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A Study of Gilt Mutual Fund Schemes in India

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Abstract: Mutual fund is an investment vehicle for small investors with common financial goals to enter the market through pooling. There are different types of mutual fund schemes which are available to investors, such as equity schemes, debt schemes, gilt schemes, hybrid schemes, index schemes etc. Amongst these schemes, gilt schemes are considered as safest for risk averse investors because these are confined only to government securities. In the present study, growth of gilt schemes has been examined and the performance of selected gilt schemes has been evaluated for the period 1st January, 2013 to 31st December, 2017. 15 gilt schemes, one from each asset management company (AMC) have been selected on the basis contribution to assets under management (AUM) as on 31st December, 2017. NAVs were collected on monthly basis and S&P BSE Sovereign 10 year Bond Fund has been considered as benchmark index for comparison. A major decline in gilt schemes in terms of number and resources mobilized was observed during 2016 and 2017. It was found that all gilt schemes had generated positive returns throughout the study period and involved high risk during 2015 and 2016. Further, it was revealed that L& T Gilt Fund ranked on top and Sundaram Gilt Fund ranked at bottom in terms of risk adjusted measures.

Keywords: Mutual Funds, Gilt Schemes, CAGR, Beta.

I. INTRODUCTION

Mutual fund is an investment vehicle particularly for small investors to enter the financial market without knowing the complexities of it. It allows a large number of investors to pool their money together with a pre-determined financial goal and thus invest the collected money in the securities market on their behalf. The money so collected is called Corpus of Fund and the investors are called Unit Holders. The benefits from the fund accrue to all investors in proportion to their share in the pool. The Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 define mutual fund as "a fund established in the form of a trust to raise money through the sale of units to the public or a section of the public under one or more schemes for investing in securities, including money market instruments". The benefits of investing in mutual funds are professional management, portfolio diversification, low transaction cost, liquidity, flexibility, tax benefits and transparency.

The mutual funds in India started its roots with the establishment of Unit Trust of India (UTI) in 1963. The UTI came into operation in 1964 with the introduction of its first scheme US-64. Till 1980s, UTI enjoyed monopoly and experienced consistent growth with Rs. 6,700 crore assets under management. In 1987, public sector banks and insurance companies were allowed to enter the market and by the end of 1990s, six public sector banks and two insurance companies entered the mutual fund industry and raised the assets under management (AUM) to Rs. 47,004 crore. To elevate the competition among the mutual fund companies, the private and foreign sector was also permitted to step into the mutual fund industry in 1993. During this period, a number of mergers and amalgamations took place and there were 33 mutual funds at the end of 2003 with Rs. 1,21,805 crore AUM. Since 2003, mutual funds have followed the path of success and rise to cater to the needs of modern market. There are 41 mutual fund companies operating 1904 different schemes with Rs. 21,26,665 crore assets under their management at the end of December 2017.

Basically, mutual fund structure comprises of Sponsor, Trust, Asset Management Company (AMC) and Custodian. A mutual fund is set up by sponsor(s) who completes the formalities and gets the fund registered with SEBI. A trustee holds the property of the mutual fund in trust of the unit-holders and also supervises the working of AMC. AMC administers the affairs of the mutual fund and operates its schemes. Custodian manages mutual fund securities and ensures their safety and ready availability.

Wide varieties of mutual fund schemes are available according to the different needs of the investors which can be classified as equity schemes, debt schemes, hybrid schemes, gilt schemes, liquid schemes, index schemes, exchange traded funds, gold funds, real estate funds and fund of funds. Amongst these schemes, gilt schemes are considered better option especially for risk averse investors, who demand regular returns with more safety. Gilt schemes are a type of mutual funds that invests solely in government securities which are of high quality and with low risk of default. The Government securities are issued by Reserve Bank of India (RBI) on behalf of the government. These securities are also called dated securities as there is fixed maturity amount and date. The tenure of gilt schemes is generally from medium to long term.

The performance of gilt schemes depends upon the changes in interest rates in the market and the prices of bonds are inversely related with interest rates. Therefore, gilt schemes are subject to interest rate risk. The major advantage of investing in gilt schemes is capital protection i.e. there is no credit risk which is there in other schemes. On the other hand, the returns from these schemes are generally moderate or less in comparison to other types of mutual fund schemes.

