(SnT FAC Project 2)

Mergers and Acquisitions

- Mergers:
  A merger is the type of agreement where two companies join together to form a new company.
- Acquisitions:
  The term 'acquisition' is used when the assets and liabilities of a smaller company is purchased by a larger one by paying shares, cash or other assets to the target company's shareholders.

Synergy

- Synergy represents the estimated cost savings or incremental revenue arising from a merger or acquisition. This means that consolidated companies will be able to produce better value in comparison to the sum of their combined value . Hence, they will be able to benefit from higher levels of success than they would otherwise have.
- Synergy can be expressed in the form of the following formula:
  $V(AB) > V(A) + V(B)$
- Where V(AB) stands for the value of the combined companies and V(A) and V(B) for the stand-alone value of company A and B. So the value of synergy is the difference of the value of the combined companies and the stand-alone value of the two companies:
  $S = V(AB) – (V(A) + V(B)$

Synergy

- If a company worth \$100M(V(A)) acquires another smaller-sized company which is worth \$20M(V(B)) – post-combination, the combined company is valued at \$150M(V(AB)), so the synergy value comes out to be:
  S = V(AB) – (V(A) + V(B))=\$150-(\$100+\$20)=\$30
- Synergy leads to the increase of value of the both merging firms. Synergy can be roughly divided into two types, operational and financial synergy.

Types of Synergy

- Operational synergy:
  → **Economics of scale-** the merger increases the size of the company's operation, so it helps in lowering the costs per unit produced. The synergy will be even more if there is higher similarity in the operations of the merging firms.
  → **Market power-** market power synergy generally occurs in mature markets, when the market is consolidating due to overcapacity.
  It generally describes the the ability of a company, as a market participant, to control the price. If a company has higher market power over its other competitors, then the company will have the monopoly in the market, through which it can generate additional profits, and can put barriers for potential competition.

Types of Synergy

- Operational synergy:
  →**Complementary resources-** Here two companies combine different set of resources that are assumed to be mutually supportive. In a broader sense, resources can be, all assets, capabilities, organizational processes, firm attributes, information, knowledge controlled by a firm that enables the firm to conceive of and implement strategies that improve its efficiency and effectiveness.

Types of Synergy

- Financial Synergy:
  Financial synergies are assumed to result from lower cost of capital. This can be achieved by the merger in different ways.
  →Due to merger the size increases, asset increases, and thereby a higher dept capacity of the firm, which ultimately gives access to cheaper capital.
  → In unrelated mergers, where companies asymmetric business cycle merges, the combined income stream of the firms stabilizes and their varience decreases.
  →The merging companies can establish an internal capital market, which might be more efficient in allocating capital due to better information.
  → An other type of financial synergy which helps the merging firms is tax-related synergy. Tax synergies are not a sustainable source of value and rather a one-time benefit resulting from the merger.

M&A-Winner's Curse

- The winner's curse is a tendency for the winning bid in an acquisition to exceed the valuation of the company.
- Winner’s curse may be the result of emotions, incomplete information, a simple miscalculation, or a number of other factors regarding the company.
- In general, subjective factors usually create a value gap because the bidder faces a difficult time rationalizing an item's true intrinsic value. As a result, the largest overestimation of an item's value ends up in acquiring a potential seller.
- The winner’s curse phenomenon is more likely to be observed if there is divergence of opinion about value of acquisition gains or if there is a high degree of competition from potential buyers to gain control of the seller.

Diversification

- Diversification is a corporate action whereby a company either diversifies into a new line of products.
- The company may believe that diversifying unlocks synergies that promote growth or reduce prevailing risks in other operations.
- Economics of scope also plays a major role here since the production cost may decrease by sharing resources.
- Even if one venture fails, there are other ventures present to back the losses and keep the company stable.
- For example, TATA Group has been diversifying its product line for several past years and now has a presence in most of the sectors.

Diversification Acquisition

- Diversification acquisition is a corporate action whereby a company takes a controlling interest in another company to expand its product and service offerings.
- Big corporations typically find themselves involved in diversification acquisitions either to minimize the potential risks of one business component not performing well in the future, or to maximize the earnings potential of running a diverse operation.
- For example, in 2019 Reliance Industries Limited(RIL) acquired 100 percent stake in the British toy retailer Hamley's. This acquisition will help Reliance Brands become a dominant player in the global toy retail industry.

