AN EMPIRICAL STUDY ON RISK AND RETURN ANALYSIS OF SIP V/S LUMP SUM INVESTMENT W.R.T. ELSS MUTUAL FUND SCHEME

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ABSTRACT

This research is undertaken to compare the risk and return of investment in mutual funds through SIP or lump sum investment. There is a lot of ambiguity among small investors regarding whether they should go for a lump sum investment or for SIP if the fund is available with them for investment. To justify the objectives of this research ten popular mutual fund ELSS schemes, one each from ten Asset Management Companies having the highest Asset under Management as on December 2019. Last ten years NAV data are collected for analysis purposes. The two parameters chosen here are the risk and return for analyzing both ways of investments. T-Test for the difference in the mean is used to compare mean and return of SIP and lump sum investment. F-Test for the difference in variance is used to compare mean return of SIP and lump sum investment. Results of data analysis strongly suggest to go for lump sum investment compared to SIP investment if investors have only two criteria to evaluate investment avenues i. e. return and risk.

Key words: Risk & Return, Lump sum Investment, Mutual fund, Systematic investment plan, Net Asset Value, CAGR.

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1. INTRODUCTION

In the last two decades investment as a field is emerging like anything in India. There are lots of investment alternatives that emerge with already available traditional investment alternatives. A mutual fund is one of the highest growing investment alternatives of the decade as per the views of experts there is still lots of potential in this sub-sector to grow. There is a wide variety of reason behind it such as no. of investors available in India, an average of populations of India, saving habit of Indians, the potential of Indian stock market to which mutual fund sector have direct exposure. The history of mutual funds in India can be broadly divided into four distinct phases. The first phase of 1964 to 1987 with the establishment of UTI by an Act of Parliament. The second phase of 1987 to 1993 with an entry of public sector funds like LIC, GIC, PNB, BOB, etc. Third phases of 1993 to 2003 with an entry of private sector funds and phase four from 2003 onwards in which UTI is bifurcated into two different entities. Investment in Mutual funds gives many advantages to investors such as professional fund management team, diversification, etc. there are mainly three types of schemes offered by any Assets Management Company. These are equity schemes, balance Schemes, and debt schemes. There are mainly two ways investors can invest in mutual funds, one is SIP and the other is the lump sum. Both have their advantages and disadvantages. An investor having funds available at present time for investment is always in a dilemma whether he should go SIP or lump sum investment. In this research paper, we have tried to quantify the outcome of SIP and lump sum investment on risk and return parameters. We have used T-Test, F-Test, and Coefficient of variance to analyze the data and attain the mentioned objectives of the research paper. CAGR return is calculated on the basis of monthly NAV data for the last ten years.

2. LITERATURE REVIEW

Mane (2016) examined the investor's awareness concerning mutual funds that are the plans they like, the plans they are picking, the intentions behind such determinations and furthermore this exploration managed distinctive venture choices, which individuals lean toward alongside and a section from shared supports like postal saving plans, recurring deposits, bonds and shares. The discoveries from this undertaking are that individuals are reluctant in going for new age investment options like mutual funds and want to turn away dangers by putting resources into safer venture alternatives like recurring deposits.

Dr. Hemendra Gupta (2015) from this research of “Study on Performance of Sensex and evaluation of investing lump sum or regular investment in equity in risk and return for investors has shown that there is no substantial difference between Risk and Return but SIP is a very good way of investment. It is proved right that savings is equal to income deducted from expenses. The observation is to have a good income you should spend time in the market.

Srinivas Yadav and Hemanth N C (2014), have contemplated the Performance of Selected Equity Growth Mutual Funds in India. An Empirical Study from first June 2010 to 31st May 2013. The investigation assesses the performance of chosen growth equity funds in India, done utilizing portfolio performance evaluation methods, for example, Sharpe and Treynor measure. S&P CNX NIFTY has been taken as the benchmark. The examination directed with 15 equity growth Schemes (NAV) was browsed the main 10 AMCs (in light of AUM) for the period first June 2010 to 31st May 2013(3 years).

