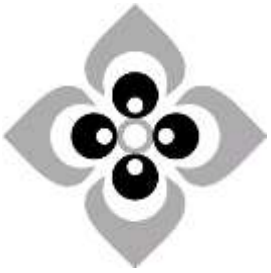

[Academic Script]

Mutual Funds (Part-2)

Subject:	Business Economics
Course:	B. A. (Hons.), 5th Semester, Undergraduate
Paper No. & Title:	Paper – 511 Investment Management
Unit No. & Title:	Unit – 4 Mutual Funds
Lecture No. & Title:	Lecture – 2 Mutual Funds (Part-2)

Academic Script

Mutual Funds

(Part 2)

Topics: Strategies for mutual fund evaluation, ratios to gauge risk and return, trends in investment management

Mutual Fund Performance Evaluation:

The performance of a particular mutual fund scheme is denoted by following parameters;

1. ***Asset Mix***: It refers to the allocation of corpus of a scheme across stocks, bonds or cash. It reflects the degree of risk and return.
2. ***Net Asset Value***: It refers to the market value of assets minus its liabilities. The NAV is divided by the number of units outstanding on the valuation date. It is computed as follows:

$$NAV = market\ value\ of\ funds'investments + receivables + accrued\ income - liabilities - accrued\ expenses/number\ of\ units\ outstanding$$

3. ***Entry or Exit loads*:** The amount loaded by fund managers to purchase or sell units. Such loads justify the administrative expenses to be incurred by the fund managers.
4. ***Discounts offered*:** Generally closed ended schemes are offered at discount for better marketability.
5. ***Rate of Returns promised*:** The compounded annual total return on a mutual fund scheme represents the rate of return to investors from the date of issue. It is calculated on NAV basis or price basis.
6. ***Standard deviation***: It refers to the funds volatility in terms of rise and fall in its returns. It measures the risk by measuring the degree to which the fund fluctuates in relation to its mean return.
7. ***Beta***: It measures its price volatility relative to a particular stock market index.
8. ***Alpha***: It measures the extra return earned on a scheme on a risk adjusted basis.

9. ***Gross dividend yield***: It is an important indicator of the investment characteristics of a mutual fund. Value oriented funds have higher gross dividend yield and growth oriented funds have lower yield.
10. ***Portfolio turnover ratio***: It represents the churn in the portfolio.
    a. PTO=$\frac{lower\ of\ purchase\ or\ sales\ during\ a\ given\ period}{average\ daily\ net\ assets}$

Calculation of sums:

Illustration 1

The unit price of a scheme of mutual fund is Rs.10. the public offer price of the unit is Rs.10.204 and the redemption price is Rs.9.80. Calculate (i) Front-end load (b) Back end load

Solution:

I. Calculation of front-end load (F)

Public offer Price = $\frac{net\ asset\ value}{1-Front\ end\ load}$

$10.204=\frac{10}{(1-F)}$

10.204(1-F) =10

10.204-10.204F=10

10.204F=10.204-10

F=0.204/10.204

=0.01999

Front end load=2%

ii. Calculation of back end load (B)

Redemption= $\frac{net\ asset\ value}{(1-Back\ end\ load)}$

$9.80=\frac{10}{(1-B)}$

9.80(1-B) =10

9.80-9.80B=10

-9.80B=10-9.80

B=0.20/9.80

= 2.04%

Back end load=2.04%

Illustration 2

ABC Fund has made a return of 13%, 15% and 8% respectively for 1st, 2nd and 3rd year. Calculate standard deviation of the return of the fund.

Solution:

$$\text{Average return} = \frac{13+15+8}{3} = 12$$

$(12-13)^2 = 1$

$(12-15)^2 = 9$

$(12-8)^2 = 16$

$$\text{SD} = \sqrt{\frac{1+9+16}{3}}$$

$= 2.944$

Following ratios have been popularly used for evaluation of performance of mutual funds:

Sharpe ratio:

This ratio, proposed by William Sharpe describes how much return is receiving for the extra volatility that an investor endure for holding a riskier asset. He needs to be properly compensated for the additional risk he undertakes for not holding a risk free asset. The risk adjusted return is called 'Sharpe ratio'. It is also called 'reward to variability ratio'. A fund with higher Sharpe ratio gets a better rank.

