


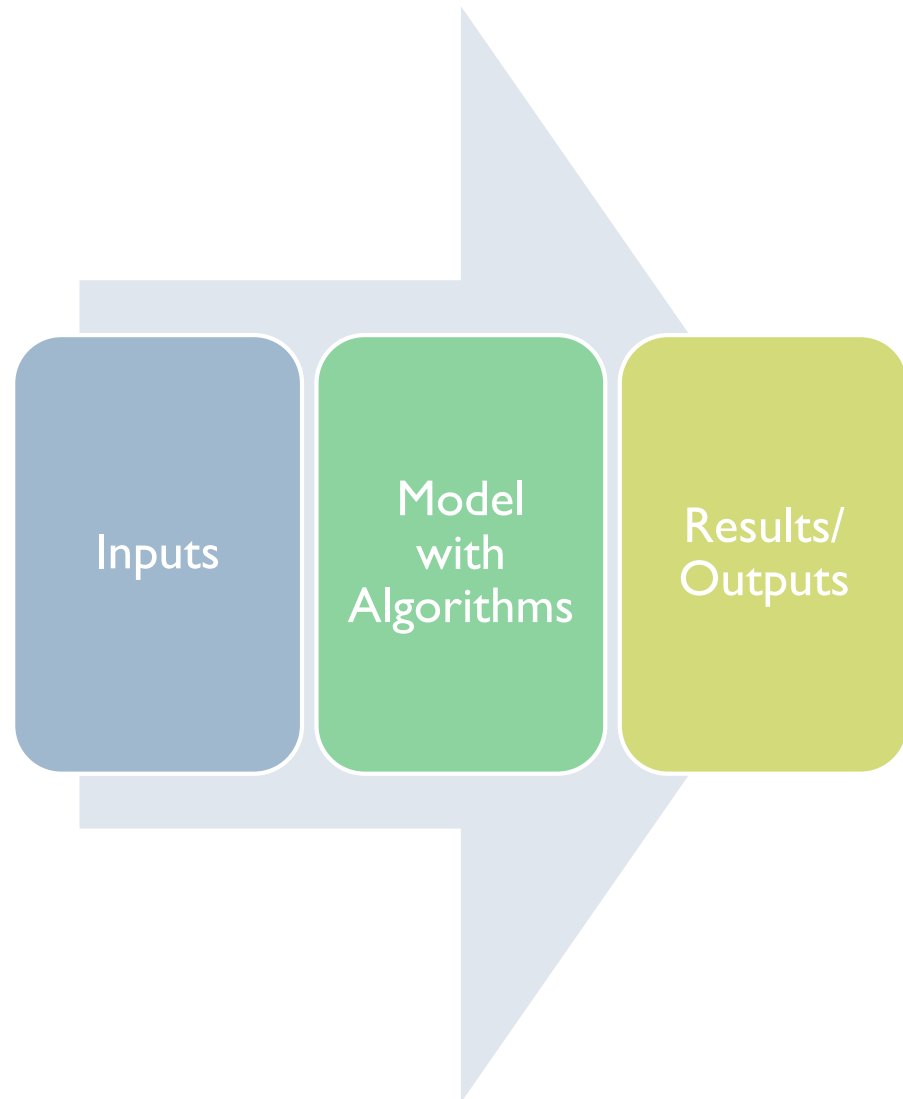
Valuation through Financial Modeling: A curtain raiser



ICMAI, Kolkata
2023

Financial Model

- ▶ A tool (built with Excel, or other data analytics software) that finds out and displays possible solutions of a real-world financial problem or question?
 - ▶ Typically, data intensive
 - ▶ Theoretical perspective is the backbone
 - ▶ Incorporates assumptions
- ▶ Building models is a skill
 - ▶ Any spreadsheet is not a model