Economics of Scale

- It is the cost advantage that the company has with the increased output of a good or service.
- Generally, when the fixed costs are covered, the marginal cost of production for each additional product decreases, increasing profits.
- Walmart is the largest US general retailer. They can buy in such enormous bulk, and force suppliers to accept such low prices, so they can sell at low prices to customers.
- Although an economy of scale may seem beneficial to a company, it has some limits. Marginal costs never decrease perpetually. At some point, operations become too large to keep experiencing economies of scale.

Economics of Scope

- Economics of scope basically says that the average cost of products decreases as diversification of goods produced takes place.
- One simple way to think about it is to imagine that it is cheaper for two goods to share production resources instead of each one of them having their individual product lines.
- For example airlines take major advantage of this concept. Passenger airlines frequently transport freight cargo underneath the plane. This optimizes the use of the plane, the fuel, and the flight crew already needed to run a passenger flight.

M&A Waves

A merger wave is an intense period of merger activity in a particular sector or industry and lasts from a short period to a long time partly depending on the performance of the market and the participating companies.

M&A ACTIVITY IN INDIA

M&A activity has seen phenomenal rise in India in the past few years and some patterns are discernible in this mass of financial transactions. India has passed several milestones and come a long way from overseas investments of about $0.7 billion in 2000-01 to $2.7 billion in 2005-06 and finally to $11 billion in 2006-07.

M&A Waves

M&A IN TIMES OF PANDEMIC

Deal-making in India in the first three months of this calendar year raced to a four-year high, bucking the global trend where mergers & acquisitions fell sharply. Corporate India closed 608 deals worth $13.3 billion during the period, up from 408 deals worth $12.1 billion a year ago.

While global deal-making fell to its lowest opening period since 2020, the start of the Covid-19 pandemic, M&A activity involving India witnessed a strong start as the first quarter period reached a four-year high. The acquisition of technology and healthcare, availability of private equity and abundant cash reserves as well as historically low interest rates were key factors pushing the M&A growth so far this year.

M&A Waves

M&A deals in healthcare industry in India post pandemic

The merger and acquisition (M&A) deals in the healthcare industry has seen a jump in terms of value in the first six months of the year 2021, to $1.9 billion as compared to $772 million during same period of previous year, owing to factors including digitisation, supply chain optimisation, new business models and incubation.

Private equity investments drove deal values in the first quarter of 2022 with 441 deals valued at $9.4 billion, which is the highest number of deals recorded in the opening quarter of any year.

CROSS BORDER M&A

A cross border merger explained in simplistic terms is a merger of two companies which are located in different countries resulting in a third company. A cross border merger could involve an Indian company merging with a foreign company or vice versa.A company in one country can be acquired by an entity (another company) from other countries. The local company can be private, public, or state-owned company. In the event of the merger or acquisition by foreign investors referred to as cross-border merger and acquisitions.

TYPES OF CROSS BORDER MERGERS

The most popular types of mergers are horizontal, vertical, market extension or marketing/technology related concentric, product extension, conglomerate, congeneric and reverse.

Inbound M&A’s

In this process foreign company mergers with or acquires an Indian company. E.g. Daichii Acquiring Ranbaxy

Outbound M&A’s

In this process an Indian company merger with or acquires a foreign company. E.g. Tata steel Acquires Corus

