

Portfolio Diversification and Financial Performance of Mutual funds in India

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Abstract

Financial innovations have become the central driving force taking any financial system towards economic efficiency. Indian Capital market has shown a spurt growth with financial innovations becoming a regular feature leading to change in investor's preferences for newly fangled financial innovations. Mutual fund has become an obvious choice for most of the investors because of its performance in terms of providing higher returns at low risk. Although past performance of fund is an important parameter in selecting a particular Asset Management Company (AMC) for investment yet some other parameters that should be considered involves knowledge and diligence of fund managers in deciding asset mix for funds as it results in significant difference in financial performance of fund as compared to other funds. This paper employs Beta (β), Fama, Sharpe (S^i), Treynor (T^i) as a risk measure that measures the variability of fund in terms of return provided and if fund manager was able to provide return over and above risk free return and expected return. Results of the study show that funds under study vary to some extent in terms of risk level assumed and returns generated from investment. Difference in investment style adopted by various funds managers in designing portfolio with updated market knowledge certainly yields them superior returns in comparison to other funds. [PUBLICATION ABSTRACT]

Full text

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Financial innovations have become the central driving force taking any financial system towards economic efficiency. Indian Capital market has shown a spurt growth with financial innovations becoming a regular feature leading to change in investor's preferences for newly fangled financial innovations. Mutual fund has become an obvious choice for most of the investors because of its performance in terms of providing higher returns at low risk. Although past performance of fund is an important parameter in selecting a particular Asset Management Company (AMC) for investment yet some other parameters that should be considered involves knowledge and diligence of fund managers in deciding asset mix for funds as it results in significant difference in financial performance of fund as compared to other funds. This paper employs Beta (β), Fama, Sharpe (S^i), Treynor (T^i) as a risk measure that measures the variability of fund in terms of return provided and if fund manager was able to provide return over and above risk free return and expected return. Results of the study show that funds under study vary to some extent in terms of risk level assumed and returns generated from investment. Difference in investment style adopted by various funds managers in designing portfolio with updated market knowledge certainly yields them superior returns in comparison to other funds.

Keywords: Net Asset Value (NAV), Asset Management Companies (AMCs), Asset mix, Portfolio risk, Financial return, Investment portfolio

1. Introduction

Mutual fund industry in India has already entered in the world of exciting innovations that has lured investors to invest in Mutual funds as a preferred investment. Intense competition put forth by private players in this industry has forced fund managers to foster innovations in existing schemes that can satisfy the investment objectives of investors. Reduced complexities, strong integrated network and decreasing market imperfections are luring Indian investors to invest their domestic savings into capital markets but risk averse attitude of Indian investors do not allow them to directly participate in this race. Thus, investment through mutual fund is most suitable option that provides them with maximum return at minimum risk. Mutual funds industry has moved from offering a handful of

schemes like equity, debt or balanced funds to liquid, money market, sector specific funds, index funds and gilt edged funds. Beside this recently mutual funds have introduced some special specific funds like children plans, education plans, insurance linked plans, and exchange traded funds. This is the reason that over the time Indian investors have started shifting towards mutual funds instead of traditional financial avenues. Automated approaches designed by new technology and data mining is helping Asset Management Companies (AMCs) of mutual funds in strategic planning and investment decision making by uncovering the hidden patterns and predict future trends and behavior in financial markets.

Mutual fund AMCs take care of every specific need of investors especially their risk appetite and accordingly design well-diversified portfolio that can provide returns to match investor's expectations. Thus, complete focus of fund managers is on striving to achieve not less than rate of return consistent with risk level they assume. On the other side investor's are generally more careful while investing and presence of rationality among investors demand more returns at low risk. Absence of perfect knowledge about financial markets create problem for investors on the issue of evaluating mutual funds. As a result most investors select AMC on the basis of word of mouth advertisement and sometimes over tempting returns by a particular fund lure them. However, fund managers vary in investment styles and knowledge they possess that leads to different outcomes even for same fund run by different AMCs. This ultimate difference between investment style opted by fund manager in designing portfolio and investment objective set by investors poses a serious threat. Thus, it becomes imperative for investors to thoroughly investigate fund before investing and should not use past returns as only mean in selecting a particular fund scheme.