Karrupasamy & Vanaja (2014) to assess the performance of various mutual fund schemes based on returns and compare with their benchmark and furthermore to evaluate the performance of various classes of assets utilizing risk adjusted measures as recommended by Sharpe, Treynor, and Jeanson. The examination uncovered the investors for investment less

than 2 years can pick mid-cap plans and for more than 3 years can be made in small and mid-cap plans.

Sharma & Pandya (2013) have done a review of Investing in Mutual Funds. In this paper, the structure of mutual funds, examination between investments in mutual fund and other investment alternatives and calculation of NAV, and so forth have been thought of. In this paper, the effects of different segment factors on investors' perspectives towards mutual funds have been contemplated. For estimating different marvels and dissecting the gathered information successfully and effectively for making sound determinations, drawing pie graphs has been utilized and for examining the different variables answerable for investment in mutual funds.

Kumar, A & Ali, R (2013) clinched that the two growth funds have not achieved well in terms of total risk and the funds are not contributing rewards of divergence to the investors. The performance of Birla sun life dividend yield plus is poor. Birla sun life India Gen next fund-Growth is well diversified and has compact its risk however Birla sun life India Gennext fund-Growth did not.

Singh (2012) in his research determined that there are various demographic influences resulting in shifting investor's assertiveness towards mutual funds. These influences include (B. K. Singh, 2012) 1. Gender 2 Income 3 Level of Education. Alongside these there are five more factors that make mutual funds more striking to investors (B. K. Singh, 2012) 1. Return Potential 2 Liquidity 3 Flexibility 4 Transparencies 5 Affordability. The altering nature of rivalry in the mutual fund sector as it relates to price competition and threat of swelling range of different investment alternatives also had a consequence in shifting investor's assertiveness toward mutual funds.

Kothari and Mindargi (2012) in their study examined the influence of different demographic variables on the approach of investors headed for mutual funds. To one side from this, it also emphasises on the paybacks brought by mutual funds to investors. To this end, 200 respondents of Solapur City, having dissimilar demographic profiles were gaged. The study exposes that the common of investors have still not shaped any approach towards mutual fund investments.

Singh and Jha (2012) conducted a study on awareness & acceptability of mutual funds and found that consumers basically prefer mutual funds due to return potential, liquidity and safety and they were not totally aware about the systematic investment.

Priyadarshini and Babu A (2011), have done estimate of The Net Asset Values of Indian Mutual Fund with Auto- Regressive Integrated Moving Average (Arima). In this paper, some of the mutual funds in India had been exhibited using Box-Jenkins autoregressive integrated moving average (ARIMA) procedure. Rationality of the models was tested using standard statistical methods and the future NAV values of the mutual funds have been predicted.

Hundal, B & Grover, D (2011) have done perceptual study of Systematic Investment Plan (SIP). A case study of service class. Systematic Investment Plan (SIP) is an ordered way of investing, where you make steady investments conferring to a set schedule you create. Systematic investing is a time-tested discipline that makes it easy to invest automatically. This paper is an effort to examine the awareness of service class people headed for systematic investment plans. Factor analysis and cluster analysis have been used to study the same and originate that service classes have an expectant approach towards investment in these plans.

3. OBJECTIVE OF THE STUDY

Primary Objectives

- To analyze the risk and return of both i.e. SIP and Lump sum investment in Mutual funds.
- To compare the Return on Investment (ROI) from both the investment options.

Secondary Objectives

- To study the overall risk and returns in the Mutual funds industry.
- To study the NAV associated with different schemes.

Sampling & Data Collection

For attaining our research objectives we have taken 10 ELSS regular schemes as samples which are as under.

- Axis Long Term Equity Fund
- BOI Axa Tax Advantage Fund
- DSP Tax Saver Fund
- HDFC Long Term Fund
- ICICI Prudential Long Term Equity Fund
- IDFC Tax Advantage Fund
- Invesco India Tax Plan Fund
- Kotak Tax Saver Scheme Fund
- L&T Tax Advantage Fund
- TATA India Tax Saving Fund

Date Collection: Last 5 years NAV data collected on monthly basis for above mentioned scheme.

