



Effect of Genre of Sponsorship on the Performance of Mutual Funds

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Abstract

In any given country Mutual Funds operate in similar regulatory framework, the investors will be almost homogenous, the markets are rather efficient and the operating expenses will be more or less the same. However, there are differences in the performance of mutual funds. The performance of mutual fund may be influenced by the type of sponsorship. This paper examines the effect of type of ownership on the performance of Mutual Funds. In India mutual funds can be categorized into three on the basis of sponsors viz., bank and institution sponsored, private sponsored and foreign sponsored mutual funds. The performances of mutual funds are evaluated with the help of Sharpe measure, Treynor measure and Jensen measure. The study found that disparity does not exist in the performance of mutual funds on the basis of type of sponsorship. ANOVA test confirms that there is no difference in the performance among Mutual Funds.

Keywords: Mutual Fund, Sharpe measure, Treynor measure, Jensen measure

I. Introduction

A Mutual Fund is an institution, trust or investment company that drums up financial resources of the community, particularly from the household segment and allocates and directs these scant resources from the idle to the productive sectors for increase of Gross National Product and the growth of the economy in general. Mutual fund en route the pooled money to capital market. Capital market is the most important source of capital formation which paves the way for economic development of any country. By investing in several securities – equity shares, debentures, government securities etc., - Mutual Funds reduce risk through diversification.

Weston and Brigham (1997) hold that “Mutual Funds are corporations which accept dollars from

savers and then use these dollars to buy stocks, long term bonds and short term debt instruments issued by business or government units. These corporations pool funds and thus reduce risk by diversification”.

Mutual funds as an investment vehicle have gained immense popularity in the current scenario, which is clearly reflected in the robust growth levels of assets under management. At the end of first quarter of 2013, mutual funds that exist worldwide held assets valued at \$ 27,856,458 million¹.

India has vast growth potential supported by a strong economy, corresponding with a fairly increasing GDP growth rate², satisfactory rate of household savings and investments³. By the



end of first quarter of 2013, mutual funds in India held assets valued at \$ 102,826⁴ million.

The Unit Trust of India (UTI), a government owned firm, was the first institution to come up with a mutual fund scheme in India in the early 1960's. At present, 46 Asset Management Companies (AMCs) are operating in India⁵. Mutual funds in India can be broadly categorized into three on the basis of the nature of sponsorship, viz Bank Sponsored and Institution Sponsored mutual funds, Private Sector mutual funds and Foreign mutual funds.

In finance, an investment is a monetary asset purchased with the idea that the asset will provide income in the future or appreciate and be sold at a higher price⁶. Mutual funds in India operate in similar regulatory framework⁷, the investors are almost homogenous, the Indian market is relatively efficient⁸ and the operating expenses are almost same⁹. However, there are differences in the performance of mutual funds operating in India. The performance of mutual fund may be influenced by the type of sponsorship, *inter alia*, many other factors. This paper examines the effect of type of sponsorship on the performance of mutual funds.

II. Objective and Hypothesis

The objective of this study is to evaluate the effect of type of sponsorship on the performance of selected mutual funds. The following hypothesis has been formulated based on the objective of the study:

H₀: The type of sponsorship and the performance of mutual funds are unrelated.

III. Methodology

The study is analytical in nature using secondary data. The returns of the selected mutual funds are calculated from the Net Asset Values (NAV) values.

III (A). Selection of Study Units

The study is limited to open-ended equity schemes for a period of one year. The open-ended schemes constitute 88% of the total assets held by Asset Management Companies¹⁰. Three mutual fund schemes from each of the three types of sponsorships of mutual funds prevalent in India (i.e. Bank and Institution Sponsored mutual funds, Private Sector mutual funds and Foreign mutual funds) are selected for the study.

III (B). Collection of Data

The NAVs of the selected schemes were collected from the official website of AMFI. The S&P Bombay Stock Exchange Index values (S & P BSE SENSEX Index) are drawn from BSE

¹ <http://www.ici.org/research/stats/worldwide>

² In its release of Trade and Development Report 2013, the United Nations Conference on Trade and Development (UNCTAD) said the Indian economy is expected to grow at 5.2 per cent in calendar year 2013 as against 3.8 per cent in 2012.

