CHAPTER 5

Analysis of Debt Funds

Contents

5.1   Analysis of Debt Scheme

5.2   Result of Debt Funds with BROAD Index

5.1 Analysis of Debt Funds

This chapter shows the analysis of debt funds schemes and impact on Brand Index. Debt funds comprising liquid schemes and floating funds. The purpose debt fund is producing regular income by investing pool of funds in debenture, bonds and government securities. The debt schemes are very much liquid, safe, less or no risky, diversified and highly marketable in nature. It is expected that the debt funds has the relation with bond market because fund collected through debt scheme are invested in Bond and T- Bills.

The study includes eight debt funds (independent variable) for analysis of the impact of debt funds on Bond index (dependent variable). The debt funds are selected as per CRISAL ranking these debt fund are constant performer.

This chapter highlights the impact of debt funds on Indian capital market. Regression analysis has been used to show the impact of Debt fund's NAV (independent variable) on Broad index (dependent variable).Debt fund's NAV (independent variable) data were collected from specific mutual fund website on daily basis from 1January 2010 to 31 January 2016 and again converted on monthly basis, and then monthly NAV of each debt scheme converted in funds return by using the formula: $Rp = ((NAVt-NANt-1)/NANt-1) \times 100$.

Capital market index Broad index (dependent variable) data collected from CCIL website on monthly basis from January 2010 to January 2016 and selected closing index of each

month of Bond market and then converted in market return by using the formula:
$Rm=((Indext -Indext-1)/Indext-1)\times100$.

Analysis of the data to know the impact of debt funds on capital market done by regression analysis, variance analysis by ANOVA, relation and strength in variables calculated by Part (sr) correlation analysis and test of significance of impact calculated by t-test with the help of SPSS.

5.2 Result of Debt Funds with Broad Index

The result of an SPSS regression analysis to see the impact on Broad Index from all eight predictor variables are shown in Table 5..2.1 to Table.5.2.3 and figure.5.2.1.The tables and figure are provide fairly complete information including correlation among the all predictor and outcome variable; mean and standard deviation for each variable involved in analysis ; information about overall fit of the regression model (multiple R and R – Square and associated F-test); the b coefficient for the raw score regression equation and a squared part correlation (sr^2) for each predictor that represent the proportion of variance in the Y outcome variable.

Table.5.2.1: Descriptive Statistics

Descriptive Statistics

Variables (Funds)	Mean	Standard Deviation
CCIL- Broad Index	0.6671	1.25182
IDFC Dynamic Bond fund	0.7172	1.09612
IDFC Super Saver Income Fund	0.6603	1.08928
UTI Bond Fund	0.7024	0.93986
HDFC Income Fund	0.6019	1.15171
HDFC High Interest Fund	0.6524	1.00449
Tata Income Fund	0.6331	0.81269
SBI Magnum Income Fund	0.6464	0.92151
Birla Sun Life Income Plus Fund	0.5979	1.1273

Table.5.2.2 Model Summary

Model Summary[b]

Model	Sum of Squares	R	R Square	Adjusted R Square	F	Sig.
Regression	105.666	.975[a]	0.95	0.943	148.74	.000[a]
Residual	5.594					

b. Dependent Variable: CCIL Broad Index

a. Predictors: (Constant), Birla Sun Life Income Plus Fund, IDFC Super Saver Income Fund , HDFC Income Fund ,

Tata Income Fund , UTI Bond Fund , SBI Magnum Income Fund , HDFC High Interest Fund , IDFC Dynamic Bond
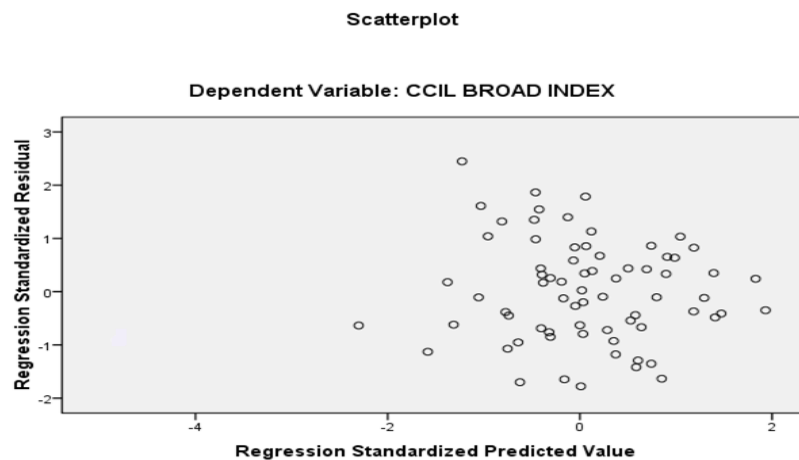
Fund

