Risk vs. Reward

Risk is the reciprocal of reward. An investor must be offered a higher rate of return for each unit of additional risk the investor is willing to assume. There are many types of risk involved with investing money. They are as follows:

- ✓ Capital Risk
- ✓ Market Risk
- ✓ Nonsystematic Risk
- ✓ Legislative Risk
- ✓ Timing Risk
- ✓ Credit Risk
- ✓ Reinvestment Risk
- ✓ Call Risk
- ✓ Liquidity Risk

Capital Risk

Capital risk is the risk that an investor may lose all or part of the capital they have invested.

Market Risk

Market risk is also known as a systematic risk and it is the risk that is inherent in any investment in the markets. For example, you could own stock in the greatest company in the world and you could still lose money because the value of your stock is going down, simply because the market as a whole is going down.

Nonsystematic Risk

Nonsystematic risk is the risk that pertains to one company or industry. For example, the problems that the tobacco industry faced a few years ago would not have affected a computer company.

Legislative Risk

Legislative risk is the risk that the government will do something that adversely affects your investment. For example, beer manufacturers probably did not fare too well when the government enacted prohibition.

Timing Risk

Timing risk is simply the risk that an investor will buy and sell at the wrong time and will lose money as a result.

Credit Risk

Credit risk is the risk of default inherent in debt securities. An investor may lose all or part of their money because the issuer has defaulted and cannot pay the interest or principal payments owed to the investor.

Reinvestment Risk

When interest rates decline and higher yielding bonds have been called or have matured, investors will not be able receive the same return given the same amount of risk. This is reinvestment risk and the investor is forced to either accept the lower rate or must take more risk to obtain the same rate.

Interest Rate Risk

Interest rate risk is the risk that the price of bonds will fall as interest rates increase. As interest rate rise the value of existing bonds fall and may subject the bondholder to a loss if they need to sell the bond.

Call Risk

Call risk is the risk that, as interest rates decline, higher yielding bonds and preferred stocks will be called and investors will be forced to reinvest the proceeds at a lower rate of return or at a higher rate of risk to achieve the same return. Call risk only applies to preferred stocks and bonds with a call feature.

Opportunity Risk

Investors who hold long term bonds until maturity must forgo the opportunities to invest that money in other potentially higher yielding investments.

Liquidity Risk

Liquidity risk is the risk that an investor will not be able to liquidate their investment when they need to or that they will not be able to liquidate their investment without adversely affecting the price.

Alpha

A stock's alpha is its projected independent rate of change or the difference between an investment's expected return and its actual return. Portfolio managers whose portfolios have positive alphas are adding value through their asset selection.

Beta

A stock's beta is its projected rate of change relative to the market as a whole. If the market was up 10% for the year, a stock with a beta of 1.5 could reasonably be expected to be up 15%. A stock with a beta greater than one has a higher level of volatility than the market as a whole and is considered to be more risky than the overall market. A stock with a beta of less than one is less volatile than prices in the overall market and is considered to be less risky. An example of a low beta stock would be a utility stock. The price of utility stocks does not tend to move dramatically. A security's beta measures its non-diversifiable or systematic risk. For each incremental unit of risk an investor takes on, they must be compensated with additional expected returns. If the portfolio's actual return exceeds that of its expected return, the portfolio has generated excess returns. The Sharpe Ratio can measure a portfolio's risk adjusted return. If two portfolios both return

8%, but portfolio A contains dramatically more risk than portfolio B, then portfolio B is a much better investment choice. The Shape Ratio will tell an investor how well they are being compensated for the investment risk they are assuming. The Shape Ratio takes the portfolio's return and subtracts the "risk free return" offered on short-term Treasury bills (usually 90 days) to determine the level of return that the investor earned over the risk free return. The risk premium is then divided by the portfolio's standard deviation. The Sharpe Ratio appears as follows:

$$\textbf{Sharpe Ratio} = \frac{(R - RFR)}{SD}$$

Series 65 candidates will have to be able to identify The Shape Ratio, but most likely will not be required to calculate it.