(Source: <http://www.thehindubusinessline.com/economy/indias-gdp-growth-likely-to-be-at-52-in-2013-unctad/article5120306.ece>)

³ The Reserve Bank of India's Handbook of Statistics (September 2013) shows that investment in shares and debentures constituted 3.1% of the incremental financial assets of the household sector in fiscal year 2013.

(Source: <http://www.livemint.com/Money/rkS7koY3mPmB2LKKEzLyUK/Indian-markets-are-far-more-volatile-than-others.html?ref=dd>)

⁴ <http://www.ici.org/research/stats/worldwide>

⁵ <http://www.amfiindia.com/amfimembers.aspx>

⁶ <http://www.investopedia.com/terms/i/investment.asp>

⁷ All mutual funds are governed under SEBI guidelines - SEBI (MF) Regulation - 1993

⁸ Vaidyanathan & Gali (1994) and Ray & Sharma (2008), *inter alia*, provided empirical evidence.



directory for the study period to compute market return. The average of the annualised closing yields on ten year government bonds over the last three months is used as the Risk free rate.

III (C) Tools of Analysis

1. **Standard Deviation:** Standard deviation is a measure to quantify risk. It reflects the degree to which returns fluctuate.
2. **Beta Co-efficient:** Beta measures the sensitivity of the funds to fluctuations in the market index and thereby assesses the market risk of the schemes.
3. **Sharpe and Treynor Ratios and Portfolio Alpha:** The Sharpe ratio tells whether a portfolio’s returns are due to smart investment decisions or a result of excess risk. Treynor Ratio uses the portfolio’s Beta as the unit of risk. The Portfolio Alpha (Jensen index) is a risk-adjusted measure of performance that compares

realized returns with returns that should have been earned per unit of non-diversifiable risk.

4. **ANOVA:** In order to test the statistical significance of various ratios ANOVA is applied wherever appropriate, at 5% level of significance.

IV. Empirical Results

IV (A). Return Analysis

The returns of the selected schemes are given in Table 1. The daily price changes in the scheme were measured and the natural log of the ratio of the scheme’s price S_t to its previous day’s price S_{t-1} . Then the average log returns over the period is calculated. Later it is multiplied by 365 days to get the annual return from the scheme. The formula used is as follows:

$$R_m = \frac{\sum_n R_t}{n}$$

Table 1: Return Analysis of the Schemes

| No. | Scheme | Return (%) |
|-----|---|------------|
| 1 | SBI Magnum Multicap Fund - RP- Growth | 10.63 |
| 2 | BOI AXA Equity Fund -RP - Growth | 6.54 |
| 3 | UTI Equity Fund Growth | 11.51 |
| 4 | Birla Sun Life India Gennext Fund-Growth-Direct Plan | 23.64 |
| 5 | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 9.05 |
| 6 | Axis - Equity Fund - Growth | 23.42 |
| 7 | Morgan Stanley Growth Fund - Regular Growth Plan | 17.14 |
| 8 | Franklin India High Growth Companies Fund - Growth Plan | 19.30 |
| 9 | BNP PARIBAS Equity Fund-Growth Option | 13.80 |

Source: Authors’ Computation

Figure 1: Return Analysis of the Schemes



Table 1 and Figure 1 show that, prima facie, there is difference among the returns of the mutual funds in the three sectors. In order to verify the significance of the difference one way ANOVA is conducted by taking the null hypothesis, “there is no significant difference in the return of mutual

funds on the basis of sponsorship”. The ANOVA results (Table 2) show that the calculated value (2.46) is less than the table value (5.14). So the null hypothesis is accepted and it is concluded that the difference is statistically not significant.

Table 2: ANOVA of Return of the Schemes

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value | F crit |
|---------------------|----------------|----|-------------|----------|----------|----------|
| Between Groups | 139.1143 | 2 | 69.55713 | 2.464574 | 0.165461 | 5.143253 |
| Within Groups | 169.3367 | 6 | 28.22278 | | | |
| Total | 308.4509 | 8 | | | | |

Source: Authors’ computation

IV (B). Risk Analysis

Standard deviation is a measure to quantify risk. It reflects the degree to which returns fluctuate around their average. To find out how far the returns deviate from the average, the standard

deviations of the returns are computed using the following formula.