Sharpe ratio = (Mean portfolio return − Risk-free rate)/Standard deviation of portfolio return

$$= \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where:

$\bar{r}_p$ = Expected porfolio return

r_f = Risk free rate

σ_p = Portfolio standard deviation

Illustration

XYZ Ltd. has got 12.04% as annualized standard deviation. The annualized return for the same fund is 16.8% and the average yield on one year Treasury Paper is 6.8%. Calculate Sharpe ratio.

$$S=\frac{(R_p-R_f)}{\sigma_p}$$

$$S=\frac{16.2-6.8}{12.04}=0.781$$

Sortino ratio:

This ratio, proposed by Frank A Sortino, identified the weakness of the Sharpe ratio and thus tried to differentiate between good and bad volatility. This differentiation allows to calculate a risk adjusted measure of a fund's performance in a clearer and a comprehensive way. It is a modification of Sharpe ratio but penalizes only those returns falling below a user specified target.

$$\text{Sortino Ratio} = \frac{< R > - R_f}{\sigma_d}$$

Where,

$< R >$ = Expected Return

R_f = The Risk Free Rate of Return

σ_d = Standard Deviation of Negative Asset Returns

Here, R equals the asset's or portfolio's annualized return, r(f) equals the risk-free rate, and DD equals the asset's or portfolio's downside deviation.

Treynor ratio

This ratio developed by Jack Treynor, measures returns earned in excess of that which could have been earned on a risk less investment per each unit of market risk. It adjusts excess return for systematic risk. It is computed by dividing a portfolio's excess return, by its beta. It is also called reward to volatility ratio.

$$\text{Treynor Ratio} = (R_i - R_f)/B,$$

Where:

R_i is the return of the investment

R_f is the risk-free rate

B is the beta of the portfolio

Jensen's Alpha

This ratio, developed by Michael Jenson, is used to measure the risk adjusted performance of a fund in relation to its expected market return (which is based on the capital asset pricing model). The higher the alpha, the more a portfolio has earned above the level predicted.

Jensen's Alpha = $R_i – [R_f + B \times (R_m - R_f)]$

Where;

R_i = the realized return of the portfolio or investment

R_m = the realized return of the appropriate market index

R_f = the risk-free rate of return for the time period

B = the beta of the portfolio of investment with respect to the chosen market index

Modigliani risk adjusted ratio (M2 ratio)

It is the measure of the risk adjusted returns of some investment portfolio. It measure the returns of the portfolio, adjusted for the risk of the portfolio relative to that of some benchmark.

$$M^2 = \left[erf + \left(\frac{arp - erf}{\sigma_p} \right) \sigma_m \right] - arm \quad .....(2)$$

Where:

erf = The effective return of a risk-free asset

arp = The average return of a portfolio (highs or lows)

arm = The average return of a market portfolio

σ_p = The standard Deviation of a portfolio (High or lows)

σ_m = The Standard Deviation of a market portfolio

Information Ratio (IR)

IR is a ratio of portfolio returns above the returns of a benchmark usually an index to the volatility of those returns. It measures a portfolio manger's ability to generate excess returns relative to a benchmark but also attempts to identify the consistency of the investor.

$$\text{Information Ratio} = \frac{(R_p - R_i)}{S_{p\text{-}i}}$$

Where:

R_p = Return of the portfolio

R_i = Return of the index or benchmark

$S_{p\text{-}i}$ = Tracking error (standard deviation of the difference between returns of the portfolio and the returns of the index)

S&P's Risk adjusted capital ratio

The ratio developed by Standard and Poor, is a measure of financial institutions that compares total adjusted capital to the institutions risk weighted assets. They test the capital adequacy of a financial institution.

FAMA French three factor model.

This model was designed for explaining risk and return of the stocks. It was developed by Nobel Laureate Eugene Fama and a renowned researcher Kenneth French. It is unique in the way that it not only reveals the primary factors that drive a stock return but also provides the strategies for using those factors in the portfolio for a potentially higher expected long term return. This model builds off of the one factor model associated with the Capital Asset Pricing Model (CAPM), with a factor referred to as beta, by adding the factors of size, also referred to as small minus big (SMB), and value, as defined by HML.

Required return can be calculated as: $R_i = R_f + S_i/S_m (R_m - R_f)$

Where, S_m is standard deviation of market returns. The net selectivity is then calculated by subtracting this required return from the actual return of the fund.

Among the above performance measures, two models namely, Treynor measure and Jenson model use systematic risk based on the premise that the unsystematic risk is diversifiable. These models are suitable for large investors like institutional investors with high risk taking capacities as they do not face paucity of funds and can invest in a number of options to dilute some risks. For them, a portfolio can be spread across a number of stocks and sectors.