Characteristics of Financial Model

Financial Model

Structured Algorithms

Dynamic – fresh set of assumptions and inputs lead to different outputs

Relationship between several variables

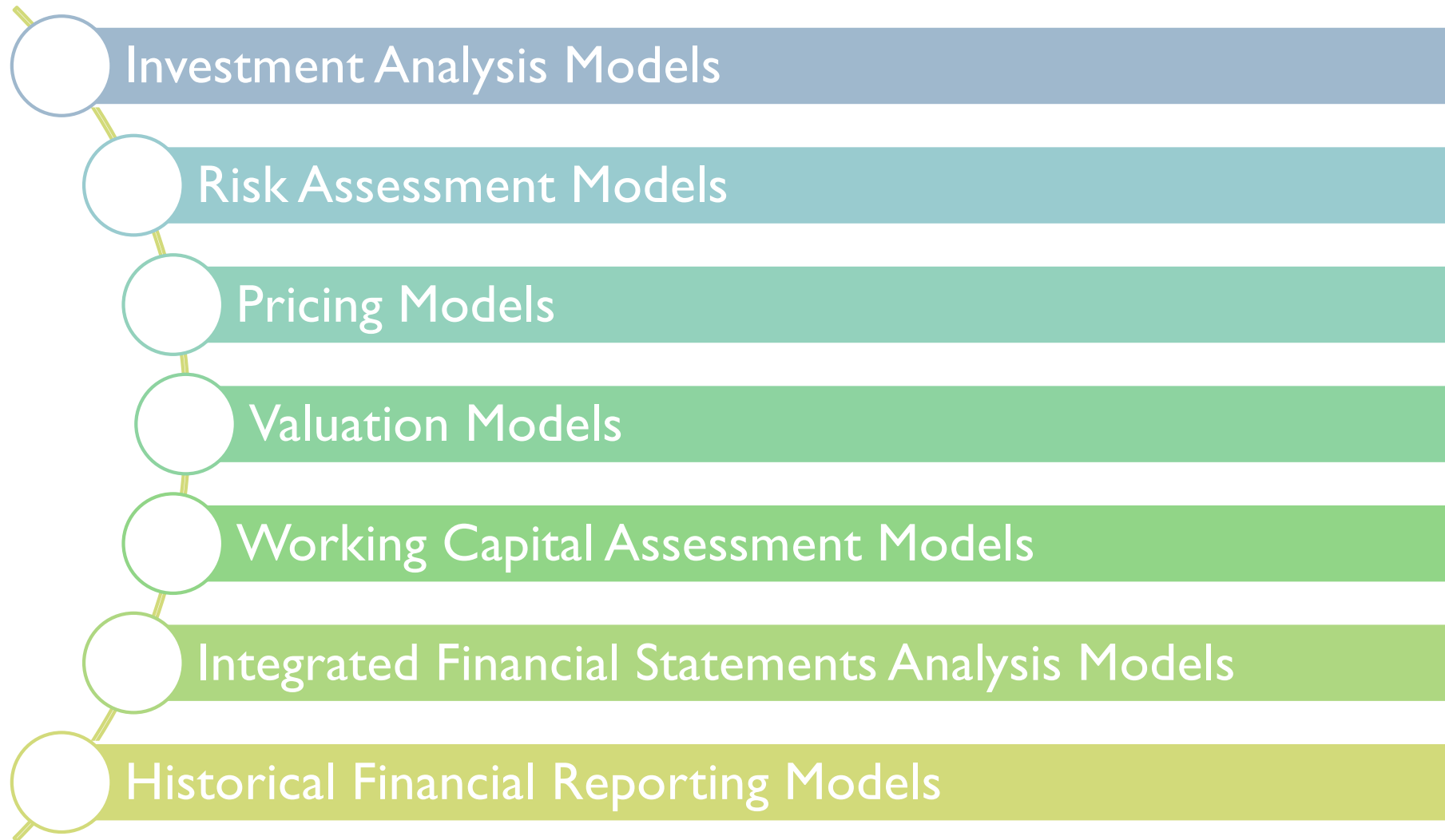
Can be used for forecasting

Is most often futuristic (used for forecasting)

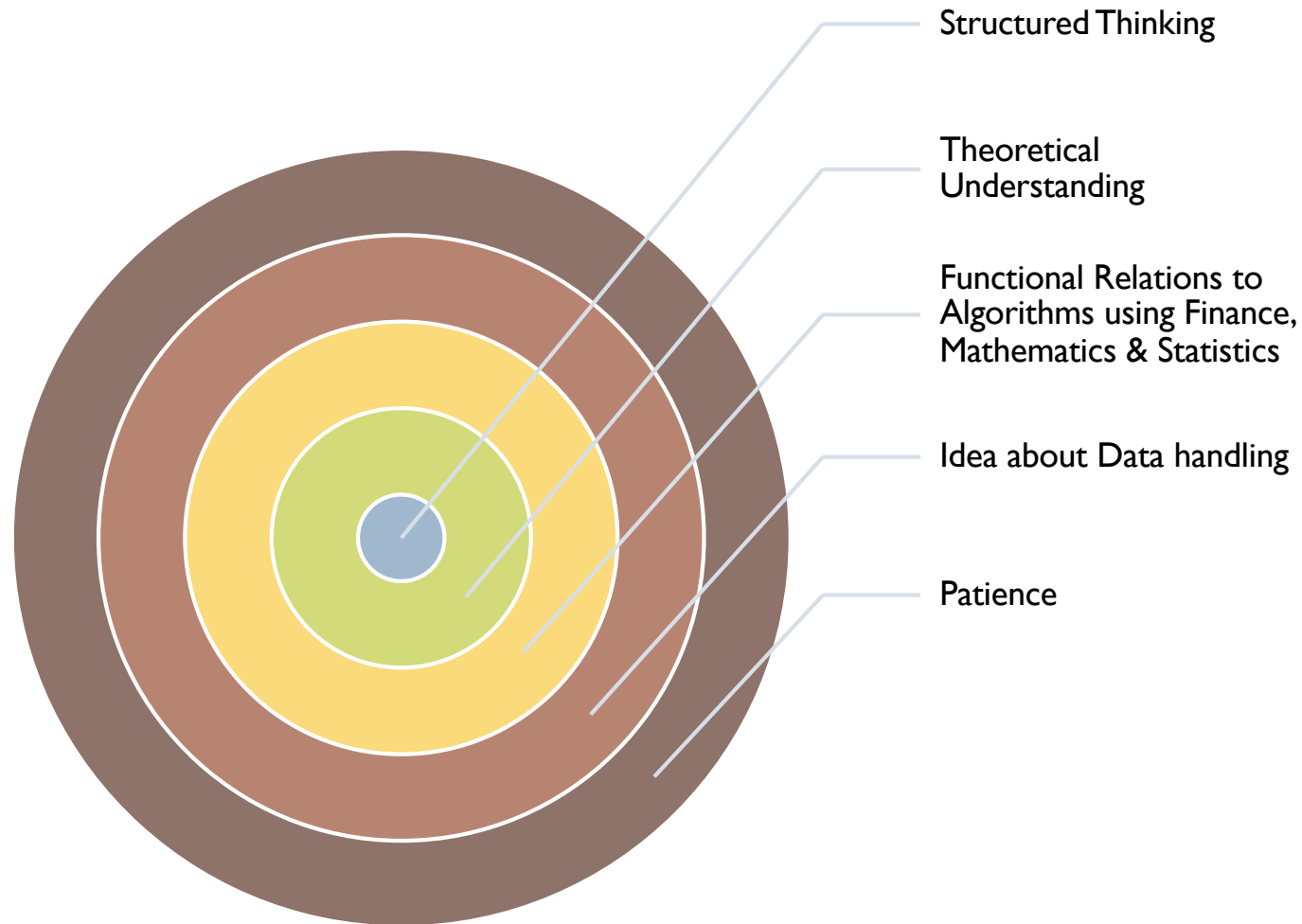
Can be used to build scenarios



Categories of Financial Models



Who can be a Financial Modeler?



Valuation: What does the Dictionary say?

- ▶ Lexical meanings (Cambridge Dictionary)
 - ▶ Two Meanings
 - ▶ “The act of saying or deciding how much money something might be sold for (or purchased for)”
 - ▶ “The act of deciding how much money something is worth”
- ▶ Value is subjective!
 - ▶ Value is determined by the principle: *Beauty lies in the eyes of the beholder*”
 - ▶ Value is the “worth of something” and hence, subjective
 - ▶ “Worth” is a psychological aspect
 - Worth to someone
 - ▶ Depends on who is deciding on the worth
 - ▶ For whom the value is being decided upon
 - Relative Bargaining Power plays a role



Fluctuating Value of A van Gogh Painting!



- ▶ **Portrait of Dr. Gachet**
 - ▶ Auvers-sur-Oise, June, 1890
 - ▶ Unsold during the life of Vincent
 - ▶ Whoever saw the painting during the life of the painter, they did not find it worthwhile
- ▶ **May 1990: Acquired by Ryoei Sato** (the second largest paper manufacturer in Japan) for USD 82.5 Million
- ▶ **Later, sold by Sato at a discount of 12.5%**
 - ▶ Value reduced (?)
 - ▶ Distress sale(?)



