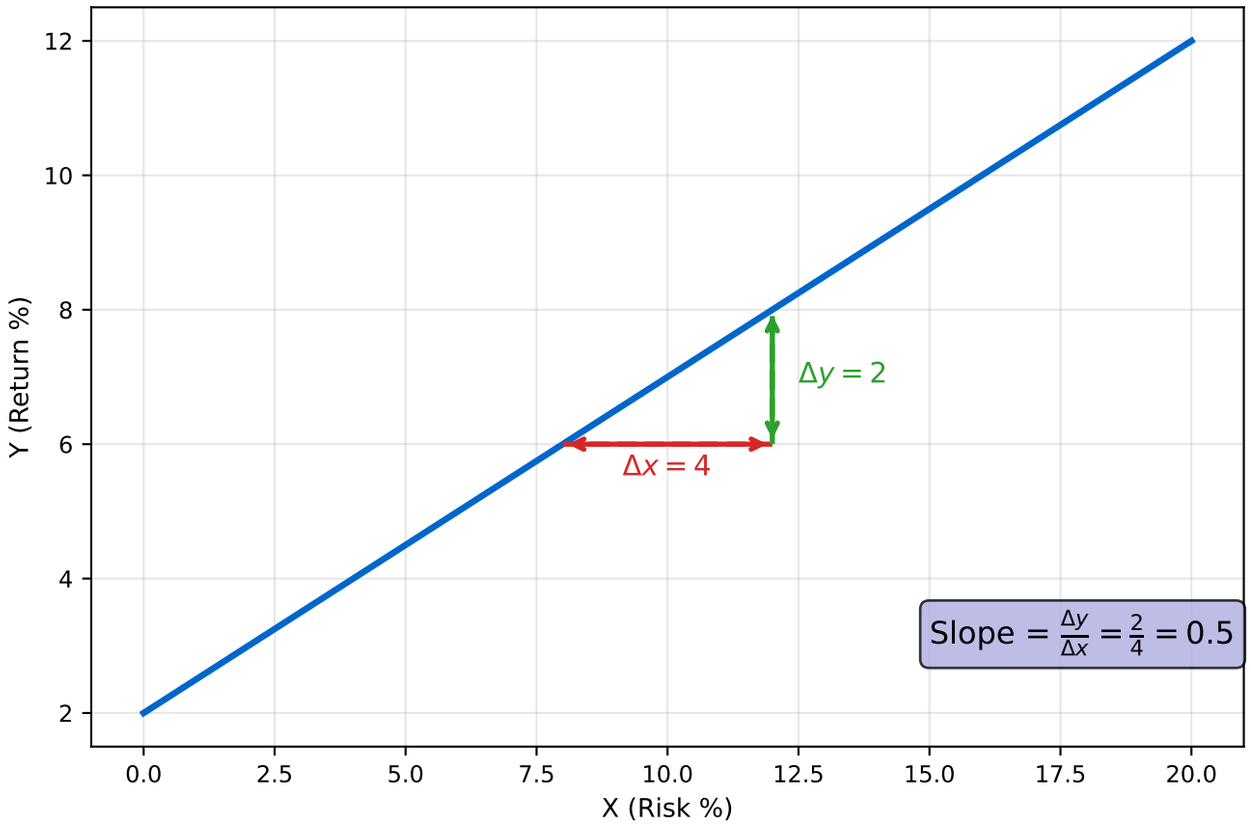
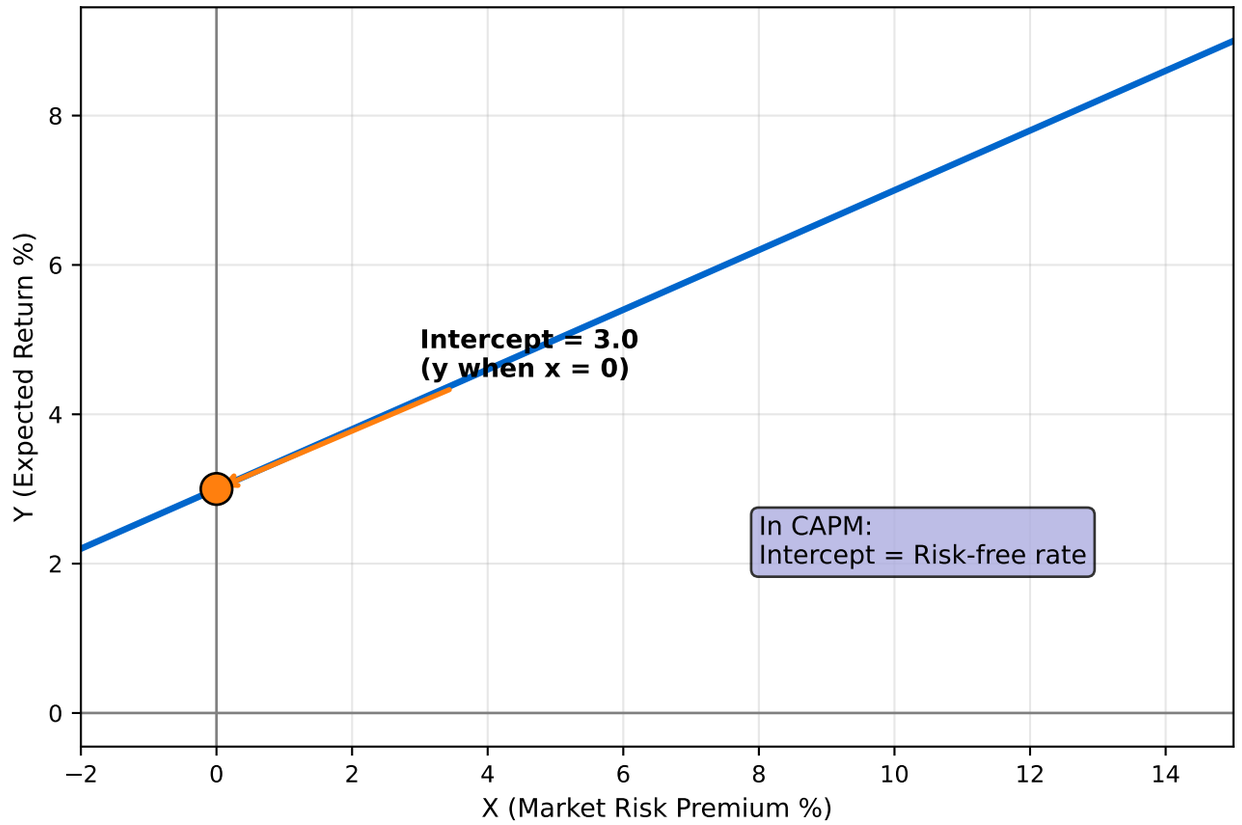
Interpreting Regression Coefficients