Expected Return

Modern portfolio managers try to manage risk and evaluate investments by employing a variety of concepts under modern portfolio theory. Modern portfolio theory states that the expected rate of return for an investment is the sum of its weighted returns. An investment's weighted return is its possible return multiplied by the likelihood of that return being realized. The following table details the expected return for XYZ:

Opinion	Expected Return	Probability of Expected Return	Weighted Return
Outperform	**20%**	**25%**	**5%**
Market perform	**10%**	**50%**	**5%**
Under perform	**5%**	**25%**	**1.25%**
Expected Return			**11.25%**

The following table details the expected return for ABC:

Opinion	Expected Return	Probability of Expected Return	Weighted Return
Outperform	**40%**	**10%**	**4%**
Market perform	**20%**	**70%**	**14%**
Under perform	**(33.75%)**	**20%**	**(6.75%)**
Expected Return			**11.25%**

Notice that the expected rate of return for both XYZ and ABC is 11.25%. However, an investment in XYZ contains less risk than an investment in ABC because the distribution of potential returns is not as wide as the distribution of potential returns for ABC. An investor who is considering investing in either XYZ or ABC would consider the 11.25% expected return offered by XYZ to be more attractive than the same expected return offered by ABC. The distribution of an investment's varying expected returns is measured by the investment's standard deviation. The wider the distribution of an investment's expected returns, the greater its standard deviation. Investments with higher standard deviations contain more risk than investments with lower standard deviations. As an investment's results are plotted over time, there is a 95% chance that its actual return will be within two standard deviations of its expected return and a 67% chance that it will be within one standard deviation of its expected return. Portfolio managers will use computer simulations to examine the possibilities of various portfolio strategies. The Monte Carlo simulation is one such simulation used by portfolio managers.

Time Value of Money

As time progresses, inflation eats away at the value or the purchasing power of the dollar. That is to say that a dollar today is worth more than a dollar tomorrow. Investors can determine the future value of a sum invested if they know the interest rate, the time horizon, and the compounding schedule. The future value of a sum invested today can be determined by using the following formula:

$$FV = PV (1 + R)^{T}$$

FV = Future Value
PV = Present Value
R = Interest rate
T = The number of compounding periods for which the money will be invested

Example:

FV = ?
PV = $1,000
R = 5%
T = 5 years compounded annually

$$FV = \$1,000 (1 + .05)^{5}$$
$$FV = \$1,000 (1.276)$$

$$FV = \$1,276$$

The future value of the investment will increase as the number of compounding periods increases. Lets look at what would happen to the same investment of $1,000 for five years at 5% if the interest was compounded semiannually. Everything would remain the

same except T would be 10 and the interest rate for each semi-annual period would be half the annual rate. In this example we get:

$$FV = \$1{,}000\,(1 + .025)^{10}$$
$$FV = \$1{,}000\,(1.28)$$

$$FV = \$1{,}280$$

More compounding periods increase the investor's total return.

An investor can also determine the present value a future payment by using the following formula:

$$PV = \frac{FV}{(1+R)^{T}}$$

An investor can also use the present value formula to determine how much they would have to invest today to have a given sum of money in the future. For example, let's say that an investor wants to have $10,000 saved for their child's college tuition five years from now. If the investor knows that they can receive 6 % on their money, they can determine how much they must invest today. The present value of $10,000 five years from now at a 6% rate is found as follows:

$$PV = \frac{\$10{,}000}{(1+.06)^{5}}$$

$$PV = \frac{\$10{,}000}{1.338}$$

$$PV = \$7{,}473$$

The investor would have to invest $7,473 today at a 6% rate to have $10,000 five years from now. Investors can also use the present value and future value to determine an investment's internal rate of return through a process called iteration. Series 65 candidates will not have to calculate an investment's internal rate of return.

Modern Portfolio Theory

As money management developed over the last century, analysts began to shift their focus from the returns available from individual investments to the returns available from an entire portfolio. This approach became known as modern portfolio theory. Modern portfolio theory is based on the concept that investors are risk adverse. Through diversification of investments and asset classes, portfolios can be constructed with higher levels of expected return for each unit of risk assumed. Asset classes are divided into