Do Costs determine Value?

- ▶ A plumber is called by a customer to fix a pipe. The plumber completes the job. It has taken one hour of labour to fix the pipe. Normally, the plumber expects a profit margin of 15% over and above his cost of doing a work.
 - ▶ The cost of his work is:
 - ▶ Travel : Rs. 5.00
 - ▶ Materials: Rs. 15.00
 - ▶ 1 Hour of labour: Rs. 200.00
- ▶ How much should the plumber charge?
 - ▶ $\text{Rs. } 220 \times (1.15) = \text{Rs. } 242.00$?
 - ▶ Rs. 520.00 (say) ?
- ▶ The repair of the pipe has the following benefits for his customer:
 - ▶ Saving in cost of electricity (for reduced time of running the pump): Rs. 100.00
 - ▶ Increased convenience for the members of the family (saving of time): Rs. 100.00
 - ▶ Avoiding damage of the roof: Rs. 500.00
- ▶ Cost is immaterial
 - ▶ Tangible and intangible benefits matter in deciding on the value
 - ▶ A proper valuation increases profitability!



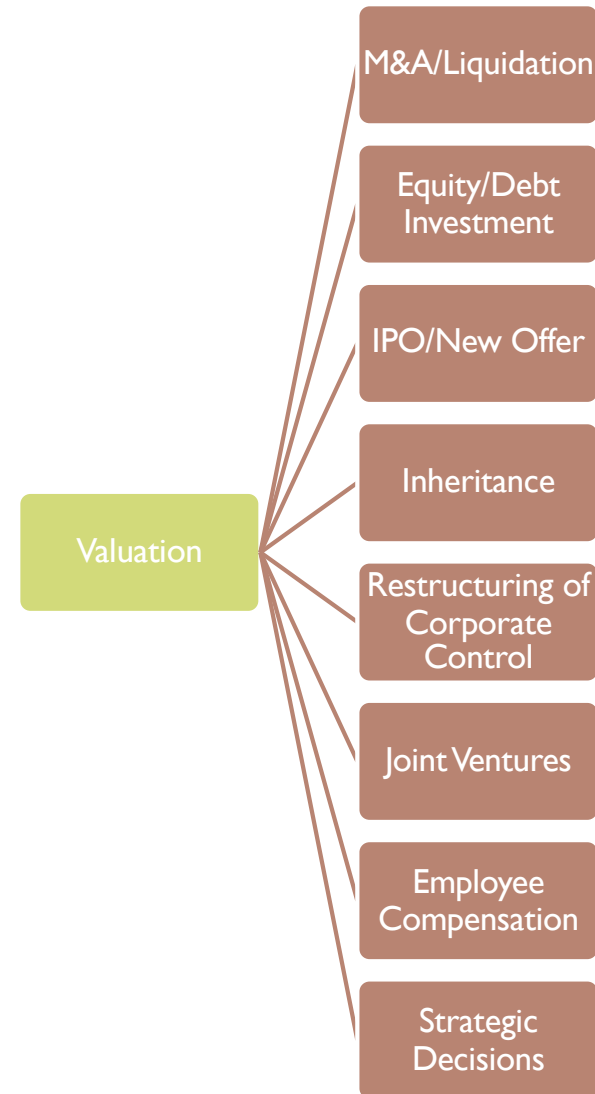
Valuation: Some important points

- ▶ **Fundamental Principle:**
 - ▶ Payment for an Asset \leq Worth of the Asset
 - ▶ Agents are Rational – they are trying to minimize costs and maximize benefits
- ▶ **Argument: “Beauty (value) is in the eyes of the beholder”**
 - ▶ True for aesthetic assets (paintings, sculptures, dresses)
 - ▶ May also hold for financial assets
 - ▶ How ‘beautiful’ will the financial assets be in the future?
 - How will the returns from the assets behave in the future?
- ▶ **Investors bid differently in case of the same asset**
 - ▶ Perceptions about future returns may differ
 - ▶ Perceptions about risk and uncertainty may differ
 - ▶ Uncertainty may affect the accrual of returns



Purpose of Valuation

- ▶ All investors want to know: “what is the worth of an asset?” before making an investment decision
 - ▶ A company buying or selling operations (M&A)
 - ▶ For the Buyer: The highest price to be paid
 - ▶ For the Seller: The lowest price to accept
 - ▶ Valuation of Listed and Traded Companies
 - ▶ Valuation is compared with the Trading Price – used for 3 decisions: Buy, Sell, Hold
 - ▶ Valuation of several companies – Decide the strength of the portfolio of stocks and need for changing portfolio building strategies
 - ▶ Public Offerings
 - ▶ Valuation justifies the price at which the stocks are offered to the public
 - ▶ Helps investors to decide on the bid amount



Purpose of Valuation...Contd.

- ▶ Inheritance & Will
 - ▶ Valuation of shares helps comparing them with other assets
 - ▶ Used for a 'just' and 'desired' allocation of assets among inheritors
- ▶ Financing Decisions
 - ▶ Lenders may want to look at the Ability to Pay through Valuation
- ▶ Shareholders' Dispute Resolution (Restructuring Corporate Control)
 - ▶ Valuation: A precondition to the transfer of shares between shareholders
- ▶ Formation of Joint Ventures
 - ▶ Valuation: Helps in deciding relative shares in the JV
- ▶ Employee Compensation
 - ▶ Increasingly, efficient companies are linking compensations to value creation
 - ▶ Valuation of a firm and/or a unit may be necessary
 - ▶ E.g. Toyota



