CHAPTER - VII

PORTFOLIO MANAGEMENT

Portfolio performance measures

Portfolio performance evaluation involves determining periodically how theportfolio performed in terms of not only the return earned, but also the riskexperienced by the investor. For portfolio evaluation appropriate measures of returnand risk as well as relevant standards (or "benchmarks") are needed. In general, the ***market value of a portfolio at a point of time*** is determined byadding the markets value of all the securities held at that particular time. The ***marketvalue of the portfolio at the end of the period*** is calculated in the same way, only using end-of-period prices of the securities held in the portfolio.

The return on the portfolio (r_p): $\mathbf{r_p = (V_e - V_{b)} / V_b,}$ **(7.1)**

Here: V_e - beginning value of the portfolio;

V_b - ending value of the portfolio.

The essential idea behind performance evaluation is to compare the returnswhich were obtained on portfolio with the results that could be obtained if moreappropriate alternative portfolios had been chosen for the investment. Suchcomparison portfolios are often referred to as ***benchmark portfolios***. In selecting theminvestor should be certain that they are relevant, feasible and known in advance. Thebenchmark should reflect the objectives of the investor.

Portfolio Betacan be used as an indication of the amount ofmarket risk that the portfolio had during the time interval. It can be compared directlywith the betas of other portfolios.You cannot compare the ex post or the expected and the expected return of twoportfolios without adjusting for risk. To adjust the return for risk before comparison of performance risk adjusted measures of performance can be used:

- ☞ Sharpe's ratio;
- ☞ Treynor's ratio;
- ☞ Jensen's Alpha.

Sharpe's ratio shows an excess a return over risrisk free rate, or risk premium, by unit of total risk, measured by standard deviation:

Sharpe's ratio = $(r_p – r_f) / s_p$,

Here: r_p - the average return for portfolio p during some period of time;

r_f - the average risk-free rate of return during the period;

s_p - standard deviation of returns for portfolio p during the period.

Treynor's ratio shows an excess actual return over risk free rate, or riskpremium, by unit of systematic risk, measured by Beta:

Treynor's ratio = $(r_p - r_f) / ß_p$,

here: $ß_p$ – Beta, measure of systematic risk for the portfolio p.

Jensen's Alpha shows excess actual return over required return and excessof actual risk premium over required risk premium. This measure of the portfoliomanager's performance is based on the CAPM.

Jensen's Alpha = $(r_p - r_f) - ß_p (r_m - r_f)$,

here: r_m - the average return on the market in period t;

$(r_m - r_f)$ - the market risk premium during period t.

It is important to note, that if a portfolio is completely diversified, all of thesemeasures (Sharpe, Treynor's ratios and Jensen's alfa) will agree on the ranking of theportfolios. The reason for this is that with the complete diversification total variance isequal to systematic variance. When portfolios are not completely diversified, theTreynor's and Jensen's measures can rank relatively undiversified portfolios muchhigher than the Sharpe measure does. Since the Sharpe ratio uses total risk, bothsystematic and unsystematic components are included.

Portfolio management process

- **Identification of Objectives**
- **Selection of the Asset mix**
- **Formulation of portfolio strategy**
- **Security Analysis**
- **Portfolio Evaluation**
- **Portfolio Revision**

- **Identification of Objectives:**

The first step in the portfolio management process is identification of objectives. The investors' objectives may be income, capital appreciation or a future provision such as marriage, education etc..

- **Selection of the Asset mix:**

A proper asset mix between stock and bonds depends upon the risk tolerance and investment limit of the investors. Asset mix means a proportions of stocks (Ex: Equity shares and preference shares) and bonds (fixed income securities) in the portfolio.

- **Formulation of portfolio strategy:**

2 types of investment portfolio management:

- ✓ Active portfolio management
- ✓ Passive portfolio management

The main points for the ***passive portfolio management:***

• holding securities in the portfolio for the relatively long periods with small and infrequent changes;

• investors act as if the security markets are relatively efficient. The portfolios they hold may be surrogates for the market portfolio (indexfunds).

• Passive investors do not try outperforming their designated benchmark.