4. DATE ANALYSIS

4.1. First Level Analysis: Analysis of CAGR monthly return on Lump sum V/S SIP Investment

Hypothesis

H₀: There is no significant difference in the mean CAGR return of SIP Investment and Lump sum Investment in selected mutual fund ELSS Scheme.

H₁: There is a significant difference in the mean CAGR return of SIP Investment and Lump sum Investment in selected mutual fund ELSS Scheme.

Table 1 T Test Two-Sample for difference in mean

Scheme	Type of Investment	Mean	Variance	T-State
Axis Long Term Equity Fund	SIP	5.36	43.59	-3.52
	Lump sum	12.56	208.48	
BOI Axa Tax Advantage Fund	SIP	4.36	44.88	-2.69
	Lump sum	9.13	144.64	
DSP Tax Saver Fund	SIP	5.83	41.44	-3.70
	Lump sum	12.46	150.74	
HDFC Long Term Fund	SIP	4.83	29.54	-2.53
	Lump sum	7.98	63.37	

ICICI Prudential Long Term Equity Fund	SIP	4.21	40.27	-2.64
	Lump sum	9.17	172.31	
IDFC Tax Advantage Fund	SIP	6.06	83.98	-3.20
	Lump sum	15.58	447.85	
Invesco India Tax Plan Fund	SIP	5.35	52.39	-3.30
	Lump sum	12.65	241.34	
Kotak Tax Saver Scheme Fund	SIP	5.01	81.09	-2.44
	Lump sum	12.17	436.87	
L&T Tax Advantage Fund	SIP	5.38	41.76	-3.28
	Lump sum	11.21	147.15	
TATA India Tax Saving Fund	SIP	6.85	61.38	-3.82
	Lump sum	16.57	327.52	
Average monthly CAGR Return of 10 Fund	SIP	5.32	46.63	-3.22
	Lump sum	11.95	206.83	

Note: n_1 & $n_2 = 60$, D.F. = 118, T Critical value for all test at 5% LOS = ± 1.98

Interpretation

All above T - Test reject the null hypothesis at 5% level of significance indicates that there is a significant difference in the return on lump sum and SIP investment. Data of average CAGR return given in table 1 indicate that return on Lump sum investment is quite higher compared to SIP Investment in Mutual Fund.

4.2. Second Level Analysis: Analysis of Variance of CAGR return of SIP V/S Lump sum Investment

Hypothesis

H_0 : There is no significant difference in the variance of CAGR return of SIP Investment and Lump sum Investment in selected mutual fund ELSS Scheme.

H_1 : There is a significant difference in the variance of CAGR return of SIP Investment and Lump sum Investment in selected mutual fund ELSS Scheme.

Table 2 F Test Two-Sample for difference in Variance

Scheme	Type of Investment	Mean	Variance	F Calculated
Axis Long Term Equity Fund	SIP	5.36	43.59	0.209
	Lump sum	12.56	208.48	
BOI Axa Tax Advantage Fund	SIP	4.36	44.88	0.310
	Lump sum	9.13	144.64	
DSP Tax Saver Fund	SIP	5.83	41.44	0.275
	Lump sum	12.46	150.74	
HDFC Long Term Fund	SIP	4.83	29.54	0.466
	Lump sum	7.98	63.37	
ICICI Prudential Long Term Equity Fund	SIP	4.21	40.27	0.234
	Lump sum	9.17	172.31	
IDFC Tax Advantage Fund	SIP	6.06	83.98	0.188
	Lump sum	15.58	447.85	
Invesco India Tax Plan Fund	SIP	5.35	52.39	0.217
	Lump sum	12.65	241.34	
Kotak Tax Saver Scheme Fund	SIP	5.01	81.09	0.186
	Lump sum	12.17	436.87	
L&T Tax Advantage Fund	SIP	5.38	41.76	0.284
	Lump sum	11.21	147.15	
TATA India Tax Saving Fund	SIP	6.85	61.38	0.187
	Lump sum	16.57	327.52	
Variance of average monthly CAGR Return of 10 Fund	SIP	5.32	46.63	0.225
	Lump sum	11.95	206.83	

Note: n_1 & $n_2 = 60$, D.F. = 59, F Critical value for all test at 5% LOS LT = 0.649 & HT = 1.54

Interpretation

All above F - Test reject the null hypothesis at 5% level of significance indicates that there is a significant difference in the variance of return on lump sum and SIP investment. Data of variance on CAGR return given in table 2 indicate that variance on return of Lump sum investment is quite higher compared to SIP Investment in Mutual Fund.