Valuation for Strategic Decisions

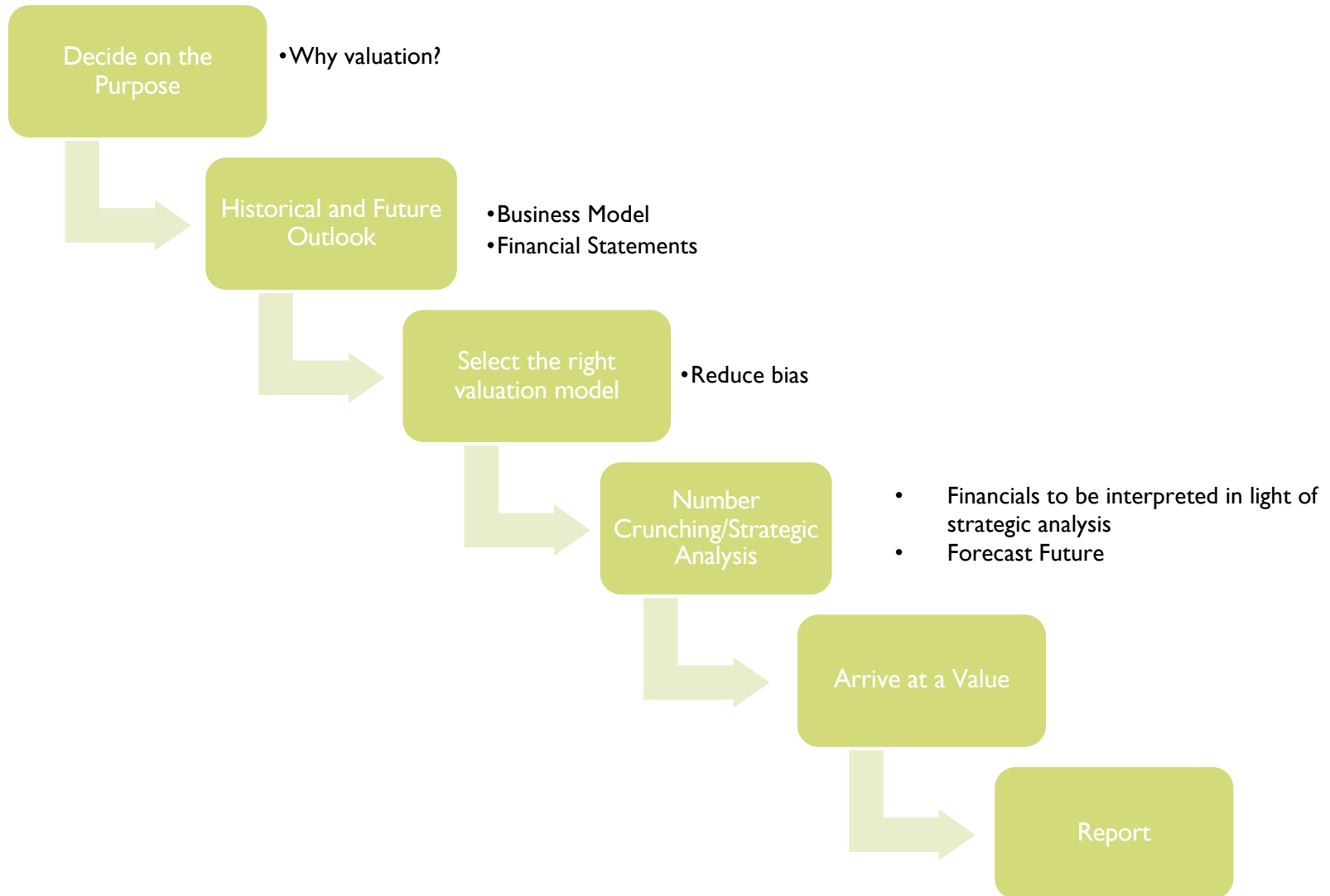
- ▶ Identification of Value Drivers
 - ▶ Strategies are formulated to strengthen value drivers
 - ▶ Value destroyers must be weakened

- ▶ Strategic decisions on a Firms Growth and Existence
 - ▶ Organic v/s Inorganic Growth
 - ▶ Entry strategies
 - ▶ Strategies concerning M&A, Disinvestment, Spin-offs, Split-offs, etc.
 - ▶ E.g. Reliance Retail & Bigbazar, Axis Bank & Citibank, Air India, etc.

- ▶ Strategic Planning
 - ▶ Which markets to enter/exit?
 - ▶ Continuance/Expansion/Abandonment of products, businesses, markets, etc.



Steps in Valuation



Price and Value

- ▶ Price is the quantum of consideration required to acquire an asset
 - ▶ Price is decided by the interaction between supply and demand in a market
- ▶ What determines price?
 - ▶ An infinite range of factors – both rational and irrational
 - ▶ Market sentiment, expectations about future price movements are important “psychological” factors determining price
- ▶ Value is “what the right price should be”?
- ▶ Value takes into account the expected returns from the assets
 - ▶ Assets could be tangible and/or intangible
- ▶ Value is “intrinsic worth” of an asset
 - ▶ Value increases when the expected returns from assets increase and/or risk in the asset returns decrease
 - ▶ Value is deemed to be free from bias – with all risks taken into account and measured
- ▶ Which one of these two – Water and Diamond, more valuable?
 - ▶ What are the reasons?



Value Difference: Buyer & Seller

▶ Example

- ▶ *A large foreign company, highly advanced in technology, wishes to buy a well-known Indian company to gain access to the Indian market, taking advantage of the top-of-the-mind-recall of the Indian Brand*

▶ Buyer's Perspective:

- ▶ Value of the 'Brand' is of material importance
- ▶ Physical Assets of the Indian company is of little importance
- ▶ Want to know the 'maximum' price it can pay