II. REVIEW OF LITERATURE

Chandel *et al.* (2009) evaluated the performance of sector specific 20 mutual fund schemes for the period from July 5, 2006 to June 27, 2007 and found that all the schemes performed satisfactory during the study period. Bhuvaneswari (2010) evaluated the performance of 21 equity schemes for the period January 1, 2002 to December 31, 2007 and found that only 50% of the selected schemes performed better than the market index and majority of the fund managers could not provide the market timing and stock selection advantages to the investors. Bawa and Brar (2011) compared the public and private sector equity schemes for the period April 1, 2000 to March 31, 2010 and concluded that performance of private sector schemes was quite better than the public sector schemes. Kantilala (2012) suggested that past performance, age and size of the fund, fund manager performance, types of services offered and fees charged by funds were the factors to be considered before making investment. Biswas (2013) in his paper evaluated the performance of 10 selected gilt funds and revealed that Baroda Pioneer Gilt Fund had highest return with lower beta and suggested that gilt funds could be better option for investment during low interest regime. Sahi (2014) examined the perception, experience and expectations of mutual fund investors of Punjab and observed that the investors expected changes in product features in terms of simplicity, whereas brokers expected awareness campaigns, investor education programs and reduction in number of schemes for better understanding. Sharma (2015) studied the investment strategies of open-ended equity diversified schemes of HDFC Mutual Fund and Reliance Mutual Fund for the period April 1, 2008 to March 31, 2013 and concluded that HDFC sample schemes outperformed Reliance schemes. Bhayasree and Kishori (2016) investigated the performance of 30 open-ended equity schemes and found that 14, 9 and 12 schemes out of 30 schemes outperformed the market return according to Sharpe, Treynor and Jensen models respectively. Reddy (2017) evaluated the performance of equity diversified, debt and hybrid mutual fund schemes and suggested that debt schemes were better for short term investments because of security purpose and equity schemes were better for long term investments because of higher returns.

III. Objectives of the Study

To evaluate the performance of the gilt mutual fund schemes, following objectives were defined:

1. To examine the growth of gilt schemes in terms of number of schemes and resource mobilization.
2. To evaluate the performance of gilt schemes on the basis of risk and return as well as in comparison to benchmark index.

RESEARCH METHODOLOGY:

Sample selection:

The growth of Gilt schemes is studied from March, 2008 to March, 2017. The present study comprises of 15 AMCs selected on the basis of highest contribution to the total AUM as on 31st December, 2017. One Open-ended Gilt Scheme with growth option from each mutual fund was selected (in case of more than one scheme, old scheme was opted). The period of the research work was from 1st January, 2013 to 31st December, 2017. NAVs were collected on monthly basis for the evaluation purpose. The yield of 364 Day Treasury bill was considered as risk-free rate of return and S&P BSE 10 Year Sovereign Bond Fund was considered as benchmark index for comparison.

Data collection:

The present study is based on secondary data which was collected from official websites of AMFI, RBI, SEBI and from various journals and research papers.

METHODOLOGY:

To examine the growth of gilt schemes compound annual growth rate (CAGR) has been calculated. Further, to evaluate the performance on risk and return basis, beta and average annual return has been calculated. Sharpe, Treynor and Jensen measures were used to compare the performance with benchmark index.

IV. Analysis and Results

TABLES:

Table 1: Total Number of schemes and Resources Mobilized by Gilt Schemes

Year	Number of schemes	Resources Mobilized (Rs. in crore)
March-08	30	3180
March-09	34	14696
March-10	35	3974
March-11	37	4450
March-12	42	4050
March-13	42	12886
March-14	44	9917
March-15	45	13133
March-16	41	3150
March-17	41	1485
CAGR (%)	3.64	-4.79

Growth of Gilt Schemes:

In Table 1 growth of gilt mutual fund schemes has been examined in terms of number of schemes and resources mobilized and CAGR has been calculated for the period March, 2008 to March, 2017. It is clearly visible that total number of gilt mutual fund schemes increased from 30 in March, 2008 to 41 in March, 2017 disclosing CAGR 3.64%. Thus, the number of schemes increased at a meager rate throughout the period, though decline was seen in March, 2016 when the number decreased to 41 from 45 in March, 2015.

Further, the total resources mobilized have shown a decline from Rs. 3,180 crore in March, 2008 to Rs. 1,485 crore in March, 2017 with negative CAGR -4.79%. A hike in resources mobilized is clearly visible in March, 2009 (Rs. 14,696 crore) when compared to March, 2008 (Rs. 3,180 crore). Further, a similar trend of rise was seen in March, 2013 and March, 2015. However, a decline in resources mobilized has been observed for the remaining years i.e. 2010, 2012, 2014, 2016 and 2017.

