Why do M&As Happen?

Theory	Motivation
Operating Synergy	Improve efficiency through economies of scale or scope by acquiring a customer, supplier or competitor or enhance technical or innovative skills or gain access to scarce resources
Economies of scale	
Economies of scope	
Complementary resources	
Market Power	Actions taken to boost selling prices above competitive levels by affecting supply and demand

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Why do M&As Happen?

Theory	Motivation
Financial Synergy	Lower cost of capital; increase borrowing capacity
Diversification	Position the firm in higher-growth products or markets
Hubris	Acquirers believe their valuation of the target is more accurate than the market's; causing them to overpay by overestimating synergy.

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Why do M&As Happen?

Theory	Motivation
Strategic Realignment	Acquire capabilities to adapt more rapidly to environmental changes than could be achieved if they were developed internally
Technological change	
Regulatory & Political change	
Managerialism (Agency Problem)	Increase the size of the company to increase the power and pay of managers

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Why do M&As Happen?

Theory	Motivation
Buying Overvalued Assets	Acquire assets more cheaply when the market value of equity of existing companies is less than the cost of buying or building the assets.
Tax Considerations	Obtain unused net operating losses and tax credits and asset write-ups and substitute capital gains for ordinary income.

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Bidding for M&A

Common bidder strategy objectives:

- Gain control of the target firm
- Minimise the size of the control premium
- Minimise transactions costs
- Facilitate post-acquisition integration

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Pros & Cons of alternative takeover tactics

TACTIC	ADVANTAGES	DISADVANTAGES
Casual pass (i.e., informal inquiry)	May learn target is receptive to deal	Gives advance warning
Bear hug offer (i.e., letter to target board forcefully proposing takeover)	Raises pressure on target to negotiate a deal	Gives advance warning
Proxy contest (i.e., an effort to obtain target dismantle target defences)	Less expensive than tender offer	Adds to transactions costs
	May obviate need for tender offer	Relatively low probability of success if a stock is widely held

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Pros & Cons of alternative takeover tactics

TACTIC	ADVANTAGES	DISADVANTAGES
Open market purchases (i.e., acquirer buys target shares on the public market)	May lower cost of transaction	Can result in a less than controlling interest
	Create profit if target agrees to buy back bidder's toehold position	Could alienate target management and make a friendly takeover more difficult
	May discourage other bidders	Could suffer losses if takeover attempt fails
		Some shareholders could hold out for higher price
		Limits on the amount one can purchase without disclosure

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Pros & Cons of alternative takeover tactics

TACTIC	ADVANTAGES	DISADVANTAGES
Hostile tender offer (i.e., direct offer to target shareholders to buy shares not supported by target's board or management)	Pressures target shareholders to sell stock	Tends to be the most expensive tactic
	Bidder not bound to purchase tendered shares unless desired number of shares tendered	Disrupts postmerger integration because the potential loss of key target managers, customers, and suppliers
Litigation (i.e., lawsuits accusing target board of improper conduct)	Puts pressure on the target board	Expense

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Pre-offer defenses

- **Poison Pills** – Raising the cost of acquisitions
- **Shark Repellants** – Change bylaws or charter to strengthen Boards defenses
- **Golden Parachutes** – Change of Control Payments

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Post-offer defenses

- **Greenmail** – Bidders investment purchased at a premium to what bidder paid as inducement to refrain from any other activity
- **Standstill agreement**
- **White Knights**
- **Others** - Employee Stock options, Leveraged recapitalization, Share repurchase or buyback plan, Corporate restructuring, Litigation

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VALUATION

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Free Cash Flow to the Firm

$$FCFF = \{EBIT\ (1 - Tax\ Rate) + Depreciation\ \&\ Amortization - \Delta\ Net\ Working\ Capital\}^{b} - Gross\ Capital\ Formation^{a}$$

Cash flow (after taxes and reinvestment requirements) available to repay lenders and/or pay common and preferred dividends and repurchase equity.

