MEASURING PORTFOLIO EXPECTED RETURN

WHAT WILL YOU LEARN?

- What is the expected return on a portfolio?

REVIEW: MEASURING EXPECTED RETURN

- We use the central tendency – or the average – as a measure of the expected value.
- The expected return is a probability weighted average of the possible outcomes.

EXPECTED RETURNS

State of the economy	Prob.	Toyota	Walmart	Pfizer
Expansion	0.10	6.0%	4.5%	2.5%
Normal	0.40	7.5	5.5	-0.5
Recession	0.30	2.0	4.0	1.0
Depression	0.20	-3.0	-1.0	13.0
Expected return E(R)				

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PORTFOLIOS

- A portfolio is a collection of different assets treated as a single asset.
- For example, let's consider a portfolio of just two securities from the table above. Say 50% Toyota and 50% Pfizer.
- Let's look at the return to this portfolio in each state of the world, and find the expected return of the portfolio.

PORTFOLIO EXPECTED RETURN: ½ TOYOTA + ½ PFIZER

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PORTFOLIOS

- What if we form a portfolio that consists of 50% Pfizer and 50% Walmart?

PORTFOLIO EXPECTED RETURN: ½ WALMART + ½ PFIZER

State of the economy	Prob.	Walmart	Pfizer	½ Walmart + ½ Pfizer
Expansion	0.10	4.5%	2.5%	
Normal	0.40	5.5	-0.5	
Recession	0.30	4.0	1.0	
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Expected return E(R)		**3.65%**	**2.95%**	

PORTFOLIO EXPECTED RETURN

- Expected return to portfolio = weighted average of expected (mean) returns to each asset.

PORTFOLIO EXPECTED RETURNS

	Walmart	Pfizer	½ Walmart + ½ Pfizer
Expected return E(R)	3.65%	2.95%	3.30%

	Toyota	Pfizer	½ Toyota + ½ Pfizer
Expected return E(R)	3.60%	2.95%	3.275%

	Toyota	Walmart	Pfizer	1/3 Toyota+ 1/3 Walmart + 1/3 Pfizer
Expected return E(R)	3.60%	3.65%	2.95%	3.40%

SUMMARY

- Portfolio expected return is simply a weighted average of the expected returns of the individual assets.