

Portfolio Considerations

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WHAT'S COVERED

In this lesson, you will learn about the effects of portfolio diversification on risk. Specifically, this lesson will cover:

1. [Portfolio Diversification and Weighting](#)
2. [Implications for Expected Returns](#)
3. [Implications for Variance](#)

1. Portfolio Diversification and Weighting

In finance, there are two types of risk:

- **Systemic risk:** This is essentially the risk that the markets will experience in a downturn and all investments within that market will be negatively affected. It is difficult to reduce with diversification.
- **Specific risk:** This is the risk associated with one individual security. It can be diversified away.

Let's revisit the ski/snowboard example.

IN CONTEXT

Let's say that you pick one resort to invest in, and cross your fingers hoping for a huge snowdrop this winter. It turns out that the winter sets records for snowdrop across the state of Colorado and as an industry, the resorts turn record profits.

Unfortunately, your snowboard friend didn't tell you that the resort you picked still hasn't upgraded to the high-speed chairlifts, and they also don't plow their roads very often. It turns out that while all the other mountains were turning huge profits, your investment actually lost 10%.

The risk associated with the one mountain would be specific risk. The risk of having bad weather would have been systemic risk.

If you had taken your money and divided it up across all of the ski resorts in Colorado, you would be up 15%, but because you happened to pick the one bad egg, you lost money.

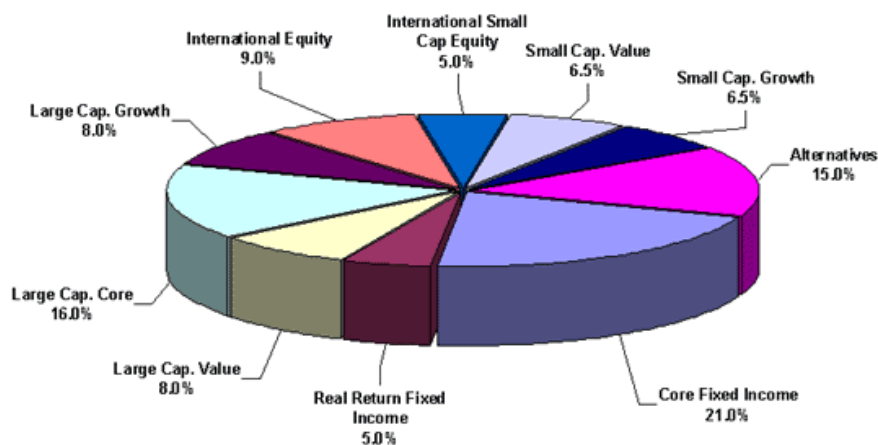
The above example explains why investors are often choosing mutual funds and exchange-traded funds (ETFs) over individual stocks and bonds. Mutual funds and ETFs invest in underlying pools of investments specific to a particular investment objective. These objectives can range from specific to one particular industry to something that achieves a balanced portfolio of blended assets.

The idea of eliminating risk by spreading investments across pools of underlying stocks and bonds is called diversification. A diversified portfolio spreads investments across all asset classes with a weighting system that takes time frame and risk tolerance into account. The weight is the proportion of that portfolio assigned to one category. In our example, we talked about diversifying away the risks of slow chair lifts but in reality, there are many more aspects to diversification.



THINK ABOUT IT

Below is an example of a diversified portfolio of different assets. How many pairs of antonyms can you find?



TERMS TO KNOW

Systemic Risk

A risk that markets will experience in a downturn and all investments within that market will be negatively affected; it is difficult to reduce with diversification.

Specific Risk

A risk inherent in a small group of assets that can be mitigated by diversifying, investing in a broad portfolio of assets; also known as unsystematic risk or diversifiable risk.

2. Implications for Expected Returns

Asset allocation is the theory that any portfolio should have a set of target weights for different asset classes based on time frame and risk tolerance.

There are two key principals at work in this theory.

1. Everything goes in cycles.
2. Often, when one thing is ebbing, the other is flowing.

With finance, stocks have cycles and when stocks do well, bonds are more likely to do poorly and vice versa.

IN CONTEXT

Let's look at an example where bonds return 4% in a bad year, 6% in an average year, and 8% in a good year, while stocks return -5% in a bad year, 10% in an average year, and 15% in a good year.

Suppose we have a portfolio of \$100,000 that has a target mix of 60% stocks and 40% fixed income and, therefore, has \$60,000 in stocks and \$40,000 bonds. The stocks have a good year and bonds have a bad one. Let's calculate what we will have after this year:

Good Year with Stock Return = $\$60,000 * 15\% = \$9,000$, so a total of \$69,000 invested in stocks

Bad Year with Bond Return = $\$40,000 * 4\% = \$1,600$, so a total of \$41,600 invested in bonds.

At this point, we have a total portfolio of \$110,600 and an asset mix of roughly 62% stocks and 38% bonds. We began with a target mix of 60-40, but since the equity market fared better than the fixed-income market, we are a little off-balance.