2. Literature Review

Mutual fund industry in India although working at excellent pace is still far behind from the heights it should have touched as it is still ranked at 19th position among worldwide mutual fund markets. Despite the reason that Indian Mutual fund industry possesses high potential, very few researches have been conducted to study the working of mutual funds and which relative measure should be used to measure their performance. Huge literature available on predicting stock market returns has proved that generally investors consider stock's past returns to decide future returns (De Bondt, 1993) and past returns are positively correlated with investor's expectations from future return (Fisher et. al, 2000) but return alone cannot be used as a measure of evaluating the performance of mutual funds as most commonly some highlighted stocks are taken into portfolio for cosmetic purposes (Neal, 2001). Return ambiguity and changes in risk perception of individual investor affect action taken in risky financial market. Computational complexities are not only the reason why rationality assumption is challenged rather challenges also come from cognitive reasoning (Anderson 1991) where question is how optima human beings are. Based on different investment objectives fund managers have to use their specialized skills and adopt varied investment styles. Gottesman & Morey (2006) conducted research to find relationship between manager's education and mutual fund performance and concluded that certainly managers with higher intelligent level acquire advance knowledge on market movements and can use these skills to get superior performance.

Analyzing the performance of mutual fund is a critical issue. Different researchers have used varied parameters to evaluate fund schemes with respect to their ability to generate returns and skills to reduce risk. Haslem (1988) used fund's systematic risk, beta coefficient to compare portfolio risk relative to market risk. Investment in equity funds is the obvious choice of highrisk profile investors. Treynor (1965) and Sharpe (1966) provided a specialized index to measure superfluous returns by equity funds. In this regard they differ in their evaluation criteria as Treynor used only systematic risk to measure portfolio performance but Sharpe used total risk to evaluate fund Performance. Fama (1972) provided a different approach to measure performance of mutual funds and accordingly he developed a measure in the form of comparing actual realized return and expected portfolio return. Financial innovations have become the central driving force taking any financial system towards economic efficiency. Similarly innovations in Indian mutual fund industry have completely given it afresh look. Study by Kane (1978) has described the process of avoiding regulations, as "loophole mining" which suggests that when regulatory constraints are so burdensome that large profits can be made by avoiding them, financial innovations is more likely to occur. These financial innovations may look for searching either entirely new product or making some structural changes in already

built financial products to focus on investor's requirement. In Indian context very few studies have been conducted on mutual funds to measure their performance. Gupta & Sehgal (1997) performed benchmark comparison of 80 mutual fund schemes during the period from 1992-1996 and concluded that industry performed well during this period. Bello (2005) matched a sample of socially responsible funds with randomly selected conventional funds to investigate difference in characteristics of assets held, degree of portfolio diversification and effect of diversification on fund performance and concluded that socially responsible mutual funds does not differ significantly from conventional funds in any of these attributes. Panwar & Madhumati (2006) studied sample of public sector sponsored and private sector sponsored funds to investigate the differences in characteristic of asset held, portfolio diversification and variable effect of diversification on fund performance during 2002-2005 and concluded that private sector funds do not differ significantly in terms of mean return but differ significantly in terms of average standard deviation and average covariance.

3. Research Objectives

With Mutual fund luring investors with innovative schemes to satisfy investor's quest, it has become imperative to study the working of mutual funds in India with reference to strategies opted by fund managers of different AMCs that result in different return for investors. Moreover investors are also required to analyze some key parameters of fund they are selecting to invest besides looking into the historical returns provided by the fund scheme. To address this issue present study was initiated to analyze various parameters of funds that highlight and disclose the operational efficiency of funds along with different type of risks associated with the fund. The study was conducted with following objective:

To study the investment style and distinguished strategies of mutual funds in India those help a particular AMC to yield superior return than other funds.

To compare the operational performance of selected funds in term of return benefits provided to the investors.

To analyze the risk level assumed by investors that help fund managers to get return above risk free return.

To conduct this study only four mutual funds were taken under study that are most commonly preferred by a common investor either because of their strong fundamentals or because of their aggressive marketing that include UTI mutual fund, SBI Magnum mutual fund, Reliance mutual fund and ICICI Prudential mutual fund. Although all these four AMCs have already launched varied fund schemes to suit individual investors but only equity, income and balanced funds were taken under broad research purview.