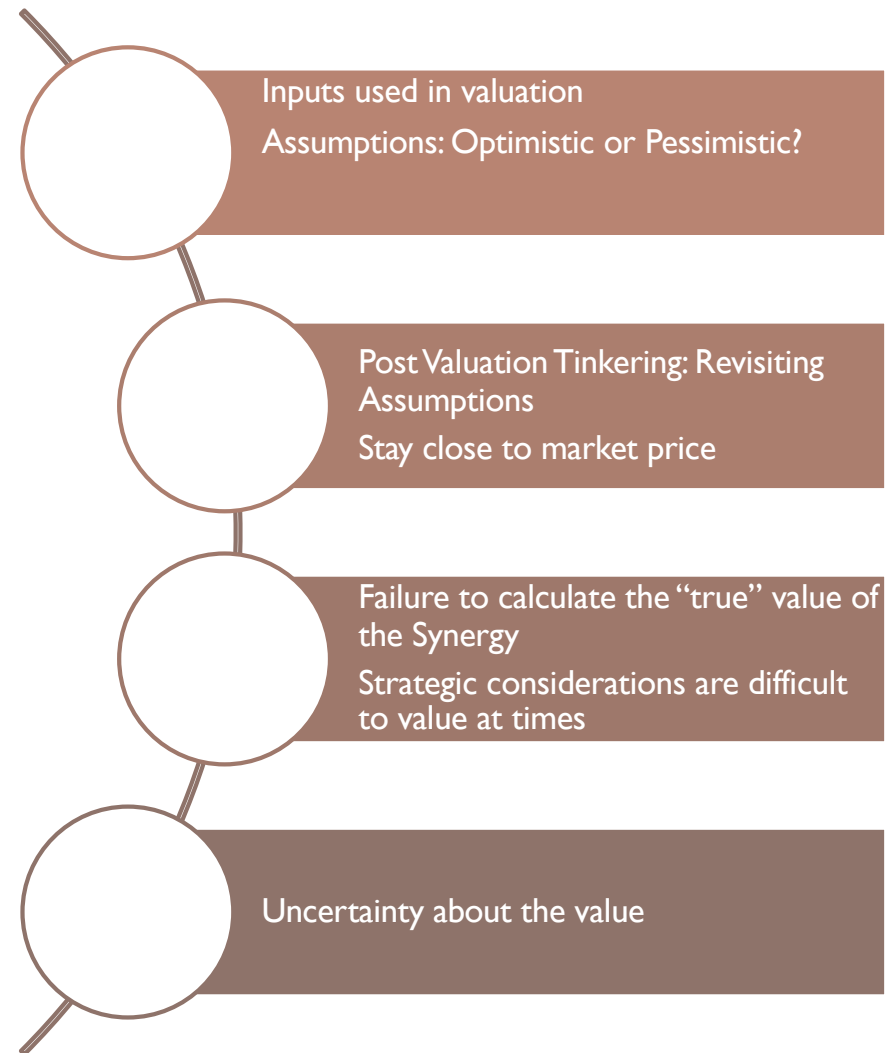
▶ Seller's Perspective

- ▶ Accords enormous importance to its material assets and the brand
- ▶ Wants to know the 'minimum' price it can accept



Bias in Valuation

- ▶ **Assets that are chosen for valuation**
 - ▶ Is that nature of assets well understood?
- ▶ **History of the Firm & Management Discussions / Annual Reports**
 - ▶ Has the analyst taken a hard and dispassionate look?
- ▶ **Perception of the Analyst about future**
 - ▶ Is the analyst too bullish (or bearish)?
- ▶ **Tendency to make Value closer to Price**
 - ▶ Analyst wants to stay comfortably closer to the market price
 - ▶ Never questions that market may be wrong!
 - ▶ Market may not discount all information
 - ▶ There can be artificial ways how stocks are being overvalued in the market
- ▶ **Management pressure**
 - ▶ Independent valuation? Or, justifying management's intended decision



Uncertainty in Valuation

- ▶ **Estimation Uncertainty**
 - ▶ Mistakes in inputs/assumptions in the model
- ▶ **Asset Specific/ Firm Specific Uncertainty**
 - ▶ What is the trajectory that the firm(s) will follow?
- ▶ **Macroeconomic Uncertainty**
 - ▶ How will the landscape factors change
 - ▶ Local, Sub-national, National, Global
- ▶ **Dynamism of the Value itself**
 - ▶ Value is not static
 - ▶ Changes over time with changing conditions in EIC



Myths about Valuation

- ▶ Damodaran (2006) posits the following as myths about valuation

Myth 1

- Valuation is an “objective” search for “true value”
- All valuations are biased – to what extent bias are reduced
- Bias in valuation depends on for whom the valuation is carried out

Myth 2

- A Good Valuation provides a precise estimate of value
- All it can provide is a range for negotiation

Myth 3

- More quantitative a Model, the better the valuation
 - Too many input variables may clutter the understanding of the model
 - Sometimes simpler valuation models which are theoretically sound do better than complex ones
-



Value Drivers

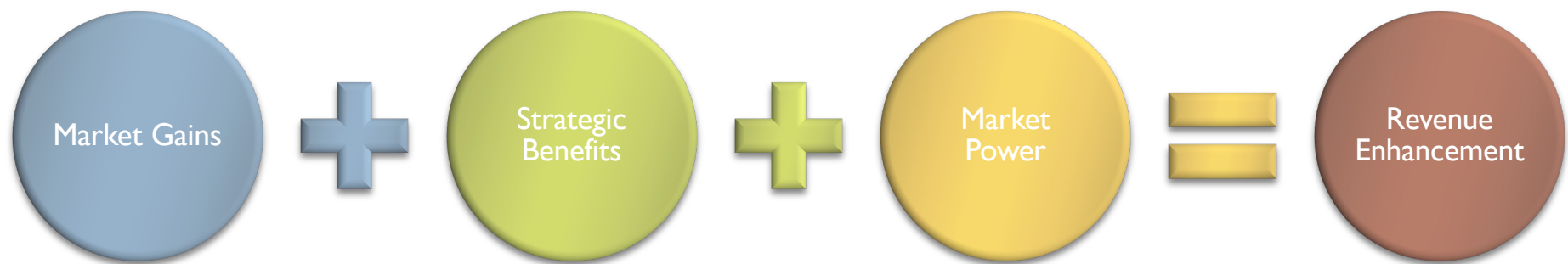
- ▶ How is value created?
 - ▶ Increase in cash flows!

$$\begin{aligned}\Delta CF_t &= \Delta REV_t - \Delta COST_t + \Delta NCE_t - \Delta TAX_t - \Delta ASSET_t + \Delta LIAB_t + \Delta EQUITY_t \\ \Delta CF_t &= [\Delta REV_t - \Delta COST_t] + \Delta NCE_t - \Delta TAX_t - [\Delta ASSET_t - \Delta LIAB_t - \Delta EQUITY_t] \\ \Delta CF_t &= \Delta PROFIT_t + \Delta NCE_t - \Delta TAX_t - \Delta CAPITALREQUIREMENT_t\end{aligned}$$

- ▶ Financial motivation of M&A (Synergy) has 4 pillars
 - ▶ Revenue Enhancement
 - ▶ Cost Reduction
 - ▶ Lower taxes
 - ▶ Lower Net Capital requirements



