Universidad del Desarrollo
Universidad de Excelencia

Finance I
Fall 2012

Session 7:
Portfolio Risk and Return

Agenda

1. **Recap**

2. **Portfolio Risk and Return**

3. **Closing**

1. Recap

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- **You can graph the possible combinations of assets (portfolios) in terms of risk and expected return**
  - The level of risk of a portfolio is determined by:
    - Variance of each asset
    - Covariance within assets
    - Weight of each asset in the portfolio
  - The expected return of a portfolio is determined by:
    - Expected return of each asset
    - Weight of each asset in the portfolio

- **There is an efficient “frontier” of portfolios**
  - Some portfolios have the same level of risk but different expected return. The efficient frontier or “Markowitz” frontier shows the portfolios with highest expected return for any level of risk

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2. Portfolio Risk and Return

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- **What if we can invest in a risk free asset**
  - Portfolio expected return?
  - Portfolio variance?

- **The combination of the risk free asset and the efficient frontier of portfolios generates a new set of possible investments**
  - Are these new investment possibilities more efficient than the Markowitz's efficient frontier?
  - Yes, it's more efficient. This line is called Capital Market Line or Securities Market Line
  - It represents the optimal (most efficient combinations) of a risk free asset and the market portfolio
  - Every one, regardless of risk aversion should have a portfolio combining the risk free asset and the market portfolio. NO OTHER PORTFOLIO may have a higher return/risk ratio (Sharpe ratio)

2. Portfolio Risk and Return

- **The separation theorem:**
  - All investors maximize the return to risk ratio (Sharpe ratio), regardless of risk aversion
  - All investors choose a portfolio within the Security Market Line, according to their risk aversion
- **All portfolios are combinations of the Market Portfolio and the risk free asset**

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3. Recap

- IS you can lend and borrow at a risk free rate, the Capital Market Line or Security Market Line represents the optimal combination of the market portfolio and a risk free asset
- The market portfolio doesn’t depend on the risk preferences of individuals, only the risk free rate and the Sharpe ratio
- All investors will choose the same risky portfolio (the market portfolio), but they will combine it with the risk free asset in a different proportion

3. Closing

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- **Please take some reasonable distance among your fellow classmates**
  - **This is an individual quiz!!!!**
- **Send me an email with the participants and leader of each group**
- **Next class :**
  - **Study chapter 10 BMA**
  - **I’ll “randomly” assign the group assignments**