Performance Evaluation of Equity Oriented Growth and Dividend Funds of Mutual Funds in India : An Application of Risk – Adjusted Theoretical Parameters

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Abstract

This study attempted to evaluate the performance of fund of funds on the basis of risk-adjusted methods. The performance of fund of funds were compared with the risk free returns as well as the benchmark index (BSE 100), which was taken as the proxy for the market returns. Samples were collected from the AMFI websites and respective AMC websites from April 1, 2007 to March 31, 2014 and the returns were calculated from the respective schemes' NAV price. The methods used in the study is risk adjusted tools of Sharpe ratio, Treynor ratio, and Jensen alpha. An analysis performed on the sample of equity oriented fund of mutual funds showed that all the fund of funds in the sample earned negative returns in excess of the risk free rate of return offered by 91 days treasury bill. The comparison of rates of return of the benchmark index and the sample of fund of funds indicated that majority of the equity fund of funds included in the sample had underperformed the benchmark. Such results might be because of double layer of fees. The results revealed that the performance of fund of funds had posted a negative Sharpe, Treynor, and Jensen alpha. The underperformance of fund of mutual funds strongly explained the double layer of fees.

Key words: **Fund of funds, risk adjusted methods, risk free rate, net asset value, asset management company, excess returns**

JEL Classification : G1, G11,G14, G23

Paper Submission Date: January 5, 2015 ; Paper sent back for Revision : September 8, 2015 ; Paper Acceptance Date : July 10, 2016

Fund of funds are particular investment resources to invest in more than two mutual funds. Fund of funds are financial instruments traded in the American market since 1980s. In India, SEBI has permitted fund-houses to launch fund of funds only in the middle of 2003. The first fund of mutual funds in India was FT India Dynamic PE Ratio fund of funds launched by Franklin Templeton mutual funds in October 2003. Today, 44 AMCs and more than 50 schemes are in operation. The fast growth registered in the last few years could be explained by the high financial innovation that characterized these markets. This type of fund of funds offers an opportunity for achieving greater diversification as compared to other instruments. In fact, new instruments proposed the achievement.

All investments involve certain element of risk and their risk profile varies according to the changing degree of returns. The performance of fund of mutual funds has evoked a great deal of interest in the academic circle. The common belief in a segment of the academia is that fund of mutual funds cannot beat the market with their active fund management in contrast to the efficient market hypothesis. It is extremely critical for the investors to know whether fund of mutual funds managers are able to deliver better returns ; thereby, justifying the

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management fees they charge. This evaluation would explain performance of fund of mutual funds risk adjusted returns which are growth-oriented and dividend-oriented.

Review of Literature

Friend, Blume, and Crockett (1970) made an extensive study of mutual funds by evaluating the performance from 1952 to 1958 with an annual data of 152 mutual funds. They revealed that over the period of their study, mutual funds earned 12.4% as an average annual return, while the market index earned a return of 12.6%. Based on the results, the mutual funds in their sample nearly closed the market index, and the authors concluded that the overall results did not recommend widespread inefficiency in the mutual fund industry.

Treynor (1965) attempted to suggest portfolio evaluation measure which considered the risk involved in a portfolio. In his view, managed portfolios carry market risk, that is, the aggregate value of the portfolio is dependent on the market trends. He introduced the concept of 'beta' parameter. According to him, the appropriate measure of portfolio performance is risk premium per unit of 'market risk' generated by the portfolio. The portfolio performance of Treynor measure is a relative measure that ranks the funds in terms of market risk and return. This was termed as reward to volatility ratio.

Sharpe (1966) propounded another measure of evaluation of portfolio performance. He replaced the 'market risk' with the' total risk' parameter, that is, standard deviation. The portfolio performance of Sharpe's measure was ranked in terms of total risk and returns. This ratio is also termed as reward to variability ratio. Comparing the performance of 34 open-ended mutual funds from 1954 to 1963 with Dow-Jones industrial average in terms of the variability ratio, in his study, Sharpe concluded that only 11 out of 34 funds had posted better performance than market portfolio.

Another study that caught the attention of researchers over the period was conducted by Jensen (1968). He examined 54 open-ended U.S. mutual funds performance for the period from 1945-64 and found that the returns of mutual funds before the load fees and after management fees and other expenses were on average of 1% per annum below the benchmark return. S&P 500 Index was used as the benchmark. The proxy for the risk-free rate of return was taken to be the yield on one year U.S. Treasury Bills. Returns of mutual funds on more than half of the fund were below the benchmark.

