Managing Investment Risks

With the markets moving up and down like a roller coaster, is there anything you can do to stomach the risk? Have you carefully considered the various risks that are associated with each investment you make?
Whether it is investing, driving, or just walking down the street, everyone exposes themselves to risk. Your personality and lifestyle play a big role in how much risk you are comfortably able to take on. If you invest in stocks and have trouble sleeping at night, you are probably taking on too much risk.

Risk - Good, Bad and Necessary

We tend to think of "risk" primarily in negative terms, as something to be avoided or a threat that we hope won't materialize. In the investment world, however, risk is inseparable from performance and, rather than being desirable or undesirable, is simply necessary. The fact is, many people either have no desire or no knowledge about how to protect themselves from unneeded risk. Therefore, understanding risk is one of the most important aspects of capital market education for any existing or potential investor. This article intends to introduce risk and give a good foundation to understand the relationship between return and risk. Further, it will examine ways to measure and manage risk in making investment decisions.

What Does Risk Mean?

A common definition for investment risk is *deviation from an expected outcome*. In other words, the chance that an investment's actual return will be different than expected. The returns generated from an asset over future periods of time are not known in advance. While we can try to anticipate future returns the actual returns are likely to be different from the anticipated return. This possibility that the actual returns from an investment will deviate from the expected returns is defined as the risk. Returns consist of income and price changes, and fluctuations of both income and prices will lead to fluctuations in return.

Types of Risk

When investing in stocks, bonds, or any investment instrument, there is a lot more risk involved than you'd think. Let's take a look at the two basic types of risk:

The sources of investment risk are classified as systematic and unsystematic risk.

1. **Systematic Risk**

Systematic risk is the volatility of returns caused by the factors that affect all firms. These systematic factors include macroeconomic factors such as inflation, interest rates, economic growth, exchange rates etc. Changes in these macro-economic variables affect the entire market and all the firms although the magnitude of impact varies across firms. Systematic risk cannot be eliminated through diversification. Therefore, this is also referred to as undiversifiable risk or market risk.

2. **Unsystematic Risk**

Unsystematic risk is the volatility of returns due to factors specific to a given firm. The source of volatility is attributable to conditions unique to a firm and may include things such as labour strikes, production problems, law suites, loss of contracts, management changes, poor management decisions, etc. These conditions affect the firm in question and generally not the entire market.

Hence, the impact of firm-specific risk can be eliminated by creating a portfolio diversified across different firms and sectors. This risk is also referred to as the diversifiable risk or unique risk.

Business and Financial Risk

The sources of risk faced by investors in a business can also be classified as business risk and financial risk.

1. Business Risk

Business risk is the variability of the firm's operating income. The operating income, also known as the earnings before interest and taxes (EBIT), is equal to the revenue less operating cost. Anything that affects revenue such as changes in selling price and sales volume, and operating costs, such as changes in cost of goods sold, selling expenses and administrations expenses, affects operating income. The operating income of some industries, such as utilities and retail food are relatively stable while operating earnings of other industries such as technology and automobiles tend to be more volatile. The larger the fluctuations in operating income, higher the business risk.

2. Financial Risk

Financial risk is the additional variability of company's net income due to the use of debt financing. The major sources of financing of companies are equity and debt. Some companies use only equity and others use a combination of equity and debt. The risk created by the use of debt is that debt requires the firm to pay interest changes, which is a fixed cost to the firm. The interest on debt has to be paid regardless of whether the firm is making an operating profit or loss. The more the interest expenses the less is the net income available to the shareholders. Thus, use of debt financing causes volatility of net income over and above the volatility caused by business risk.

Liquidity Risk

Liquidity risk is the possibility of not being able to sell an asset for fair market value. Liquidity is an important characteristic to investors in financial instruments. An investment is considered liquid if it can be sold quickly without a significant loss of value. Illiquid investments expose the investor the risk that the investor might not be able to exit from it quickly or the investor might have to sell at a price much lower than the existing market price. Assets that are not frequently traded carry higher degree of liquidity risk. Stocks of small companies are generally prone to more liquidity risk than stocks of large and well-known companies. Bonds issued by the Sri Lankan Government as well as debentures issued by Sri Lankan companies do not trade very frequently, and hence, carry substantial liquidity risk.

As you can see, there are several types of risk that a smart investor should consider and pay careful attention to.

