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HOW TO CALCULATE TERMINAL VALUE?

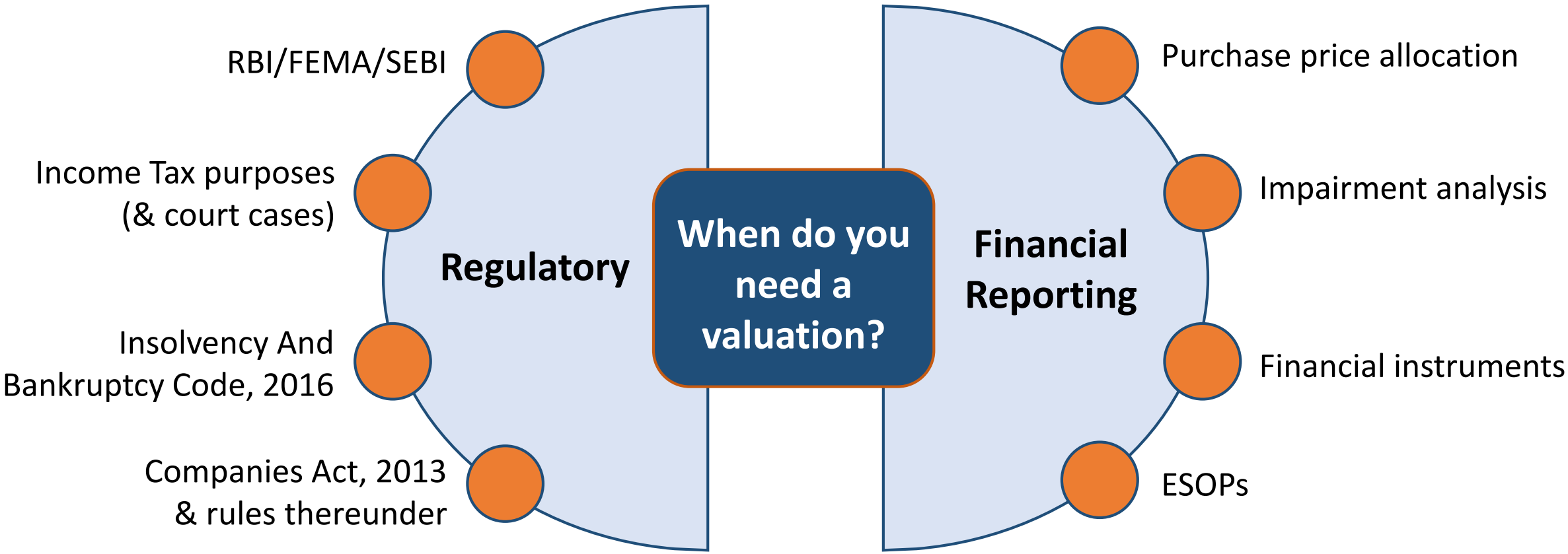
Presented by
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