicated by the changing level of profits.

The economic and financial meanings of investment have slightly different approaches. Former considers investment as a net addition to the nation's capital stock while the later, is allocation of money to assets class that can yield some returns over a period of time.(Grinblatt, & Titman, 1992) Both approaches are absolutely linked to each other because savings of the people are invested into capital or money market instruments as financial investment first, and then, it is utilised as economic investment further. The financial investment varies according to the financial goals of the individuals. The retired people would like to save for their future needs; private individuals would like to increase their present wealth; private corporate would prefer to expand the existing business and government would prefer to finance its projects. Hence, finance is the key to investment and thus to economic growth in a nation(Sharpe 1966).

Finance is one of the fundamental elements of monetary framework which includes the whole of capacities performed by every money related middle person. Monetary intermediaries complete the capacity of intervening cash among saver and borrower and help with spreading the danger of budgetary interests in an enhanced structure. They give the liquidity facility to the financial specialists with some essential data and furthermore, direction about the investment procedure. In straightforward terms, "financial intermediaries are the organizations that give administrations and items that clients will be unable to get all the more proficiently independent from anyone else in the budgetary market".

MUTUAL FUNDS

Nowadays, people invest in a wide spectrum of financial market options such as bonds, shares and short-term securities but among all the existing investment avenues, mutual fund has become the investment instrument for small scale investors. Mutual fund is basically a retail product, which is especially designed for those people who avoid accruing any disadvantage due to asymmetric information availability and shortage of time or skill to keep track of the financial market and business movements (Sharpe 1966). It garners the savings of this class of investors significantly and eases them from the kind of pressure involved in managing the securities. It works as an intermediary that comprises the huge system of financial management services involving fund manager who act on behalf of investors and exploit their knowledge to select the securities according to investors' investment objectives criteria thereby professionally manage the investors' money. Managed portfolio of securities incurs some gain or loss and offer dividend or interest income to the individual investor. Mutual funds are required to get registered with the state regulatory or any other formed authority of the country before mobilising their resources. Thus, by offering the investors an indirect doorway to participate in the financial market and benefiting from diversified portfolio that too managed by professionals with adequate expertise and market knowledge, mutual fund has become an important constituent of the global financial system now.

Mutual fund is an investment vehicle, which works on the ethics of 'resource pooling' activity. It pools the savings from different array of investors by selling varied nature of investment units and invests that pooled savings in numerous corporate and government type of securities.

CHARACTERISTICS OF MUTUAL FUND

Mutual Funds gather dispersed little investment funds into a typical store of sizeable sum. Fund Mobilization: Mutual assets give a chance to little speculators to put their cash in businesses which is beyond the realm of imagination generally. By method for support preparation exercises from huge number of people, common assets can gather a major entirety which later on is accessible to enterprises and other monetary exercises (Sharpe, 1966). Mutual supports utilize specialists for professionalized portfolio the executives. Along these lines, speculators are getting the advantage of master money related administration. Mutual assets put the gathered assets in differing protections, for example, values, debentures and obligations of different organizations. The speculations are made in fixed and guaranteed return protections just as cash acknowledging protections. Along these lines the expansion of ventures is helping the financial specialists to limit the hazard and amplify the profit (Grinblatt, & Titman, 1992). Mutual assets reveal every single important certainty concerning the store and the plans propelled routinely. The most significant exposure is the net resource esteem (NAV) of different plans. The profit of common

assets are circulated among the financial specialists with respect to their property in the wake of modifying the working costs.