Measuring Risk

Risk can be understood as the actual volatility of past returns or the expected volatility of future returns. There are two important measures of risk: standard deviation and coefficient of variation (CV). Different versions of risk are usually measured by calculating the standard deviation of the historical returns or average returns of a specific investment. A high standard deviation indicates a high degree of risk. We can express this in absolute terms or relative to something else like a market benchmark. That deviation can be positive or negative, and relates to the idea of "no pain, no gain" - to achieve higher returns in the long run you have to accept more short-term volatility. The CV is the risk divided by average return and hence it gives the risk per unit of return. Thus, it is a relative measure of risk since risk is measured relative to the return. The CV is useful for

comparing assets with different risk and return characteristics. A higher coefficient of variation indicates more risk per unit of return.

Determinants of Required Return

The required rate of return on an investment, also known as the discount rate is the sum of the real risk-free rate of interest, expected inflation and a risk premium. This can be presented as follows:

Expected return = Real Risk-Free Rate + Expected Inflation + Risk Premium

The first component of the required return is the real risk-free rate. The real risk-free rate is the compensation necessary for forgoing the present consumption for future consumption. It is the interest rate that exists when there is no inflation and no uncertainty about future cash flows. This rate, which is also known as the pure time value of money, is determined by two factors. They are (a) degree of preference for current consumption and (b) available investment opportunities.

Individuals' time preference for consumption may change over time. An individual who prefers more present consumption than future consumption will demand higher compensation for foregoing the present consumption for future consumption. Investment opportunities refer to alternatives available for people to invest money in the production of goods and services. If such investments yield a higher rate of return, then the pure time value of money becomes higher. Since investment opportunities available are influenced by the long term real rate of growth of the economy, the growth of the real gross domestic product (GDP) may be used as a proxy for the real risk-free rate on interest in an economy.

In the short-run, the real risk-free rate is also influenced by conditions in the capital market. Since the interest rate is determined by the balance in the market for capital, temporary imbalances in the supply of and demand for capital can cause temporary uncertainty in the capital market. Two of the more important factors causing such an imbalance are changes in monetary and fiscal policies. A decrease in money supply growth (a tight monetary policy) will lead to a reduction in the supply of capital and an increase in interest rates. An increase in money supply growth (an expansionary monetary policy) will lead to an increase in the supply of capital and a decline in interest rates.

The second component of the required return is the expected inflation. Investors would require compensation for the inflation that is expected to prevail during the investment time horizon. Increases in inflationary expectations will result in a rise in the discount rate, while decreases in inflationary expectations will reduce the discount rate. The sum of the real risk-free rate and the expected inflation is equal to the nominal risk-free rate.

The third component of the required return is the risk premium, which is the compensation required for the uncertainty regarding future cash flows of the investment. The risk premium is determined by the characteristics of a particular investment. Investors require a higher risk-premium from higher –risk investments.

Risk and Return Relationship

A fundamental idea in finance is the relationship between risk and return. The risk-return tradeoff could easily be called the iron stomach test. The risk-return tradeoff is the balance an investor must decide on between the desire for the lowest possible risk for the highest possible returns. Remember to keep in mind that low levels of uncertainty (low risk) are associated with low potential returns and high levels of uncertainty (high risk) are associated with high potential returns. The reason for this is that investors need to be compensated for taking on additional risk. Therefore, deciding what amount of risk you can take on is one of the most important investment decisions an investor has to make.

The following chart shows an example of the risk/return tradeoff for investing. A higher standard deviation means a higher risk:

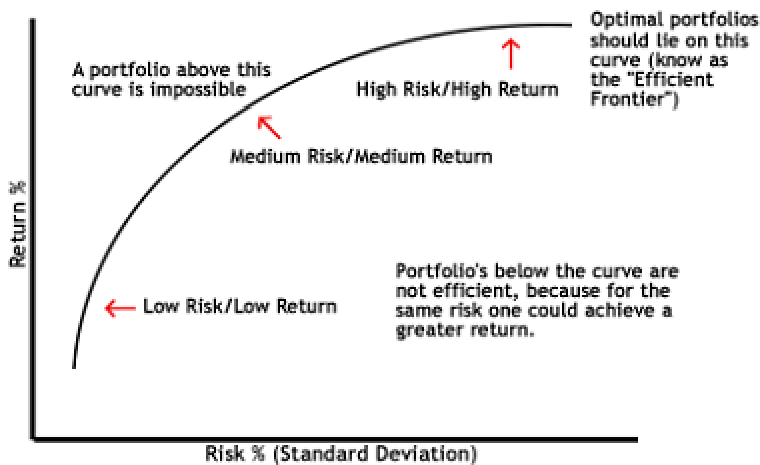


Figure 1
Source: Investopedia

This depicts the relation between the risk and expected returns for assets with varying degrees of risk. The greater the risk, the greater the expected return. Thus, the expected return of an asset is positively related to its risk. The ability and willingness to take risk varies among investors and investors will choose investments consistent with their risk preferences. Investors who do not like to invest in risky assets at all will consider the risk free assets such as the treasury bills. Some investors prefer to invest entirely in the stock market. Others may choose to invest in a combination of the risk free asset and the market portfolio. The exact portfolio of the investor depends on the investor's risk preference. Investors will determine feasible investment options based on their individual risk attitude & risk appetite. This will make them either risk averse, risk moderate or risk lovers.

