M&A Review - Theory **Chand Sooran**

Develop a framework for understanding acquisitions and buyouts along the following dimensions of risk:

Valuation
Legal
Accounting
Tax
Transaction Mechanics

Seven Recurring Corporate Themes

From Copeland et al., Valuation:

The Industry Shaper: Repeatedly spots discontinuities in industries and acts pre-emptively to shape the emerging new industry to its own advantage (e.g. Amazon.com)

The Deal Maker: Systematically beats the market through superior skill at spotting and executing deals. This could be either through superior insight into the inherent value of companies or through superior insight into specific industries (e.g. Cisco).

The Scarce Asset Allocator: Efficiently allocates capital, cash, time and talent across multiple business units (e.g. ABB)

The Skill Replicator: Repeatedly transfers particular skills across business units. The skill of lateral transfer is a distinct skill from the functional skill itself (e.g. GE)

The Performance Manager: Has proven skills at instilling a high performance ethic with matching incentives and MIS processes across multiple business units (e.g. Intel)

The Talent Agency: Institutionalizes a model for attracting, retaining and developing talent that is truly distinctive relative to all others in the industry (e.g. BCG)

The Growth Asset Attractor: Possesses a proven and sustained record of consistently leading in innovation in multiple businesses (e.g. IBM)

Some M&A Facts

Global M&A is growing exponentially, with particular growth in Europe
Big deals are advised, smaller deals (greater number) are not

Typical investment bank compensation: 0.25% for very big deals, 1% norm, 2-3% for smaller deals
Most corporates have M&A teams
Investment bank advantage: ability to raise capital
Three types of mergers: vertical mergers, horizontal mergers and conglomerate mergers
Mergers occur in waves (six in the 20th century)
Waves track periods of rising equity values
Out-of-market acquisitions are a recipe for disaster
Mergers typically do not work but when they do, their success is spectacular

- 7% underperformance in the first year
- 70% of the time, the merged company's PAT is less than the sum of the separate PATs from the previous year
- It takes 5 years on average for margins to return to the industry average

Common justifications for mergers:

- Changing industry economics (technological shifts; regulatory shifts)
- Synergy (economies of scale and scope; efficiencies in production, distribution and procurement; reduction in SG&A)
- Financial synergies (lower costs of financing with larger, putatively safer, firms)
- Managerial inefficiencies (oust bad management)
- Valuation errors (cheap are targets and overvalued use stock as currency)
- Value transfers (tax; monopoly rent-seeking; union busting; from bondholders - buy a highly leveraged company)
- Hubris

WACC DCF Valuation Methodology

Objective: To obtain the present value of cash generated by net assets, thereby valuing debt and equity

Net Assets = Total Assets -(Current Liabilities - Short Term Interest Bearing Liabilities)
Net Assets = Net Working Capital + PP&E + Other Assets
Net Assets must be equal to the sum of Interest Bearing Liabilities and Equity

Value of Net Assets = Value of the Firm = Value of Debt (I.e. Interest Bearing Liabilities) + Value of Equity

Approach:

1. Determine the cash flows for years 1 to N
2. Calculate the appropriate discount rate
3. Calculate the terminal value at end of year N
4. Calculate the present value of the cash flows and of the terminal value and sum these two numbers, which is equal to the value of the firm

5. Subtract the value of debt to obtain the value of equity

Free Cash Flow to the Firm: Cash generated that is available for creditors and shareholders

Free Cash Flow to Equity: Cash generated that is available for shareholders

Determining the Cash Flows:

Sales	EBIT x (1 - Tax Rate)
-COGS	+ Depreciation
= Gross Profit (EBITDA)	+ Amortization
- SG&A	+ Other Non-Cash Charges
= Operating Profit (EBITDA)	- Change in Net Working Capital
- Depreciation	- Change in PP&E (CapEx)
- Amortization	- Change in Other Assets
= PBIT (EBIT)	= Free Cash Flow
- Interest	
= PBT (EBT)	
- Taxes	
= Net Income	

Calculating the Appropriate Discount Rate:

We want to have a discount rate that is appropriate to the risks of the **project** under consideration and that incorporates the tax shield of debt

$$WACC = k_D(1-t)(\%D) + k_E(\%E)$$

k_D	The opportunity cost of debt; what creditors could earn by lending to similar projects
k_E	The opportunity cost of capital; what shareholders could earn by investing in similar projects
%D	The post-execution target capital structure
t	The tax rate for ordinary income

We use the CAPM model to determine k_E

$$k_E = r_f + \beta(\text{Market Risk Premium})$$

r_f = Long-term Treasury rate - 1% <-- trying to get a proxy for the long-term bill rate because the market risk premium relates to bills

The 1% is the liquidity premium

Market Risk Premium = 8.8% (from historical performance of market relative to bills)
β found by looking at comparables

Find comparables
Compare debt structures --> Look at the ratio of MV Equity to (MV Equity + BV Debt) <-- assuming BV Debt = MV Debt
For each comp, unlever its β --> $\beta_{unlevered} = \beta_{levered}$ x (MV Equity)/(MV Equity+BV Debt)
Calculate the average $\beta_{unlevered}$
Relever this average --> $\beta_{levered} = \beta_{levered\ average}$ x (MV Equity + BV Debt)/(MV Equity) <-- use **target capital structure**

Calculating the Terminal Value:

There are three methods to calculate terminal value:

Liquidation	Best for low growth firms
Perpetuity	Best for stable cash generating firms
Multiples	Best for high growth firms

The Liquidation method:

The termination value is assumed to be the **book** value of net assets in year n
TV = NWC + PPE + Other Assets

The Perpetuity method:

g = annual growth rate in cash flows from year N to infinity (by assumption)
FCF_n = FCF at year n

$TV_n = (FCF_n) \times (1-g)/(WACC - g)$

The Multiples method:

Determine multiple of pre-interest earnings (EBIAT) at which comparables trade and apply to own project's EBIAT

$Multiple_{comparable}$ = (MV Equity + BV Debt)/EBIATand compute average multiple

TV_n = Multiple x EBIAT (or Revenues, or whatever other index used)

Putting It All Together:

Value of the Firm = Value of Equity + Value of Debt --> **Value of Equity = Value of the Firm - Value of Debt**

Value of the Firm = Σ PV FCF + Σ PV TV

Implementation Notes (from Cases):

1. You want to use the capital structure that is unique and appropriate to the project
2. There are two sorts of systematic risk in the $\beta_{levered}$: operating risk and financial risk (which comes from leverage)
3. The $b_{unlevered}$ reflects the operating risk of the assets
4. **Only count as debt interest-bearing liabilities**
5. If there is recourse debt, then you use the parent's cost of debt; if no recourse, then use the project's cost of debt
6. Don't just focus on valuation; consider other statistics as well
7. **Don't forget to deduct the value of the debt when calculating the value of the equity**
8. There are conditions under which multiples are inappropriate
    - Cyclical industry --> volatile multipliers
    - Multiples may not take into account any step-up
9. If you use a 5-year β, then use a 5-year capital structure

<u>APV Valuation Methodology</u>

Useful in situations in which the firm is highly leveraged

1. Pretend the firm has a certain % of debt (the target %)
2. Value the all equity company, discounting at k_A
3. Subtract the MV of debt it does have
4. Add the tax shields --> estimated value of the equity

For each tranche of debt --> the tax shield of debt is equal to the interest payment (using average debt balances) x tax rate
Discount the tax shield of debt stream using the **yield** on that tranche

Note: Unleveraging companies caluses P/Es to go up