Advantages of Mutual Funds

Mutual fund offers several advantages to the general investors. Investors gain the automatic benefit of research and low-cost information services by investing in mutual funds. Mutual fund portfolio is managed by highly skilled professionals with expertise knowledge and having a dedicated team for analysing the performance of stocks. So, the fund will have lower risk and achieve higher returns. Diversification is a risk reduction strategy in which stocks of different companies of different industries and from different countries are chosen so there is a negative correlation in their returns. If a company doesn't provide adequate returns it will be compensated by other stocks giving greater returns (Grinblatt, & Titman, 1992). Returns offered by mutual funds are comparatively better than any other investment alternative. Shared reserve offers a moderately more affordable approach to contribute when contrasted with different roads, for example, capital market venture. The charge regarding businesses, custodial expenses and other administration charges are significantly lower than different alternatives and are legitimately connected to the presentation of the plan. Interest in common assets additionally offers a ton of adaptability with highlights, for example, customary venture plans, normal withdrawal plans and profit reinvestment plans empowering orderly speculation or withdrawal of assets. Indeed, even the financial specialists, who could some way or another not enter securities exchanges with low investible assets, can profit by a portfolio including extravagant stocks since they are obtained from pooled reserves. Investors in open-ended mutual fund schemes can withdraw or redeem their investment anytime at the (NAV) related prices. In close-ended schemes, the funds can be sold at the prevailing market prices in a stock exchange. Regulatory Supervision to protect the interest of investors, mutual fund must comply with the strict regulatory norms framed by country/ state regulatory authorities. These norms stipulate mutual funds to disclose necessary information submit several reports and publish operational details for public information. where the investor is situated.

Disadvantages of Mutual Funds

Despite accruing the benefits to general investor, mutual funds also have some disadvantages. But, some of them are temporary in nature and depend on the kind of schemes selected. Mutual fund investor has to bear the unnecessary burden of sales charges, annual fees and other expenses. Kaura, & Jayadev (1995) highlighted that during the clients have to pay extra taxes on capital gains. Every investment involves some degree of risk. When the entire stock market goes down, the value of mutual fund shares will also go down despite styling a balanced portfolio.

Investor may go through the risk of losing money by investing in mutual funds because returns on them cannot be guaranteed by any means (Krishnamurthi 1997). In mutual funds, investors have to depend on fund managers for any decision making related to the fund portfolio. If fund managers do not perform according to investor's expectation, then investor might fail to earn as much money on his investment as he expected. In this way, he/she has to suffer from the management risk by investing in mutual funds. In spite of the fact that diversification decreases the measure of hazard engaged with putting resources into shared assets, it can likewise be a hindrance because of weakening. For instance, if a solitary security held by a shared store duplicates in esteem, the common reserve itself would not twofold in esteem since that security is just a single little piece of the reserve's property. By holding an enormous number of various ventures, shared subsidizes will in general do neither particularly well nor outstandingly inadequately (Ibikunle, & Steffen, (2017) examined that around 75% of every common reserve neglect to beat the significant market records and a developing number of pundits currently question whether proficient cash chiefs have preferred stock-picking abilities over the normal financial specialist.

The directors of shared finances settle on the entirety of the choices about which protections to purchase and sell and when to do as such (Grinblatt, & Titman, 1992). This can make it hard for you when attempting to deal with your portfolio. For instance, the duty results of a choice by the administrator to purchase or sell a benefit at a specific time probably won't be ideal for you. You additionally ought to recollect that you are relying upon another person w.r.t your cash when you put resources into a shared store.

CLASSIFICATION OF MUTUAL FUNDS

Keeping focus on the needs, objectives and liquidity holding of investors, mutual funds can be classified in several ways. Some of these classifications are described below:

A. Functional Classification by Structure/ Tenor

a. Open-ended Funds- An open-ended fund is characterised by the unlimited capitalisation, flexibility to enter and exit the scheme and no preset date of redemption. Unit holders can buy or sell their units at the current price of NAV (net asset value) to the issuing mutual fund anytime during the life of scheme. The corpus of fund can change frequently on daily basis due to the frequency of transactions by investors. In such schemes, when the demand for particular fund is high enough, the fund can issue any amount of shares without considering how many investors there are (Wermers, 1997)

b. Close-ended Funds has the limited capitalisation, very low flexibility, predetermined date of closing subscription and redemption. Investors can buy/ sell units in the market at the prevailing market. These are traded on the major stock exchange of the country. The market price of such

funds varies in direction to the demand and supply situation and may be above or below the scheme's NAV.

c. Interval Funds- Interval fund offers the combining features of close-ended and open-ended funds under one roof. During preset intervals, these can be traded on stock exchange or can be sold or redeemed at NAV related prices.

