# Why and How To Use Correlation



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## What Is Correlation?

In statistics, correlation measures the degree to which two (or more) variables move together. Positive correlation values indicate movement together in the same direction. Negative correlation values indicate movement in opposite directions. Correlation values range from -1.0 to +1.0, with a value of 0 indicating no relationship between the variables.

In finance and financial markets, correlation measures relationship between two securities (stocks, bonds, ETFs, mutual funds, indexes, etc.) and the degree to which they move together. Securities with high positive correlation values move together in the same direction. Securities with high negative correlation values move in exact opposite directions. Securities with very low correlation values at or around 0 are unrelated with respect to the directions in which they move.

## Why Use Correlation

Correlation values can be used to construct a well diversified portfolio, reducing risk while also improving returns. By building a portfolio that consists of a diverse set of securities across multiple asset classes, each with low correlation values, you can limit risk by reducing exposure to singular market shocks.

## How To Use Correlation

To use correlation to your advantage, balance the securities in your portfolio according to their correlation values, and ensure that the correlation values against a common benchmark (such as the S&P 500) are not all clustered in a specific range. For example, if you have 10 stocks and funds in your portfolio all with correlation values against the S&P 500 ranging from +0.87 to +0.98, the assets in your portfolio can be shown to move in very similar directions, increasing your risk exposure to singular market shocks. If, however, the set of stocks and funds in your portfolio is more diverse and the correlation values range from, for example, -0.79 to +0.95, your portfolio can be considered more broadly diversified and thus less exposed to singular market shocks.