McDonald (1974) examined the performance of 123 mutual funds in the USA from the period from 1960-1969 using NYSE index as the market index. In his study, he found that 54% of the mutual funds had posted better performance than the market in terms of Treynor's measure ; whereas, only 32% of the funds performed superior to NYSE index in terms of Sharpe's measure.

Stopp (1988) revealed the schemes of mutual funds in terms of the rate of return generated for the period ended on December 31, 1986. He examined inter-group performance by regrouping the sample into four broad categories and computed the percentage of growth during 5-year, 3-year, 2-year, and 1-year ended on December 31, 1986. He suggested that choosing a scheme based on the outstanding performance might be a recipe for disaster as the sector, which tends to produce outstanding performance, may also carry the greatest risk.

Grinblatt and Titman (1989) examined performance in terms of gross returns of mutual funds for the period from December 31, 1974 to December 31, 1984. They found that abnormal performance (highly superior or inferior performance compared to the normal performance as that of market portfolio) of the funds based on the gross returns wasinversely related to the size. In their study, the authors pointed out that superior performance may exist for funds with smaller size of net asset value. However, due to high expenses, the investors are unable to take advantage of their superior performance.

Gupta and Sehgal (1997) evaluated mutual fund performance over a four-year period, from 1992-1996, with a sample of 80 mutual fund schemes. They suggested that the mutual fund industry faired reasonably well over the period of study. Mishra (2001) examined the performance of mutual funds over the period from 1992 to 1996. The

sample size was 24 public sector sponsored mutual funds. The performance was evaluated in terms of the rate of return, Treynor, Sharpe, and Jensen measures of performance. The study found a dismal performance of PSU mutual funds in India, in general, during the period from 1992- 1996. Sondhi and Jain (2006) evaluated the performance of mutual funds for 36 schemes for the period from 1993 to 2002 and suggested that performance of their sample funds remained far from satisfactory in terms of rates of return and risk-adjusted returns.

Jagric, Podobnik, Strasek, and Jagric (2007) analysed the risk adjusted returns, and the study found that Sharpe and Treynor ratio provided similar rankings if funds were well diversified. The ranking results revealed that all analyzed funds outperformed the market SBI 20 on a risk-adjusted basis consisting of weekly returns from January 1997 to December 2003.

Bhootraa, Dreznerb, Schwarzc, and Stohs (2015) analyzed the mutual fund performance: luck or skill based. The study period from 1995 to 2009 examined asset NAV data from CRSP, 981 mutual funds. The results displayed the outperformance with their peers on a risk-adjusted basis. The results signified that the mutual funds were successful and showed the actively managed well diversified index fund strategy.

Naz, Mustafa, Mukhtar, and Nawaz (2015) analyzed five balanced schemes of Pakistan Mutual funds from 2010 to 2013. They proved that the average returns of elected funds were less than the market returns. Overall, the results indicated underperformance of most of the schemes during the span of the study.

The review of studies reveals that many studies have been conducted which have ascertained the performance of mutual fund portfolios. However, any study investigating the performance of fund of mutual funds of a very recent period has not been available and this is the motivation for this study, which humbly attempts to plug the gap by evaluating the performance of growth and dividend oriented funds in India in the recent past.

Database and Research Methodology

The entire study is based on secondary data. The secondary data were collected from the AMFI websites and respective AMC's websites. For the performance evaluation of a sample scheme, month end NAV data of 15 open-ended equity funds of mutual funds were considered. Out of the 15 schemes, seven schemes are growth-oriented and eight are dividend - oriented schemes. The period of performance was for seven years : from April 1, 2007 to March 31, 2014. In order to evaluate the performance of the managed portfolio, benchmark comparison is an important measure to ascertain a fund manager's success in ranking the schemes.

Our study has the following objective: To evaluate the comparative performance of growth and dividend oriented equity funds of mutual funds.

Based on this objective, we intend to test the following hypothesis:

- **H0 :** Fund of funds provides more returns to investors against the benchmark.

Risk-Return Measure

Risk and returns express the performance of any investment. Investors can easily rank the portfolio by superior to inferior outcomes.