B. Portfolio Classification Based on Nature/ Investment Objective/ Asset Class

This classification of mutual fund is based on the nature/ objective of different securities. These are designed keeping in view the varied risk-return profiles of investors.

- Growth Funds- the basic focus is on the appreciation of the value or wealth of clients. Stocks of those companies are chosen which has a potential to rise in coming future. Focus is not on the profits or liquidity rather it is a long term investment that gives return in the form of appreciated value of fund(Ghoul, & Karoui, 2017)
- Income Funds- These funds are for those investors who are interested to have regular and steady mode of income from investments. Such funds invest their assets in fixed income securities such as bonds and corporate debentures, mainly with an aim of providing interest higher than that paid by banks(Berk & Green, (2004). These funds have limited capital appreciation and their risk profile varies from low to medium. Income funds are well suited to risk-averse investors like retired people and students.
- Balanced Funds- The fundamental target of adjusted reserve is to give the mix of development and pay. These assets put reasonably both in shares and fixed pay protections as per the extent showed in their offer records(Pal,& Mittal, 2011)The venture example of such plans permits 60 percent of its net resources for be put resources into value and value related instruments and the equalization 40 percent to be put resources into fixed pay protections, currency advertise instruments, money and money counterparts. Adjusted assets are reasonable for the speculators searching for a mix of salary (occasional returns) and moderate development (capital appreciation).
- Money Market/ Liquid Funds- Currency advertise reserves give the wellbeing, moderate salary and high liquidity by putting 100 percent of its corpus in a differentiated arrangement of obligation and currency showcase protections. Offering high liquidity at generally safe is the significant element of these assets(Babalos, Mamatzakis, & Matousek, 2015). These assets are perfect for the corporates and individual speculators who need to stop their surplus assets for transient period.
- Tax Saving Funds- Under tax saving funds, investors enjoy the benefit of tax exemption provided under tax laws. The minimum lock-in-period for such investment is usually

three years. These funds promote the long-term investments in equities and are suitable for the investors seeking tax incentives. (Bauer, Koedijk, & Otten, 2005)

- Geographical Classification Based on the Periphery
- On the basis of geographical classification, mutual funds that are floated within a country's periphery for its citizens are known as the domestic mutual funds and that floated outside the periphery for foreigners or citizens living outside its parent country, are known as offshore mutual funds. Pal, & Mittal, (2011) explained domestic mutual funds are offered for subscriptions from citizens and offshore funds for the subscriptions from foreigners because of the difference in country's periphery.

Review of Literature

A plethora of western and Indian empirical studies have been conducted on mutual funds.

Cumby and Glen (1990) inspected a sample of fifteen US based globally differentiated mutual fund between January 1982 and June 1988 by utilizing the two execution. They found no proof that the assets, either exclusively or all in all beat both the benchmark portfolios (for example the Morgan Stanley World Index and the two portfolio benchmark comprising of the world list and a similarly weighted arrangement of Eurocurrency stores) over the example time frame. In an examination, Grinblatt and Titman (1993) presented another proportion of portfolio execution, the "Portfolio Change Measure" and finished up similar discoveries with the previous investigation led by similar creators. They additionally dissect the determinants of common reserve execution, for example, Net Asset Value load costs portfolio turnover and the executives expense. they inferred that turnover was essentially decidedly identified with the capacity of store supervisors to procure strange Returns.

Gruber (1996) inspected the explanations behind mutual fund popularity and presumed that Customer services including Record Keeping and capacity to move cash around among reserves low transaction cost diversification and expert administration security determination were the significant four factors behind the prominence of shared assets. with the utilization of an example of 270 Mutual Funds during the period 1985 to 1994 he inspect how effectively oversaw open finished subsidizes have performed relative Lee to a proper arrangement of records. applying single list model and four file model he reasoned that the common assets failed to meet expectations the market. the outcomes underscored that financial specialists in effectively oversaw Mutual Funds have been more judicious than have been accepted previously.