[a] Cash from Investing activities

[b] Cash from Operating activities

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Free Cash Flow to Common Equity Investors

$$FCFE = (Net\ Income + Depreciation\ \&\ Amortization - \Delta\ Net\ Working\ Capital)^b - Gross\ Capital\ Formation^a + (New\ Preferred\ Equity\ Issues - Preferred\ Dividends + New\ Debt\ Issues - Principal\ Repayments)^c$$

Cash flow (after taxes, debt repayments and new debt issues, preferred dividends, preferred equity issues, and all reinvestment requirements) available for paying dividends and/or repurchasing common equity.

[a] Cash from Investing activities
[b] Cash from Operating activities
[c] Cash from Financing activities

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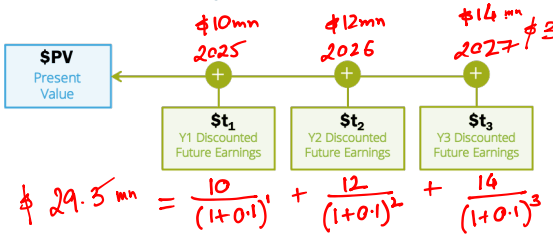
Net Present Value

$$NPV = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_0$$



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Discount Rates

- **Cost of Equity - CAPM**

$$k_e = R_f + \beta(R_m - R_f)$$

Where:

R_f = risk-free rate of return

β = variation of an individual stocks return as percent of variation of overall market

R_m = expected rate of return on equities

$R_m - R_f$ = risk premium

- **Weighted Average Cost of Capital – WACC**

$$WACC = k_e \times \frac{E}{D+E+PR} + i(1-t) \times \frac{D}{D+E+PR} + k_{pr} \times \frac{PR}{D+E+PR}$$

Where:

E = Market Value of equity
D = Market Value of debt
PR = Market value of preferred stock
t = Marginal tax rate
i = Pre-tax interest rate

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The Zero Growth Valuation Model

- This model assumes that free cash flow is constant in perpetuity.

$$P_{0,FCFF} = \frac{FCFF_0}{WACC}$$

Where: $P_{0,FCFE}$ is the valuation $FCFF_0$ is the free cash flow to the firm at time 0 and WACC is the cost of capital

$$P_{0,FCFE} = \frac{FCFE_0}{k_e}$$

Where: $P_{0,FCFE}$ is the valuation $FCFE_0$ is the free cash flow to common equity at time 0 and K_e is the cost of equity

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The Zero Growth Valuation Model

What is the enterprise value of a firm whose annual $FCFF_0$ of $1 million is expected to remain constant in Perpetuity and whose cost of capital is 12%?

FCFF = $1 mn.
WACC = 12%

$$P = \frac{FCFF}{WACC} = \frac{1}{0.12} = \$8.33 \text{ mn.}$$

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The Constant Growth Valuation Model

- This model is applied in mature markets, characterized by a predictable rate of growth.

$$P_{0,FCFF} = \frac{FCFF_1}{(WACC - g)}$$

Where: $P_{0,FCFE}$ is the valuation $FCFF_1$ is the free cash flow to the firm at time 1 and WACC is the cost of capital, while g is the growth rate

$$P_{0,FCFE} = \frac{FCFE_1}{(k_e - g)}$$

Where: $P_{0,FCFE}$ is the valuation $FCFE_1$ is the free cash flow to common equity at time 1 and K_e is the cost of equity , while g is the growth rate

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The Constant Growth Valuation Model

Determine the enterprise value of a firm whose projected free cash flow to the firm next year is $1 million, WACC is 12%, and expected annual cash flow growth rate is 6%?