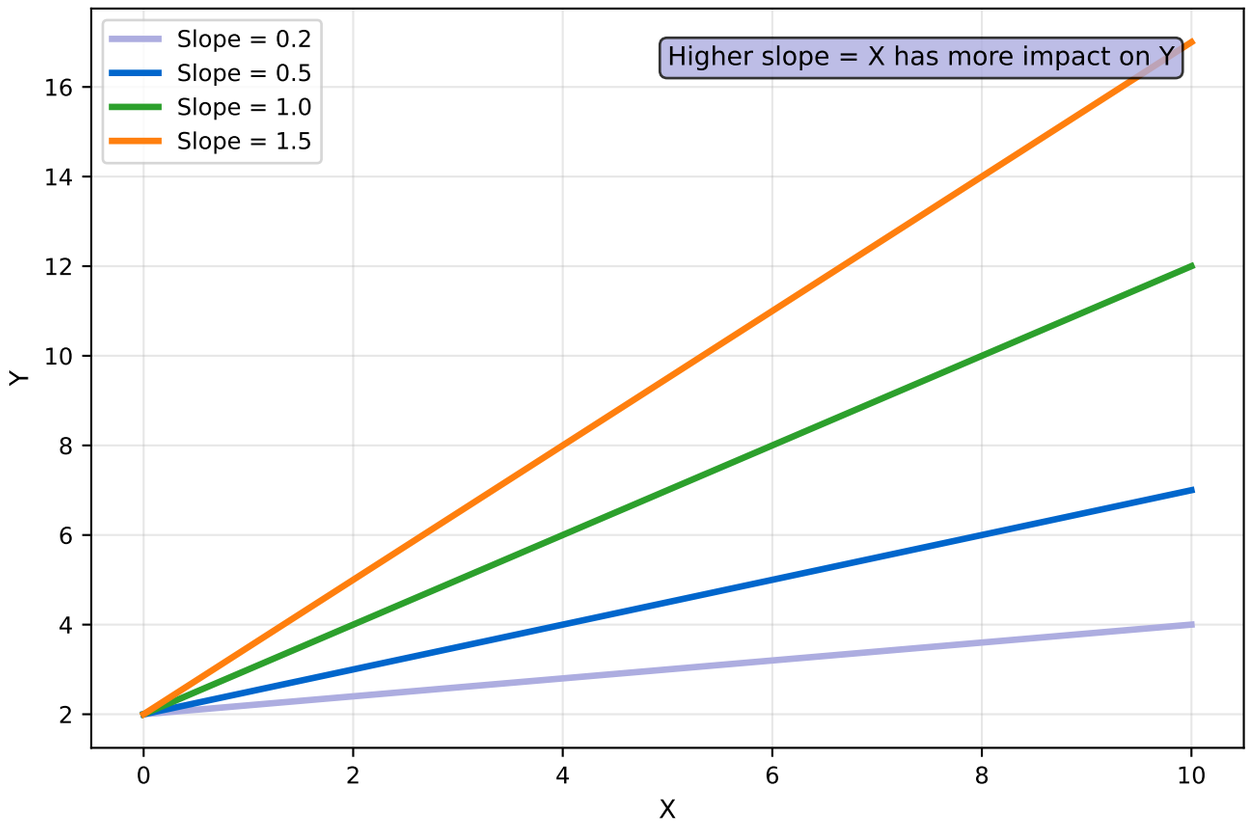
Slope: Change in Y per Unit Change in X



Intercept: Y Value When X = 0



Slope Comparison: Steeper = Stronger Effect



Finance Application: CAPM Beta

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FINANCE EXAMPLE: CAPM Regression

Model: Stock Return = alpha + beta * Market Return

y = 0.5 + 1.2 * x

Coefficient Interpretations:

INTERCEPT (alpha = 0.5%):
- Expected return when market return = 0
- Positive alpha: stock outperforms (risk-adjusted)
- Negative alpha: stock underperforms

SLOPE (beta = 1.2):
- For every 1% market move, stock moves 1.2%
- beta > 1: more volatile than market
- beta < 1: less volatile than market
- beta = 1: moves with market

Example Predictions:
- Market +5% -> Stock = 0.5 + 1.2(5) = +6.5%
- Market -3% -> Stock = 0.5 + 1.2(-3) = -3.1%
```