4.3. Third Level Analysis: Analysis Coefficient of Variance of CAGR return of SIP V/S Lump sum Investment

Table 3 Analysis of Coefficient of Variance

Scheme	Type of Investment	Mean	Standard Deviation	CoV
Axis Long Term Equity Fund	SIP	5.36	6.60	123%
	Lump sum	12.56	14.44	115%
BOI Axa Tax Advantage Fund	SIP	4.36	6.70	154%
	Lump sum	9.13	12.03	132%
DSP Tax Saver Fund	SIP	5.83	6.44	110%
	Lump sum	12.46	12.28	99%
HDFC Long Term Fund	SIP	4.83	5.43	113%
	Lump sum	7.98	7.96	100%
ICICI Prudential Long Term Equity Fund	SIP	4.21	6.35	151%
	Lump sum	9.17	13.13	143%
IDFC Tax Advantage Fund	SIP	6.06	9.16	151%
	Lump sum	15.58	21.16	136%
Invesco India Tax Plan Fund	SIP	5.35	7.24	135%
	Lump sum	12.65	15.54	123%
Kotak Tax Saver Scheme Fund	SIP	5.01	9.01	180%
	Lump sum	12.17	20.90	172%
L&T Tax Advantage Fund	SIP	5.38	6.46	120%
	Lump sum	11.21	12.13	110%
TATA India Tax Saving Fund	SIP	6.85	7.83	114%
	Lump sum	16.57	18.10	109%
Coefficient of Variance of average monthly CAGR Return of 10 Fund	SIP	5.32	6.83	128%
	Lump sum	11.95	14.38	120%

Note: $CoV = (SD/Mean) * 100$

Interpretation

Coefficient of variance is the statistical tool which combines both mean and standard deviation which help researchers to make clear decisions towards any situation. Coefficient of variance given in Table 3 reflects that the risk-return combination in lump sum investment is superior compared to SIP investment.

5. FINDINGS

- First level analysis on difference in CAGR return indicates that there is a significant difference between return of lump sum Investment and SIP investment and also infers that return on Lump sum investment is quite higher compared to return on SIP investment. All 11 hypotheses reject the null hypothesis which itself is a strong evidence for this finding.
- Second level analysis on difference in variance of CAGR return indicates that there is a significant difference between variance of return of lump sum Investment and SIP investment and also infers that variance of return on Lump sum investment is quite higher compared to return on SIP investment. As return is higher in lump sum investment it is expected to have higher variance. All 11 hypotheses reject the null hypothesis which itself is strong evidence for this finding.

- Third level analysis using coefficient of variance helps to give strong recommendation for SIP V/S lump sum investment in mutual funds as CoV uses both standard deviation and means to produce its statistics. It gives a return per unit of risk which helps research to compare to a set of investment easily. All 11 CoV value of lump sum investment is low compared to SIP investment which indicates that risk-return combination is better in lump sum investment compared to SIP investment.

6. CONCLUSION

Investment through SIP or Lump sum investment is always a debatable point and also of great attraction for Individual or Retail Investors, Financial Institutions like AMC, Investment Advisor etc. This research is undertaken to have some quantitative analysis for both investment ways. Analysis gives very clear inference that lump sum investment is better compared to SIP investment as far as risk and return are criteria. Obviously while doing investment, investors may have more criteria such as flexibility, safety of fund, availability of fund, liquidity etc... which may insist investors to go for SIP investment. In general we may say that in right investment alternatives any investment for long term will surely benefit investors.

