PORTFOLIO CHOICE PROBLEM

WHAT WILL YOU LEARN?

- ► Expected utility
- ► Mean variance problem
- ▶ Portfolio choice problem

EXPECTED UTILITY

EXPECTED UTILITY

- ► Expected utility is the main workhorse in modeling individual choices in economics.
- ► Expected utility combines probabilities of outcomes with how investors feel about these outcomes.

EXPECTED UTILITY

- ► Maximize expected utility by choosing different
 - ▶Spending/savings plans
 - ightharpoonup Asset holdings
 - ▶ Production plans

EXPECTED UTILITY EXAMPLE: PORTFOLIO CHOICE PROBLEM

▶Two assets: stocks and bonds

MEAN-VARIANCE PREFERENCES		
MEAN-VARIANCE PREFERENCES		
►Mean-variance utility		

INDIFFERENCE CURVES FOR DIFFERENT LEVELS OF UTILITY

INDIFFERENCE CURVES

- ► Along an indifference curve, an investor is indifferent to all mean-volatility (or mean-variance) combinations.
- ►One particular indifference curve represents a particular level of utility.

INDIFFERENCE CURVES FOR DIFFERENT LEVELS OF RISK AVERSION

INDIFFERENCE CURVES

► The more risk averse an investor, the steeper the slope of the indifference curve.

PORTFOLIO CHOICE PROBLEM WITH MEAN VARIANCE PREFERENCES

► Portfolio choice problem = maximizing expected utility = finding the highest mean-variance indifference curve given the investment opportunity set and constraints

PORTFOLIO CHOICE PROBLEM: AN ILLUSTRATION

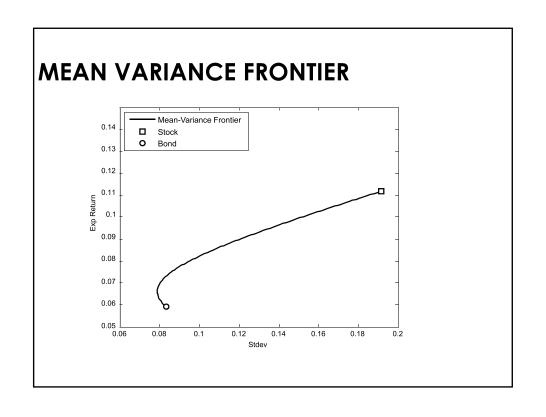
PORTFOLIO CHOICE PROBLEM: A GRAPHICAL ILLUSTRATION

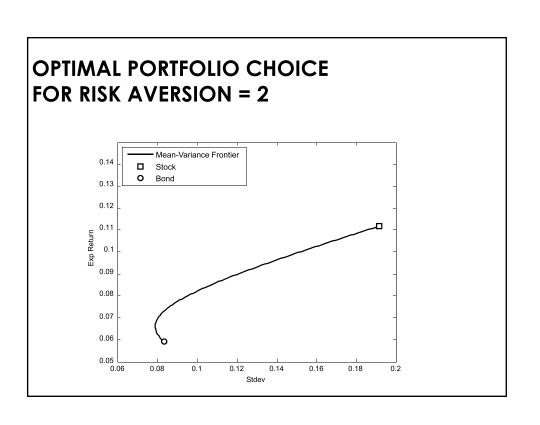
	Mean	Standard deviation
Stocks	11.9%	19.15%
Bonds	5.91%	8.33%
Corr(stocks, bonds)	0.113	

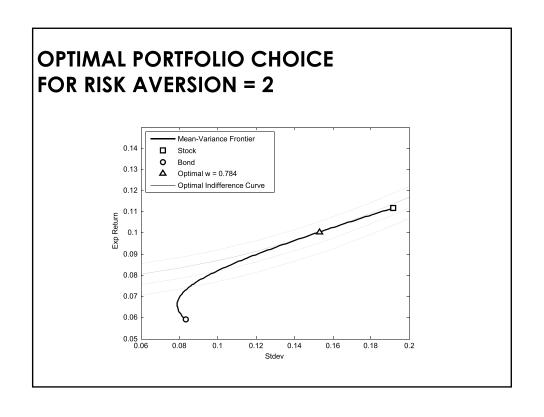
- ▶Investors can hold only stocks and bonds.
- ► For a given risk aversion, what are the optimal holdings?

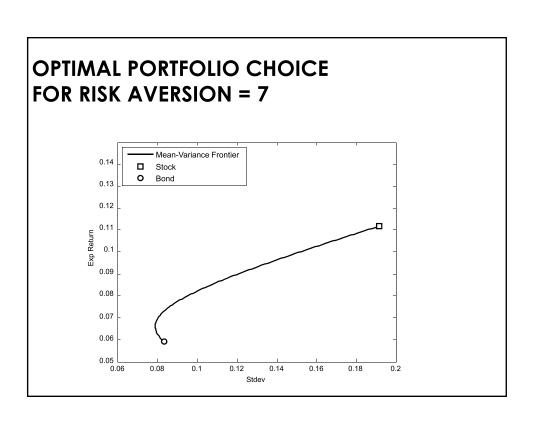
MEAN VARIANCE FRONTIER

► We can trace the mean-variance frontier by taking all combinations of the two assets (stocks, bonds).

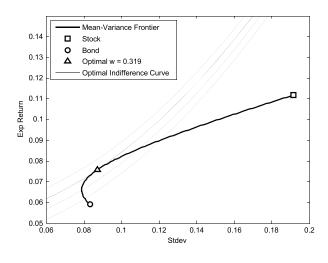












SUMMARY

- ► Expected utility combines probabilities of outcomes with how investors feel about these outcomes.
 - ► Maximize expected utility given the investment opportunity set and constraints
- ► Mean-variance utility: investors only care about means and variances
- ▶ Portfolio choice problem: illustration