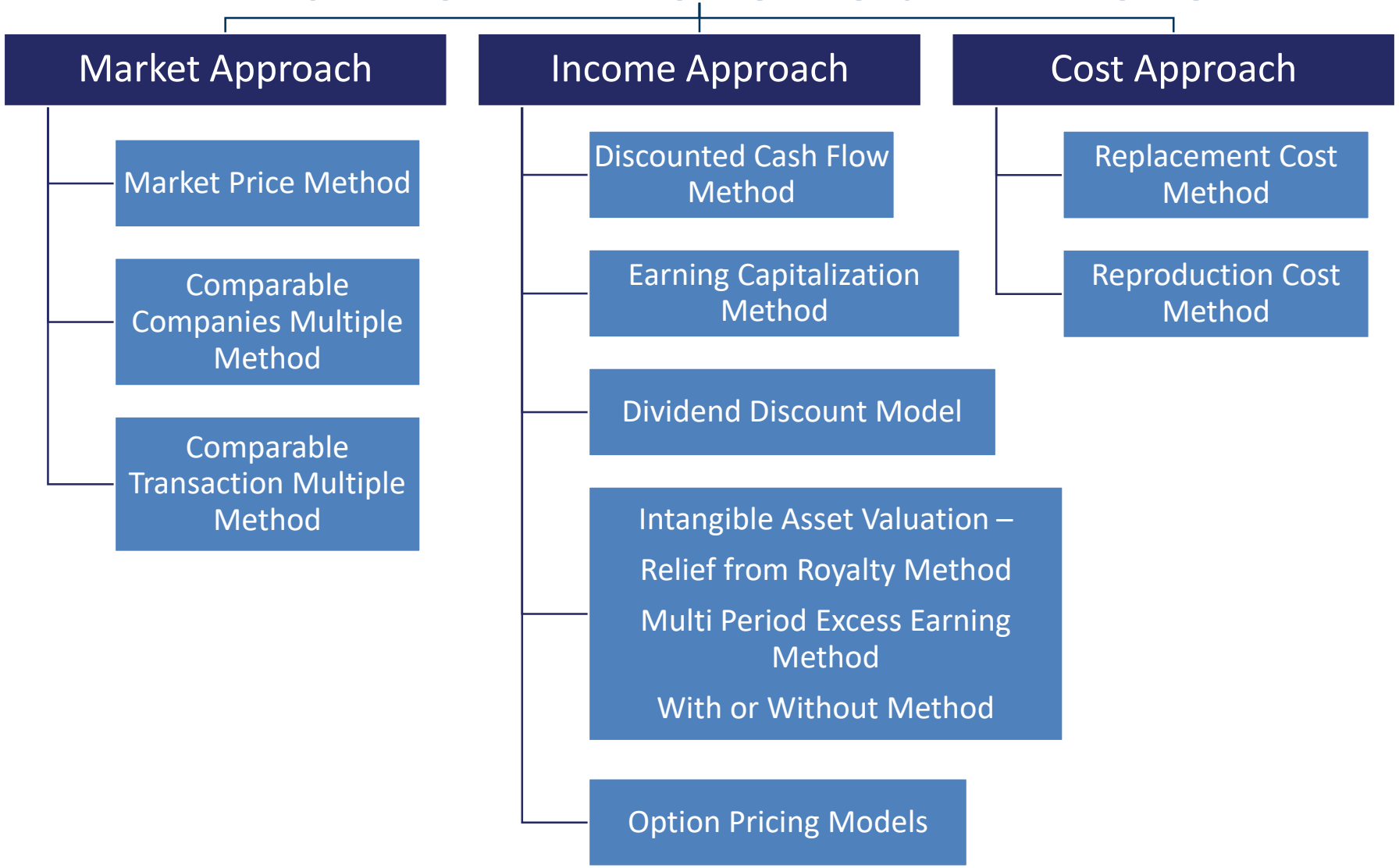
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1.	What is Terminal Value
2.	Why is Terminal Value important?
3.	Methods of Calculation
4.	Myths