However, Sharpe measure and Fama model that consider the entire risk associated with fund, are suitable for small investors, as the ordinary investor lacks the necessary skill and resources to be diversified.

PORTFOLIO MANAGEMENT STRATEGIES:

Tactical Asset allocation (TAA) v/s Portfolio rebalancing (PR)

Tactical Asset Allocation is an active management portfolio strategy that shifts the percentage of assets held in various categories to take advantage of market pricing anomalies or strong market sectors.

This strategy allows portfolio managers to create extra value by taking advantage of certain situations in the marketplace. It is as a moderately active strategy since the manager will get back to the portfolio's original strategic asset mix when desired short-term profits are achieved.

Portfolio rebalancing

It is the process of buying and selling portfolio in order to adjust the tolerance for the risk of each class of security. The risks and returns continuously change resulting in the change in investor mindset and thus he may reallocate his funds to satisfy his financial goals. It may lead to increase or decrease in risk.

Hence the basic difference between the two is that the former aims at maximizing returns and the latter aims at risk reduction. TAA is an active strategy keeping a continuous watch on markets whereas PR is a passive strategy keeping a track of investor requirements.

Core Satellite portfolio framework

According to Vanguard's research, it is conventionally suggested that indexing works better in the most efficient market segments as information is readily available while active management works in inefficient markets. Under inefficient markets information is not readily available and hence and so primarily individual managers may find opportunities to outperform the benchmarks. So the major portion of the portfolio consists of passive investments that track major market indices whereas the rest of the portion known as *satellites* are in the form of actively managed investments. It aims at minimizing costs, tax liability and volatility and improvise on performance. Thus it caters to most of the needs of the investors.

Asset Allocation v/s Diversification

The U.S Securities and Exchange Commission defines asset allocation as dividing an investment portfolio among various asset categories, such as stocks, bonds and cash. Such allocation largely depends on the individual's capacity to take risk and the time he requires to achieve his financial goals.

Diversification on the other hand is spreading money among different investments to reduce risk. Segments of each asset category need to be assessed under various market conditions.

Asset allocation is not necessarily diversification. Across assets and within assets, the money needs to be spread so as to minimize risks.

Bench marking Mutual fund performance

In April 2002, SEBI made benchmarking mandatory for mutual funds. In every half yearly results, the performance of mutual funds needs to be disclosed along with the performance of a benchmark index. In India, the benchmark is BSE Sensex AND NSE Nifty for large cap funds. The reason why benchmarking is important is quintessentially the customer's need for value for money. Since the fund managers charge for the same the mutual funds need to outperform the peers. It is necessarily used by investors to assess the option of choosing a fund over another looking at the long term impact. Outperforming throughout, in the dynamic markets seems to be a tough task for the fund managers. Hence from investor point of view, it is a key factor in deciding his portfolio.

Portfolio Management Services (PMS)

The need for the hour is tailor made products. The marketer needs to cater to specific and not generic consumer needs. So is the case in investment management. The PMS are entities which are registered with regulators, offer customized portfolio services to investors with large pool of funds and specific financial goals. On behalf of the investors, they hold stocks, unlike mutual funds where the investor is a unit holder. These stocks are invested in equity and debt options. The investor holds the stocks in his own de-mat account but the fund manager operates on his behalf. Secondly he needs to invest a minimum of Rs.25 lakhs a PMS. The only problem with PMS seems to be the fact that mutual fund performance is made public whereas the client has to rely on judgment of the fund manager in the former case.

Trends and growth in the mutual fund industry (Road ahead)

1. Looking at the tough competition in the MF industry and inclination of HNI individuals towards the same, quite a few pioneering products have been launched in the market. A few are;

i. Options: With respect to number of schemes, the investor can choose, any of the three options;
ii. The dividend payout option where the dividend is paid in cash to investors
iii. Systematic Investment Plan where the investor can invest regular sums of money every month to buy unit of an MF Scheme.
iv. Systematic Transfer Plan where money can be gradually invested from a liquid scheme to equity scheme thus increasing the returns for the investor.
v. Value added services: MFs offer value added services like redemption over phone, triggers and alerts, cheques book facility and new points of purchase. For E.g. HDFC MF allows investors to sell units through ATMs.
vi. Theme funds: such funds invest in a sector, surrounding a theme for e.g. pharmaceuticals, infrastructure etc. the investor can assess the industry trends and make a choice.
vii. Global funds: Such funds mobilise rupee funds from Indian residents for investments abroad. This product essentially focuses on needs of HNI and ultra HNI investors.
viii. Commodity funds: such funds invest directly in a commodity through commodity shares or commodity futures.