(i) Returns Measure : Returns can be defined as the reward received for sacrificing the amount over a certain period of time. The returns on funds of mutual funds have been calculated using the NAV of schemes as follows :

$$R_p = ((NAV_t - NAV_{t-1})/NAV_{t-1})*100$$

where,

R_p is the return on funds, NAV_t = net asset value at the end of the holding period, NAV_{t-1} = net asset value at the beginning of the holding period. The yearly returns so computed for different single periods have been averaged to get the averaged yearly rate of return on fund of mutual funds (Lee, Lee, & Lee, 2000). From the investor point of view, the track record of 7 years is a significantly long period to judge the performance of fund of funds for investment purposes.

In this study, the rate of returns on 91 days treasury bills has been taken as a surrogate measure for risk free returns. BSE 100 has been used as a surrogate measure for market portfolio. The index is broad based, consisting of 100 actively traded equity shares listed on the BSE. The expression for calculating the yearly returns for BSE 100 index is similar to that calculating the yearly average returns for sample funds :

$$R_m = ((RI_t - RI_{t-1})/RI_{t-1})*100$$

where,
R_m is the return on market portfolio, RI_t is at the end of the holding period of BSE 100, RI_{t-1} is beginning of the holding period of BSE 100.

(ii) Risk Measure : Risk may be defined as the variation of the returns from an average expected return. The degree of risk varies according to the preference of assets by investors. There are two types of risks associated with a portfolio : (a) total risk (σ), and (b) systematic risk (β). Total risk is measured by the standard deviation denoted by 'σ' , and systematic risk is measured by the beta coefficient denoted by 'β'.

(iii) Standard Deviation

$$(\sigma_p) = \Sigma [(R_p - AR_p)^2/t\text{-}1]^{1/2}$$

The square root of variance is also called the standard deviation. Standard deviation and variance are equivalent measures of assets total risk. Beta co-efficient indicates the variability of fund returns against the market returns. When β >1, fund of fund is more volatile and favorable for investors during the bull market phase ; whereas, in case of β<1, fund of fund is less volatile and favorable for investors during the bear market phase. To calculate the beta of fund of funds, CAPM version of the market model is used :

$$R_p = \alpha + \beta 1\, R_m + e$$

where, R_p is the returns on mutual funds, R_m = returns on market, α = intercept, β_1 = slope or beta coefficient and e_p = error term. The value of constants α and β is computed by regressing fund of funds returns on market returns with the above model.

Risk-Adjusted Theoretical Parameters

(i) Sharpe Ratio : William F. Sharpe developed a composite index of portfolio performance in 1966, which is generally known as the reward to variability ratio *(RVAR$_p$)*. Sharpe measures returns relative to the total risk of portfolio, where total risk is the standard deviation of the portfolio returns. Sharpe presumed that small investors put their wealth completely in fund of mutual funds with the prior expectation of holding premium for total risk. This measure of portfolio performance can be computed by dividing portfolios average return (risk premium) by its total risk (standard deviation):

Sharpe ratio *(SR$_p$)* = Average excess return / total risk $= R_p - R_f/\sigma_p$

where, SR_p corresponds to the Sharpe's ratio, R_p = average return on portfolio, R_f = average return on risk free assets, σ_p = standard deviation of portfolio returns.

(ii) Treynor Ratio : Jack Treynor devised the measure of portfolio performance in 1965, with an objective to evaluate the excess returns or risk premium per unit of systematic risk (β). This model is called the reward to volatility ratio *($RVOL_p$),* in which he presumed that by holding diversified portfolio, one can eliminate the unsystematic risk. Treynor ratio can be computed by dividing the average return by its market risk.

$$\text{Treynor ratio } (TR_p) = \text{Average excess return / market return} = R_p - R_f / \beta_p$$

where , TR_p corresponds to the Treynor ratio, R_p = average return on portfolio, R_f = average return on risk free asset, β_p = beta coefficient for portfolio. The TR_p for benchmark portfolios is, $TR_p = R_m - R_f / \beta_m$, where $(R_m - R_f)$ is average excess market return and β_m is beta coefficient for market returns. If fund of funds portfolio provides the highest returns per units of systematic risk - that implies superior performance or vice-versa.

(iii) Jenson Model : Jenson's model proposes another risk adjusted performance measure. This measure was developed by Michael Jenson and is sometimes referred to as the differential return method. This measure involves evaluation of the returns that the fund has generated. The surplus between the two returns is called alpha, which measures the performance of a fund compared with the actual returns over the period. Required returns of a fund at a given level of risk can be calculated as:

Using the CAPM model, the expected returns of a portfolio can be calculated as follows:

$$E(R_p) = R_f + \beta_p (R_m - R_f)$$

where,
$E(R_p)$ = Expected portfolio return,
R_f = Risk free rate,
R_m = Return on market risk,
β_p = Systematic risk of the portfolio.