Redman et al (2000) look at the hazard balanced returns of worldwide Mutual Funds over the three timeframe 1985 through 1994, 1985 through 1989 And 1993 through 1994. Sharpe's file, Treynor's record and Jensen's alpha were Computed for 5 arrangement of worldwide common assets : World, Europe, foreign, Pacific and universal and the exhibitions of these 5 portfolios was contrasted with an intermediary for the financial exchange the Vanguard list 500 common assets and was a Portfolio made out of shared finances that put resources into US gave stocks (household Mutual Funds). They found blended outcomes and presumed that the financial specialist could get potential broadening benefits by adding Global assets to arrangement of residential Mutual Funds. Kothari and Warner (2001) execution quantifies by utilizing invigorated supports whose attributes emulate real assets. The creator's affirm that an occasion study philosophy dependent on Mutual Fund Holdings might be a better route than break down shared reserve execution.

Busse (2001) by using a sample of 230 domestic equity funds during the period January 2, 1985 to December 29, 1995 concluded that daily estimates were more precise relative to monthly estimates.

Otten and Bams (2002)liquid fund performance by utilizing an exceptional survivorship controlled database that considers of 506 common assets from the five European nations: France, Germany, Italy, Netherlands and UK. further they are likewise viewed as the impact of a few fund attributes like administration costs, support resources and age on chance balanced execution. Carhart (1997) four factor resource valuing model has been utilized to explore the presentation of European value reserves. They found that European shared assets and uncommonly little top assets had the option to include an incentive as demonstrated by their positive after cost alphas. another examination led by similar creators - Otten and Bams (2004) gave a thorough evaluation of existing common store execution models utilizing a survivorship bais free database of 2436 US open finished value assets from January 1960 to 22 December 2000. Some researchers have examined in mutual fund performance in relation to their characteristics such as size, expenses, turnover, past performance etc.

Chevalier and Ellison (1999)inspected whether mutual fund performance was effected with the attributes of fund manager capacity, information or exertion. Results concluded that more young fund managers perform superior to more old fund managers.

Gupta (2001)assessed the exhibition of 73 Mutual Funds of period April 1994 to March 1999 by utilizing 7 execution measures - pace of return , Treynor , Jensen differential return ,

Sharpe differential return , examination proportion and segments of speculation execution measure. He found that the exhibition of test plans during the investigation time frame had demonstrated blended outcomes.

Nair and Ramanthan (2002) analyse the performance of selected Mutual Funds by using the stochastic dominance Efficiency Test. the selected Mutual Funds were one of the top 10 performing funds during the year 2001 - 02, yielding a return of more than 30%. the results provided substantial evidence in the favour of the application of second degree stochastic dominance test as a most convincing tool for portfolio screening.

Rao (2006) consider 21 growth plans and 21 profit plans for breaking down the exhibition of chose open finished value Mutual Funds during the period of April 2005 to march 2006 by concentrating on the two prevailing speculation styles that is development and profit plans. The investigation was finished by utilizing the exhibition estimates, for example, month to month exacerbated return, hazard per unit return and sharpe's proportion. The development plan should moderately preferred execution over the profit plans repeating the way that the investment styles matters in execution assessment of the shared assets.

Objectives of study

- To compare the performance of Reliance Multi Cap Equity Fund with its benchmark.
- To compare the performance of Reliance Multi Cap Equity Fund with its competitors

Method

This study was conducted for a time of 48 days, in which the primary center was to see the exhibition of the mutlicap top store of Reliance Mutual Funds. The investigation first attempts to comprehend the structure of the chose assets which decides the extent of execution for the assets. At that point a near investigation of the shared store plans is done to break down the exhibition of 5 assets over the time of 10 years.