Table 2: Average Returns of Gilt Mutual Fund Schemes

Name of the Scheme	Year					
	2013	2014	2015	2016	2017	HPY
Aditya Birla Sun Life Gilt Plus	10.49	6.37	17.37	10.54	13.14	64.94
Axis Constant Maturity 10 Year Fund	6.83	2.63	13.00	9.26	8.89	40.97
DSP BlackRock Government Securities Fund	8.38	5.03	11.87	9.30	10.62	47.06
Franklin India Government Securities Fund	6.72	4.60	16.29	9.79	9.52	47.54
HDFC Gilt Fund	9.06	5.06	16.37	10.19	9.80	51.91
ICICI Prudential Long Term Gilt Fund	8.18	3.99	15.30	10.09	11.79	51.31
IDFC Government Securities Fund	12.58	6.47	14.58	8.22	11.22	55.18
Invesco India Gilt Fund	6.53	5.09	13.13	8.00	12.27	46.67
Kotak Gilt Investment	9.23	3.58	14.46	9.36	10.24	45.60
L&T Gilt Fund	13.63	8.80	15.81	10.12	10.40	61.10
Reliance Gilt Securities Fund	10.34	5.90	15.94	9.82	12.36	58.21
SBI Magnum Gilt Fund-Long Term	11.81	7.46	17.92	9.14	12.88	65.95
Sundaram Gilt Fund	16.44	14.45	10.77	6.77	8.37	60.75
Tata Gilt Securities Fund	9.74	7.29	14.93	8.08	10.40	54.55
UTI Gilt Advantage Fund Long Term	10.05	5.43	17.80	7.65	13.46	59.82

Table 3: Beta of Gilt Mutual Fund Schemes

Name of the Scheme	Year				
	2013	2014	2015	2016	2017
Aditya Birla Sun Life Gilt Plus	0.82	1.05	1.94	1.71	1.01
Axis Constant Maturity 10 Year Fund	0.81	0.97	1.31	1.17	0.89
DSP BlackRock Government Securities Fund	0.68	0.52	2.06	1.43	1.02
Franklin India Government Securities Fund	0.99	1.25	2.125	1.78	1.24
HDFC Gilt Fund	0.97	1.11	1.90	1.76	1.17
ICICI Prudential Long Term Gilt Fund	0.97	1.13	1.79	1.83	1.23
IDFC Government Securities Fund	0.56	0.56	1.41	1.25	0.78
Invesco India Gilt Fund	0.56	0.82	1.64	1.76	1.13
Kotak Gilt Investment	1.10	1.14	1.87	1.65	1.16
L&T Gilt Fund	0.54	0.38	1.28	1.42	1.12
Reliance Gilt Securities Fund	0.87	0.96	1.75	1.56	0.99
SBI Magnum Gilt Fund-Long Term	0.51	0.79	1.78	1.31	0.86
Sundaram Gilt Fund	-0.30	-0.46	0.90	1.02	0.75
Tata Gilt Securities Fund	0.57	0.77	1.73	1.19	0.71
UTI Gilt Advantage Fund Long Term	0.44	0.92	2.05	1.40	0.97

Return:

Average Monthly Returns and Holding Period Yield (HPY) have been calculated on the basis of NAV for the period 2013 to 2017.

It is clearly visible in Table 2 that all the gilt schemes generated positive returns and the values of return varied between 2.63% and 17.92% during the study period. Highest return was visible in case of SBI Magnum Gilt Fund-Long Term during

2015 while, lowest return was seen in case of Axis Constant Maturity 10 Year Fund in 2014. Aditya Birla Sun Life Gilt Plus and L&T Gilt Fund, earned returns above 10% in 4 out of 5 years however, 6 schemes viz. ICICI Prudential Long Term Gilt Fund, IDFC Government Securities Fund, Reliance Gilt Securities Fund, SBI Magnum Gilt Fund-Long Term, Sundaram Gilt Fund and UTI Gilt Advantage Fund had return above 10% during 3 out of 5 years taken for the study. Further, remaining schemes earned returns below 10 % for more than half of the study period. On the other hand, in terms of HPY, SBI Magnum Gilt Fund-Long Term (65.95%) was ranked on top followed by Aditya Birla Sun Life Gilt Plus (64.94%) and L&T Gilt Fund (61.10%) while, lowest HPY has been seen in case of Axis Constant Maturity 10 Year Fund (40.97%).