The differential returns are calculated as follows:

$$\alpha = Rp - \mathrm{E}(Rp)$$

where,
α_p = Differential return,
R_p = Actual return earned on the portfolio,
$E(R_p)$ = Expected return.

Thus, α_p represents the difference between actual returns and expected returns. If α_p has a positive value, it indicates that superior return has been earned due to superior management skills. When $\alpha_p = 0$, it indicates neutral performance. It means that the portfolio manager has done just as well as an unmanaged randomly selected portfolio with a buy and hold strategy. A negative value of α_p indicates that the portfolio's performance has been worse than that of the market.

In this study, risk adjusted methods of Sharpe, Treynor, and Jenson alpha measure have been used for the performance evaluation of growth and dividend open-ended schemes of equity funds of mutual funds in the mutual fund industry.

Analysis and Results

Yearly returns have been computed for all the 15 fund of mutual funds in the sample for BSE 100 index and for 91 days T-bills. It can be observed that all the fund of funds schemes in the year 2007 - 2008 generated positive returns. ING 5 Star multi-manager fund of funds (G), ING AA multi fund of funds (G), ING 5 Star multi-manager fund of funds (D), Kotak Equity fund of funds provided higher positive returns as compared to other funds. In the year 2008-09, all the funds posted negative returns. Fund of funds yearly returns during the period from 2009 - 2010 provided positive returns. ING 5 star MM FoFs (G), Franklin India life stage fund of funds 20 (D), ICICI Prudential Long Term Savings Plan Reg. (D), ICICI Prudential Very Aggressive Reg.(D), ING 5 Star multi-manager FoFs (D) performed well. In the year 2010 -11 all the funds provide positive returns with the exception of Franklin India Life Stage fund of funds 30 (D) and Franklin India Life Stage fund of funds (D). In 2011 -12, out of 15 funds, six funds provided positive returns, that is, 40% of the sample funds provided positive returns. Furthermore, in the year 2012 -13, all the funds posted positive returns except for Franklin India Life Stage FoFs 30(D) and Franklin India Life Stage fund of funds 20 (D). Even though the sample funds provided positive returns, the rate of returns was quite less than it was during the period from 2008 -2009. At the end of the sample period, from 2013 - 2014, fund of funds schemes provided positive returns. ICICI Prudential Very Aggressive-Reg. (G) provided higher performance as compared to other funds.

The Table 1, Table 2, Table 3, Table 4, Table 5, Table 6, and Table 7 present yearly returns of the funds, total risk (σp), and systematic risk or market risk (βp) of the funds and year wise performance of Sharpe, Treynor, and Jenson Alpha. However, the above analysis revealed that more than 80% of the funds generated negative Sharpe, Treynor, and Jenson Alpha. The Tables show that fund of funds showed a negative risk adjusted measure as compared to the respective benchmark, which implies that these schemes failed to meet the risk adjusted returns to investors due to the reason of double layer of fees. Risk adjusted measure revealed that fund of funds under performed than that of BSE 100 index.

(i) Results of Sharpe : From the comparative analysis depicted in the Table 1, it is observed that ING 5 star MM FoF(G), ING asset allocator multi FoFs (G) equity funds indicates high returns among the other schemes and the risk of standard deviation also is very low. ING 5 star multi-manager FoFs(G) has higher risk (1.923) ; if the investors have risk awareness, they choose this fund, while the Franklin India Life Stage FoF 30(D) and (G) has very low risk. As depicted in the Tables 1 to 7, for all the 7 years, all the selected sample schemes generated negative Sharpe ratio, and it can be inferred that the FoF schemes failed to meet the benchmark during the period.

(ii) Results of the Treynor Ratio : The Tables 1 to 7 (6^{th} column) give the results of the Treynor ratio. It can be inferred that all the 15 schemes failed to meet the market index because all the sample scheme results show the negative Treynor ratio. The results of Sharpe Ratio and Treynor Ratio show some conflicting performance because Sharpe ratio takes into account the total risk of the portfolio ; whereas, Treynor Ratio considered only the systematic risk. The negative Treynor ratio may imply that the fund manager has outperformed the risk-free rate while reducing systematic risk (negative beta) which is a favorable situation. All the selected schemes showed beta value of less than 1, which means that the funds are less volatile than the market.