Revenue Enhancement

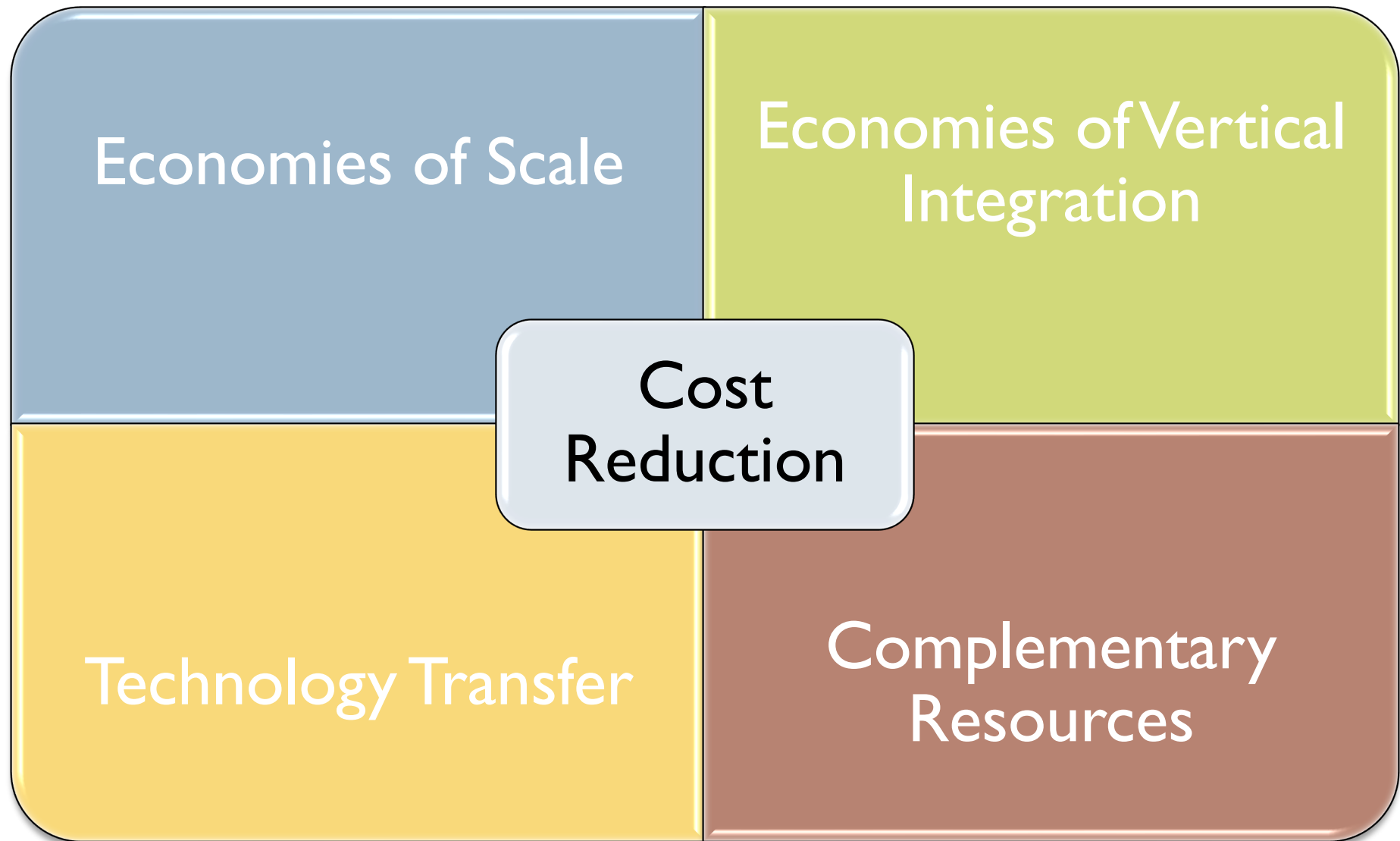


An example

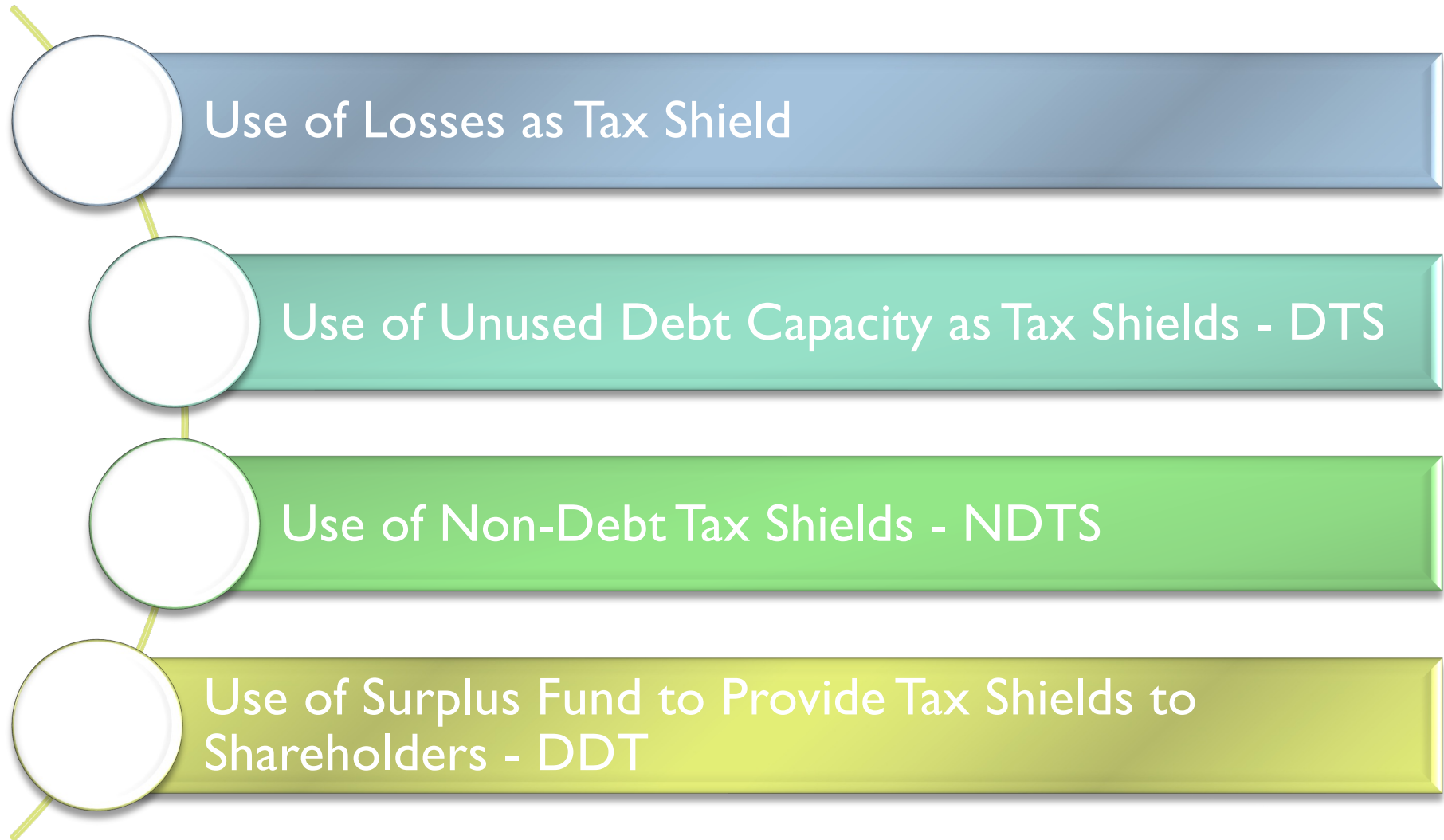
- ▶ Rado Pharmaceuticals is a relatively young pharmaceutical company in India
 - ▶ It has been engaged in R&D concerning medicines for HIV AIDS
 - ▶ The medication developed is a low-cost one
 - ▶ Currently, it is marketing its product in India – with a market share of 7%
- ▶ Pfizer Limited has approached Rado with a proposal for Amalgamation – the details will be decided later
 - ▶ Should Rado accept the offer?
 - ▶ What is the rationale?