2. The following information published on the site of Association of Mutual Funds in India displays interesting data about growth in the industry, investor patterns as well as preference towards schemes. As a student of investment management, it is important to study and analyze such information to understand the latest scenario and the future of this industry so far Indian economy is concerned.

i. Assets managed by the Indian mutual fund industry have grown from Rs. 13.29 trillion in October 2015 to Rs. 16.86 trillion in October 2016. That represents a 27% growth in assets over October 2015.

ii. The proportionate share of equity-oriented schemes is now 32% of the industry's assets in October 2016, down from 32.7% in October 2015. The proportionate share of debt-oriented schemes is 45.4% of industry assets in October 2016, up from 44.1% in October 2015.

iii. Individual investors now hold a lower share of industry assets i.e. 45.4% in October 2016, compared with 46% in October 2015.institutuional investors account for 54.6% of the assets, of which corporates are 85.7%. The rest are Indian and foreign institutions and banks.

iv. Equity oriented schemes derive 85% of their assets from individual investors (retail + HNI).

v. Institutional investors dominate liquid and money market schemes (92%), debt oriented schemes (64%) and ETF's, FOFs (82%).

vi. Institutions include domestic and foreign institutions and banks. HNIs are investors who invest with a ticket size of Rs. 5 lakhs or above.

vii. Individual investors primarily hold equity-oriented schemes while institutions hold liquid and debt oriented schemes.

viii. 60% of individual investors' assets are held in equity oriented schemes.

ix. 88% of institution's assets are held in liquid/money market schemes and debt oriented schemes.

x. The value of assets held by individual investors in mutual funds increased from Rs.6.11 lakh crore in October 2015 to Rs 7.65 lakh crore in October 2016, an absolute increase of 25.14%.

xi. The growth in institutional assets from Rs.7.17 lakh crore to Rs.9.2 lakh crore, an absolute growth of 28.26%.

Top performing Mutual Funds

Large Cap	Crisil Rank	NAV (Rs./Unit)	1 yr Return (%)	AUM (Rs. cr.) Oct 16
Birla SL Frontline Equity (G)	Rank 1	170.76	11.9	10,717.30
Birla Sun Life Top 100 (G)	Rank 1	44.98	10.3	2,096.33
Kotak Select Focus Fund - Regular (G)	Rank 1	24.94	12.7	4,726.10
SBI Blue Chip Fund (G)	Rank 1	29.90	8.6	6,412.83

Small & Mid Cap	Crisil Rank	NAV (Rs./Unit)	1 yr Return (%)	AUM (Rs. cr.) Oct 16
DSP-BR Micro Cap Fund - RP (G)	Rank 1	49.83	20.1	3,106.06
Franklin (I) Smaller Cos (G)	Rank 1	44.65	15.9	2,996.11
Mirae Emerging Bluechip Fund (G)	Rank 1	35.82	17.6	2,010.42

Diversified Equity	Crisil Rank	NAV (Rs./Unit)	1 yr Return (%)	AUM (Rs. cr.) Oct 16
ICICI Pru Value Discovery Fund (G)	Rank 1	120.51	9.4	12,449.59
L&T India Value Fund (G)	Rank 1	28.01	15.3	1,500.38
Principal Emerging Bluechip(G)	Rank 1	76.80	17.6	563.47
SBI Magnum Multicap Fund (G)	Rank 1	35.73	11.6	924.48
UTI MNC Fund (G)	Rank 1	145.73	-1.6	1,910.83

(Source: http://www.moneycontrol.com/mutual-funds/top-rated-funds)

Summary:

This session explained the various strategies for evaluation of performance of mutual funds. It enlists popularly used ratios which consider risks and returns associated with investment in mutual funds. These ratios are used in markets as indicators to guide both investors and portfolio managers. The portion explaining asset allocation, diversification and portfolio management services is an attempt to enrich the students about new trends of investment management. This trend is an off shoot of requirements of the educated, aware and intelligent customers. Also it summarizes the growth in the mutual fund industry, buyer behavior, customized products and their investment patterns in the year 2016 as compared to 2015. There is a significant growth in this sector, which can be contributed to the benefits, the innovations and the regulations supporting the MF industry.