(iii) Results of Jensen Differential Returns Measure : Tables 1 to 7 (column 7) gives the results of Jensen measure. In case of majority of the funds, the alpha is not found to be different from zero. In general, we can see that majority of the schemes have produced normal and below normal returns. On the whole, fund of funds fail to provide more returns to the investors against the benchmark on risk adjusted method. Based on our results, we can reject the null hypothesis.

Table 1. Risk and Return of Fund of Funds for April 1, 2007 to March 31, 2008

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.0902	0.8034	0.3755	-8.7166	-18.6513	-10.0596
Franklin India Life Stage FOFs-20(G)	0.0866	1.2342	0.6094	-5.6799	-11.4978	-2.7493
Franklin India Life Stage FOFs-30(G)	0.0648	0.7951	0.3852	-8.8389	-18.2471	-4.3374
ICICI Prudential Very Aggressive-Regular(G)	0.0839	1.7899	0.3852	-3.9158	-7.8827	-0.7999
ING 5 Star Multi-Manager Fund of funds(G)	0.1009	1.9323	0.8879	-3.6185	-7.8754	-0.7899
ING Asset Allocator Multi FoF(G)	0.1031	1.407	0.517	-4.9679	-13.5203	-3.3767
Franklin India Life Stage FOFs-30(D)	0.0648	0.7951	0.3852	-8.8389	-18.2471	-4.3374
Franklin India Dynamic PE Ratio FOFs(D)	0.0901	0.7877	0.1307	-8.8903	-53.5737	-6.0926
Franklin India Life Stage FOFs-20(D)	0.0869	1.2394	0.6153	-5.6526	-11.3865	-2.7076
ICICI Prudential Long Term Savings Plan-Reg.(D)	0.0696	1.4236	0.6987	-4.9338	-10.05214	-2.1447
ICICI Pru. L T S Plan-Reg.(DP)	0.0695	1.4195	0.6963	-4.9479	-10.0873	-2.1616
ICICI Prudential Very Aggressive-Reg.(D)	0.0839	1.7899	0.8892	-3.9158	-7.8827	-0.7999
ING 5 Star Multi-Mgr FoF(D)	0.1009	1.9324	0.8879	-3.6185	-12.0428	-2.9008
ING Asset Allocator Multi FoF(D)	0.0687	1.4716	0.5049	-4.7734	-13.9116	-3.4954
Kotak Equity FOF(D)	0.1063	1.8649	0.9044	-3.7463	-7.7255	-0.6725

***risk free rate 7.093** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical Report.

Table 2. Risk and Return of Fund of Funds for April 1, 2008 to March 31, 2009

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	-0.0705	1.7239	0.5768	-4.1478	-12.3959	-2.9676
Franklin India Life Stage FOFs-20(G)	-0.1237	1.7531	0.5978	-4.1089	-12.0489	-2.8669
Franklin India Life Stage FOFs-30(G)	-0.0751	1.1734	0.3979	-6.0974	-17.9818	-4.2686
ICICI Prudential Very Aggressive-Regular(G)	-0.141	2.1247	0.7334	-3.3985	-9.8459	-1.9069
ING 5 Star Multi-Manager Fund of funds(G)	-0.1539	1.7952	0.6043	-4.0293	-11.9704	-2.8512
ING Asset Allocator Multi FoF(G)	-0.073	1.1224	0.1781	-6.3726	-40.1747	-5.8618
Franklin India Life Stage FOFs-30(D)	-0.0751	1.1734	0.3982	-6.0974	-0.1886	-4.2665
Franklin India Dynamic PE Ratio FOFs(D)	-0.0701	1.7475	0.1877	-4.0915	-38.1055	-5.7874
Franklin India Life Stage FOFs-20(D)	-0.124	1.6997	0.5943	-4.2381	-12.1213	-2.8921
ICICI Pru Long Term Savings Plan-Reg(D)	-0.1101	1.6062	0.5623	-4.4761	-12.7863	-3.1147
ICICI Prudential Long Term Savings Plan-Reg.(DP)	-0.1095	1.6371	0.5628	-4.3914	-12.7731	-3.1113
ICICI Prudential Very Aggressive-Reg.(D)	-0.1393	2.1247	0.7334	-3.3976	-9.8435	-1.9051
ING 5 Star Multi-Mgr FoF(D)	-0.2124	2.0172	0.6055	-3.6149	-12.0429	-2.9008
ING Asset Allocator Multi FoF(D)	-0.0732	1.1289	0.178	-6.3361	-40.1831	-5.8622
Kotak Equity FOF(D)	-0.1651	2.0868	0.7324	-3.4717	-9.8915	-1.9356