CROSS BORDER M&A

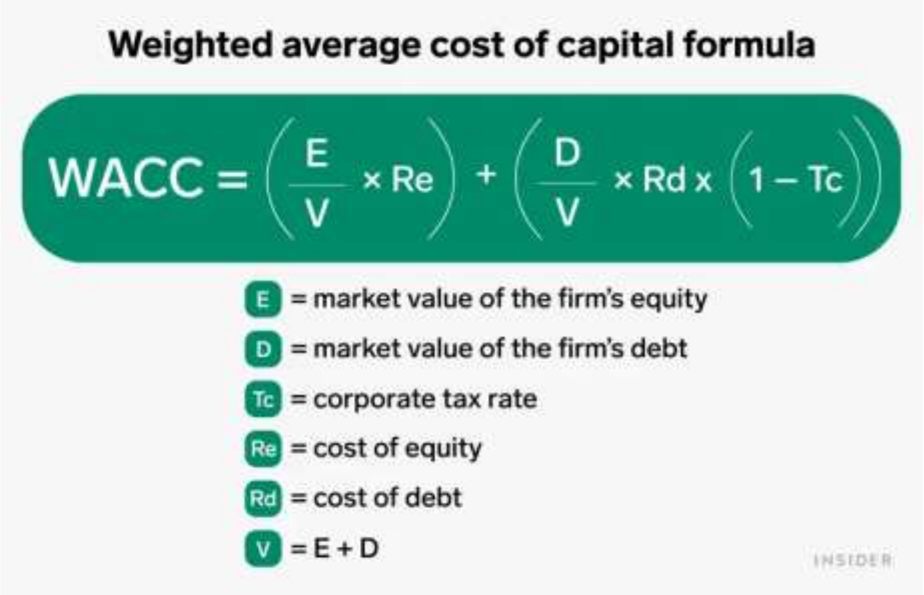
- the Jet-Etihad deal and the Air Asia deal in the aviation sector in India are good examples of how cross border M&A deals need to be evaluated . For instance, there is both support and resistance to the Jet-Etihad deal as well as for the Air Asia deal. This has made other foreign companies weary of entering India.
- Past of Daimler-Chrysler Merger which was a cross border M&A where Daimler-Benz was a German automotive company and Chrysler Corporation an American automobile manufacturer. This German-American marriage took place in the year 1998 and was considered as a "merger of equals".

Cost of Equity + Cost of Debt

- Every business needs capital to operate successfully. Capital is the money a business—whether it's a small business or a large corporation—needs and uses to run its day-to-day operations. Capital may be used to make investments, conduct marketing and research, and pay off debt.
- There are two main sources of capital companies rely on—debt and equity:
  -Debt: Debt capital refers to borrowed funds that must be repaid at a later date. This is any form of growth capital a company raises by taking out loans. These loans may be long-term or short-term such as overdraft protection.
  -Equity: Because equity capital typically comes from funds invested by shareholders, the cost of equity capital is slightly more complex. Equity funds don't require a business to take out debt which means it doesn't need to be repaid. But there is some degree of return on investment shareholders can reasonably expect based on market performance in general and the volatility of the stock in question.

WACC (Weighted average cost of capital)

- The WACC is the rate at which a company's future cash flows need to be discounted to arrive at a present value for the business.
- It reflects the perceived riskiness of the cash flows. Put simply, if the value of a company equals the present value of its future cash flows, WACC is the rate we use to discount those future cash flows to the present.



WACC (Weighted average cost of capital)

- **Capital structure — a company's debt and equity mix**
- Because the cost of debt and cost of equity that a company faces are different, the WACC has to account for how much debt vs equity a company has, and to allocate the respective risks according to the debt and equity capital weights appropriately.
- Assume a constant capital structure when calculating WACC
- **To determine the equity value of a company:**
- If the market value of a company's equity is readily observable (i.e. for a public company), *Equity value = Diluted shares outstanding x share price*
- If the market value of is not readily observable (i.e. for a private company), estimate equity using comparable company analysis .
- **To determine the debt value:**
- Most of the time you can use the book value of debt from the company's latest balance sheet as an approximation for market value of debt. That's because unlike equity, the market value of debt usually doesn't deviate too far from the book value

Terminal Value

Terminal Value is the value of a business or a project beyond the explicit forecast period wherein its present value cannot be calculated. It includes the value of all cash flows, regardless of duration, and is an important component of the discounted cash flow model (DCF).

There are three ways to calculate the Terminal Value of the Firm.