Managing Risk

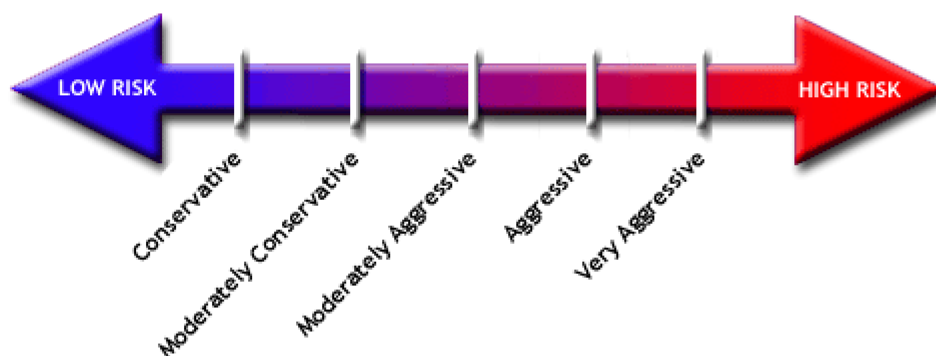
Determining Risk

Having discussed the risk-return trade-off above which states that the higher the risk of a particular investment, the higher the possible return, many investors do not understand how to determine the level of risk their individual portfolios should bear. This section provides a general framework that any investor can use to assess his or her personal level of risk and how this level relates to different investments.

Risk-Reward Concept

This is a general concept underlying anything by which a return can be expected. Anytime you invest money into something there is a risk, whether large or small, that you might not get your money back. In turn, you expect a return, which compensates you for bearing this risk. In theory the higher the risk, the more you should receive for holding the investment and the lower the risk, the less you should receive.

For investment securities, we can create a chart with the different types of securities and their associated risk/reward profile.



Source: Investopedia

Although this chart is by no means scientific, it provides a guideline that investors can use when picking different investments. Located on the upper portion of this chart are investments that offer investors a higher potential for above-average returns, but this potential comes with a higher risk of below-average returns. On the lower portion are much safer investments, but these investments have a lower potential for high returns.

Determining Your Risk Preference

With so many different types of investments to choose from, how does an investor determine how much risk he or she can handle? Every individual is different, and it's hard to create a steadfast model applicable to everyone, but here are two important things you should consider when deciding how much risk to take:

- **Time Horizon**

  Before you make any investment, you should always determine the amount of time you have to keep your money invested. If you have Rs.2, 000,000 to invest today but need it in one year for a down payment on a new house, investing the money in higher-risk stocks is not the best strategy. The riskier an investment is, the greater its volatility or price fluctuations, so if your time horizon is relatively short, you may be forced to sell your securities at a significant loss.

With a longer time horizon, investors have more time to recoup any possible losses and are therefore theoretically be more tolerant of higher risks. For example, if that Rs. 2, 000,000 is meant for a down payment that you are planning to make in ten years, you can invest the money into higher-risk stocks because there is be more time available to recover any losses and less likelihood of being forced to sell out of the position too early.

- **Bankroll**

Determining the amount of money you can stand to lose is another important factor of figuring out your risk tolerance. This might not be the most optimistic method of investing; however, it is the most realistic. By investing only money that you can afford to lose or afford to have tied up for some period of time, you won't be pressured to sell off any investments because of panic or liquidity issues.

The more money you have, the more risk you are able to take and vice versa. Compare, for instance, a person who has a net worth of Rs.50,000 to another person who has a net worth of Rs. 5,000,000. If both invest Rs. 25,000 of their net worth into securities, the person with the lower net worth will be more affected by a decline than the person with the higher net worth. Furthermore, if the investors face a liquidity issue and require cash immediately, the first investor will have to sell off the investment while the second investor can use his or her other funds.

Diversification as a Tool for Managing Risk

With the stock markets bouncing up and down every week, individual investors clearly need a safety net. Diversification can work this way and can prevent your entire portfolio from losing value.

After deciding on how much risk is acceptable in your portfolio by acknowledging your time horizon and bankroll, you can use the risk pyramid approach for balancing your assets.