The method of selecting samples i.e. the multi cap funds of Reliance Mutual Funds along with funds of other companies is purposive sampling. This method is used so as to get necessary and sufficient data which will be helpful in studying the trend of rolling returns and modified duration of funds

- HDFC Multi Cap Equity Fund
- ICIC Prudential Multi Cap Equity Fund
- SBI Magnum Multi Cap Equity Fund

- Reliance Multi Cap Equity Fund
- Franklin India Equity Fund
- UTI Multi Cap Equity Fund
- Aditya Birla Sun Life Equity Fund
- Kotak Mahindra Standard Equity Fund

Primary and secondary sources are used for data collection. The study has been conducted from the period of January 2009 to June 2019. Monthly estimates of NAV are more precise than quarterly estimates therefore monthly values of NAV have been considered from various trusted sites. MS Excel has been used to study the trend of rolling returns. Monthly NAVs are used to calculate the rolling returns with the help of following formula:

$$\frac{\text{Current Year Monthly NAV} - \text{Base Year Monthly NAV}}{\text{Base Year Monthly NAV}} \times 100$$

Result

Comparison of performance of reliance multi cap equity fund with its benchmark-BSE 500

The average 1 year return of Reliance Multi Cap Equity Fund is 21.84% which is higher than its benchmark BSE 500, 14.42%. We can interpret that Reliance Multi Cap Equity fund has been able to deliver returns of 16.68% above its benchmark of BSE 500 i.e. 11.18% on a 3 Year Rolling Return basis. Reliance Multi Cap Equity Fund has delivered a CAGR of 18.20% on a 5 Year Rolling Return basis in comparison to the benchmark of BSE 500, 12.25% (see Table1).

Comparative analysis of multicap equity schemes of selected AMCS

Table

Performance Analysis of Multicap Schemes of Different Mutual Funds

S. NO	Fund House	Multicap Scheme	Rolling Returns							
			Monthly (%)		1 Year(%)		3 Year(%)		5 Year(%)	
			Sch eme	Bench mark	Sch eme	Bench mark	Sch eme	Bench mark	Sch eme	Bench mark
1	Reliance Mutual Fund	Reliance Multi Cap Fund	1.75	1.33	21.84	14.42	16.68	11.18	18.20	12.25
2	Aditya Birla Sun Life Mutual Fund	Aditya Birla Sun Life Equity Fund	1.54	1.32	18.61	14.21	15.96	11.07	17.82	12.12

3	HDFC Mutual Fund	HDFC Equity Fund	1.65	1.33	19.30	14.42	14.31	11.18	15.68	12.25
4	ICICI Prudential Mutual Fund	ICICI Prudential Multi Cap Fund	1.50	1.33	17.49	14.42	14.92	11.18	16.48	12.25
5	SBI Mutual Fund	SBI Magnum Multi Cap Fund	1.46	1.33	16.90	14.42	15.07	11.18	16.88	12.25
6	Kotak Mahindra Mutual Fund	Kotak Standard Multi Cap Fund	1.20	1.32	15.61	14.21	16.67	11.07	18.32	12.12
7	Franklin Templeton Mutual Fund	Franklin India Equity Fund	1.50	1.33	17.49	14.42	14.92	11.18	16.48	12.25

On a 5 Year Rolling return basis,

All the sample funds have been able to perform above the benchmark return of BSE 200 (12.12%) and BSE 500 (12.25%). All the funds have generated an alpha for 5 year investment horizon. The highest return was recorded by Reliance Multi Cap Fund (18.20%) and Kotak Mahindra Standard Equity Fund (18.32%). On 3 Year Rolling return basis, All the sample funds have been able to perform above the benchmark return of BSE 200 (11.07%) and BSE 500 (11.18%). All the funds have generated an alpha for 3-year investment horizon. The highest return was recorded by Reliance Multi Cap Fund (16.68%) and Kotak Mahindra Standard Equity Fund (16.67%). On 1 Year Rolling return basis, All the sample funds have been able to perform above the benchmark return of BSE 200 (14.21%) and BSE 500 (14.42%). All the funds have generated an alpha for 1-year investment horizon. The highest return was recorded by Reliance Multi Cap Fund (21.84%) and HDFC Equity Fund (19.30%).