4. Performance evaluation of Mutual funds

A rational investor generally hand over their savings to mutual fund AMCs in the anticipation of yielding abnormally high return, assuming fund managers possess updated market knowledge and professional skills. However, despite the fact that fund managers make every possible attempt to design fund schemes according to investor's objectives, yet they vary in deciding the proportion of asset mix and their stock selection abilities. These differences in investment style and market knowledge of fund manager yield different returns even to the funds categorized under same umbrella. This study endeavors to identify the hidden practices that fund managers follow and uses as a key differentiator. The study initially compares the important parameters of four funds under study for their performance evaluation and simultaneously provides a comparable choice of fund managers for deciding asset-mix.

4.1 Analysis Of Equity-Growth Funds

Table 1 compares the basic parameters of four mutual funds under our study. Expense ratio of all the four funds when compared shows that SBI Magnum equity fund-Growth has got top position with $E_p=2.50\%$ and UTI Equity fund takes the next lead with $E_p=1.94\%$. With regard to volatility in NAV UTI seems to be performing well with 52 week highest on 37.88 whereas Reliance equity fund has a slow move with 13.46. UTI seems to be playing well with healthy strategies of investment as the 52 week low NAV in this fund was 23.63 in comparison to Reliance Equity Fund at 8.21. As a general practice a fund with higher portfolio turnover rate is not accepted to be excellent but in case of Reliance Equity Fund-Growth highest level of portfolio turnover rate i.e 114% should not be given a negative look as it is providing higher rate of return than all other funds under our

study. The only negative aspect about higher portfolio turnover rate is that it adds to transaction cost but if this increased return is offsetting the increased transaction cost it cannot be considered negative. SBI magnum Equity fund has got the lowest portfolio turnover rate and along with it is also providing the highest rate of return, which reveals that with minimum shifting of funds SBI Equity plan is performing absolutely excellent. Table 2 unveils the comparative returns of four Mutual funds that are known for their excellent performance and most commonly preferred by general investors because of several reasons. SBI Magnum Equity fund-Growth has been proved to be highly volatile because of higher level of risk assumed by it, thus, as expected it has been providing high rate of return in comparison to other three funds under our study. Average results of one-month performance shows that SBI Magnum equity fund-growth has highest return of 27.31% whereas ICICI Prudential Aggressive Plan-Growth has lowest return 15.03%. Performance of previous three months average return is pretty appreciable in case of SBI and UTI Equity fund growth with 77.31% and 50.86% respectively. Results of return during last one year are negative for all mutual fund plans under the study and the condition was quite obvious, escapeless and threatening. This particular negative trend during last one year's result shows that financial crisis has also put its shadow on Mutual fund industry in India and as a result all top class mutual funds had to suffer despite the best strategies adopted by them. Data of last three years performance again declare SBI Magnum equity fund as a champion among other three funds under the study with highest return of 19.59% followed by Reliance Equity Fund-Growth with 15.06%.

Table 3 highlights the various risk estimations that depict the variability or fluctuations in the return generated by various funds. Data estimates suggest that among four Mutual funds that were selected for this study, highest variation is shown by SBI Magnum equity fund-Growth with s 5.48 whereas least fluctuations are shown by ICICI Prudential Aggressive plan -Growth. As standard deviation is a measure of total risk assumed by securities i.e both systematic and unsystematic risk it means there must be some specific security present in SBI Magnum Equity fund and Reliance Equity fund that is causing more variability in returns. Beta is used as a measure of systematic risk only and as shown in table above again SBI magnum equity planGrowth is showing higher level of $\beta=0.92$ whereas ICICI prudential Aggressive plan has been at least level with $\beta= 0.59$. Data given in above table can not infer that SBI mutual fund are most risky, however it can be interpreted that this plan is suitable particularly for those investors who want to avail the superlative advantage of market movements as beta signify fluctuation in NAV of a fund vis-à-vis market. Higher level of Beta in case of SBI and Reliance equity plan signify that their NAVs are more responsive to market.