The reasons when the investors with passive portfolio management makechanges in their portfolios:

• the investor's preferences change;

• the risk free rate changes;

• the consensus forecast about the risk and return of the benchmark portfolio Changes.The main points for the ***active portfolio management:***

• Active investors believe that from time to time there are mispricedsecurities or groups of securities in the market;

• The active investors do not act as if they believe that security markets are efficient;

There are arguments for both active and passive investing though it is probably a case that a larger percentage of institutional investors invest passively than do individual investors. Of

course, the active versus passive investment managementdecision does not have to be a strictly either/ or choice. One common investmentstrategy is to invest passively in the markets investor considers to be efficient andactively in the markets investor considers inefficient. Investors also combine the twoby investing part of the portfolio passively and another part actively..

Security Analysis:

This step consists of examining the risk-return characteristics' of individual securities. It depends on the sources of information. Securities are analyzed from the point of their prices, returns, and risks. During the security analysis fundamental and technical analysis help in the selection of securities.

Portfolio Selection:

The inputs from the portfolio analysis can be used to identify the set of efficient portfolios. From these efficient portfolios, the optimal portfolio has to be selected for investment.

Portfolio Evaluation:

It is the process which is concerned with assessing the performance of the portfolio over a selected period of time in terms of return and risk. Portfolio evaluation is useful to identify the weaknesses in the investment process and for improving these deficient areas. It provides a feedback mechanism for improving the entire portfolio management process.

Portfolio Revision:

A portfolio once constructed requires constant monitoring and revision. Changes in investor's financial status, his preferences and market conditions will also necessitate changes in portfolio composition. Such a revision generally involves a shift from one stock to another stock.

Portfolio revision is the process of selling certain issues in portfolio andpurchasing new ones to replace them. *The main reasons for the necessity of theinvestment portfolio revision:*

• As the economy evolves, certain industries and companies become either
less or more attractive as investments;

• The investor over the time may change his/her investment objectives and in
this way his/ her portfolio isn't longer optimal;

• The constant need for diversification of the portfolio. Individual securitiesin the portfolio often change in risk-return characteristics and theirdiversification effect may be lessened.

Three areas to monitor when implementing ***investor's portfolio monitoring:***

1. Changes in market conditions;
2. Changes in investor's circumstances;
3. Asset mix in the portfolio.

The need to monitor changes in the market is obvious. Investment decisionsare made in dynamic investment environment, where changes occur permanently. Thekey macroeconomic indicators (such as GDP growth, inflation rate, interest rates,others), as well as the new information about industries and companies should beobserved by investor on the regular basis, because these changes can influence thereturns and risk of the investments in the portfolio. Investor can monitor these changesusing various sources of information, especially specialized websites (most frequently used are presented in relevant websites). It is important to identify he major changes inthe investment environment and to assess whether these changes should negativelyinfluence investor's currently held portfolio. If it so investor must take an actions to Rebalance his/ her portfolio.

When monitoring the changes in the investor's circumstances, followingaspects must be taken into account:

• Change in wealth
• Change in time horizon
• Change in liquidity requirements
• Change in tax circumstances
• Change in legal considerations
• Change in other circumstances and investor's needs.

Any changes identified must be assessed very carefully before usually theygenerally are related with the noticeable changes in investor's portfolio.

Rebalancing a portfolio is the process of periodically adjusting it to maintaincertain original conditions. Rebalancing reduces the risks of losses – in general, arebalanced portfolio is less volatile than one that is not rebalanced. Several methods ofrebalancing portfolios are used:

- ✓ Constant proportion portfolio;
- ✓ Constant Beta portfolio;

✓ Indexing.

Constant proportion portfolio. A constant proportion portfolio is one in whichadjustments are made so as to maintain the relative weighting of the portfoliocomponents as their prices change. Investors should concentrate on keeping theirchosen asset allocation percentage (especially those following the requirements forstrategic asset allocation). There is no one correct formula for when to rebalance. Onerule may be to rebalance portfolio when asset allocations vary by 10% or more. Butmany investors find it bizarre that constant proportion rebalancing requires the purchase of securities that have performed poorly and the sale of those that haveperformed the best. This is very difficult to do for the investor psychologically. But the investor should always consider this method of rebalancing as onechoice, but not necessarily the best one.