Cost Reduction



Tax Considerations

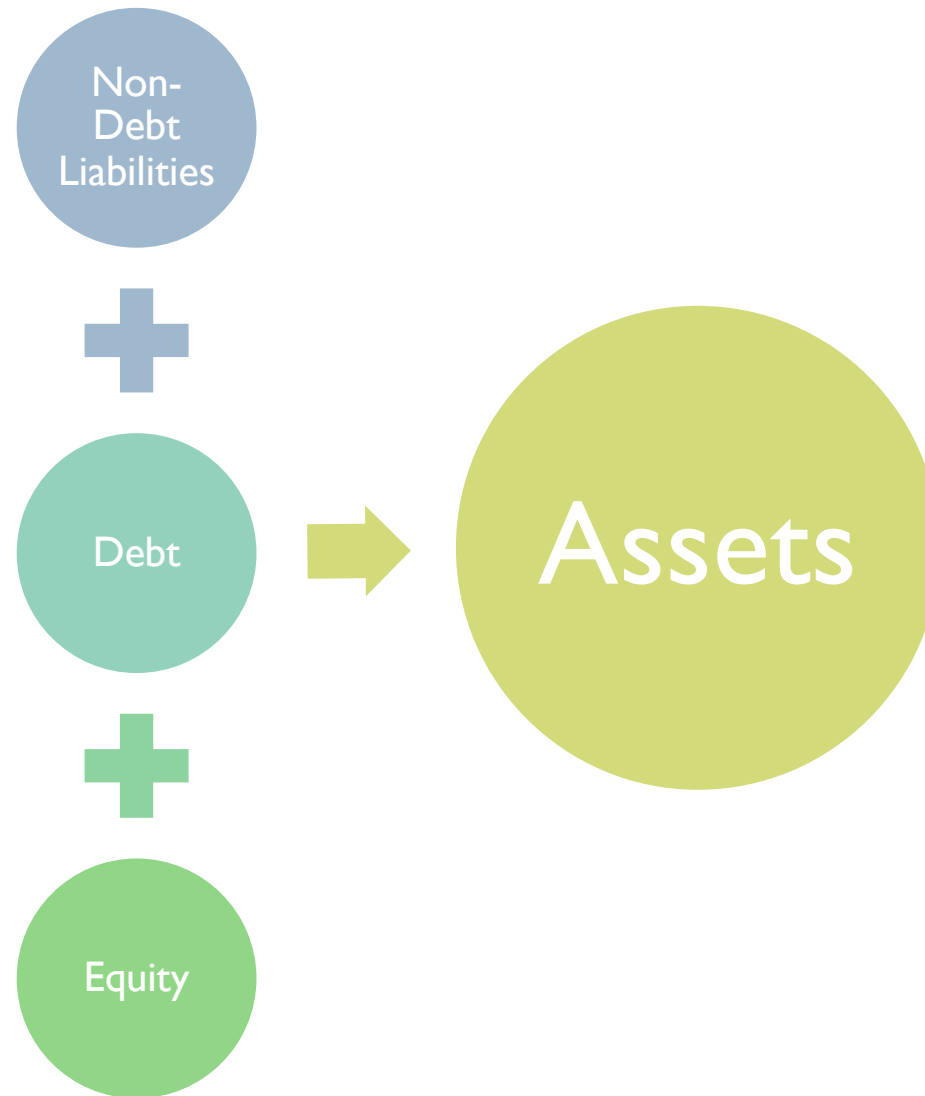


Caveats: Tax Consideration

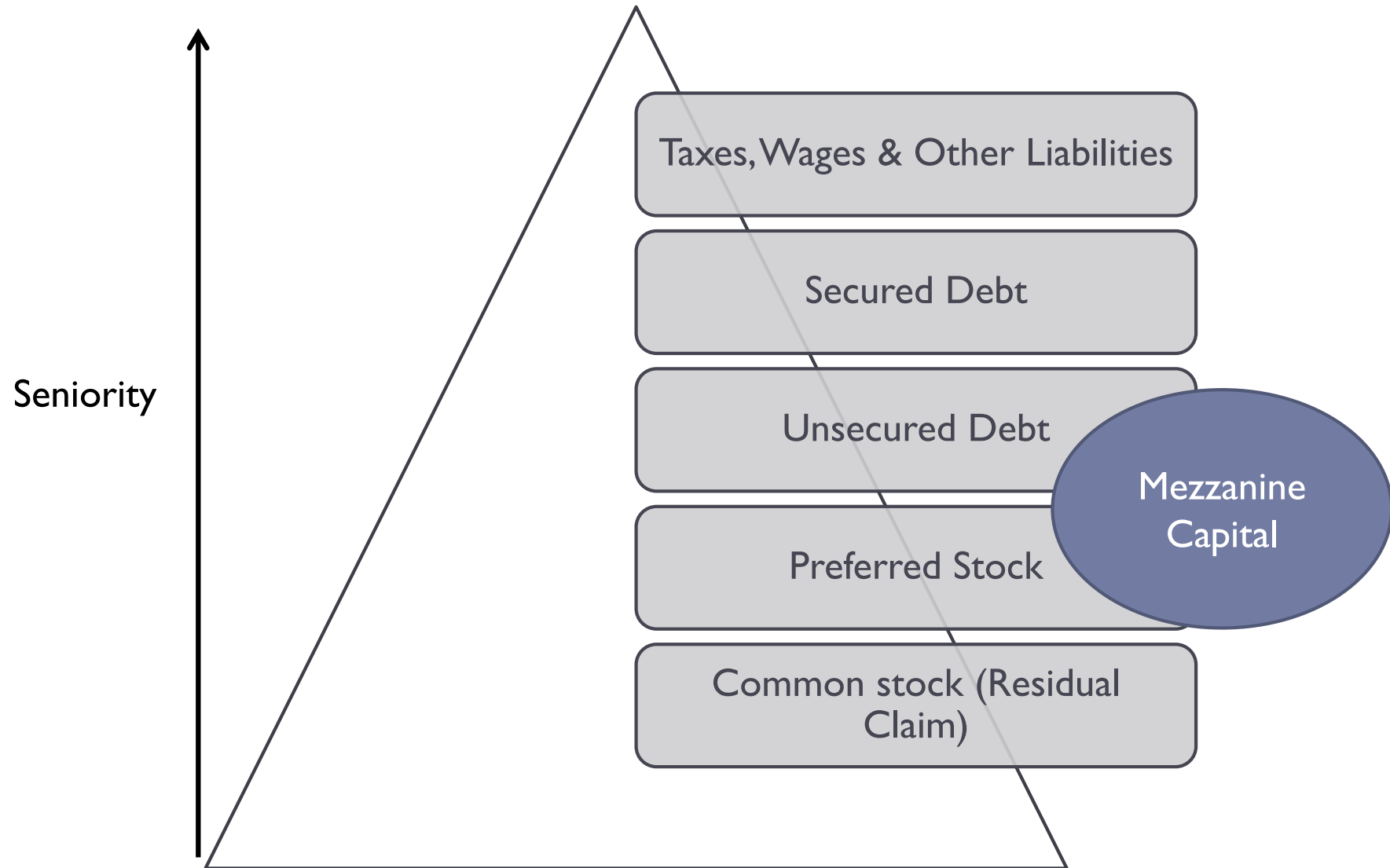
- ▶ Provision for Carry Forward of Losses
- ▶ Nature of Losses and Disputes
 - ▶ Contingent Liabilities?
- ▶ Tax Laws
 - ▶ Treatment of Tax Shields due to M&A
 - ▶ Treatment of Recognition of Losses
- ▶ In India Accounting Standards (AS) need to be considered