Table.5.2.3 Coefficients

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations Part
	B	Std. Error	Beta			
1 (Constant)	0.025	0.053		0.461	0.647	
IDFC Dynamic Bond Fund	0.51	0.221	0.447	2.308	0.024	0.065
IDFC Super Saver Income Fund	-0.436	0.224	-0.379	-1.947	0.056	-0.055
UTI Bond Fund	-0.099	0.124	-0.074	-0.8	0.427	-0.023
HDFC Income Fund	1.349	0.169	1.241	7.959	.000	0.225
HDFC High Interest Fund	-0.392	0.21	-0.315	-1.872	0.066	-0.053
TATA Income Fund	0.207	0.121	0.134	1.704	0.093	0.048
SBI Magnum Income Fund	0.007	0.129	0.005	0.056	0.956	0.002
Birla Sun Life Income Plus Fund	-0.097	0.04	-0.088	-2.433	0.018	-0.069

a. Dependent Variable: CCIL-Broad Index

Figure 5.2.1 Output from SPSS Linear Regression to Predict Broad Index from predictor variables

Scatterplot

Dependent Variable: CCIL BROAD INDEX

An SPSS regression analysis for a sample of n=72 show overall multiple regression analysis and impact on Broad Index from all eight predictor variable in table.5.2.1, R=0.975 show a very high correlation between all debt funds with Broad Index and positive high correlation show return from all debt funds and return from Broad Index move in same direction it indicate increasing in debt funds return an increase in Broad index return, R^2=0.95 represent 95% variance in Broad index could be predicted, adjusted R^2=0.94 also statistically significant. Table.5.2: ANOVA show F-Ratio: $F_{(8,63)}$=148.740, p<0.001 show over all multiple regression model is statistically significant it means Debt funds have impact on capital market.

First table.5.2.1 of analysis is Descriptive Statistics which show mean return and Standard Deviation of Broad index and debt Funds. The mean return of two debt funds are high in relation to Broad index mean return =0.67. IDFC Dynamic Bond Fund with highest mean return=0.717 and UTI bond fund with second highest mean return=0.702 and least mean return by remaining debt funds to Broad index mean return. In all debt funds IDFC Dynamic Bond Fund yield highest mean return=0.717 and Birla Sun Life Income Plus Fund yield lowest mean return=0.597. Risk associated with debt funds and Broad Index explain by Standard Deviation, descriptive statistic panel show all debt funds Standard Deviation are low with Broad Index Standard Deviation=1.25 that explain investment in debt fund are less risky and more consistent than Bond return. Within all debt funds TATA income fund has less risk with Std. Deviation=0.812 and HDFC income fund show high risk with Standard Deviation=1.15. UTI bond fund is efficient

fund its mean return=0.70 and Standard Deviation=0.939 show high average return and less risk to Broad Index mean return and Risk.

The last table.5.2.3 shows coefficients for both raw score and the standard score version of regression equation. The raw labeled constant provide the estimated value of b0, the intercept b0= (.025) and a t-test to evaluate whether this differed significantly from 0. The intercept b0 is significant different from 0; t(72)=0.461; p=0.647. Only one debt funds out of eight debt funds is statistically significant that is HDFC Income Fund with b value=1.349; t(72)=7.959, p<0.001 representing 134.9% increase in return in Broad Index for a 100% increase in HDFC income fund return and its sr=0.225 (sr²=0.0449) about 5% of variance in Broad index uniquely predicated from HDFC income fund. The remaining predictor variable sr² are low so these uniquely less predictive of Broad index.

The predictive regression equation γ=α + βx is as follows:

Where:

γ= Bond Index (Dependent Variable)

α =Alpha

β=Beta

x=Debt Funds (Independent variable)

Bond Index=0.25+ 1.349 × HDFC Income Fund

The standardized residual requested as part of the regression analysis appears in figure 5.2.1. When the assumption of regression are satisfied by the data ,the point in thus plot

should appear with in a fairly uniform bond from left to right and most standardized residuals should be between -3 to +3.The graph shows that the assumption for regression appear to be reasonably well satisfied.

Summary

Descriptive Statistics which show mean return and Standard Deviation of Broad index and debt Funds. The mean return of two debt funds are high in relation to Broad index mean return =.67. IDFC Dynamic Bond Fund with highest mean return=.717 and UTI bond fund with second highest mean return=.702 and least mean return by remaining debt funds to Broad index mean return. In all Debt funds IDFC Dynamic Bond Fund yield highest mean return=.717and Birla sun life income plus fund yield lowest mean return=.597. Risk associated with Debt funds and Broad Index explain by Standard Deviation, descriptive statistic panel show all debt funds Standard Deviation are low with Broad Index Standard Deviation=1.25 that explain investment in debt fund are less risky and more consistent than Bond return. Within all debt funds TATA income fund has less risk with Standard Deviation=.812 and HDFC income fund show high risk with Standard Deviation=1.15. UTI bond fund is efficient fund its mean return=.70 and Standard Deviation=.939 show high average return and less risk to Broad Index mean return and Risk.

Correlation between debt funds and Broad Index is high explaining return from all debt funds and return from Broad Index move in same direction it indicate increasing in debt funds return an increase in Broad index return. Two out of eight debt fund returns are

higher than Broad index return so investment in both debt funds are better option for investment. Standard Deviation is low with Broad Index Standard Deviation that explains investment in debt fund is less risky and more consistent than Bond return. HDFC income fund is more predictive and remaining predictor variable sr² are low so these uniquely less predictive of Broad index. The analysis and result of study helps to achieve the objective number three and F-Test rejects the null Hypothesis number three.