***risk free rate: 7.079** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical report.

Table 3. Risk and Return of Fund of Funds for April 1, 2009 to March 31, 2010

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.206	1.0541	0.4963	-3.2105	-6.8169	-1.7434
Franklin India Life Stage FOFs-20(G)	0.2677	1.3583	0.6565	-2.4459	-5.05876	-1.1527
Franklin India Life Stage FOFs-30(G)	0.1964	0.9842	0.4739	-3.4496	-7.1582	-1.8271
ICICI Prudential Very Aggressive-Regular(G)	0.2427	1.4113	0.6964	-2.371	-4.8051	-1.0285
ING 5 Star Multi-Manager Fund of funds(G)	0.2809	1.6123	0.7679	-2.0518	-4.3075	-0.7696
ING Asset Allocator Multi FoF(G)	0.1541	1.6249	0.6953	-2.1139	-4.9403	-1.1369
Franklin India Life Stage FOFs-30(D)	0.1964	0.9835	0.4739	-3.4494	0.4145	-1.8271
Franklin India Dynamic PE Ratio FOFs(D)	0.168	1.1996	0.203	-2.8518	-16.8509	-2.7524
Franklin India Life Stage FOFs-20(D)	0.2664	1.3464	0.6463	-2.4678	-5.1413	-1.1874
ICICI Pru Long Term Savings Plan-Reg(D)	0.2056	1.1128	0.5528	-3.0405	-6.12	-1.5541
ICICI Prudential Long Term Savings Plan-Reg.(DP)	0.2049	1.1378	0.5477	-2.9745	-6.1787	-1.5702
ICICI Prudential Very Aggressive-Reg.(D)	0.2049	1.1378	0.5477	-2.3678	-4.8051	-1.0401
ING 5 Star Multi-Mgr FoF(D)	0.2808	1.604	0.7646	-2.0621	-4.3267	-0.7809
ING Asset Allocator Multi FoF(D)	0.1542	1.6265	-0.0001	-2.1118	-4.6548	-3.4351
Kotak Equity FOF(D)	0.28699	1.709	0.8055	-1.932	-4.0991	-0.6361

***risk free rate: 3.589** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical report.

Table 4. Risk and Return of Fund of Funds for April 1, 2010 to March 31, 2011

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.0364	0.3692	0.3034	-16.5318	-20.1129	-4.2556
Franklin India Life Stage FOFs-20(G)	0.041	0.7004	0.5801	-8.7072	-10.5126	-2.5664
Franklin India Life Stage FOFs-30(G)	0.0361	0.4594	0.3791	-13.2849	-16.1019	-3.7955
ICICI Pru. V.Agg.-Regular(G)	0.0315	0.7589	0.6262	-8.0485	-9.7539	-2.2943
ING 5 Star Multi-Manager FoFs(G)	0.0523	0.9543	0.7916	-6.3789	-7.6899	-1.2666
ING Asset Allocator Multi FoF(G)	0.0284	0.6196	0.336	-9.8628	-18.1878	-4.0651
Franklin India Life Stage FOFs-30(D)	-0.0238	1.0124	0.3512	-6.0881	-0.0676	-4.025
Franklin India Dynamic PE Ratio FOFs(D)	0.0015	0.6349	0.1078	-9.6676	-56.9273	-5.4811
Franklin India Life Stage FOFs-20(D)	-0.0252	1.2138	0.5492	-5.079	-11.2253	-2.8209
ICICI Pru Long Term Savings Plan-Reg(D)	0.0394	0.5803	0.4666	-10.5115	-13.074	-3.2587
ICICI Pru. Long Term Savings Plan-Reg.(DP)	0.0394	0.5803	0.4666	-10.5115	-13.0741	-3.2586
ICICI Prudential Very Aggressive-Reg.(D)	0.0394	0.5803	0.4666	-8.0223	-9.73053	-6.1393
ING 5 Star Multi-Mgr FoF(D)	0.0524	0.954	0.7913	-6.3817	-7.6925	-1.2683
ING Asset Allocator Multi FoF(D)	0.0286	0.6166	0.3386	-9.9115	-18.0487	-4.0493
Kotak Equity FOF(D)	0.015	1.0159	0.8429	-6.0287	-7.2664	-0.9914

