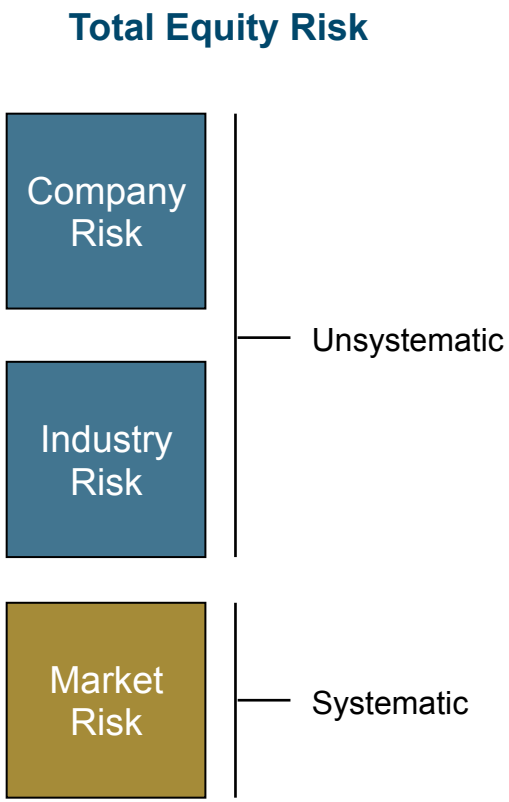
Capital Asset Pricing Model

William Sharpe: Nobel Prize in Economics, 1990



Unsystematic

- Specific to firm or industry (lawsuit, fraud, etc.)
- Diversifiable
- No compensation

Systematic

- Marketwide, affects all firms (war, recession, inflation, etc.)
- Non-diversifiable
- Investor compensation
- Measured by beta

Beta measures volatility relative to the total market. A beta higher than the market's beta of 1 implies more volatility, and a beta lower than the market's implies less volatility.

A meaningful discussion of market efficiency requires a description of how security prices would behave if markets were perfectly efficient. William Sharpe shared the Nobel Prize in Economics in 1990 for his pioneering contribution to asset pricing theory. Sharpe's model sought to explain how risky assets would be priced in equilibrium. Employing a number of simplifying assumptions, the Capital Asset Pricing Model he developed proposed that a stock's expected return was a function of its volatility relative to the volatility of the universe of risky assets, and that the most efficient portfolio (in the Markowitz mean-variance sense) was the entire universe of risky assets. The CAPM provides the intellectual foundation for the total-market index fund.

Equity risk is a combination of systematic and unsystematic risk:

- Systematic risk includes macroeconomic conditions affecting all companies in the stock market. Systematic risk cannot be diversified away.
- Unsystematic risk includes company and industry developments specific to individual securities. The effect of these can be reduced through sufficient diversification.

Investors should not expect markets to reward them for risks that can be diversified away. They should expect compensation only for bearing systematic risks.