three main categories, stocks, bonds, and, cash and cash equivalents. Portfolio managers, through modern portfolio theory, can construct portfolios based on various allocations over the three main asset classes whose return will be the greatest given each unit of risk. This level of optimal performance is known as the efficient frontier. Any portfolio whose returns are expected to be less than optimal are said to be operating behind the efficient frontier. Optimal portfolio performance will be achieved by constructing a portfolio whose securities prices move independently of one another or whose prices move inversely to one another. Allocating a client's assets over various asset classes to achieve a given investment objective is known as strategic asset allocation. As the investment results of the different asset classes vary over time, the assets may have to be rebalanced. Asset rebalancing can be divided into two categories: systematic rebalancing and active rebalancing. Systematic rebalancing is designed to keep the original asset allocation model in place. For example, if a client's portfolio is designed to be 70%/25%/5% in stocks, bonds, and cash respectively, as the percentages shift, the portfolio manager would rebalance the assets to maintain the original percentages. Systematic rebalancing can be done at regular intervals such as quarterly or whenever the asset allocation shifts by a certain percentage, such as by five per cent or more. Active rebalancing assumes that a portfolio manager can effectively shift the asset allocation to take advantage of shifts in the performance of the various asset classes. If an investor has the same original portfolio allocation 70%/25%/5% and the portfolio manager thought that the bond market would outperform all other investments, they may use tactical rebalancing to rebalance as follows 40%/55%/5%. Alternatively, Investors may elect to employ a buy and hold strategy and let the allocations go where they may. This buy and hold strategy would reduce transaction costs and tax consequences.

Tax Structure

There are two types of taxes: progressive and regressive. A progressive tax levies a larger tax on higher income earners. Examples of progressive taxes are:

- ✓ Income taxes
- ✓ Estate taxes

Regressive taxes level the same tax rate on everyone, regardless of their income. As a result, a larger portion of the lower income earner's earnings will go toward the tax. Examples of regressive taxes are:

- ✓ Sales taxes
- ✓ Property taxes
- ✓ Gasoline taxes
- ✓ Excise taxes

Investment Taxation

Investors must be aware of the impact that federal and state taxes will have on their investment results. A taxable event will occur in most cases when an investor:

- ✓ Sells a security at a profit
- ✓ Sells a security at a loss

- ✓ Receives interest or dividend income

Calculating Gains and Losses

When an investor sells their shares, in most cases they will have a capital gain or loss. In order to determine if there is a gain or loss, the investor must first calculate their cost basis or cost base. An investor's cost base, in most cases, is equal to the price they paid for the shares, plus any commissions or fees paid in connection with the purchase. An investor's holding period begins the day after the purchase date and ends on the day of sale. Once an investor knows their cost base, calculating any gain or loss becomes easy. A capital gain is realized when the investor sells the shares at a price that is greater than their cost base.

Example:
An investor who purchased a stock at $10 per share three years ago and receives $14 per share when they sell the shares has a $4 capital gain that is found by subtracting the cost base from the sales proceeds. $14 - $10 = $4. If the investor had 1000 shares they would have a $4,000 capital gain.

An investor's cost base is always returned to them tax-free. A capital loss is realized when the investors sells the shares at a price that is less than their cost base. If the investor in the previous example were to have sold the shares at $8 instead of $14, the investor would have a $2 capital loss or a total capital loss of $2,000 for the entire position.

Again this is found by subtracting the cost base from the sales proceeds
$8 - $10 = -$2.

Capital gains and losses are further classified as short term or long term capital gains or losses. Any gain or loss on an investment held for less than one year is classified as a short term gain or loss. A short term capital gain will be taxed as ordinary income. Long term capital gains on assets held for more than one year will be taxed at a maximum rate of 15%.

Cost Base of Multiple Purchases

Investors who have been accumulating shares through multiple purchases must determine their cost base at the time of sale through one of the following methods:

- ✓ FIFO First In First Out
- ✓ Share Identification
- ✓ Average Cost

FIFO First In First Out

If the investor does not identify which shares are being sold at the time of sale, the IRS will assume that the first shares that were purchased are the first shares that are sold

under the FIFO method. In many cases this will result in the largest capital gain and as a result the investor will have the largest tax liability.

Share Identification

An investor may, at the time of the sale, specify which shares are being sold. By keeping a record of the purchase prices and the dates that the shares were purchased, the investor may elect to sell the shares that create the most favorable tax consequences.

Average Cost

An investor may decide to sell shares based on their average cost. An investor must determine their average cost by using the following formula:

$$\textbf{Average cost} = \frac{\textbf{Total dollars invested}}{\textbf{Total \# of shares purchased}}$$

Once an investor has elected to use the average cost method to calculate gains and losses they may not change the method without IRS approval.

Deducting Capital Losses

An investor may use capital losses to offset capital gains dollar for dollar in the year in which they are realized. A net capital loss may be used to reduce the investor's taxable ordinary income by up to $3,000 in the year in which it is realized. Any net capital losses that exceed $3,000 may be carried forward into future years and may be deducted at a rate of $3,000 from ordinary income every year until the loss is used up. If the investor has a capital gain in subsequent years, the investor may use the entire amount of the net capital loss remaining to offset the gain up to the amount of the gain.