***risk free rate: 6.139** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical report.

Table 5. Risk and Return of Fund of Funds for April 1, 2011 to March 31, 2012

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.0136	0.634	0.4474	-13.2649	-18.805	-4.6253
Franklin India Life Stage FOFs-20(G)	0.0043	0.8148	0.5721	-3.5785	-10.3369	-14.7215
Franklin India Life Stage FOFs-30(G)	0.0157	0.5115	0.3601	-23.358	-16.4444	-5.3625
ICICI Prudential Very Aggressive-Regular(G)	0.0111	0.7873	0.5144	-3.9042	-16.4682	-15.6274
ING 5 Star Multi-Manager Fund of funds(G)	-0.016	1.1035	0.7682	-10.9916	-1.9399	-7.6517
ING Asset Allocator Multi FoF(G)	-0.073	0.8273	0.3874	-21.9414	-5.2202	-10.2745
Franklin India Life Stage FOFs-30(D)	-0.0357	0.9109	0.3329	-0.1077	-5.6435	-9.2908
Franklin India Dynamic PE Ratio FOFs(D)	-0.0129	0.5269	0.1504	-12.412	-60.5653	-7.2596
Franklin India Life Stage FOFs-20(D)	-0.0552	1.1889	0.5397	-7.135	-15.7157	-3.9124
ICICI Pru Long Term Savings Plan-Reg(D)	0.0279	0.6447	0.3872	-13.029	-21.6947	-5.92095
ICICI Prudential Long Term Savings Plan-Reg.(DP)	0.0278	0.6149	0.3685	-13.6588	-22.7956	-5.2801
ICICI Prudential Very Aggressive-Reg.(D)	0.0277	0.6149	0.3685	-10.7053	-16.3601	-4.0629
ING 5 Star Multi-Mgr FoF(D)	-0.0163	1.1062	0.7698	-7.6327	-10.9687	-1.92626
ING Asset Allocator Multi FoF(D)	2.0884	0.8337	0.3894	-7.6024	-16.2794	-3.0422
Kotak Equity FOF(D)	-0.0271	1.0556	0.7739	-8.0077	-10.9247	-1.9027

***risk free rate: 8.427** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical report.

Table 6. Risk and Return of Fund of Funds for April 1, 2012 to March 31, 2013

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.0299	0.6343	0.447	-17.3404	-15.7392	-3.9377
Franklin India Life Stage FOFs-20(G)	0.0309	0.5626	0.6139	-14.5228	-13.3082	-3.1587
Franklin India Life Stage FOFs-30(G)	0.0333	0.3925	0.4261	-20.8103	-19.1707	-4.6899
ICICI Prudential Very Aggressive-Regular(G)	0.0262	0.4964	0.5231	-7.7709	-16.0672	-3.9565
ING 5 Star Multi-Manager Fund of funds(G)	0.0256	0.7834	0.8234	-10.4359	-9.9299	-1.4544
ING Asset Allocator Multi FoF(G)	0.0019	0.6268	0.5685	-13.0816	-14.4232	-3.5594
Franklin India Life Stage FOFs-30(D)	-0.018	0.858	0.3849	-9.5795	-0.0473	-5.0769
Franklin India Dynamic PE Ratio FOFs(D)	0.004	0.52688	0.1504	-15.5585	-54.5163	-6.9706
Franklin India Life Stage FOFs-20(D)	-0.0259	1.0092	0.5695	-8.1522	-14.4472	-3.5785
ICICI Pru Long Term Savings Plan-Reg(D)	0.0253	0.4144	0.4283	-19.7309	-11.6527	-4.67917
ICICI Prudential Long Term Savings Plan-Reg.(DP)	0.0253	0.4221	0.4288	-19.3688	-19.0689	-4.67561
ICICI Prudential Very Aggressive-Reg.(D)	0.0253	0.4221	0.4288	-16.2107	-15.6394	-3.9105
ING 5 Star Multi-Mgr FoF(D)	0.0366	0.7879	0.8273	-10.3625	-9.8688	-1.4109
ING Asset Allocator Multi FoF(D)	0.0106	0.6246	0.5677	-13.1123	-14.4279	-3.5613
Kotak Equity FOF(D)	0.0303	0.7467	0.8671	-10.9431	-9.4231	-1.0915

