

FIN 401: Final Exam Tip Sheet

Berk, J., DeMarzo, P., Strangeland, D., Horford, J., & Marosi, A. (2019). *Fundamentals of Corporate Finance, Third Canadian Edition*. Pearson Canada.

Chapter 14: Raising Equity Capital

Key Terms

- **Primary shares:** New shares issued by a company in an equity offering
- **Secondary shares:** Shares sold by existing shareholders in an equity offering
- **Initial public offering (IPO):** The process of selling stock to the public for the first time
- **Underwriter:** An investment banking firm that manages a security issuance and designs its structure
- **Primary offering:** New shares available in a public offering that raise new capital
- **Secondary offering:** An equity offering of shares sold by existing shareholders (as part of their exit strategy)

Equity Formulas

Shares to Issue	$\frac{\text{Shares Needed}}{\text{Subscription Price}}$
Subscription Price	A static price at which existing shareholders can participate in a rights offering
Value of a Right	$\frac{(\text{Current Stock Price} - \text{Subscription Price})}{\text{Number of Rights Needed} + 1}$
Number of Rights Needed	$\frac{\text{Old Shares Outstanding}}{\text{New Shares Issued}}$

Underwriters' Formulas

Firm Commitment	$\text{Proceeds to Firm} = \text{Number of Shares} \times \text{Price per Share}$
	$\text{Underwriters' Profit} = (\text{Selling Price} - \text{Cost}) \times \text{Number of Shares}$
Best Efforts	$\text{Proceeds to Firm} = (\text{Selling Price} - \text{Fee to Underwriters}) \times \text{Number of Shares}$
	$\text{Underwriters' Profit} = \text{Fee} \times \text{Number of Shares}$
Auction IPO	$\left(\frac{\text{Number of Shares Sold}}{\text{Number of Shares Bid}} \right) \times \text{Individual Bids}$

Chapter 15: Debt Financing

Private vs. Public Debt

Private Debt	Public Debt
Term Loan: a bank loan that lasts for a specific term	Indenture: a formal contract between a bond issuer and a trust company that specifies the firm's obligations to the bondholders
Syndicated Bank Loan: a single loan funded by a group of banks	Original Issue Discount Bond (OID): a coupon bond issued at a discount

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Revolving Line of Credit: a credit commitment for a specific time period to use as needed	Unsecured Debt: gives bondholders a claim to only the assets of the firm not already pledged as collateral on other debt Notes: unsecured corporate debt with maturities shorter than 10 years Debentures: unsecured corporate debt with maturities of 10 years or longer
Private Debt Cont'd	Public Debt Cont'd
Asset-Backed Line of Credit: a line of credit secured by pledging an asset as collateral	Secured Debt: specific assets are pledged as a firm's collateral Mortgage Bonds: real property is pledged as collateral Asset-Backed Bonds: specific assets are pledged as collateral Subordinated Debenture (Sub-Debt): a subsequent debenture issue that has lower priority than its outstanding debt
Private Placement: a bond issue sold to a small group of investors	Tranche: different classes of securities that make up a single bond issuance Domestic Bonds: issued by a local entity, purchased by foreigners Foreign Bonds: issued by a foreign company in a local market, intended for local investors and denominated in the local currency Eurobonds: international bonds not denominated in the local currency of the country in which they are issued Global Bonds: offered for sale in several markets simultaneously

Convertible Bonds

Conversion Price	$Conversion\ Price = \frac{Face\ Value}{Conversion\ Rate}$
Canada Call / Make-Whole Call	a callable bond with the call price set equal to the PV of the bond's remaining payments
Sinking Bond	a method for repaying a bond in which a company makes regular payments into a fund administered by a trustee over the life of the bond
Balloon Payment	large payment made at maturity if sinking payments not enough

Chapter 13: Options

Option Contract = 100 shares of stock

	Call Payoff	Put Payoff	Profit
Option Buyer	$MAX(St - E, 0)$	$MAX(E - St, 0)$	Payoff - Premium
Option Seller	$-MAX(St - E, 0)$	$-MAX(E - St, 0)$	Payoff + Premium
→ payoff is choosing the largest number in the MAX bracket, either St-E or 0			

St = stock price at expiration date; **E** = strike price (exercise price)

Break-Even Share Price = option buyer's profit = sellers' profit = 0

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Options Cont'd

	In the Money	At the Money	Out of the Money
Spot	Payoff > 0	= 0	< 0
Call	$S_t > E$	$S_t = E$	$S_t < E$
Put	$S_t < E$	$S_t = E$	$S_t > E$