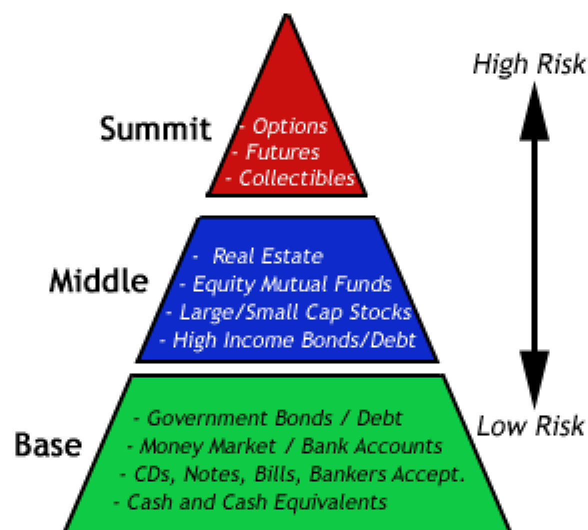
Diversification is a technique that reduces risk by allocating investments among various financial instruments, industries and other categories. It aims to maximize return by investing in different areas that would each react differently to the same event. Diversifying your portfolio may not be the sexiest of investment topics. Still, most investment professionals agree that while it does not guarantee against a loss, diversification is the most important component to helping you reach your long-range financial goals while minimizing your risk. Keep in mind, however that no matter how much diversification you do, it can never reduce risk down to zero.

What do you need to have a well-diversified portfolio? There are three main things you should do to ensure that you are adequately diversified:

1. Your portfolio should be spread among many different investment vehicles such as cash, stocks, bonds, mutual funds, and perhaps even some real estate.
2. Your securities should vary in risk. You're not restricted to picking only blue chip stocks. In fact, the opposite is true. Picking different investments with different rates of return will ensure that large gains offset losses in other areas. Keep in mind that this doesn't mean that you need to jump into high-risk investments such as penny stocks.

3. Your securities should vary by industry, minimizing unsystematic risk to small groups of companies.
   Another question people always ask is how many stocks they should buy to reduce the risk of their portfolio. The portfolio theory tells us that after 10-12 diversified stocks, you are very close to optimal diversification. However, you need to buy stocks of different sizes and from various industries.

Investment Risk Pyramid



Source: Investopedia

This pyramid can be thought of as an asset allocation tool that investors can use to diversify their portfolio investments according to the risk profile of each security. The pyramid, representing the investor's portfolio has three distinct tiers:

- Base of the Pyramid– The foundation of the pyramid represents the strongest portion, which supports everything above it. This area should be comprised of investments that are low in risk and have foreseeable returns. It is the largest area and composes the bulk of your assets.
- Middle Portion– This area should be made up of medium-risk investments that offer a stable return while still allowing for capital appreciation. Although more risky than the assets creating the base, these investments should still be relatively safe.
- Summit– Reserved specifically for high-risk investments, this is the smallest area of the pyramid (portfolio) and should be made up of money you can lose without any serious repercussions. Furthermore, money in the summit should be fairly disposable so that you don't have to sell prematurely in instances where there are capital losses.

Personalizing the Pyramid

Not all investors are created equally. While others prefer less risk, some investors prefer even more risk than others who have a larger net worth. This diversity leads to the beauty of the investment pyramid. Those who want more risk in their portfolios can increase the size of the summit by decreasing the other two sections, and those wanting less risk can increase the size of the base. The pyramid representing your portfolio should be customized to your risk preference.

It is important for investors to understand the idea of risk and how it applies to them. Making informed investment decisions entails not only researching individual securities but also understanding your own finances and risk profile. To get an estimate of the securities suitable for certain levels of risk tolerance and to maximize returns, investors should have an idea of how much time and money they have to invest and the returns they are looking for.

More Tips to Manage Risk Successfully

- Obtain services of stock brokers to seek expert investment advice
- Investing in companies with strong fundamentals.
  i.e. past earnings, future earning potential, dividends declared, business strategy, management acumen, experience of the Board of Directors, corporate governance practices adopted contribute to fundamentals.
- By referring Annual Reports, quarterly financial statements published by companies and other information released through the Colombo Stock Exchange (CSE) inform yourself of the potential for returns and the associated risk.
- Reading reports published by stock brokers
  Research done by stock broking firms on companies and sectors and their performance are a useful source of information for investors. These provide detailed financial analysis, earnings forecasts & share valuations and a host of other information about the company and sector.
- Buy shares when the share price is lower than its fair value and sell when the opposite is true.
- Invest within your means. Do not over expose yourself.

Sources for this article: 1) Equity Securities: Theory & Practice, 1st Edition, Professor Lalith Samarakoon

2) The Investopedia (website)