***risk free rate: 8.201** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical report

Table 7. Risk and Return of Fund of Funds for April 1, 2013 to March 31, 2014

Scheme Name	Fund yearly Return (Rp)	Standard Deviation (σp)	Fund Beta (βp)	Sharpe Ratio	Treynor Ratio	Jenson Alpha
Franklin India Dynamic PE Ratio FOFs(G)	0.0496	0.7761	0.6479	-11.6251	-13.9238	-3.1962
Franklin India Life Stage FOFs-20(G)	0.0629	0.8183	0.6808	-11.0096	-13.2332	-2.8897
Franklin India Life Stage FOFs-30(G)	0.0494	0.6265	0.5001	-14.4018	-18.0403	-4.5257
ICICI Prudential Very Aggressive-Regular(G)	0.0869	1.1562	0.5592	-7.7709	-16.0672	-3.9565
ING 5 Star Multi-Manager Fund of funds(G)	0.0828	0.9224	0.7854	-9.7448	-11.4444	-1.9272
ING Asset Allocator Multi FoF(G)	0.0546	0.6925	0.5475	-13.0203	-16.4699	-4.0968
Franklin India Life Stage FOFs-30(D)	0.0041	0.9494	0.5196	-9.5507	0.0078	-9.1094
Franklin India Dynamic PE Ratio FOFs(D)	0.0202	0.8052	0.1806	-11.2414	-50.1235	-7.4281
Franklin India Life Stage FOFs-20(D)	0.0133	1.1369	0.705	-7.9669	-12.8483	-2.733
ICICI Pru Long Term Savings Plan-Reg(D)	0.0605	0.8453	0.5753	-10.6597	-15.6622	-3.8377
ICICI Prudential Long Term Savings Plan-Reg.(DP)	0.0605	0.8453	0.5753	-10.6597	-15.6642	-9.0111
ICICI Prudential Very Aggressive-Reg.(D)	0.0605	0.8453	0.5753	-7.7709	-16.0489	-3.95075
ING 5 Star Multi-Mgr FoF(D)	0.0525	0.9219	0.7848	-9.7828	-11.4926	-1.9634
ING Asset Allocator Multi FoF(D)	0.0518	0.6831	0.5415	-13.2046	-16.6556	-4.1507
Kotak Equity FOF(D)	0.0859	1.0245	0.8633	-8.7707	-10.4087	-1.2231

***risk free rate: 9.07** Source: AMFI websites and Respective AMC websites, BSE 100 Index and risk free rate is from RBI statistical Report.

Suggestions

Any investment risk taken is based on the individual investors' risk taken stress aptitudes. Investors who have a low-risk aptitude should invest in low risk schemes and those who have a high risk taking aptitude should invest in high risk schemes, and it yielded the highest returns among all the others.

Implications

Historical performance of fund of mutual funds is important both for the individual investors as well as for fund of funds managers. This study depicts how much returns have been generated by a particular portfolio fund of fund manager (scheme wise) for each AMC and what risk level was assumed in generating such returns to the investors. Subsequently, the investors can appraise the comparative performance of different fund managers. Similarly, fund of fund managers would also be able to know their performance over the time period and also that of other competitors in the mutual fund industry. The risk adjusted return performance evaluation also provides a mechanism for identifying the strength and weaknesses of fund of fund managers in the investment processes, which would help them to take corrective actions in the future.

Conclusion

The study evaluated the performance of growth and dividend oriented equity fund of mutual funds on the basis of risk adjusted methods. The performance of the fund of funds was compared with the risk-free returns that the investor would gain if he/she invested his/her corpus in a risk-free asset such as a Treasury bill. The performance

is also compared with the benchmark index (BSE 100), which is taken as a proxy for market returns. Yearly return analysis performed on the sample of equity fund of mutual funds clearly showed that all sample funds earned negative returns in the excess of the risk free rate of return offered by 91 days Treasury bill over the study period. The comparison of rates of return of the benchmark index and the sample of equity fund of mutual funds indicates that majority of the equity fund of mutual funds included in the sample had underperformed the benchmark. The results of this study is contrary to the results obtained by earlier studies, for example, Vasantha (2013), Jagric et al. (2007), and Rohitraj and Rao (2015), who revealed that the funds were outperformed. The returns performance presents a better picture, while the performance based on risk adjusted performance did not show commendable performance due to double layer of fees.

Limitations of the Study and Scope for Further Research

For the purposes of historical performance evaluation, those schemes were selected which are in operation since the last 10 years. Only open-ended, growth, and dividend equity fund of fund schemes have been considered for this study's purpose. Comparative performance between public sector fund of funds and private sector fund of funds, open-ended funds and close-ended funds, bull phases and bear phases, and risk adjusted tools can be used to analyze the future for fund of mutual funds within the family performance and out of the family performance and also strategy level.

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