Constant Beta portfolio.The base for the rebalancing portfolio using thisalternative is the target portfolio Beta. Over time the values of the portfolio components and their Betas will change and this can cause the portfolio Beta to shift.For example, if the target portfolio Beta is 1,10 and it had risen over the monitoredperiod of time to 1,25, the portfolio Beta could be brought back to the target (1,10) inthe following ways:

• *Put additional money into the stock portfolio and hold cash.* Diluting thestocks in portfolio with the cash will reduce portfolio Beta, because cash hasBeta of 0. But in this case cash should be only a temporary component in theportfolio rather than a long-term; *Put additional money into the stock portfolio and buy stocks with a Betalower than the target Beta figure.* But the investor may be is not able toinvest additional money and this way for rebalancing the portfolio can becomplicated.

• *Sell high Beta stocks in portfolio and hold cash.* As with the firstalternative, this way reduces the equity holdings in the investor’s portfolio

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• *Sell high Beta stocks and buy low Beta stocks.* The stocks bought could be new additions to the portfolio, or the investor could add to existing positions.

Indexing. This alternatives for rebalancing the portfolio are more frequentlyused by institutional investors (often mutual funds), because their portfolios tend to belarge and the strategy of matching a market index are best applicable for them.Managing index based portfolio investor (or portfolio manager) eliminates concernabout outperforming the market, because by design, it

seeks to behave just like themarket averages. Investor attempts to maintain some predetermined characteristics ofthe portfolio, such as Beta of 1,0. The extent to which such a portfolio deviates fromits intended behaviors called ***tracking error.***

Revising a portfolio is not without costs for an individual investor. Thesecosts can be direct costs – ***trading fees and commissions*** for the brokers who cantrade securities on the exchange. With the developing of alternative trading systems(ATS) these costs can be decreased. It is important also, that the selling the securitiesmay have income tax implications which differ from country t⑥ ⑥❶⑤❼⑨❺

Strategic versus tactical asset allocation

An asset allocation focuses on determining the mixture of asset classes that ismost likely to provide a combination of risk and expected return that is optimal for theinvestor. Asset allocation is a bit different from diversification. It focus is oninvestment in various asset classes. Diversification, in contrast, tends to focus more onsecurity selection – selecting the specific securities to be held within an asset class.

Asset classes here is understood as groups of securities with similar characteristics andproperties (for example, common stocks; bonds; derivatives, etc.). Asset allocationproceeds other approaches to investment portfolio management, such as market timing(buy low, sell high) or selecting the individual securities which are expected will bethe "winners". These activities may be integrated in the asset allocation process. Butthe main focus of asset allocation is to find such a combination of the different assetclasses in the investment portfolio which the best matches with the investor's goals –expected return on investment and investment risk. Asset allocation largely determinesan investor's success or lack thereof. In fact, studies have shown that as much as 90 %or more of a portfolio's return comes from asset allocation. Furthermore, researchers have found that asset allocation has a much greater impact on reducing total risk than does selecting the best investment vehicle in any single asset category.

Two categories in asset allocation are defined:

- ✓ Strategic asset allocation;
- ✓ Tactical asset allocation.

Strategic asset allocation identifies asset classes and the proportions for thoseasset classes that would comprise the normal asset allocation. Strategic asset allocationis used to derive long-term asset allocation weights. The fixed-weightings approach instrategic asset allocation is used.

Investor using this approach allocates a fixed percentage of the portfolio to each of the asset classes.

Generally,these weights are not changed over time. When market valueschange, the investor may have to adjust the portfolio annually or after major marketmoves to maintain the desired fixed-percentage allocation.

Tactical asset allocation produces temporary asset allocation weights thatoccur in response to temporary changes in capital market conditions. The investor'sgoals and risk- return preferences are assumed to remain unchanged as the assetweights are occasionally revised to help attain the investor's constant goals. Forexample, if the investor believes some sector of the market is over- or under valuated.The passive asset allocation will not have any changes in weights of asset classes inthe investor's portfolio – the weights identified by strategic asset allocation are used.

Alternative asset allocations are often related with the different approaches torisk and return, identifying conservative, moderate and aggressive asset allocation.The conservative allocation is focused on providing low return with low risk; themoderate – average return with average risk and the aggressive – high return and highrisk.