Treynor index of all the four equity fund schemes is showing unfavorable performance as this particular measure signify the ratio of return generated by fund over and above risk free return. With regard to this parameter all the four funds are showing negative performance with a negligible difference. Reliance and ICICI Prudential equity funds are showing their equating underperformance with negative $T_j = -0.69$. Similarly Sharpe ratio shown in table 3 is showing the underperformance of all mutual funds taken under sample. Sharpe ratio depicts reward per unit of total risk and in our results all the four funds are showing underperformance with a very thin ignorable difference as Reliance equity fund has an $S_i = -0.12$ and SBI Equity fund has $S_p = 0.10$. Fama as a quantitative measure of risk is here depicting the compared performance of return with required return corresponding to total risk associated with it. SBI Magnum equity fund with highest level of Fama indicates that fund manager has earned returns well above the return corresponding to level of risk taken by him whereas UTI Equity fund with lowest level of Fama = 0.02 concludes the poor stock selection skills of fund manager in comparison to other funds taken under sample. This particular comparison reveals the fact that out of these four Equity funds taken under sample SBI Magnum Equity fund is performing reasonably well by providing excess return over and above required rate of return to compensate total risk assumed. However, Lower level of Fama in case of UTI Equity fund-Growth signify lower level of risk assumed by fund manager and thus it will be suitable more for risk averse investors.

4.2 Analysis of Income Funds

Income funds are especially designed for conservative investors who want to get regular periodic income from their investment instead of capital appreciation with least risk bearing securities in their portfolio. Majority of investments that comprise of the portfolio of income fund ranges from preferred stock, money market instruments, bonds and government securities. Investment of these funds in

low risk bearing securities does not assure average return higher than risk free return. Analysis of four income funds under our study show that ICICI Prudential income fund-Growth provides highest variation in NAV during preceding 52 weeks with Range (R) band 6.67. UTI Bond fund-Growth are also showing even higher level of variation R= 4.90 (Table 1). Comparison of Expense ratio, which highlights the operational efficiency of fund, also shows that SBI Magnum Income fund-Growth bears highest expense ratio of 1.85% whereas UTI Bond Fund-growth bears the lowest expense ratio of 1.40% among the four funds under our sample study. Table 2 provides the detailed comparison of historic as well as current returns provided by selected sample funds under the study. An analysis of these returns are clearly depicting that financial crisis putting its impact on all industries has resulted into negative returns for all the funds during last one year. However in case of income funds private sector funds i.e Reliance income fund -Growth and ICICI Prudential income fund-Growth are providing pretty good returns than public sector funds with ICICI providing highest return of 22.68% during last one year and SBI Magnum income fund growth providing lowest return of 3.64%. Analysis of average returns during last three years and five years also declare ICICI Prudential and Reliance income funds providing higher returns than public sector funds. Table 3 highlights the comparative risks assumed by different fund schemes. Although comparison of standard deviation of four funds under study does not reveal any significant difference however ICICI Prudential income fund- growth shows highest fluctuations in returns provided to investors with $s = 1.47$ whereas SBI Magnum Income fund-Growth shows lowest fluctuations with $s = 1.03$. Unlike balanced and equity funds Sharpe ratio in this case does not show negative results. Highest $S_i = 0.25$ as shown by ICICI Prudential income fund- growth highlights the superior performance of fund in comparison to other four funds whereas SBI Magnum income fund with $S_i = 0.02$ shows the underperformance of fund. ICICI prudential income fund-growth with $\beta = 11.85$ and Reliance income fund-Growth with $\beta = 10.57$ explains the intense ability of fund's responsiveness to market changes whereas SBI Magnum income fund with $\beta = 6.73$ explains that this fund is least responsive to market fluctuations. Comparative analysis of Treynor (T_i) shows that any fund is not able to provide extreme superior returns over and above risk free return and all the funds are ranging in a domain of little significant difference. Risk measure in terms of Fama provides negative results for all the four funds that explain that any fund is not able to provide return above the required rate of return.