$$SD = \sqrt{\frac{\sum(R_t - R_m)^2}{n - 1}}$$



Table 3: Risk Analysis of the Schemes

| No. | Scheme | Risk (%) |
|-----|---|----------|
| 1 | SBI Magnum Multicap Fund - RP- Growth | 10.99 |
| 2 | BOI AXA Equity Fund -RP - Growth | 12.11 |
| 3 | UTI Equity Fund Growth | 10.86 |
| 4 | Birla Sun Life India Gennext Fund-Growth-Direct Plan | 10.74 |
| 5 | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 12.14 |
| 6 | Axis - Equity Fund - Growth | 11.50 |
| 7 | Morgan Stanley Growth Fund - Regular Growth Plan | 11.21 |
| 8 | Franklin India High Growth Companies Fund - Growth Plan | 10.71 |
| 9 | BNP PARIBAS Equity Fund-Growth Option | 9.77 |

Source: Authors' Computation

Figure 2: Risk Analysis of the Schemes

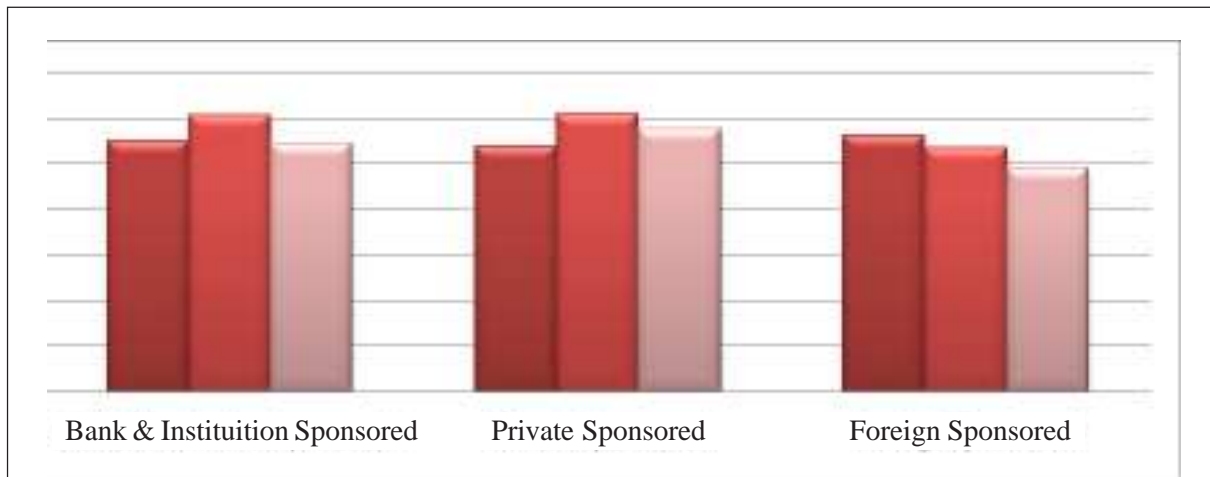


Table 3 and Figure 2 illustrate that there is, prima facie, difference in the risks of the three sectors of mutual funds. In order to statistically test the difference, one way ANOVA is conducted by taking the null hypothesis, “there is no significant difference in the risk of mutual funds on the basis

of sponsorship”. The ANOVA results show (Table 4) that the calculated value (1.40) is less than the table value (5.14). So, the null hypothesis is accepted and it is concluded that the difference is statistically not significant.



Table 4: ANOVA of Risk of the Schemes

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value | F crit |
|---------------------|----------------|----|-------------|----------|----------|----------|
| Between Groups | 1.399349 | 2 | 0.699675 | 1.396419 | 0.317736 | 5.143253 |
| Within Groups | 3.006294 | 6 | 0.501049 | | | |
| Total | 4.405644 | 8 | | | | |

Source: Authors' computation

IV (C). Performance Analysis

Performance is evaluated with the help of Sharpe Ratio, Treynor Ratio and Jensen Alpha.

of this popularity can be attributed to its simplicity. The formula used is as follows:

a. Sharpe Ratio

$$Sharpe\ Ratio = \frac{arp - arf}{\sigma p}$$

Sharpe ratio was derived in 1966 by William Sharpe, it has been one of the most referenced risk/return measures used in finance, and much

arp = Average Return of Fund
arf = Average Risk-free return
σp = Standard deviation of Fund's return