Risk:

Risk is defined as the variability in the returns from the expected returns. Gilt schemes are subject to systematic risk (interest rate risk). So the risk is measured using beta, which measures the sensitivity of the schemes with the movements in the market.

Table 3 shows that all the schemes had positive beta except for Sundaram Gilt Fund which was having negative beta in the year 2013 and 2014, indicating the movement of the schemes' returns in same direction as with the market returns. Further, 13 and 9 schemes out 15 had lower risk (beta value between 0 and 1) in the year 2013 and 2014 respectively. On the other hand, all the schemes were in high risk category during 2015 and 2016 except Sundaram Gilt Fund. Further, 8 out of 15 schemes had high risk while all the remaining schemes had lower risk during 2017.

Risk-adjusted Performance Measures:

For examining the risk-adjusted performance of the mutual fund schemes, three measures have been used such as, Sharpe (1966), Treynor (1965) and Jensen (1968).

Sharpe's Measure:

It is a ratio that indicates the relation between portfolio's additional return over risk-free return in terms of total risk (standard deviation).

It is depicted from Table 4 that all gilt schemes had positive Sharpe value in 2014 indicating good risk-adjusted performance during the year. On the other hand, during 2015 and 2016, all the gilt schemes had shown negative Sharpe ratio. Further, 3 schemes (Axis Constant Maturity 10 Year Fund, Franklin India Government Securities Fund and Invesco India Gilt Fund) in 2013 and 4 schemes (Axis Constant Maturity 10 Year Fund, Franklin India Government Securities Fund, HDFC Gilt Fund and Sundaram Gilt Fund) in 2017 had negative Sharpe ratio indicating poor performance by these schemes. However, the remaining 12 schemes had positive Sharpe ratio showing good performance.

Table 4: Sharpe's Ratio of Gilt Mutual Fund Schemes

Name of the Scheme	Year				
	2013	**2014**	**2015**	**2016**	**2017**
Aditya Birla Sun Life Gilt Plus	0.58	0.90	-0.51	-0.37	0.81
Axis Constant Maturity 10 Year Fund	-0.32	0.18	-0.89	-0.39	-0.03
DSP BlackRock Government Securities Fund	0.06	0.80	-2.20	-0.50	0.25
Franklin India Government Securities Fund	-0.27	0.72	-0.98	-0.53	-0.10
HDFC Gilt Fund	0.20	0.71	-0.65	-0.45	-0.02
ICICI Prudential Long Term Gilt Fund	0.15	0.46	-1.03	-0.78	0.30
IDFC Government Securities Fund	1.66	0.52	-0.73	-1.00	0.63
Invesco India Gilt Fund	-0.44	0.43	-1.51	-1.14	0.45
Kotak Gilt Investment	0.34	0.41	-1.34	-0.86	0.06
L&T Gilt Fund	2.08	1.24	-0.08	-0.61	0.10
Reliance Gilt Securities Fund	0.65	0.69	-0.81	-0.74	0.65
SBI Magnum Gilt Fund-Long Term	1.38	0.93	-0.36	-0.79	0.95

Sundaram Gilt Fund	2.99	2.84	-1.44	-1.37	-0.07
Tata Gilt Securities Fund	0.66	0.88	-1.07	-1.02	0.56
UTI Gilt Advantage Fund Long Term	0.96	0.60	-0.90	-1.17	0.69

Table 5: Treynor's Ratio of Gilt Mutual Fund Schemes

Name of the Scheme			Year		
	2013	2014	2015	2016	2017
Aditya Birla Sun Life Gilt Plus	2.87	4.35	-0.37	-0.80	4.04
Axis Constant Maturity 10 Year Fund	-1.62	0.28	-1.31	-0.89	0.14
DSP BlackRock Government Securities Fund	0.30	-0.43	-3.33	-1.24	1.49
Franklin India Government Securities Fund	-1.40	3.30	-1.31	-1.30	-0.16
HDFC Gilt Fund	0.99	3.30	-0.78	-1.05	0.23
ICICI Prudential Long Term Gilt Fund	0.67	1.96	-1.54	-2.01	1.68
IDFC Government Securities Fund	8.35	2.08	-0.92	-2.68	3.46
Invesco India Gilt Fund	-2.37	1.73	-2.47	-3.12	2.50
Kotak Gilt Investment	1.65	1.63	-2.18	-2.26	0.59
L&T Gilt Fund	10.58	6.30	0.56	-1.48	0.85
Reliance Gilt Securities Fund	3.14	3.21	-1.09	-1.88	3.30
SBI Magnum Gilt Fund-Long Term	7.68	4.53	-0.07	-2.04	4.85
Sundaram Gilt Fund	-26.52	-6.15	-2.39	-3.85	-0.06
Tata Gilt Securities Fund	3.30	4.28	-1.61	-2.74	2.96
UTI Gilt Advantage Fund Long Term	4.75	2.56	-0.86	-3.21	4.56

