

Formula Guide for Exam 4  
FINA 4310  
Spring 2018  
CRN 20690, 20691, 35178

**READ THIS FIRST:** This guide is intended to supplement your study. It is not intended to be an exhaustive list of every possible question you might see on the exam or a replacement for your own study habits. Any specific formulas you might be responsible for are given. You are responsible for knowing the formulas, and you may be asked to solve the equation for other values.

## 1 Chapter 8—Market Efficiency

### Autocorrelation

$$r_{t,i} = \alpha_i + \gamma_i \times r_{t-1,i} + \varepsilon_{i,t}$$

### Event Studies

#### Average Daily Alpha

$$\bar{\alpha}_t = \frac{1}{N} \sum_{i=1}^N \alpha_{i,t}$$

#### Cumulative Abnormal Return

$$CAR_T = \sum_{t \leq T} \bar{\alpha}_t$$

## 2 Chapter 9—Behavioral Finance

No formulas to know!

### 3 Chapter 13—Equity Valuation

#### Intrinsic Value of a Stock

$$V_0 = \frac{D_1 + P_1}{1 + k}$$

#### Dividend Discount Model

##### No Growth/Constant Dividend

$$V_0 = \frac{D_1}{k}$$

##### Constant Growth

$$V_0 = \frac{D_1}{k - g} = \frac{D_0 \times (1 + g)}{k - g}$$

##### Two-Stage Growth

$$V_0 = D_0 \sum_{t=1}^T \frac{(1 + g_1)^t}{(1 + k)^t} + \frac{D_T \times (1 + g_2)}{(1 + k)^T (k - g_2)}$$

#### Payout Ratio

$$Payout\ Ratio = \frac{Dividends}{Earnings}$$

#### Retention Ratio/Plowback Ratio

$$b = 1 - Payout\ Ratio$$

#### Present Value of Growth Opportunities

$$PVGO = \frac{D_1}{k - g} - \frac{E_1}{k}$$

## Price-to-Earnings Ratio

### Justified Price-to-Earnings Ratio

$$\frac{P_0}{E_1} = \frac{1 - b}{k - g}$$

### Trailing Price-to-Earnings Ratio

$$\frac{P_0}{E_0} = \frac{(1 - b) \times (1 + g)}{k - g}$$