ARE YOU ADEQUATELY DIVERSIFIED? RISKS OF NOT DIVERSIFYING

WHAT WILL YOU LEARN?

- How do your own company assets in your defined contribution pension plan affect your portfolio?

RISKS OF NOT DIVERSIFYING

- Many people hold a lot of the stock of the company they work for.
- Poterba (2003) shows that the share of assets in own-company assets in large defined-contribution pension plans is around 40%.

RISKS OF NOT DIVERSIFYING

- Such concentrated portfolios can be disastrous!
  - Just ask the Enron employees who had over 60% of their retirement assets in company stock when Enron went bankrupt in 2001.
  - Or Lehman Brothers employees when Lehman went bankrupt in 2008.

RISKS OF NOT DIVERSIFYING

- An individual should regularly decrease the weight of own company stock, especially if the stock is rising faster than other assets in her portfolio.
- It represents greater concentrated risk for that investor.
- Not to mention that your human capital is concentrated with that employer, too.

RISKS OF NOT DIVERSIFYING

- Similar concerns exist for the wealthy or institutional investors that fail to diversify and for the entrepreneurs that generate wealth from a single business.
  - Of the thirty companies that made up the Dow Jones Industrial Average in 1896, only one remains.. General Electric…

SUMMARY

- Concentrated portfolios can be disastrous – as employees of Enron, Lucent, or Lehman Brothers painfully found out.
- Norway's sovereign wealth fund was created precisely to reap benefits of diversification.
  - In the case of Norway, it turns its position in a highly concentrated single asset – oil – into a diversified financial portfolio and improve its risk-return trade-off.

MEAN-VARIANCE PORTFOLIO ANALYSIS

WHAT WILL YOU LEARN?

- Mean-variance portfolio analysis framework

MODERN PORTFOLIO THEORY

- Modern portfolio theory (MPT) was pioneered by Harry Markowitz in the 1950s.
- This theory analyzes how wealth can be optimally invested in assets that differ in expected return and risk.
- Almost 40 years later, this work earned him the 1990 Nobel Prize in Economics.

MEAN-VARIANCE FRAMEWORK

- The underlying assumption is that asset returns can be characterized entirely by their expected returns (mean) and risk (volatility).
- Mean-variance investing is all about diversification.
- Portfolio variances are reduced by holding diversified portfolios when asset returns are imperfectly correlated and so diversification is good.
- Well, if all you care about is portfolio means and variances.

LIMITATIONS OF THE MEAN-VARIANCE FRAMEWORK

- What if you also care about downside risk or other higher moments measures of risk?
- When we combine imperfectly correlated assets together, variances always decrease.
- But other measures of risk may not necessarily diminish.

DIVERSIFICATION VS. BIG LOTTERY PAYOFF

- Since diversification reduces idiosyncratic risk, it also limits the extremely high payoffs from highly concentrated portfolios.
- If you are hoping to become a billionaire by investing in the next Google or Apple, diversification is not for you!
- But most investors are risk averse and would like to avoid catastrophic losses that can come from failing to diversify.

SUMMARY

- Mean variance analysis framework forms the basis of modern portfolio theory.
- It relies on the assumption that asset returns can be entirely described by only their expected returns and volatilities.
- Diversification reduces portfolio risk.