NEED FOR VALUATION



VALUATION APPROACHES & METHODS



What is Terminal Value (TV)?

Definition

- Represents the value of a business **beyond** the explicit **forecast period** in a valuation model.
- It assumes the company will continue generating cash flows indefinitely.

Beyond Valuation

- Represents the ***legacy value*** of a business .
- Stakeholders
  - Founders: Captures their vision
  - Investors: Represents their faith in management

Acts as a **bridge** between short-term forecasts and long-term assumptions about economic viability and industry performance.

What is Terminal Value (TV)?

How does TV fit into different Valuation Approaches ?

Income Approach

- Terminal Value is explicitly calculated as a **separate component**,
- Capturing the value of future cash flows beyond the forecast period.

Cost & Market Approach

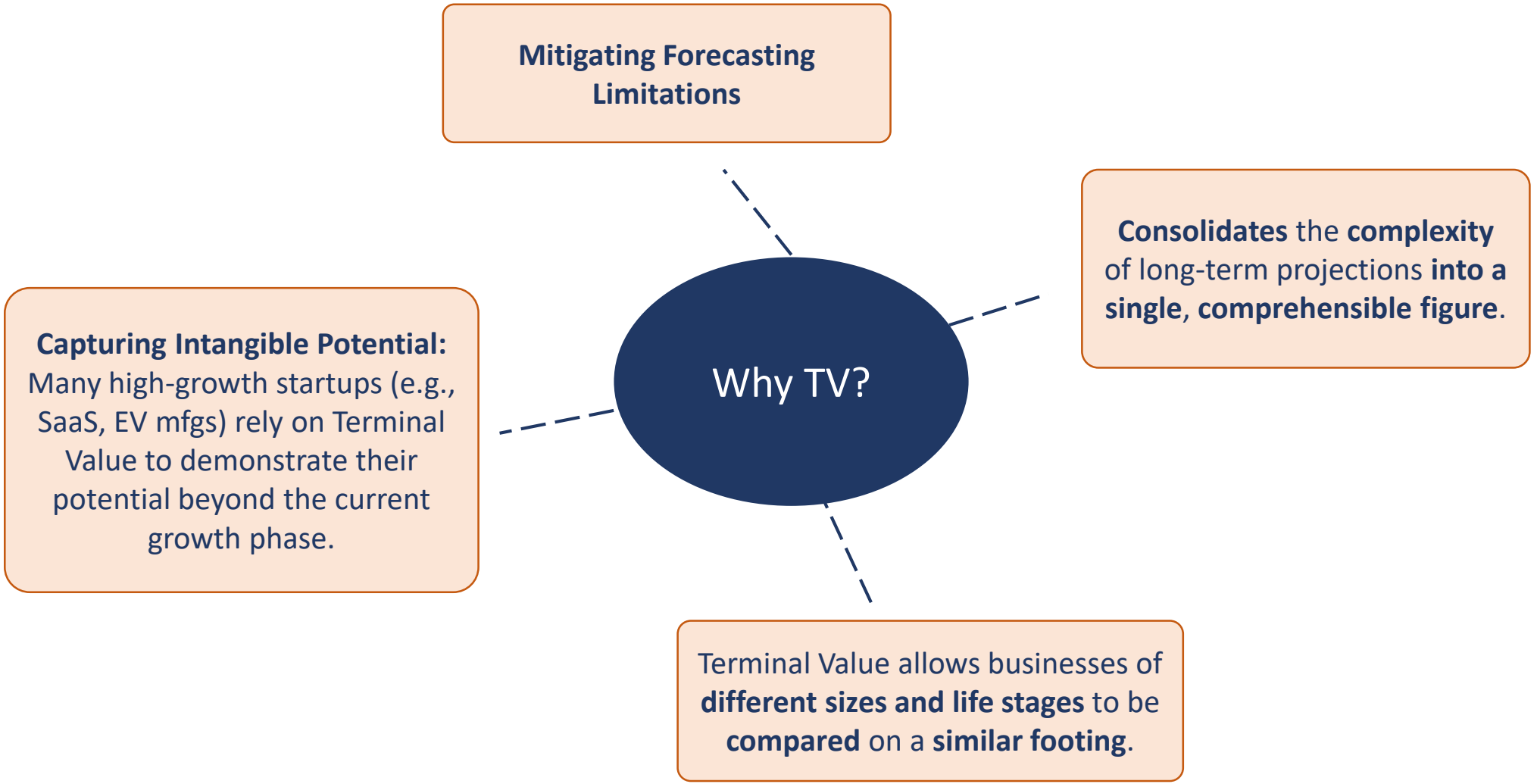
TV is implicitly embedded:

- **Market Approach**: Reflected through valuation multiples (e.g., EBITDA or Revenue), inherently accounting for long-term growth.
- **Cost Approach**: Captured as the residual asset value, with little focus on future earnings.

Beyond the Basics

TV includes not just operational cash flows but also potential synergies from future mergers and acquisitions.

Why is Terminal Value (TV) Required?



Impact of Macroeconomic Factors on Terminal Value

Discount Rates:

- Higher rates increase WACC, reducing Terminal Value.
- Example: Post-rate hike environments lead to lower present values.

