

**AG312 Summary:**

**Advanced Corporate Finance & Financial Markets**

**Lewis Britton {201724452}**

AG312: Advanced Corporate Finance & Financial Markets

Academic Year 2018/2019

Word Count: {N/A}

**Real Options**

**1 Abandonment Options**

**1.1 Initial NPV**

**1.2 Individual NPVs**

**Where:**

**1.3 NPV of Abandonment Option**

**1.4 Value of Abandonment Option**

**2 Call Options – Black & Scholes Model**

**2.1 Normal Probability Distribution Function 1**

**2.2 Normal Probability Distribution Function 2**

**2.3 Call Option Price**

**2.4 Value of Outstanding Debt**

**2.5 Interest Rate on Outstanding Debt**

**International Capital Budgeting**

**1 International Capital Budget**

**1.1 Fisher Hypothesis: Real Interest Rate**

**1.2 Foreign Currency Nominal Interest Rate**

Real Rates Are Equal {}

**1.3 NPV in Foreign Terms**

**1.4 NPV Conversion to Domestic Currency**

**Where:**

**Uncovered Interest Parity**

|  |  |
| --- | --- |
|  |  |

**Where:**

Foreign Exchange Rate

**2: Domestic Capital Budget – Additional Reminder**

**3: Adjusted Present Value Model (APV) – Not Historically Examined**

**Seeking:**

Financing of the project: Leveraged vs. Unleveraged

Each CF is considered individually (each discounted at relative rate)

**Formulae Summary**

**Real Options: Abandonment Options**

**Real Options: Black & Scholes**

**International Capital Budgeting**

**Essays & Short Questions**

**Question 4**

1. Statement Comparison
2. Embedded Option Types

**1 Statement Comparison**

* Statement 1 **incorrect**
* (1) Real option values are always positive
* (2) If the project is profitable, an option will add value rather than creating separate
* Statement 2 **correct**
* (1) If remaining CFs are greater keep going, if they’re smaller abandon

**2 Embedded Options**

* **Timing Option,** Flexibility Option, Fundamental Option
* Delay investment in hope of better opportunity
* Better information could mean better NPV

**Question 5**

1. Convertible Bonds – Multiple Embedded Options
2. Motivations for Convertible Bonds & Breakeven
3. Valuing Firms with High Numbers of Patents

**1 Convertible Bonds**

* Conversion option to exchange bond for shares
* Recall: call: agreeing to buy at date and price; put: agreeing to sell at date and price
* (1) **Call**: option to **convert** to common stock at date and price
  + Bought at premium to market share price – relative to value of call option
  + Break Even: time taken to recover premium
  + Coupons: higher/certain; Dividends: lower/uncertain
  + Converting to stock changes coupons to dividends
* (2) **Call**: option to **retire/redeem** bond
  + Redeem at the call price (rather than convert)
  + The issuer would rather you **convert** or **redeem**
* Tricky to value: (1) calling stock requires future stock price estimations, (2) calling the bond requires future interest rate estimations therefor a model of both is required

**2 Motivations for Convertible Bonds & Breakeven**

* Claiming premium over market share price when the buyer converts
* Encourage investment due to less risk for the investor
* Shorter ytm so easier to finance long-term projects (i.e. not long-term debt)

**3 Valuing Firms with High Numbers of Patents**

* **Innovation**: invention is unknown
* **Description**: invention can be understood by the mentally less able
* **Plant Patent**: discovering a new plant, granted by government (20 years)
* **Utility Patent**: invent a new useful process/software/machine (20 years)
* **Design Patent**: appearance is improved in existing product, not function (14 years)
* *The Answer:*

**Question 6**

1. Types & Reasons for Mergers
2. Why Acquirers Pay Premium Over the Market Value of Target Company
3. Repo Market Mechanics

**1 Types & Reasons for Mergers**

* Horizontal, vertical, conglomerate

1. **Horizontal:** Acquisition in same industry/market
2. **Vertical:** Acquisition in different leagues (e.g. Boeing buys TUI)
3. **Conglomerate:** Acquisition by an unrelated body

* *Reasons:*

1. Efficiency/expertise
2. Economies of scale
3. Declining firms

**2 Why Acquirers Pay Premium Over Market Value of Target**

* When **target firm** shareholders are req. by law to sell shares, they get ‘fair’ value
* Hence, no incentive to pay more than market price for company
* Market average of 43%
* *Reasons:*

1. Efficiency/expertise
2. Economies of scale
3. Declining firms