Initial Portfolio		
Stocks	\$60,000	60%
Bonds	\$40,000	40%
Total	\$100,000	

New Portfolio		
Stocks	\$69,000	62%
Bonds	\$41,600	38%
Total	\$110,600	

So how do we fix that? We could sit and wait and watch what happens, or we could balance it back to a

60-40 relationship by shifting \$2,640 from our equity position to a fixed-income position.

New Portfolio		
Stocks	\$66,360	60%
Bonds	\$44,240	40%
Total	\$110,600	

Remember, things go in cycles, so we expect that if stocks do well relative to bonds, that sometime in the future, bonds will do well relative to stocks. By shifting \$2,640 from our equity position to our fixed-income position, we are essentially selling stocks after they have appreciated (at a high) and buying bonds after they have failed to appreciate (at a low).

Look at how the different asset mixes fare, based on a 10-year period that is consistent with historical averages.

Projected 10-Year Cumulative Return After Inflation (stock return 8% yearly, bond return 4.5% yearly, inflation 3% yearly)	
80% stock / 20% bond	52%
70% stock / 30% bond	47%
60% stock / 40% bond	42%
50% stock / 50% bond	38%
40% stock / 60% bond	33%
30% stock / 70% bond	29%
20% stock / 80% bond	24%



BIG IDEA

Assuming rebalancing, the expected return of a diversified portfolio is simply the expected return of each of its underlying investments times the allocation weight the investment receives.

The theory can feature different strategies, including strategic asset allocation, tactical asset allocation, and others, but the ideas are the same as the implications for return. A portfolio should consist of a variety of classes of assets to take advantage of zero and negative correlations between those classes, and it should be designed to achieve a target mix of assets that are rebalanced when one grows in relation to another.

3. Implications for Variance

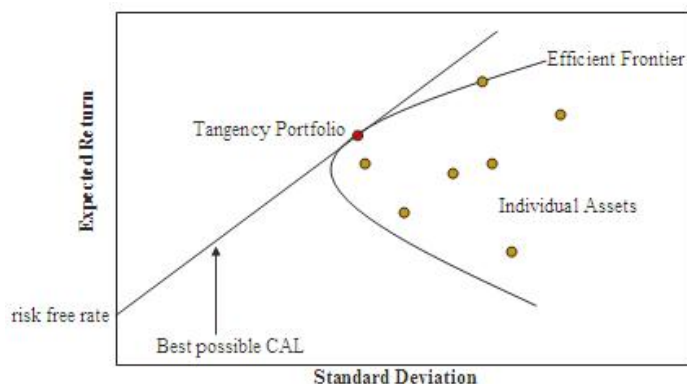
A primary reason for a diversified asset allocation is the fact that markets often sway away from each other, and it can be beneficial to have a portion of your holdings invested in bonds in years when stocks do badly.

Remember that in 2000, the NASDAQ lost 39.28% of its value (4,069.31 to 2,470.52) and in 2001, the NASDAQ lost 21.05% of its value (2,470.52 to 1,950.40). Had your portfolio consisted of a set of stocks that approximated the NASDAQ Index, you would have lost roughly 52% of your portfolio's value (from 4069.31 to 1950.40).

As mentioned before, there are more than two basic asset classes. Here are some examples of the types of assets that may be included in a diversified strategy:

- Cash and cash equivalents (e.g., deposit account, money market fund)
- Fixed interest securities, such as bonds: investment-grade or junk (high yield); government or corporate; short-term, intermediate, long-term; domestic, foreign, or emerging markets; or convertible security
- Stocks: value, dividend, growth, sector-specific, or preferred (or a “blend” of any two or more of the preceding); large-cap versus mid-cap, small-cap or micro-cap; public equities versus private equities, domestic, foreign (developed), emerging or frontier markets
- Commodities: precious metals, broad basket, agriculture, energy, etc.
- Commercial or residential real estate (also REITs)
- Collectibles, such as art, coins, or stamps
- Insurance products (an annuity, a life settlement, a catastrophe bond, personal life insurance products, etc.)
- Derivatives, such as long-short or market neutral strategies, options, collateralized debt, and futures
- Foreign currency
- Venture capital, leveraged buyout, merger arbitrage, or distressed security funds

One of the foundational arguments for the use of Modern Portfolio Theory is the concept that various asset classes provide investments whose correlations vary. In other words, the assets are less likely to move up or down in value at the same time or at the same rate. This is beneficial because if one asset class is performing poorly, another may be performing well, which can help balance out the overall performance of the portfolio.



A diversified portfolio containing investments with small or negative correlation coefficients will have a lower variance than a similar portfolio of one asset type. This is why it is possible to reduce variance without compromising expected return by diversifying.



SUMMARY

In this lesson, you learned about the importance of **portfolio diversification and weighting** to reduce risk when investing. Diversifying the asset allocation of a portfolio has **implications for expected returns** by balancing the cyclical nature of the financial markets and capitalizing on the negative correlation between certain asset classes. Diversified asset allocation also has **implications for variance**. A portfolio containing a mix of negatively correlated assets will minimize variance as compared to a portfolio containing a single asset class.

Best of luck in your learning!

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TERMS TO KNOW

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