Chapter 21: Risk Management

Futures and Forwards

Forwards: customized agreements between two parties known to each other to trade an asset on some future date at a price that is fixed today	
Futures: standardized agreements traded anonymously that mitigate credit risk through margins and marking to market	
Margin: the collateral investors are required to post on a future	
Marking to Market: gains and losses are computed daily based on the change in the market price of a futures contract	
<i>Buying</i> a product? Buy contracts	<i>Selling</i> a product? Sell contracts
Selling a Future <i>is similar to</i> Buying a Put	Hedge: locks in a price

Chapter 24: Mergers & Acquisitions

Merger: two firms agree to combine their operations

Acquisition: the acquiring firm purchases the voting shares of the target firm

- **Acquirer** (or bidder): a firm that is the buyer in a M&A deal (we call it firm A)
- **Target:** a firm that is acquired by another in a M&A deal (we call it firm B)

Types of M&A

- **Horizontal:** Same line of business
- **Vertical:** Producer-supplier relationship
- **Conglomerate:** Unrelated business

Finding Goodwill and FMV

Goodwill = Offer price – Fair Market Value (FMV) of the target firm

FMV = FMV of net fixed assets + net working capital = FMV of net fixed assets + (current assets – current liabilities)

Estimating the Value of Synergies

Step 1: Estimate the incremental CFs (ΔCF) from the merger: $\Delta CF = CF_{A+B} - (CF_A + CF_B)$

If $\Delta CF > 0$, the merger generates synergies

Step 2: Find Synergy: $S = \Delta CF/r$

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Finding Maximum # of shares issued and Maximum share exchange ratio

Max. # of shares issued = $(V_B + \text{Synergy}) / \text{share price}_A$

Max. share exchange ratio = Max. # of shares issued / # of shares_B

Finding Maximum # of shares Firm A can offer to firm B for the NPV of the transaction to be 0

- Acquirer's NPV of a stock merger = 0 $\Rightarrow P_{A, \text{post}} = P_{AB} = P_{A, \text{pre}}$
- NPV_A** = $V_B + S - \text{stock offer} \rightarrow 0 = V_B + S - (P_{AB} \times \# \text{ of shares offered to B})$
- \rightarrow Solve for # of shares offered to B

Finding share price of the combined firm assuming the market is fooled by the growth in EPS (Assume P/E ratio of firm A stays constant)

Step 1: Find **P/E ratio_A** = $\text{share price}_A / \text{EPS}_A$ (find this if it is not given)

$\text{EPS}_A = \text{Earnings}_A / \# \text{ of shares}_A$

Step 2: Find **EPS_{AB}** = $(\text{Earnings}_A + \text{Earnings}_B) / (\# \text{ of shares}_A + \# \text{ of shares issued})$

of shares issued = table 1 shows how to find it

Step 3: $P/E_A = P/E_{AB} = \text{share price}_{AB} / \text{EPS}_{AB}$

\rightarrow Solve for **share price_{AB}**

Finding new P/E ratio of the combined firm if the NPV of the acquisition is zero and the market knows it

$\text{NPV} = 0 \rightarrow P_{AB} = P_A$

$\rightarrow \text{P/E}_{AB} = (P_{AB} \text{ or } P_A) / \text{EPS}_{AB}$

Stock Offer & Cash Acquisition

- # of new shares issued = # of shares offered to B = converted target's shares
- # of shares \rightarrow pre-merger # of shares
- Share price \rightarrow pre-merger share price
- P_{post} \rightarrow post-merger share price
- S = synergy

Table 1:	Stock Offer
Firm A (acquirer or bidder)	$V_A = \# \text{ of shares}_A \times \text{share price}_A$ $\text{Earnings}_A = \# \text{ of shares}_A \times \text{EPS}_A$ $P_{A, \text{post}} = P_{AB} = V_{AB} / (\# \text{ of shares}_A + \# \text{ of shares offered to B})$ $V_{A, \text{post}} = V_{AB}$ $\text{NPV}_A = V_B + S - \text{stock offer}$ OR $\text{NPV}_A = (P_{A, \text{post}} - P_{A, \text{pre}}) \times \# \text{ of shares}_A$

