Portfolio

A collection of investments all owned by the same individual or organization

or

A grouping of financial assets such as share, bonds, etc

Diversification

Diversification is a way to reduce non-systematic risk or volatility by investing in a variety of assets.

Portfolio Diversification

Portfolio Diversification means putting your money in multiple types of investments.

Portfolio Diversification

Definition: Investing in different asset classes and in securities of many issuers in an attempt to reduce overall investment risk and to avoid damaging a portfolio's performance by the poor performance of single security or Industry or country

INTERNATIONAL INVESTMENT AND CAPITAL FLOWS

Introduction

In the early 1960s international investment was thought to be motivated by interest differentials among countries. If the interest rate in one country exceeded that of another, then financial capital was expected to flow between the countries until the rates were equal.

Portfolio Diversification

Differences in the returns on various countries assets provide an incentive for capital flows. However, we would not expect interest rates to be equalized throughout the world, since risk differs from one asset to another.

Furthermore, we would anticipate a certain random component in international capital flows because money flows to new investment opportunities as they open up in various countries.

Given the short time needed to shift funds around the world, the expected profit from investing in different assets should be equal. If this were not the case, then money would flow internationally until it was true.

Yet even with constant interest rates internationally, there would still be an incentive for international capital flows. The additional incentive is provided by the desire to hold diversified portfolios. It is this diversification motive that leads to the two-way flows of capital between countries.

Besides the return on an investment, investors are concerned with the risk attached to the investment. It is very unlikely that an individual who has 100000 to invest will invest the entire amount in one asset. By choosing several investment alternatives and holding a diversified portfolio, the investor can reduce the risk associated with his or her investments.

Modern financial literature has emphasized the concept of variability of return as a measure of risk. This is reasonable in that investors are interested in the future value of their portfolios and the more variable the value of the portfolios, the less certain they can be of the future value.

By diversifying and selecting different assets for a portfolio, we can reduce the variability of the portfolio.

To see the effects of diversification, let us consider a simple example of an investor facing a world with two investment opportunities: asset A and asset B. The investor will hold a portfolio of A and B, with the share of the portfolio devoted t A denoted by a and the share devoted by B denoted by b. Thus, if the investor holds only A, then a=1 and b=0. If only B is held, then a=0 and b=1. Most likely the investor will choose some amount of diversification by holding both A and B.

The return on the portfolio (R_p) can be written as a weighted average of the returns on the individual assets (RA and RB):

$$R_p = aR_A + bR_B \qquad (7.1)$$

The expected future return n the portfolio will then be determined by the expected future return on the individual assets

$$R_p^* = aR_A + bR_B^* \qquad (7.2)$$

Where R_p^*, R_A^*, and R_B^* are the expected values of the portfolio and individual asset returns, respectively.

Portfolio risk was associated with the variability of the return on the portfolio.

The measure of the degree to which a variable deviates from its mean or average value is known as the variance. The variance of the portfolio will depend on the share of the portfolio held by each asset and the variance of the individual assets as well as their covariance. Specifically,

$$Var(R_p) = a^2\, var(R_A) + b^2\, var(R_B) + 2ab\, cov(R_A, R_B) \qquad (7.3)$$

Where var stands for variance and cov stands for covariance. The covariance is a measure of the degree to which the two assets move together. When one return is higher than average, the return on the other asset is lower than average, the covariance is negative.

Equation 7.3 shows the negative covariance could contribute greatly to reducing the overall portfolio variance and therefore, risk.

To see the effects of diversification more clearly, let us use a simple example

Probability	R_A (%)	R_B (%)
.25	-2	16
.25	9	9
.25	19	-4
.25	14	11

Note: $R_A^*=10\%$; $R_B^*=8\%$; $Var(R_A) = 0.00605$

$Var(R_B) = 0.00545$; $cov(R_A, R_B) = -0.004825$

This table is a hypothetical assessment of the investment opportunity that is available. If we hold only asset B, our expected return is 8 percent with a variance of 0.00545. By holding 50 percent of our portfolio in A and 50 percent in B, our expected return is R_P = 0.5(10 percent) + 0.5 (8 percent) = 9 percent with a variance (using Equation (7.3)) of

$$Var(R_p) = .25(0.00605)+.25(0.00545)+2(.25)(-0.004825)$$

$$= 0.0004625$$

We need not be concerned with the statistical theory underlying the example. The important result for our use is the large reduction in variability of return achieved by diversification.

By investing half of our wealth in A and half in B, we expect to receive a return on our portfolio that is halfway between what we would expect from just holding A or B alone. However, the variance of our return is much less than half the variance of either RA or RB. The substantially lower risk achieved by diversification will lead investors to hold many different assets, including assets, including assets from different countries.

As the size of the investor's portfolio grows, the investor will want to buy more assets in the proportions that are already held in order to maintain the desired degree of diversification.

This means that as wealth increases, we could anticipate international capital flows between countries, as investors maintain these optimal portfolios. Thus, even with constant international interest rates, we should expect to observe two-way flows of capital as international wealth increases.

Diversification will not eliminate all risk to the investor, since there will still exist systematic risk- the risk present in all investment opportunities. For instance, in the domestic context we know that different industries have different time patterns of performance.

While one industry is enjoying increasing sales and profits, another industry might be languishing in the doldrums. Then, at some later period, the reverse might be true, and the once-thriving industry is now the stagnant one. This is similar to the example of opportunities A and B previously presented. The negative covariance between them indicates that when one is enjoying better than average times, the other is suffering, and vice versa. Yet there is still a positive portfolio variance even when we diversify and hold both assets. The variance that can be eliminated through diversification is called nonsystematic risk; this is the risk that is unique to a particular firm or industry.

Systematic risk is common to all firms and remains even in diversified portfolios. Systematic risk results from events that are experienced jointly by all firms, like the overall business cycle of recurrent periods of prosperity and recession that occur at the national level.

By extending our investment alternatives internationally, we can gain by international diversification. There appears to be nonsystematic risk at the national level that can be reduced with international portfolio diversification.

Moreover, business cycles do not happen uniformly across countries, so when one country is experiencing rapid growth, another may be in a recession. By investing across countries, we eliminate part of the cyclical fluctuation in our portfolio that would arise from the domestic business cycle. Therefore, some of what would be considered systematic risk, in terms of strictly domestic investment opportunities, becomes nonsystematic risk when we broaden our opportunities to include foreign as well as domestic investment. Thus, we can say that not only will investors tend to diversify their portfolio holdings

Across industries, but they can also realize additional gains by diversifying across countries.

one might wonder whether the gains from international diversification could be realized by investing in domestic multinational firms. If we consider a multinational firm – a firm doing business in many countries to be affected significantly by foreign factors, then we may view multinational stock as similar to an international portfolio. Since multinational firms have operations in many countries, we may hypothesize that multinational stock prices behave more like an internationally diversified portfolio than like just another domestic stock.

The evidence indicates that domestic multinational firms are poor substitutes for international diversification. While the variability of returns from a portfolio of U.S. multinational stock lends to be somewhat lower than the variability of a portfolio of purely domestic-oriented stocks, a portfolio invested across different national stock markets can reduce portfolio return variance by substantially more.