Treynor's Measure:

It is a ratio that indicates the relation between portfolio's additional return over risk-free return in terms of systematic risk (beta).

It is indicated from Table 5 that all the gilt schemes had shown negative Treynor ratio in 2015 and 2016, indicating poor performance during these two years. Further, 4 schemes (Axis Constant Maturity 10 Year Fund, Franklin India Government Securities Fund, Invesco India Gilt Fund and Sundaram Gilt Fund) in 2013, 2 schemes (DSP BlackRock Government Securities Fund and Sundaram Gilt Fund) in 2014 and 2 schemes (Franklin India Government Securities Fund and Sundaram Gilt Fund) in 2017 had negative Treynor ratio.

However, the remaining gilt schemes had shown positive Treynor ratio indicating better risk-adjusted performance during the remaining 3 years.

Table 6: Jensen's Alpha of Gilt Mutual Fund Schemes

Name of the Scheme			Year		
	2013	2014	2015	2016	2017
Aditya Birla Sun Life Gilt Plus	2.45	3.90	6.92	1.98	4.10
Axis Constant Maturity 10 Year Fund	-1.20	0.73	1.24	-0.09	-0.49
DSP BlackRock Government Securities Fund	0.39	8.81	1.59	0.40	1.60
Franklin India Government Securities Fund	-1.37	1.14	6.08	1.29	0.98
HDFC Gilt Fund	0.98	2.26	5.86	1.67	1.14
ICICI Prudential Long Term Gilt Fund	0.09	1.09	4.62	1.65	3.24
IDFC Government Securities Fund	4.67	9.59	3.10	-0.98	1.41
Invesco India Gilt Fund	-1.38	4.36	2.17	-0.51	3.51
Kotak Gilt Investment	1.11	0.63	3.91	0.73	1.57
L&T Gilt Fund	5.74	17.65	3.92	1.29	1.63
Reliance Gilt Securities Fund	2.28	4.02	5.19	1.08	3.27
SBI Magnum Gilt Fund-Long Term	3.95	7.08	7.23	0.05	3.37
Sundaram Gilt Fund	7.29	-8.51	-2.85	-2.95	-1.61
Tata Gilt Securities Fund	1.83	7.08	4.15	-1.25	0.23
UTI Gilt Advantage Fund Long Term	2.27	3.85	7.50	-1.29	4.32

Jensen's Measure:

It is a ratio that indicates the relation between average portfolio's return and expected average return in terms of systematic risk.

Table 6 shows the alpha values of gilt schemes for the period 2013 to 2017. It is clearly visible that 8 schemes (Aditya Birla Sun Life Gilt Plus, DSP Black Rock Government Securities Fund, HDFC Gilt Fund, ICICI Prudential Long Term Gilt Fund, Kotak Gilt Investment, L&T Gilt Fund and Reliance Gilt Securities Fund) out of 15 schemes had shown positive alpha value throughout the study period, indicating better risk-adjusted performance.

However, Axis Constant Maturity 10 Year Fund and Sundaram Gilt Fund had shown negative alpha for 3 and 4 years respectively.

V. Conclusion

The study concluded that total number of gilt schemes had CAGR 3.64% and mobilized resources with negative CAGR -4.79% during the study period. Further, all the gilt schemes earned positive returns throughout the study period and showed low risk during 2013, 2014 and 2017 in case of maximum schemes. It can be concluded that majority of the schemes outperformed the benchmark index in three out of five years taken for the study on the basis of Sharpe and Treynor measures. However as per Jensen measure, maximum number of schemes earned positive alpha, indicating the better performance. Amongst all the schemes, L&T Gilt Fund, SBI Magnum Gilt Fund and IDFC Government Securities Fund were ranked on top while Sundaram Gilt Fund was ranked at bottom.

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