- **Perpetuity Growth Model**
- **No Growth Perpetuity Model**
- **Exit Multiple Method**

$$Terminal\ Value = \sum_{t=1}^{t=\infty} \frac{FCFF_t}{(1+WACC)^t}$$

Different approaches of valuation

Valuation can be done in many ways. There are three main approaches to valuation-

1. Asset approach- This simply adds all the assets of the company and subtracts all the liabilities. Often book value is adjusted to its present market value and intangible assets such as brand name, intellectual property etc. are also included. Since only assets and liabilities are considered this represents the amount the owners would get if they were to liquidate. It is also useful where the assets are more intrinsically linked to the business than earnings(e.g. real estate).

2. Income approach-It works by estimating the current value of estimated cash flows of the organization. We can use single period capitalization or discounted cash flow capitalization in this approach. This approach is commonly used and allows us to take estimate earnings and risk specific to the company itself. It is also a useful approach where the company doesn't have a lot of tangible assets.

Different approaches of valuation

3. Market approach-This approach tries to estimate the valuation by comparison with other similar companies. There are 2 methods-

- Guideline Public Company Method-This approach takes a public company that is similar to the one under consideration. It takes the valuation of the as multiple of its earnings and other financial parameters. We then adjust those multiples to account for the size , risk and other specific parameters of subject company and then use the adjusted multiples to get the required valuation.
- Merger and Acquisition Method-This method basically estimates the valuation with reference to recent sales of similar companies in the industry. This gives us the true market price of the company at present. However, these details may be difficult to obtain as details of such private acquisitions are not easily applicable.

Income approach- Single Period Capitalization Method

This method is a simpler version of the discounted cash flow method. It assumes a single constant growth rate (which is generally modest) and uses that to get the valuation. The earnings are discounted to get the valuation. This method is more appropriate for companies that are established and have stable revenue stream. However there are some disadvantages associated with this kind of an approach. The rate of risk is derived from the risk free rate and adjusted for equity risk . A company's expenses and revenue may change. None of this is accounted for as all of these factors are essentially fixed for the entire period. This method gives us only one chance to get rate of returns right. An error in this can distort the valuation.

Income approach-
DCF Discounted Cash Flow

This method seeks to take the present value of all future cash flows by adjusting the growth parameters of the company for a few years and also accounting for risk to investors , inflation etc. Basically, growth rate is assumed to be irregular(exponential or otherwise) for a few years and then assumed to be constant for perpetuity. Here we have two approaches-

- Direct to equity- This approach takes the cash flows and includes changes in debt as well as interest payments in them. The discount rate(which basically represents risk to investors-more the risk more the discount rate, less the valuation) here takes into account only the equity discount rate and the resultant valuation represents value of equity of the company.
- Debt free- This approach does not take into account changes in debt and interest payments in projected cash flows. As such the discount rate also includes another term which accounts for the debtors' rate of return. The valuation given here represents value of all infused capital, be it as debt or equity.

Income approach-
DCF Discounted Cash Flow

- We first compute the FCFF(Future cash flow to firm) for a few years. The growth rate is varied and historical earnings are often taken as a starting point. FCFF is basically amount of cash flow available after expenses , depreciation, taxes and investments. This rate is discounted to get its present value .
- Next, we consider that the growth rate will stabilize and be constant and continue to be so for all time. This growth rate is generally conservative and not can be too high. The cash flows form an infinite GP whose sum is taken and added to previous cash flows to get the valuation.
- This method is appropriate for companies whose income stream may be unsteady or new companies whose income could be expected to grow unsteadily or maybe even post a loss for a few years and then stabilize.(or it may be used in the same situations where the previous method is used too)

Income approach-
DCF Discounted Cash Flow

Some advantages of DCF Valuation are-

- It takes into account the time value of money.
- Does not require us to compare companies
- Includes all major assumptions about the business and allows us to adjust forecasts specific to the business.

Some disadvantages of DCF valuation are-

- Requires a lot of assumptions. Also in practice making accurate forecasts may be quite difficult.
- Prone to overcomplexity.
- Terminal value calculation needs to be as accurate as possible since it represents a huge chunk of the valuation.

