7.6: Beta

In addition to serving as a measure of market risk, Beta tells us how a particular stock moves in relation to the rest of the stock market as a whole.

$$\beta_A = \frac{(\sigma_A)\,(\text{corr}_{A,MKT})}{\sigma_{MKT}}$$

where

β_A represents the Beta of Stock A
σ_A represents the standard deviation of stock A
corr $_{A,MKT}$ represents the correlation between stock A and the overall market σ_{MKT} represents the standard deviation of the overall market

Consider the following example. Stock A has a standard deviation of 60% while the overall stock market has a standard deviation of 25%. Assuming that the correlation between Stock A and the overall market is 0.30 , what is the beta of Stock A?

$$\text{Beta } = [(60)(.30)]/(25) = 18/25 = .72$$

What is the Market?

The market refers to a portfolio of all investment assets (stocks, bonds, gold , art, etc.). However, in more practical terms, the market usually refers to the stock market and can be measured by a market index (such as the S&P 500 or Dow Jones Industrial Average).