$1 mn
$1.06 mn
$1.06(1+0.06)

FCFF = $1 mn.
WACC = 12%
g = 6%

$$P = \frac{1}{(0.12 - 0.06)} = \$16.66 \text{ mn.}$$

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The Variable Growth Valuation Model

- If the industry has variable periods of growth the present value (PV) of the firm is the discounted cash flow during high growth period plus discounted cash flow during stable-growth period.

$$P_{0,FCFF} = \sum_{t=1}^{n} \frac{FCFF_0 (1+g_t)^t}{(1+WACC)^t} + \frac{P_n}{(1+WACC)^n}$$

Where: P_n is the terminal value

$$P_n = \frac{FCFF_n (1+g_m)}{WACC_m - g_m}$$

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The Variable Growth Valuation Model

Estimate the enterprise value of a firm whose free cash flow is projected to grow at a CAGR of 35% for the next 5 years. Thereafter, growth is expected to slow to a more 5% annual rate. The current years cash flow to the firm is $4 million. The firm's WACC during the high growth period is 18% and 12% beyond the 5th year

$t = 5$
$g_t = 35\%$
$FCFF = \$4mn.$
$WACC_t = 18\%$
$WACC_m = 12\%$
$g_m = 5\%$

$$\frac{FCFF(1+g_t)^t}{(1+WACC_t)^t} + \frac{FCFF_n(1+g_m)}{(WACC_m - g_m)(1+WACC)^n}$$

$$\frac{4(1+35\%)}{(1+18)} + \frac{4\times1.35^2}{1.18^2} + \frac{4\times1.35^3}{1.18^3} + \frac{4\times1.35^4}{1.18^4} + \frac{4\times1.35^5}{1.18^5} + \frac{\frac{4\times1.35^5\times1.05}{0.07}}{1.18^5}$$

$\frac{4\times1.35}{1.18}$

$= \$4.57 + \$5.28 + \$6 + \$6.88 + \$7.85 + \$117.8$
$= \$30.50 + \$117.8 = \$148$ mn.

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When to use a valuation method

Discounted cash flow

- The firm is publicly traded or private with identifiable cash flows.
- A start-up has some history to facilitate cash flow forecasts.
- An analyst has a long time horizon.
- An analyst has confidence in forecasting the firm's cash flows.
- Current or near-term earnings or cash flows are negative but are expected to turn positive in the future
- A firm's competitive advantage is expected to be sustainable.
- The magnitude and timing of cash flows vary significantly.

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When to use a valuation method

Comparable companies

- There are many firms exhibiting similar growth, return, and risk characteristics.
- An analyst has a short-term time horizon.
- Prior, current, or near-term earnings or cash flows are positive.
- An analyst has confidence that the markets are, on average, right.
- Sufficient information to predict cash flows is lacking.
- Firms are cyclical. For P/E ratios, use normalized earnings (i.e., earnings averaged throughout the business cycle).

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When to use a valuation method

Comparable transactions

- Recent transactions of similar firms exist.
- An analyst has a short-term time horizon.
- An analyst has confidence the markets are, on average, right.
- Sufficient information to predict cash flows is lacking.

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When to use a valuation method

Same or Comparable Industry

- Firms within an industry or a comparable industry are substantially similar in terms of profitability, growth, and risk.
- An analyst has confidence the markets are, on average, right.
- Sufficient information to predict cash flows is lacking.

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When to use a valuation method

Replacement Cost Approach

- An analyst wants to know the current cost of replicating a firm's assets.
- The firm's assets are easily identifiable, tangible, and separable.
- The firm's earnings or cash flows are negative.

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When to use a valuation method

Tangible Book Value

- The firms' assets are highly liquid.
- The firm is a financial services or product distribution business.
- The firm's earnings and cash flows are negative.

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When to use a valuation method

Breakup Value

- The sum of the value of the businesses or product lines composing a firm are believed to exceed its value as a going concern.

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When to use a valuation method

Liquidation Value

- An analyst wants to know asset values if they were liquidated today.
- Assets are separable, tangible, and marketable.
- Firms are bankrupt or subject to substantial financial distress.
- An orderly liquidation is possible.

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When to use a valuation method

Real Options (Contingent Claims)

- Additional value can be created if management has a viable option to expand, delay, or abandon an investment.
- Assets not currently generating cash flows have the potential to do so.
- Assets have characteristics most resembling financial options.
- The asset owner has some degree of exclusivity (e.g., a patent).

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