REFERENCES

- [1] Jaison David, G. P. (2019, March). A study of investment decisions based on systematic investment plan, value averaging and lump-sum investment plan. - *International Journal of Research and Analytical Reviews*, 6(1), 46 - 55.
- [2] Jha, D. (2015, July). Mutual fund: SIP vis-à-vis lump sum investment. *International Journal of Multidisciplinary Research and Development*, 2(7), 395 - 400.
- [3] Singh, D. B. (2012, March). A study on investors' attitude towards mutual funds as an investment option. *International Journal of Research in Management*, 2(2), 61 - 70.
- [4] Capon, N., Fitzsimons, G.J. & Alan Prince, R. (1996). An individual level analysis of the mutual fund investment decision. *J Finan Serv Res* 10, 59-82 (1996). <https://doi.org/10.1007/BF00120146>
- [5] Mane, P. (2016). A Study of Investors Perception towards Mutual Funds in the City of Aurangabad.
- [6] Batra, D. B. (2012, May 2). A DEA comparison of systematic and lump sum investment in mutual funds. *International Journal of Computing and Business Research (IJCBR)*, 2229-6166.
- [7] Ghosh, D. R. (2011). The Scenario of Investment in Systematic Investment Plan (SIP) among the Retail Customers. *Global Journal of Finance and Economic Management*, 49-62.
- [8] Gurunathan, N. S. (2012). An Analysis of Risk-Adjusted Return on Tax-Saving Mutual Fund Schemes in India. *The IUP Journal of Financial Risk Management*, 54-71.
- [9] Hansen, K. A., & Carlson, S. J. (2014). Using a dollar cost averaging to range trade in bear markets. *Journal of Business and Educational Leadership*, 71-79.
- [10] Hossain, M. S., Rahman, A. M., & Rajib, M. S. (2013). Dynamics of Mutual Funds in Relation to Stock Market: A Vector Autoregressive Causality Analysis. *International Journal of Economics and Financial Issues*, 191-201.
- [11] Krishnan, K. G. (2017). A study of growth oriented tax saving schemes of select Indian mutual fund companies. *The Indian Journal of Management*, 17-20.
- [12] Manoharan, T. G., & Nair, G. V. (2018). Equity Funds or Mutual Funds? Through the Lens of SIP and LIP. *International Journal of Pure and Applied Mathematics*, 4177-4185.

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- [13] Panyagometh, K. (2013). Performance Comparison between Dollar Cost Averaging and Value Averaging Investment Strategies and the Impacts of Investment Horizon and Target Terminal Wealth. *Journal of Applied Finance & Banking*, 15-27.
- [14] Raj, S. C. (2013). Investment Behavior of the Customers towards Mutual Fund and Other Products: A Case Study of Axis Bank. *IPE Journal of Management*, 130-156.
- [15] Telukunta, R. (2017). Mutual Funds and Systematic Investment plans with their best performing funds. *Imperial Journal of Interdisciplinary Research*, 2454-1362.
- [16] Trainor, J. w. (2005). within-horizon exposure to loss for dollar cost averaging and lump sum investing. *Financial Services Review*, 319-330.
- [17] Bapna, Yogesh Mehta and Vishal Sood, (2010) "Mutual Fund Performance", *Journal of Business*, 39, No.1, Jan, pp. 119-138.
- [18] Hundal, B. S., & Grover, S. (2011). Perceptual study of systematic investment plan (sip) a case study of service class. *International Journal of Business Economics and Management Research*, 2(3), 1-11.
- [19] Gupta, H. (2015). A study on performance of Sensex and Evaluation of Investing Lumpsum or Monthly Regular Investment in Equity on Risk and Return for Investor. *International Journal of Development Research* Vol. 5, Issue, 4, 4323-4327.
- [20] Srinivas Yadav C & Hemanth N. C. (2014). Performance of Selected Equity funds in India An Empirical Study during 1st June 2010 to 31st May 2013. *Asia Pacific Journal of Research*, 1(14), 1 – 12.
- [21] Rashmi Sharma and N. K. Pandya (2013) Investing in Mutual Fund: An Overview, *Asian Research Journal of Business Management* Issue 1(Vol.1)
- [22] Karrupasamy, R., & Vanaja, V. (2014). Performance evaluation of selected category of public sector mutual fund schemes in India. *International research journal of business and management*, 1, 1-9.