Currency Volatility

- Exchange rate fluctuations alter the value of foreign cash flows, significantly affecting MNCs.
- Example: A pharmaceutical firm sees its Terminal Value drop by 25% due to a weakening Euro, reducing revenue in USD terms.

F A C T O R S

Inflation

- Persistent inflation erodes real cash flows and shrinks margins, reducing sustainable growth (g)

Market Cycles

- Bull markets inflate growth expectations and multiples, while bear markets suppress them.

Regulatory Environment

- Tax reforms, environmental regulations, or trade barriers directly impact profitability and long-term projections

Importance of Terminal Value in valuation

FOUNDER

1. Legacy and Vision:

1. TV quantifies the long-term scalability and success of their business model.
2. It Represents the legacy of the business

2. Capital Allocation:

1. Helps founders justify investments in long-term assets or R&D by linking them to potential future gains.

3. Brand Equity Valuation:

1. For founders of strong consumer-facing brands (e.g., Apple, Coca-Cola), TV reflects their brand's perpetual market strength

INVESTOR

1. Exit Strategy Insights:

1. Investors often use TV as a benchmark for potential M&A deals or IPO valuation.

2. Risk Assessment:

1. TV provides a cushion for higher risks in early-stage investments, showing long-term profitability potential.

3. Return Optimization:

1. TV-focused strategies help identify businesses with high future growth and minimal current profitability (e.g., Amazon's early years).

VALUER

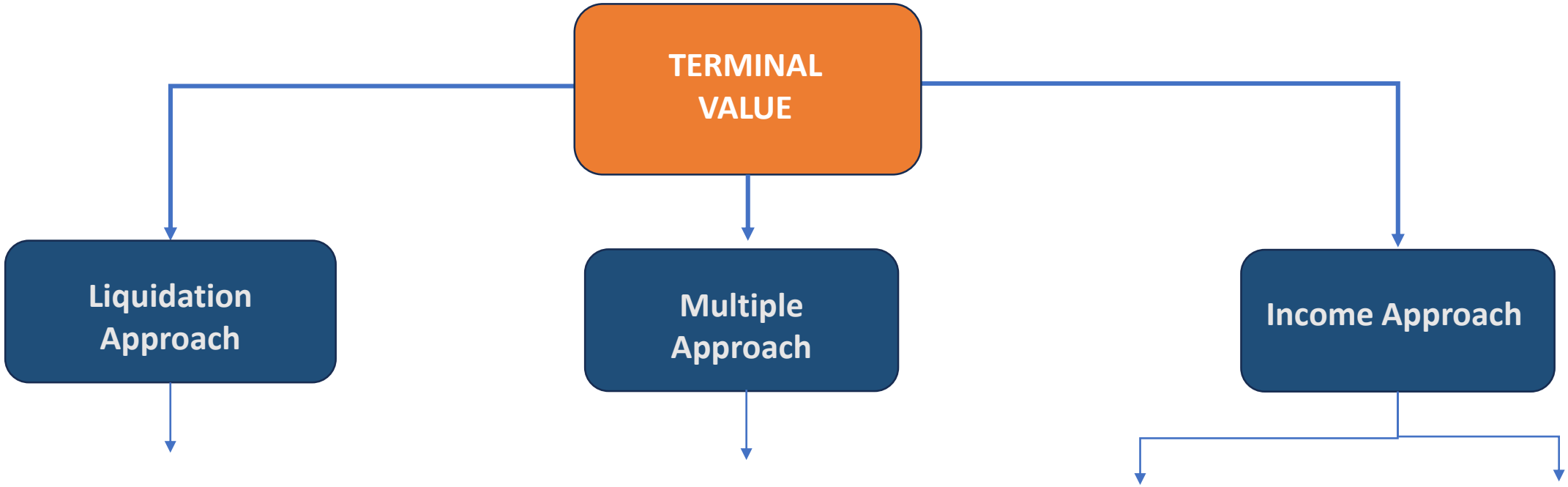
1. Accuracy & Credibility:

1. TV is often the single largest component of valuation, making accuracy paramount for credibility.

2. Reconciling Models:

1. Allows valuers to validate results using multiple approaches (e.g., comparing Perpetuity Model vs. Exit Multiple).

WAYS OF ESTIMATING TERMINAL VALUE



- Most useful when assets are separable & Marketable.
- Usually for distressed companies

- Easiest approach
- But makes the valuation a relative valuation

Gordon Approach

Assumes the company grows perpetually at a stable rate (*g*) derived from macroeconomic trends or industry norms.