Table 5: Sharpe Ratios

| No. | Scheme | Sharpe Ratio |
|-----|---|--------------|
| 1 | SBI Magnum Multicap Fund - RP- Growth | 0.32 |
| 2 | BOI AXA Equity Fund -RP - Growth | -0.05 |
| 3 | UTI Equity Fund Growth | 0.40 |
| 4 | Birla Sun Life India Gennext Fund-Growth-Direct Plan | 1.53 |
| 5 | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 0.16 |
| 6 | Axis - Equity Fund - Growth | 1.41 |
| 7 | Morgan Stanley Growth Fund - Regular Growth Plan | 0.89 |
| 8 | Franklin India High Growth Companies Fund - Growth Plan | 1.13 |
| 9 | BNP PARIBAS Equity Fund-Growth Option | 0.68 |

Source: Authors' Computation

¹ Section 52 of SEBI (MF) Regulations of 1996 stipulates that Operating expenses, adhering to the limits prescribed by it, can be charged on the income of Fund and should be disclosed in the annual accounts of the AMCs.

²www.amfiindia.com/spages/ammay2013repo.pdf . (Table: 4)



Figure 3: Sharpe Ratios

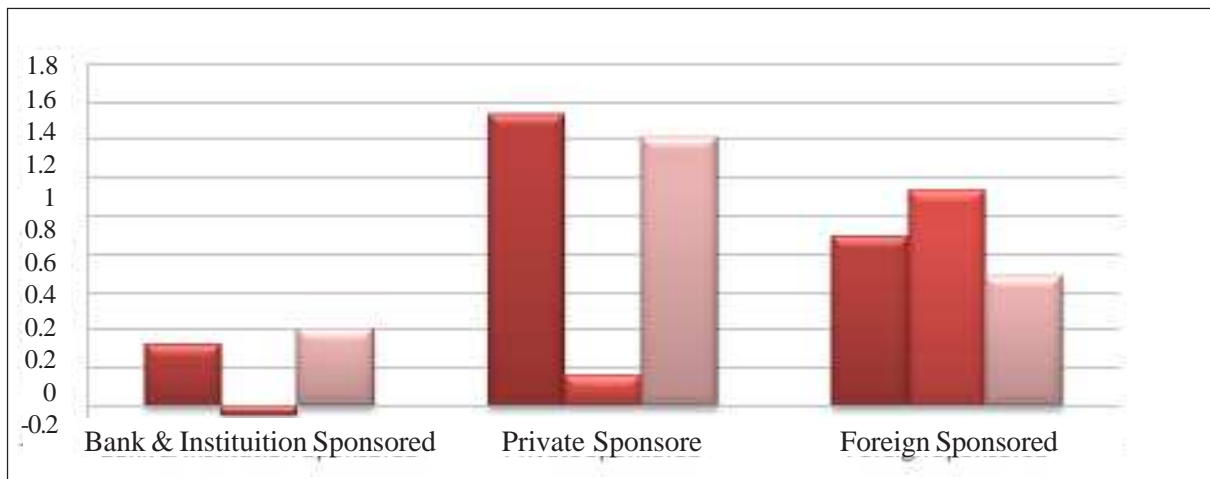


Table 5 and Figure 3 point out that there is prima facie difference in the Sharpe Ratios of the three sectors of mutual funds. In order to test the significance of the difference, one way ANOVA is conducted by taking the null hypothesis that “there is no significant difference in the Sharpe

Ratios of mutual funds on the basis of sponsorship”. The ANOVA results (Table 6) show that the calculated value (2.47) is less than the table value (5.14). So the null hypothesis is accepted and it is concluded that the difference is statistically not significant.

Table 6: ANOVA of Sharpe Ratios of the Schemes

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value | F crit |
|---------------------|----------------|----|-------------|----------|----------|----------|
| Between Groups | 1.14064 | 2 | 0.57032 | 2.469792 | 0.164988 | 5.143253 |
| Within Groups | 1.385509 | 6 | 0.230918 | | | |
| Total | 2.526149 | 8 | | | | |

Source: Authors’ computation

b. Treynor Ratio

Treynor Performance Index, developed by Jack Treynor (1965) is also known as Treynor Composite Performance Measure. It is a measure of reward (or excess return) per unit of risk. The formula used is:

$$Treynor\ Ratio = \frac{arp - arf}{\beta}$$

arp = Average Return of Fund

arf = Average Risk-free return

â = Beta



Table 7: Treynor Ratios

| No. | Scheme | Treynor Ratio |
|-----|---|---------------|
| 1. | SBI Magnum Multicap Fund - RP- Growth | 158.94 |
| 2. | BOI AXA Equity Fund -RP - Growth | -0.70 |
| 3. | UTI Equity Fund Growth | 5.58 |
| 4. | Birla Sun Life India Gennext Fund-Growth-Direct Plan | 25.06 |
| 5. | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 2.17 |
| 6. | Axis - Equity Fund - Growth | 19.43 |
| 7. | Morgan Stanley Growth Fund - Regular Growth Plan | 12.88 |
| 8. | Franklin India High Growth Companies Fund - Growth Plan | 18.47 |
| 9. | BNP PARIBAS Equity Fund-Growth Option | 10.30 |