Wash Sales

An investor may not sell a security at a loss and, shortly after, repurchase the security, or a security that is substantially the same, to reestablish the position, if they intend to claim the loss for tax purposes, and deduct the loss from their ordinary income. This is known as a wash sale and the IRS will disallow the loss. In order to claim the loss, the investor has to have held the securities for 30 days and must wait at least 30 days before re-purchasing the same securities or securities that are substantially the same. The total number of days in the wash sale rule is 61.

- ✓ Holding Period 30 days
- ✓ Sale date 1 day
- ✓ Waiting Period 30 days
- ✓ Total 61 days

Securities that are substantially the same are call options, rights, warrants and convertibles.

Taxation of Interest income

Interest earned by investors may or may not be subject to taxes. The following table illustrates the tax consequences of various interest payment received by investors:

Resident	Investment	Taxation
New Jersey	**Corporate Bond**	**All Taxes**
New Jersey	**CMO**	**All Taxes**
New Jersey	**GNMA**	**All Taxes**
New Jersey	**T' Bond**	**Federal Taxes Only**
New Jersey	**New York Muni Bond**	**New Jersey Taxes Only**
New Jersey	**New Jersey Muni Bond**	**No Taxes**
New Jersey	**Puerto Rico / Guam Muni**	**No Taxes**

Note: An investor may deduct margin interest only to the extent of their investment income. An investor may not deduct margin expenses from municipal bonds.

Inherited and Gifted Securities

If an investor dies and leaves securities to another person, that person's cost base for those securities is the fair market value of the securities on the day the decedent died. The cost base of the original investor does not transfer to the person who inherited the securities. Any capital gain on the sale of inherited securities will be considered long term. If during the course of an investor's life, they give securities to another person, the recipient will have two cost bases. Their cost base for determining a capital gain will be the giver's cost base; their cost base for determining a capital loss will be the giver's cost base or the fair market value of the securities on the day the gift was made, whichever is less.

Donating Securities To Charity

An investor who donates securities to a charity will receive a tax deduction equal to the value of the securities. If the investor has an unrealized gain and has held the securities for more than 12 months the investor will not owe any taxes on the appreciation. If the securities were held less than 12 months the investor will be responsible for taxes on the appreciation. The recipient's cost base will be equal to the value of the securities on the day they received the gift.

Trusts

There are two types of trusts that an individual may establish, revocable and irrevocable. With a revocable trust the individual who established the trust, known as the grantor, may, as the name suggests, revoke the trust and take the assets back. The income generated by a revocable trust is generally taxed as income to the grantor. If the trust is irrevocable the grantor may not revoke the trust and take the assets back. With an irrevocable trust, the trust usually pays the taxes as its own entity or the beneficiaries of the trust are taxed on the income they receive. If the income is not all distributed to the beneficiaries, the trust will pay the taxes on income that is not distributed. The grantor of an irrevocable trust is generally not taxed on the income generated by the trust, unless the assets in the trust are held for the benefit of the grantor, their spouse, or if that grantor has an interest in the income of the trust of greater than 5%.

Gift Taxes

When gifts are made to family members or others individuals, the donor does not receive any tax deduction. The donor's cost base will transfer to the recipient for tax purposes. Individuals may give gifts of up to $13,000 per person per year without incurring any tax liability. If a gift in excess of $13,000 is given to an individual, the donor owes the gift tax. Gifts to charity are always tax free as is paying someone's educational expenses or medical expenses.

TAKE NOTE!
A husband and wife may give up to $26,000 per year per person. The IRS considers half of the gift to be coming from each spouse. The annual gift limit is indexed for inflation, since 1999.

Estate Taxes

Individuals are allowed to leave an estate with unlimeted value in 2010 without subjecting the beneficiaries to estate taxes. There is an unlimited marital deduction or unified credit that allows surviving spouses to inherit the entire estate tax free. An individual's gross estate includes all of the assets they owned at the time of death, including assets placed in any revocable trusts. Assets placed in an irrevocable trust are excluded from the individual's estate. Certain items will be added to the individual's gross estate including:

- ✓ Assets transferred within 3 years of death
- ✓ Annuity payouts payable to the estate or heirs
- ✓ Life insurance

The following are deducted from the value of the estate:

- ✓ Debts owed by the individual or estate
- ✓ Funeral expenses
- ✓ Charitable gifts made after death