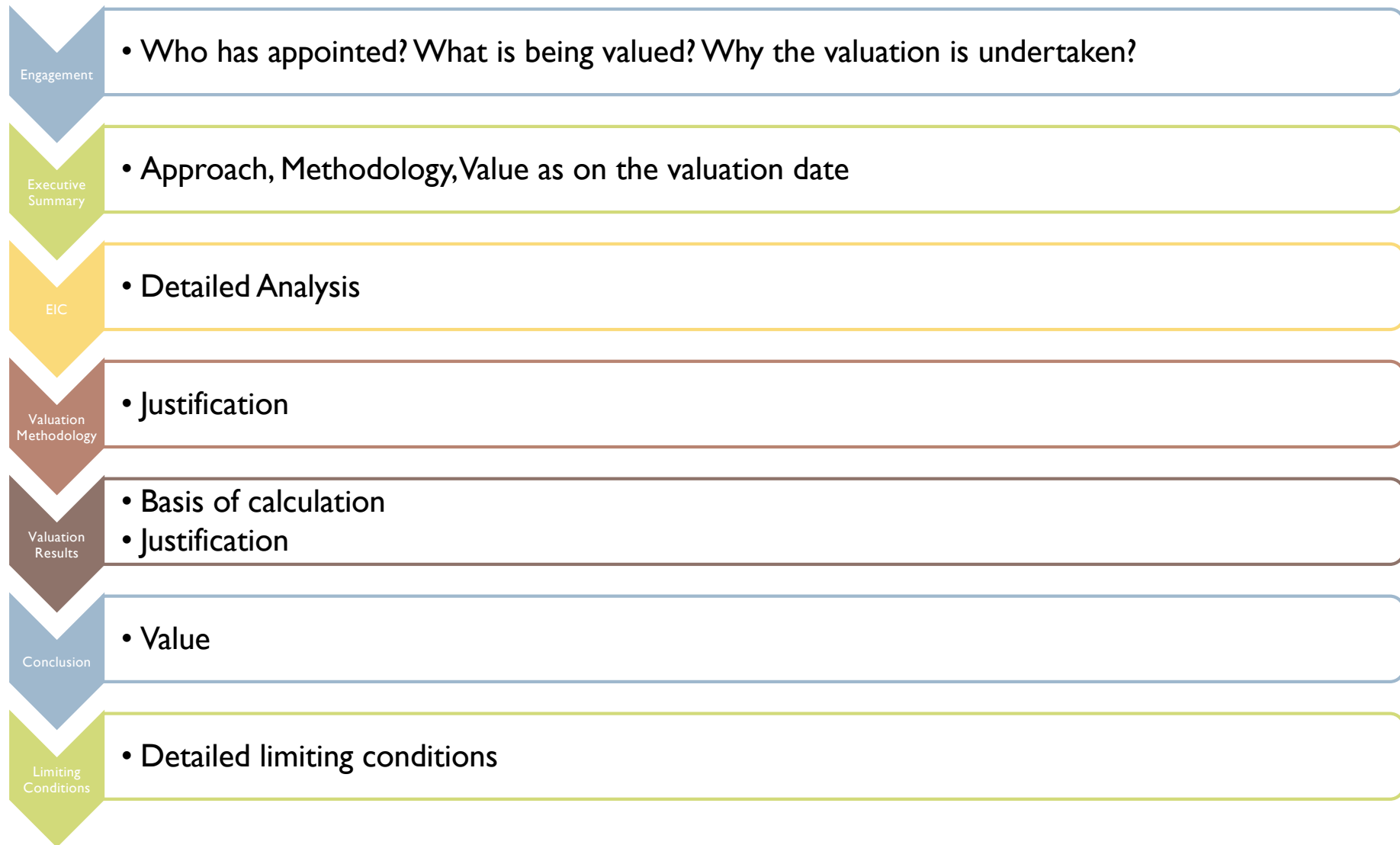
How are Assets Financed?



Seniority of Claims



Valuation Report: Structure



Some Takeaway Messages

- ▶ What is Valuation?
- ▶ Cost, Price and Value
- ▶ Purpose and Role of Valuation
- ▶ Important steps in valuation
- ▶ Bias, Independence and Objectivity in carrying out valuation
- ▶ Value Drivers & Value Destroyers
- ▶ Financial Modelling
- ▶ Valuation Report





Thank You!