EPS Accretion and Dilution

- EPS accretion / dilution allows shareholders of an acquirer company to see whether an acquisition of a target will lead to an increase in their earnings per share. It is an important metric in deciding whether the acquisition should go ahead or not
- The process of an accretion/dilution analysis begins with estimating pro-forma net income to eventually arrive at pro-forma earnings per share (EPS).
- The deal will be accretive when pro forma EPS is higher than standalone EPS. The deal will be dilutive when pro forma EPS is lower than standalone EPS

What Is Earnings Per Share (EPS)?

- Earnings per share (EPS) is a company's net profit divided by the number of common shares it has outstanding.
- EPS indicates how much money a company makes for each share of its stock and is a widely used metric for estimating corporate value.
- The higher a company's EPS, the more profitable it is considered to be.

EPS Accretion and Dilution

- EPS Formula; Pro forma EPS = Pro forma net income / Shares outstanding
- Calculating Earnings: Pro Forma Net Income; Pro forma net income = Investor (acquirer) net income + Investee (target) net income +/- Transaction effects
- Calculating Earnings: Transaction Effects; Any expected synergies due to the transaction will have to be included in the forecast income statement of the combined business and will need to be captured in the appropriate line item, most commonly SG&A expenses. The impact of synergies is to decrease SG&A costs, and therefore increase net income and EPS. The company may also have issued additional debt or used balance sheet cash to fund the deal. These impact the interest expense/income lines of the income statement, thus affecting net income and EPS.

EPS Accretion and Dilution

- Calculating Number of Shares; Shares outstanding = Acquirer shares (diluted) + New shares issued
- Accretion / dilution calculation;
  EPS accretion / (dilution) = Pro forma EPS / Acquirer standalone EPS – 1

  This often expressed as a percentage:
  1) A positive number indicates the deal is “accretive” as proforma EPS is higher than the acquirer’s standalone EPS.
  2) A negative number indicates the deal is “dilutive” because proforma EPS is lower than the acquirer’s standalone EPS.

Football Field Valuation

- A football field is a chart that is used to compare the results of different valuation methodology of a company.
- A football field not only shows the valuation range but also states the mean valuation arrived at using different valuation methodologies.
- There are a lot of uncertainties in the valuation processes. To reduce the error, several valuation methods are usually employed. A football field is therefore employed t o conveniently show all the valuations in one graph.

- A football field is a graph used to compare and summarize the results of different valuation methodologies to value a company. It is prepared using a floating bar chart in Excel and summarizes a range of values for a company, based on different valuation methodologies and assumptions.
- The football field is commonly used in investment banking. The underlying purpose of the chart is to give a visual representation of the valuation range, average, and target valuation for the company/asset.

Football Field Valuation

- Example of Football Field Valuation for Walmart Inc.

CONDUCT OF THE PROJECT

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How we are guided throughout ?

- An offline meet at the start to give the crux of the project & teach how to understand case study of a company and weekly meets to check out on our progress and to inform following week's planned undertakings.
- Divided all the interested students into 12 teams of 3 students each randomly with a purpose to make us learn to coordinate with relatively unknowns.
  Also they let the interested students who could not take part due to varying reasons Audit the project so they don't leave in despair and gave them the freedom to join any team of their choice.
- Respected Mentors after a long sweat and time-committed research on all the Impactful and Famous Mergers & Acquisitions that had taken place, assigned the 12 teams the top 12 M&A they narrowed down to.
  Such that these M&A operations, covered all the topics we were going to study in the following months.
- Weekly material is updated on the Discord as well as Whatsapp groups which is expected to be completed within that week. In addition to that we need to find information regarding that weeks topics in relation to the M&A operation assigned to us.
- We then needed to make a slide in the editable Slides link shared on the groups by our mentors where we need to update the learnings from the week as well as Explaining the comparison of topics and M&A examples we were required to research upon.

Run of the Project.....

Week 1	Week 2	Week 3	Post MidEval
Synergy and its types-operational and financial	M&A waves	3 diff approaches of valuation : income, market and asset approach	DCF Valuation in detail
Winner's curse	Cross border M&As	Income approach has 2 main methods: Single period capitalization method and DCF	EPS Accretion/Dilution test
Diversification	Cost of equity and cost of debt		Football field relative valuation
Economics of scale and scope	WACC(weighted average cost of capital)		
	Terminal value		