4.3 Analysis of Balanced Funds

Balanced fund is a perfect choice for the investors who wish to invest in scheme that can provide them a blend of capital appreciation along with income. Funds collected from unit holders in this case are invested in stock, money market instruments and bonds. Although balanced funds are assumed to be less risky than equity funds because of less proportion of funds invested in equity shares yet they are subject to market fluctuations. Balanced funds select some stocks of well performing sector and some designated proportion is invested in government securities and bonds making it a well-diversified portfolio. Data in Table 1 highlight the most important parameters that are evaluated before selecting a particular fact. Among these four funds under our study UTI balanced fund is considered to be performing well with highest NAV but it also show higher volatility with Range= 22.52, whereas Reliance balanced fund seem to move slowly with highest NAV 16.30 during last 52 weeks whereas it also show less volatility as compared to other funds with range of variation being 6.99. SBI Magnum Balanced Fund-Growth bears maximum expense ratio of 2.50% whereas Reliance balanced fund has expense ratio of 2.25% that makes it clear that all funds do not show any meaningful variation with respect to expense ratio. Comparison of portfolio turnover ratio of these funds reveal that Reliance Balanced fund has highest portfolio turnover ratio of 157% which at some time restrict investors willing to invest in this fund but comparison of returns provided by this fund highlight that this fund is providing highest returns to investors as compared to other funds under our study that will sub set the extra cost born by fund. Secondary data compiled in table 2 provides a detailed comparison of historical and current returns provided by selective funds under our study that reveals that during past performance SBI Magnum balanced fund outperforms all other funds with highest return however during last one month Reliance Balanced fund provides highest return of 22.30%. ICICI Prudential Balanced fund is not showing a positive working style with - 4.51% return during last one year and 15.69% return during last one month, which is comparatively awfully less than other funds.

Data in table 3 reveals the various risk estimations of four funds under the sample study that highlights the variation in returns generated by these funds. Most widely accepted measure of variation in data is s and a comparative estimations of selected funds show that UTI balanced fund-growth has least fluctuations in returns provided by them to the investors with $s=3.61$. Reliance Balanced fund-growth shows highest variation in returns with $s = 4.35$. Beta (β) as a risk measure estimates only systematic risk present in securities held by individual fund scheme. Analysis of (β) of these four funds does not show a significant difference except only Reliance Balanced Fund-Growth least risky among four funds with $\beta= 1 .08$. Global crisis putting its impact on mutual fund industry in India is clearly reflected from negative Treynor (T_i) in all the four funds. This particular measure signifies the ratio of return generated by fund over and above risk free return. UTI Balanced fund-Growth and ICICI Prudential fund-Growth are showing similar $T_i = -0.48$ whereas Reliance Balanced fund shows $T_i = -0.16$. Sharpe ratio depicts reward per unit of total risk and in our results all the four funds are showing underperformance with a very thin ignorable difference. Fama as a quantitative measure of risk is here depicting the compared performance of return with required return corresponding to total risk associated with it. Reliance Balanced fund -Growth with high Fama implies that fund manager is able to prove his managerial skills in order to tap market returns whereas UTI Balanced fund-Growth with negative Fama signifies that fund manager did not performed well to avail the recent up trends in market.

5. Portfolio diversification: Analysis of Asset mix

Different investment styles of fund manager are reflected from the diversified portfolio designed by them. These sophisticated strategies adopted by fund managers help them in outperforming their performance in comparison to their competitors. Aggressive style of fund managers force them to design portfolio with highly risky securities that have tendency to provide high returns whereas conservative fund managers select securities for their portfolios with minimum expected risk and expected calculated returns. However fund managers have to match their knowledge and investment skills in accordance of investment objectives set by investors. A comparative analysis of portfolio designed by fund managers reveals that among equity-growth fund scheme as per the investor's expectations majority proportion is invested in equity stock that may be risky but has high growth potential in terms of regular return and capital appreciation (Table 4). Among four funds under study SBI magnum equity fund growth invests majority of funds in equity stock i.e. 88.34% whereas ICICI Prudential equity fund growth seems to be taking calculated risk by investing only 70.86% funds in equity stock but this high level risk taken by SBI magnum equity fund seems to be paying it highest return 27.31% during last one month whereas ICICI Prudential equity fund- growth gets only 15.03% during same period. In addition to this analysis also provide that additional risk borne by SBI magnum equity fund- growth has resulted in highest negative returns -1.85% during last one year when bearish trend was following Indian stock market whereas ICICI Prudential equity fund- growth with its strategy of assuming calculated risk resulted in -1.03% returns in the same period. Reliance equity fund seems to be adopting a different investment style by assuming high risk for 76.44% investment whereby 23.56% investment is held completely risk free as liquid current asset. Ability of fund manager to maintain equilibrium in risk return trade off under this fund resulted in comparatively high return of 22.54% during last one month and during negative trends following global financial markets Reliance equity fund proved to be least risky with -0.52% returns. UTI equity fundgrowth also seems to follow a same pattern of SBI magnum equity fund investing more in equity stock (86.36%) but stock selection abilities of fund manager are doubtful in this case as they provided 19.04% return during last one month which was comparatively pretty less than 27.31% provided by SBI magnum-equity fund for same proportion of equity stock held in their portfolio whereas comparison of returns during last one year also show that fund provided highest negative return (-4.73%) among four fund funds under study.