Variable Growth

Models different growth phases (e.g., high-growth to stable growth) to capture a company's lifecycle transition.

Income Approach

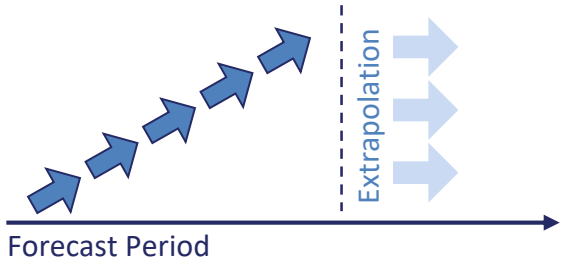
Overview Income Approach

Income Approach

Income Approach requires a lot more deeper insights to shortlist the key valuation parameters

- Company Background
- Management Business Plan
- Free Cashflows
- Discount Rate
- Business cycle / Key sensitivities

1. **FCFF** **Vs** **FCFE**

2. 

3. **Terminal Value**
   - Gordan growth
     Vs
   - Variable growth
     Vs
   - Exit multiple
     Vs
   - Salvage / Liquidation value

FCFF VS FCFE

Projections – FCFF Vs FCFE

Free Cash Flows to Equity

- Valuation of equity stake in business
- Based on expected cash flows - net of all outflows, including tax, interest and principal payments, reinvestment needs

	MINR
PAT	
Add: Depreciation	
Less: Capital Expenditure	
(Add) / Less: Increase / (Decrease) in Working Capital*	
Add / (Less): Borrowings / loan repayment	
Free Cash Flow to Equity (FCFE)	

* *Non-Cash Non-Debt Net Working Capital*

Free Cash Flows to Firm

- Value of firm for all the stakeholders – lenders and equity investors
- Net of tax but prior to debt payments
- Measures free cash flow to firm before all financing costs
- Business Value independent of the capital structure

	MINR
EBITDA	
Less: Tax (tax on PBIT)	
Less: Capital Expenditure	
Less: Increase / (Decrease) in Working Capital*	
Free Cash Flow to Firm (FCFF)	

Gordon Growth & Variable Growth - Concept

Gordon Growth

- Assumes the company continues indefinitely with a steady growth rate.
- Best suited for **mature, stable businesses** like utility companies (e.g., **Duke Energy** or **Procter & Gamble**) that have predictable, steady cash flows and modest growth rates.

Variable Growth

- Recognizes that businesses transition through phases:
  - **High Growth**: Rapid expansion phase.
  - **Transition**: Gradual slowdown in growth.
  - **Stable Growth**: Long-term, steady state.
- Ideal for **high-growth industries transitioning to maturity**, such as SaaS companies (e.g., **Shopify**) or biotech firms during periods of innovation (e.g., **Moderna during its COVID-19 vaccine phase**).

Gordon Growth & Variable Growth – Pros & Cons

Approach	Pro's	Con's
Gordon Growth:	• Simple and theoretically robust. • Emphasizes long-term sustainability over short-term volatility.	• Overly sensitive to small changes in *r* (discount rate) and *g* (growth rate). • Unrealistic for high-growth or cyclical industries.
Variable Growth:	• Realistic for companies experiencing lifecycle transitions. • Accounts for industry dynamics, innovation cycles, and market evolution.	• Assumption-heavy and data-intensive. • Requires detailed projections for multiple phases, increasing complexity.

Gordon Growth & Variable Growth – Formula & Application

- $TV = \frac{FCF_{t+1}}{Ke - g}$

FCF in the last year of projection*(1+growth rate)
(Discounting Factor – growth rate)

•**Cost of Equity (Re):** Use the Capital Asset Pricing Model (CAPM).

