Diversification

by Sophia

WHAT'S COVERED

In this lesson, you will learn about the differences between systematic risk and unsystematic risk. Specifically, this lesson will cover:

1. Impact of Diversification on Risk and Return: Unsystematic Risk

Did your grandmother ever warn you not to put all your eggs in one basket? Did you know what she was talking about? The implication is obvious. If you put all your eggs in one basket, and that basket breaks, you are stuck with nothing to fry up into an omelet. Grandma wasn't telling you to grow up and be an omelet chef, she was actually giving you some sage advice that applies to your future as a portfolio manager. We have talked about diversification previously, and this section will follow from that.

Remember, we talked about every particular investment having an expected return and a variance. If you are managing a pool of assets, you want to get positive returns without being in danger of "losing your shirt." The probability that one stock goes belly up is much higher than that the whole stock market does.

Diversification relies on the lack of a tight positive relationship among the assets' returns, and works even when correlations are near zero or somewhat positive. On the flip-side, hedging is the tactic that relies on negative correlations among assets. Diversification comes with a cost associated with it, and some might point out that it is possible to over-diversify. The idea is that you can only diversify away so much risk, that the marginal returns on each new asset are decreasing, and each transaction has a cost in terms of a transaction fee and also research costs. At some point, it just isn't worth it anymore. The risk that can be diversified away is called **unsystematic risk** or diversifiable risk.

Some investors like to call themselves fans of active or passive management. In fact, two of the biggest mutual fund managers, Fidelity and Vanguard, take opposite stances on this issue and use it as a selling point to customers.

- Passive managers say the market knows best, and they seek a portfolio that has an underlying pool that mimics a benchmark index (think S&P 500).
- Active managers believe that their fundamental analysis yields them a competitive advantage. They might decide Microsoft's stock is underpriced based on changing demographics to the labor supply in Seattle, or they might decide that political stability has improved emerging markets in Sub-Saharan Africa but the yield on their bonds hasn't taken that into account.

This debate is all held on the margins. Research has shown that there is a clear advantage in any portfolio to hold at least 30 different positions.

TERM TO KNOW

Unsystematic Risk
A risk in a portfolio that can be diversified away by holding a pool of individual assets; also known as diversifiable risk.

---

2. Impact of Diversification on Risk and Return: Systematic Risk

Recall that previously we talked about the security market line and the implication that investors require more compensation for extra risk. One might pay the same amount for a safe investment as for an investment carrying more risk; however, the riskier investment will, in theory, provide a higher return. This is the principle behind the security market line.

Diversification is a technique for reducing risk that relies on the lack of a tight positive relationship among the returns of various types of assets. By diversifying a portfolio of assets, an investor loses the chance to experience a return associated with having invested solely in a single asset with the highest return. On the other hand, the investor also avoids experiencing a return associated with having invested solely in the asset with the lowest return — sometimes even becoming a negative return. Thus, the role of diversification is to narrow the range of possible outcomes. As a result, the portion of risk that is unsystematic — or risk that can be diversified away — does not require additional compensation in terms of expected return.

IN CONTEXT

Consider the case of an individual who buys 50 corporate bonds from a single company. The individual receives a certain yield based on the purchase price. However, if unexpected business risks lead to liquidity problems, the company might go bankrupt and default on its loans. In such a case, the investor will lose the entirety of the investment. Conversely, if the investor buys a single bond from 50 different corporations who have similar credit ratings, then one instance of insolvency will have a far less drastic effect on the investor's portfolio.

Now, imagine that these 50 corporations are all given a lesser credit rating because of the risk of their overall market segment. In this case, the individual is still at risk to lose some or all of the initial investment.

This type of risk cannot be diversified away, and is referred to as **systematic risk**. This is the portion of risk that pays the risk premium, because the risk associated with this particular segment of the market is more tightly linked to the risk of the market as a whole. This risk is present regardless of the amount of diversification undertaken by an investor.

TERM TO KNOW

Systematic Risk

A risk common to all securities which cannot be diversified away; also known as non-diversifiable risk.

SUMMARY

In this lesson, you learned about the **impact of diversification on unsystematic risk**, the type of risk that investors can minimize within their portfolio through calculated investment choices. On the other hand, there is no **impact of diversification on systematic risk**, the type of risk that is linked to the market as a whole. In sum, diversification can only do so much to eliminate risk when investing.

Best of luck in your learning!

TERMS TO KNOW

Systematic Risk
A risk common to all securities which cannot be diversified away; also known as non-diversifiable risk.

Unsystematic Risk
A risk in a portfolio that can be diversified away by holding a pool of individual assets; also known as diversifiable risk.