Analysis of balanced growth scheme (Table 4) reveals that UTI Balanced fund held maximum proportion of their stock in equity shares (79.50%) and ICICI Prudential balanced fund held less proportion in equity stock (57.28%) and a significant gap of returns earned by two funds 20.93% and 15.69% respectively during last one month can be reasoned out as high risk assumed by UTI Balanced fund. Reliance balanced fund again adopts a completely different investment style with 67.21% investment in highly risky equity stock and holding remaining funds as a complete risk free investment. This investment style adopted by Reliance fund manager have resulted them yielding

highest return 19.39% during last one year in comparison to SBI Magnum that invested 71.69% of total portfolio funds in highly risky equity stock but yield only 6.7% return during same period. These results reveal that stock selection capability of fund manager and his investment style decides the extent up to which a particular fund can satisfy investor's investment objectives. Comparison of SBI magnum balanced fund and UTI balanced fund also reveal that although both the fund manager believed in putting more proportion of fund in equity securities yet fund manager of UTI Balanced fund seem to be less sharp and analytic as compared to SBI Balanced fund as difference in stock selection philosophy of fund managers result in significant gap between the returns provided by these funds with respective risks assumed.

Comparison of income funds of these four AMCs reveals that as per the fund scheme these funds are designed for risk averse investors so no proportion of fund is held in equity stock. Fund portfolio is invested in either debt or liquid current assets that are known to be completely risk free. Among these funds under study ICICI Prudential invest huge proportion of funds in debt securities (97.15%) whereas UTI Bond fund with similar vision invest only 63.18% in debt. Comparison of return during last one month yield negative returns for all the funds but returns calculated during last one year reveals that ICICI Prudential income fund was able to gain pretty well (22.68%>) for the level of risk assumed whereas UTI Bond fund yield 8.83% return during the same period. SBI magnum Income fund has been showing underperformance as compared to other funds under study with 75.04% investment in debt it yields lowest return 3.64% during last one year. Again this poor performance of SBI magnum Income fund can be attributed to the in competencies of fund manager's stock selection capabilities. Reliance income fund with 72.46% investment in debt securities performs well with its well - designed strategies and yield 15.38% return during last year. Thus, overall investment styles of these selected funds reveal that fund manager's vision, investment style and stock selection capability make a significant difference in returns they offer at a calculated risk.

6. Conclusion

Increased risk appetite of investors along with improved regulations of financial market has attracted the attention of investors towards mutual funds. Comparative analysis of selected funds operating in India reveals that a fund manager with different investment style of deciding asset mixes for their portfolio certainly yields higher returns. A general assumption of assuming high risk by investing in equity stock to yield higher return does not sound valid in absence of diligence of fund managers' knowledge. Financial performance of Reliance Mutual funds reveals that dissimilar style adopted by fund managers have yield higher return with least calculated risk because of their precision in deciding asset mix for their portfolios. SBI magnum fund seems to be performing well with highest returns offered by them in case of equity-growth and balancedgrowth funds but analysis of their investment style and asset mix reveals that they assumed maximum risk by investing maximum funds in equity stock. To conclude investors should not only consider past performance of funds in order to select AMC for their investment but portfolio evaluation with regard to fund manager's thoroughness in deciding asset mix is an important criteria that will eventually match vision of fund managers with investor's satisfaction.

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