Source: Authors' Computation

Figure 4: Treynor Ratios

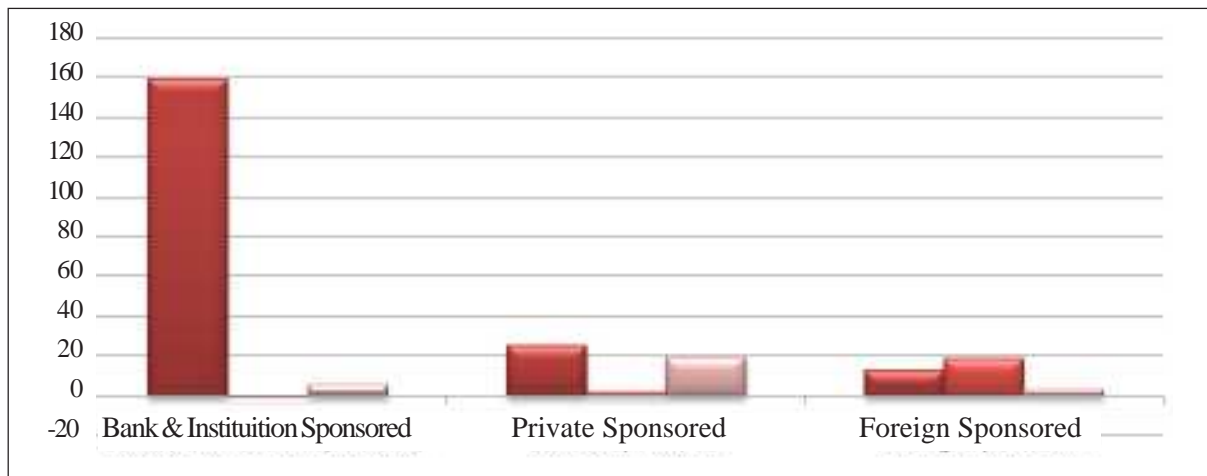


Table 7 and Figure 4 demonstrate that there is prima facie difference in the Treynor Ratios of the three sectors of mutual funds. In order to test the significance of the difference, one way ANOVA is conducted by taking the null hypothesis that “there is no significant difference in the

Treynor Ratios of mutual funds on the basis of sponsorship”. The ANOVA results (Table 8) show that the calculated value (0.57) is less than the table value (5.14). So the null hypothesis is accepted and it is concluded that the difference is statistically not significant.



Table 8: ANOVA of Treynor Ratios of the Schemes

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value | F crit |
|---------------------|----------------|----|-------------|----------|----------|----------|
| Between Groups | 3186.463 | 2 | 1593.232 | 0.573504 | 0.591672 | 5.143253 |
| Within Groups | 16668.38 | 6 | 2778.063 | | | |
| Total | 19854.84 | 8 | | | | |

Source: Authors' computation

c. Jensen Alpha

The Portfolio Alpha (Jensen index) is a risk-adjusted measure of performance that compares realized returns with returns that should have been earned per unit of non-diversifiable risk. Michael Jensen's performance index is based on the capital asset pricing model and differs from the Sharpe

and Treynor measures. The formula used is as follows:

$$Portfolio\ Alpha = arp - [arf + (arm - arf)\beta]$$

arp = Average Return of Fund

arf = Average Risk-free return

arm = Average Market Return

â = Beta

Table 9: Jensen Alpha

| No. | Scheme | Jensen Alpha |
|-----|---|--------------|
| 1. | SBI Magnum Multicap Fund - RP- Growth | 0.00063 |
| 2. | BOI AXA Equity Fund -RP - Growth | 0.85 |
| 3. | UTI Equity Fund Growth | 0.82 |
| 4. | Birla Sun Life India Gennext Fund-Growth-Direct Plan | 0.60 |
| 5. | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 0.81 |
| 6. | Axis - Equity Fund - Growth | 0.84 |
| 7. | Morgan Stanley Growth Fund - Regular Growth Plan | 0.76 |
| 8. | Franklin India High Growth Companies Fund - Growth Plan | 0.60 |
| 9. | BNP PARIBAS Equity Fund-Growth Option | 0.69 |

