



**Universidad del Desarrollo**  
Universidad de Excelencia

# **Finance I**

## **Fall 2012**

### **Session 10:**

## **CAPM, APT, 3 Factor Model**



## 1. Announcements

## 2. Flaws in CAPM

## 3. APT and 3 Factor Model

## 4. Closing

# 1. Announcements

## ▶ Midterm 1

- Overall results :OK av 4.9
- Women take the lead, as usual
- Midterm 2 will follow same format... questions very similar to quiz and quiz very similar to personal assignments.

## ▶ Groups are not yet formed, so I will assign randomly

- Chapters for each group will be posted tomorrow
- 1 video due before midterm 2
- There will be no formal presentation during class

# 1. Announcements

## ▶ Grading (4 Cs)

- 40% Content: The video must contain all relevant content of each chapter
- 40% Correct: Contents must be presented accurately (no conceptual errors)
- 20% Clear: Contents must be presented clearly and in simple language
- 10% Creativity: Use innovative ways of delivering content

## ▶ **Your classmates will use your videos to complement their study, make it easy for them to understand**

## ▶ **Total score adds 110%**

- Creativity is rewarded

**1. Announcements**

**2. Flaws in CAPM**

**3. APT and 3 Factor Model**

**4. Closing**

## 3. Flaws of CAPM

- ▶ **Base assumptions are not consistent with real world**
- ▶ **Betas are not stable over time**
- ▶ **Beta explains a small portion of returns => High error**
- ▶ **It works because we agree on the model, not because the model is correct**

**1. Announcements**

**2. Flaws in CAPM**

**3. APT and 3 Factor Model**

**4. Closing**

# 3. APT and 3 Factor Model

## ▶ APT (Arbitrage Pricing Theory, Ross):

- Required returns depend on additional risk factor, where market risk is only one of them
- The equation expands to include other risk factors, inherent to each asset.
- Following the same procedure as CAPM, we adjust for the assets sensitivity to each risk factor, multiplying it by its risk premium

$$\bullet R_a = R_f + b_1 * (R_1 - R_f) + b_2 * (R_2 - R_f) + b_3 * (R_3 - R_f) + b_4 * (R_4 - R_f) + \dots etc$$

## ▶ 3 Factor Model (Fama y French)

- Required return depends on market risk, company size and book to market ratio

$$\bullet R_a = R_f + b_m * (R_m - R_f) + b_{\text{tamaño}} * (R_{\text{small}} - R_{\text{large}}) + b_{\text{BM}} * (R_{\text{value}} - R_{\text{growth}})$$

$$\bullet (R_m - R_f) = 7\%$$

$$\bullet (R_{\text{small}} - R_{\text{large}}) = 3.7\%$$

$$\bullet (R_{\text{value}} - R_{\text{growth}}) = 5.2\%$$



- ▶ **Flaws of CAPM**
- ▶ **APT**
- ▶ **3 factor model**
- ▶ **Study chapter 29... recap of accounting and financial reporting**