FINDINGS

An investor who has little to no knowledge of stock market but seeks greater returns on his investment must go ahead and invest in mutual funds as compared to investing independently in the stock market or going for the fixed income investments since mutual funds offer a greater return on investment as compared to the other avenues.

- Top Performing Funds: Reliance Multi Cap Fund and Kotak Standard Multi Cap Fund are the top performing funds on 1 year, 3 year and 5 year investment horizon.
- Low Performing Funds: HDFC Multi Cap Equity Fund is the bottom performing fund on 3 year and 5 year investment horizon

In case of multi cap equity schemes, the investor must invest in Reliance Multi Cap Equity Fund and Kotak Standard Equity Fund to get high returns in the long term time horizon

Limitations of the Study

The study has been conducted taking into account only selected multicap equity schemes of owing to the time constraint. Also for the sake of comparison with the competitors, only one scheme per competitor has been taken. Further, the comparison with only the top 8 companies, as

per AMFI ranking, was done leaving aside the rest. Also, comparison with several other avenues of investment could not be done owing to the non-availability of data.

Conclusion

Investors can get a high return from mutual funds as compared to self managed funds if they don't have the proper expertise or knowledge about investing. Mutual funds have gained popularity due to higher returns than benchmark indices. Multicap mutual funds are a high return investment option for investors. Indian mutual funds companies have given a higher return as compared to foreign Asset management companies. Market capitalisation is increasing day by day for mutual funds as they are gaining confidence of Investors.

References

- Agrawal, D. (2011). Measuring performance of Indian mutual funds. *Finance India*, June.
- Bauer, R., Koedijk, K., & Otten, R. (2005). International evidence on ethical mutual fund performance and investment style. *Journal of Banking & Finance*, 29(7), 1751-1767.
- Berk, J. B., & Green, R. C. (2004). Mutual fund flows and performance in rational markets. *Journal of political economy*, 112(6), 1269-1295.
- Babalos, V., Mamatzakis, E. C., & Matousek, R. (2015). The performance of US equity mutual funds. *Journal of Banking & Finance*, 52, 217-229.
- El Ghoul, S., & Karoui, A. (2017). Does corporate social responsibility affect mutual fund performance and flows?. *Journal of Banking & Finance*, 77, 53-63.
- Friend et al (1962), *A Study of Mutual Funds*, SEC, USA.
- Gupta (1974), *The Mutual Fund Industry and its Comparative Performance*, Journal of Financial and Quantitative Analysis, Vol. 6
- Grinblatt, M., & Titman, S. (1992). The persistence of mutual fund performance. *The Journal of Finance*, 47(5), 1977-1984
- Krishnamurthi, S(1997), *Genesis of Mutual Funds in India*, Vision Books, New Delhi.
- Kaura, M.N & Jayadev, M (1995), *Performance of Growth Oriented Mutual Funds: An Evaluation*, Applied Finance, Vol. 1, No. 1, pp.1-14.
- Ibikunle, G., & Steffen, T. (2017). European green mutual fund performance: A comparative analysis with their conventional and black peers. *Journal of Business Ethics*, 145(2), 337-355.
- Narend, S., & Thenmozhi, M. (2016). What drives fund flows to index ETFs and mutual funds? A panel analysis of funds in India. *Decision*, 43(1), 17-30.
- Narayan, P. K., Narayan, S., & Prabheesh, K. P. (2014). Stock returns, mutual fund flows and spillover shocks. *Pacific-Basin Finance Journal*, 29, 146-162.
- Pal, K., & Mittal, R. (2011). Impact of macroeconomic indicators on Indian capital markets. *The journal of risk finance*, 12(2), 84-97.
- Sharpe, W. F. (1966). Mutual fund performance. *The Journal of business*, 39(1), 119-138.

Grinblatt, M., & Titman, S. (1992). The persistence of mutual fund performance. *The Journal of Finance*, 47(5), 1977-1984.

Wermers, R. (1997). Momentum investment strategies of mutual funds, performance persistence, and survivorship bias. *Unpublished Working Paper, University of Colorado*