Source: Authors' Computation

Figure 5: Jensen Alpha

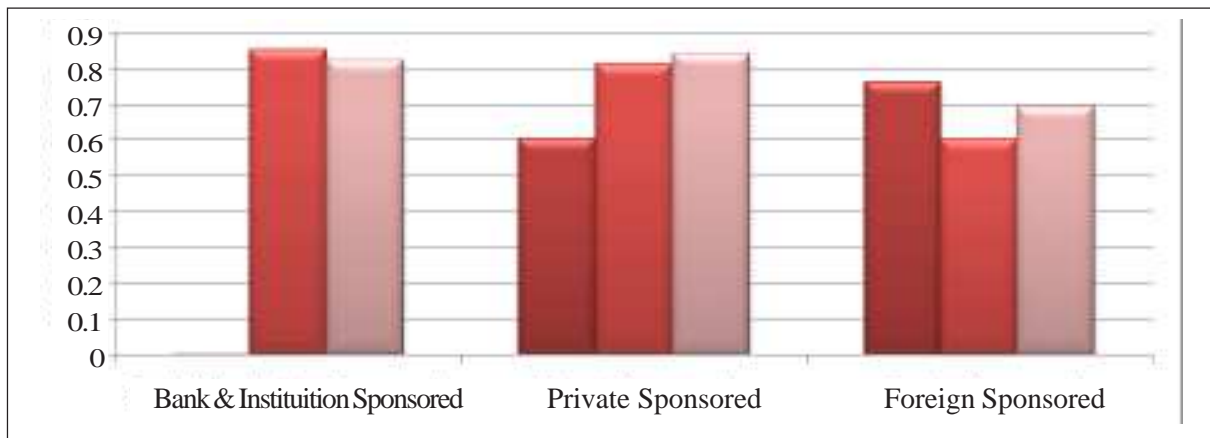


Table 9 and Figure 5 exemplify that there is prima facie difference between in the Jensen Alpha of the three sectors of mutual funds. In order to confirm the statistical significance of the difference, one way ANOVA is conducted by taking the null hypothesis that “there is no significant difference in the Jensen Alpha of

mutual funds on the basis of sponsorship”. The ANOVA results (Table 10) show that the calculated value (1.68) is less than the table value (5.14). So the null hypothesis is accepted and it is concluded that the difference is statistically not significant.

Table 10: ANOVA of Jensen Alpha of the Schemes

| Source of Variation | Sum of Squares | df | Mean Square | F | P-value | F crit |
|---------------------|----------------|----|-------------|----------|----------|----------|
| Between Groups | 111.6603 | 2 | 55.83014 | 1.677925 | 0.263757 | 5.143253 |
| Within Groups | 199.64 | 6 | 33.27333 | | | |
| Total | 311.3003 | 8 | | | | |

Source: Authors’ computation

V. Conclusion

This paper was examining whether there exists any difference in the performance of the selected mutual funds on the basis of the genre of sponsorship. The study found that disparity does not exist in the performance of mutual funds on the basis of type of sponsorship.

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(Footnotes)

¹ <http://www.ici.org/research/stats/worldwide>

² In its release of Trade and Development Report 2013, the United Nations Conference on Trade and Development (UNCTAD) said the Indian economy is expected grow at 5.2 per cent in calendar year 2013 as against 3.8 per cent in 2012. (Source: <http://www.thehindubusinessline.com/economy/indias-gdp-growth-likely-to-be-at-52-in-2013-unctad/article5120306.ece>)

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(Source: <http://www.livemint.com/Money/rkS7koY3mPmB2LKKEzLyUK/Indian-markets-are-far-more-volatile-than-others.html?ref=dd>)

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⁶ <http://www.investopedia.com/terms/i/investment.asp>

⁷ All mutual funds are governed under SEBI guidelines - SEBI (MF) Regulation - 1993

⁸ Vaidyanathan & Gali (1994) and Ray & Sharma (2008), inter alia, provided empirical evidence.

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¹⁰ www.amfiindia.com/spages/ammay2013repo.pdf . (Table: 4)