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Firm B (target)	$V_B = \# \text{ of shares}_B \times \text{share price}_B$ $\text{Earnings}_B = \# \text{ of shares}_B \times \text{EPS}_B$ $P_{B, \text{post}} = \text{stock offer} / \# \text{ of shares}_B$ $\text{Stock offer} = \# \text{ of shares issued} \times P_{AB}$ $V_B^* = \text{Value of firm B to firm A} = V_B + S \rightarrow \text{price firm A has to pay to acquire firm B}$ $\text{Merger premium} = \text{stock offer} - V_B$ $\% \text{ Merger premium} = \$ \text{ Merger premium} / V_B$						
Firm AB (combined firm)	$\text{Earnings}_{AB} = \text{Earnings}_A + \text{Earnings}_B$ $\# \text{ of new shares issued} = \text{Value of firm B to firm A} / \text{share price}_A$ OR $\# \text{ of new shares issued} = \text{share exchange ratio} \times \# \text{ of shares}_B$ For example: Firm A buys firm B. Share exchange ratio is 0.5 (which means Firm B's shareholders will receive 1 share of A stock for every 2 shares they hold in B). Firm B has 150 000 shares outstanding. <table border="1" data-bbox="318 747 1536 968"> <tr> <td># of shares B</td> <td># of shares AB</td> </tr> <tr> <td>2</td> <td>1</td> </tr> <tr> <td>150 000</td> <td># of new shares issued = 150 000 x 1 / 2 = 75000</td> </tr> </table> $\text{Share exchange ratio} = \# \text{ of new shares issued} / \# \text{ of shares}_B$ $\text{Total \# of shares}_{AB} = \# \text{ of shares}_A + \# \text{ of new shares issued}$ $\text{Share price}_{AB} (P_{AB}) = V_{AB} / \text{Total \# of shares}_{AB}$ $V_{AB} = \text{Value}_A + \text{Value}_B + \text{Synergy}$ $\text{EPS}_{AB} = \text{Earnings}_{AB} / \text{Total \# of shares}_{AB}$ $\text{P/E ratio}_{AB} = P_{AB} / \text{EPS}_{AB}$	# of shares B	# of shares AB	2	1	150 000	# of new shares issued = 150 000 x 1 / 2 = 75000
# of shares B	# of shares AB						
2	1						
150 000	# of new shares issued = 150 000 x 1 / 2 = 75000						

Table 2:	Cash Acquisition
Firm A	$V_A = \# \text{ of shares}_A \times \text{share price}_A$ $\text{NPV}_A = V_B + \text{Synergy} - \text{cash offer}$
Firm B	$V_B = \# \text{ of shares}_B \times \text{share price}_B$ $\$ \text{ Merger premium} = \text{Cash offer} - V_B$ $\% \text{ Merger premium} = \$ \text{ Merger premium} / V_B$ $\text{Cash offer} = \text{offer price} \times \# \text{ of shares}_B$
Firm AB	$\# \text{ of shares}_{AB} = \# \text{ of shares}_A$ $\text{Share price}_{AB} = V_{AB} / \# \text{ of shares}_{AB}$ $\text{Value}_{AB} = V_A + V_B + S - \text{Cash offer}$ OR $V_{AB} = V_A + \text{NPV}_A$ $\text{Cash offer} = \text{offer price} \times \# \text{ of shares}_B$

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Chapter 25: Corporate Governance

Corporate Governance: The system of controls, regulations, and incentives designed to minimize agency conflicts between managers and investors and prevent corporate fraud.

Inside Directors: Members of a board of directors who are employees, former employees, or family members of employees.

Grey Directors: Members of a board of directors who are not as directly connected to the firm as insiders are but have existing or potential business relationships with the firm.

Outside (or independent) Directors: Any member of a board of directors other than an inside or grey director.

Captured Board: A board of directors whose monitoring duties have been compromised by connections or perceived loyalties to management.

Backdating: The practice of choosing the grant date of a stock option retroactively so that the date of the grant would coincide with a date when the stock price was lower than its price at the time the grant was actually awarded.

Insider Trading: Trading a person does on the basis of privileged information.

Dual Class Shares: One class of a firm's shares that has voting rights that are superior to those of the other class.

Pyramid Structure: A way for an investor to control a corporation without owning 50% of the equity whereby the investor first creates a company in which he has a controlling interest. This company then owns a controlling interest in another company. The investor controls both companies but may own as little as 25% of the second company.

Tunnelling: A conflict of interest that arises when a shareholder who has a controlling interest in multiple firms moves profits (and hence dividends) away from companies in which he has relatively less cash flow rights toward firms in which he has relatively more cash flow rights.

Stakeholder Model: The agency costs and the ways to control them that we have discussed are general to all companies anywhere in the world. However, the United States is somewhat of an exception, in that it focuses solely on maximizing shareholder welfare. Most countries follow what is called the stakeholder model, giving explicit consideration to other stakeholders—in particular, rank-and-file employees.

Compensation Policies: By tying managers' compensation to firm performance, boards can better align managers' interests with shareholders' interests. Care must be taken to make sure managers do not have incentives to try to manipulate the firm's stock price to garner a big compensation payout.

Monitoring by the Board of Directors and Others: the board of directors hires managers, sets their compensation, and fires them if necessary. Some boards become captured, meaning that they act in the interests of managers rather than shareholders. Boards with strong outside directors who were nominated before the current CEO took the helm of the firm are the least likely to be captured.

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