•**CAPM Formula:** Re = Rf + β × (Rm - Rf)

•*Rf:* Risk-free rate, often derived from the current yield on 10-year government bonds.
•*β:* Adjusted beta reflecting the company's sensitivity to market movements
•*Rm - Rf:* Source: Industry-standard reports or country-specific premium tables.

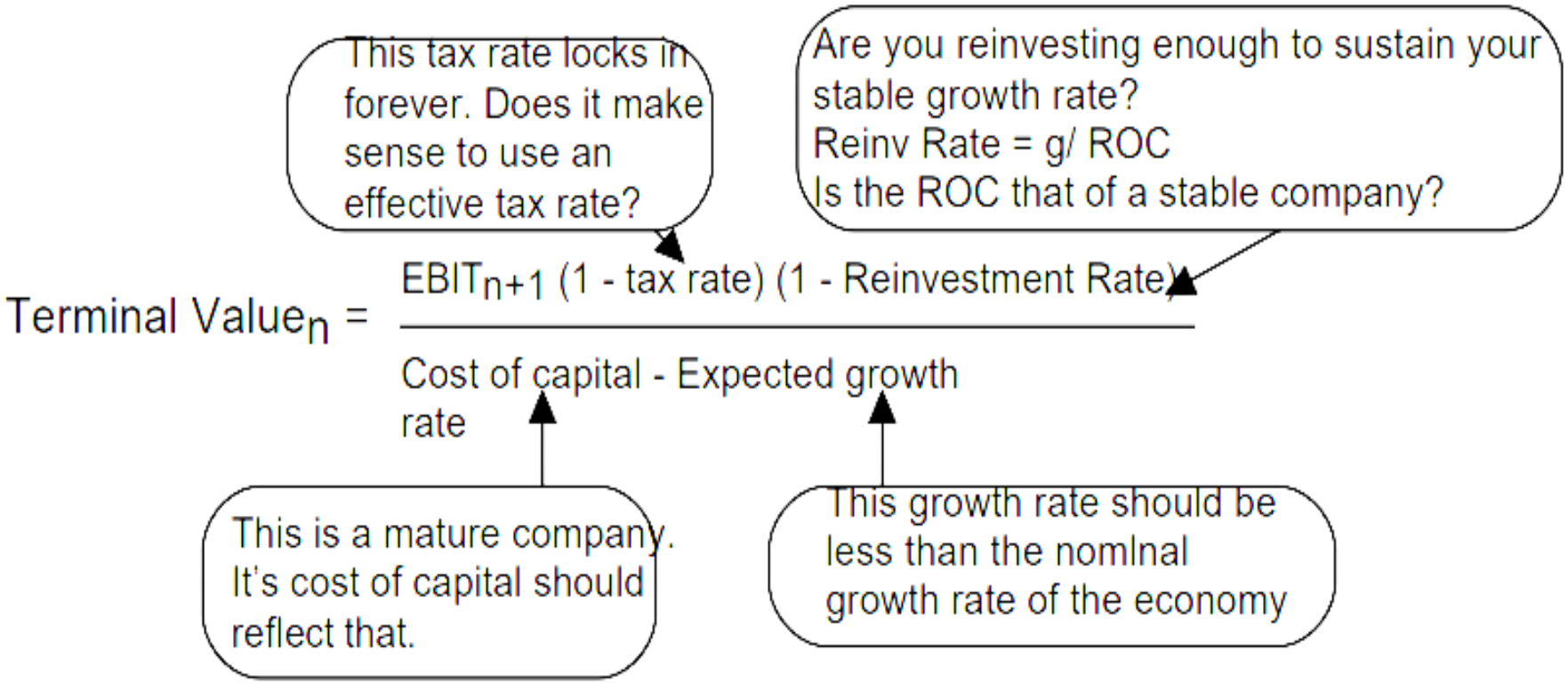
Simplifying WACC

- **Additional Considerations**:
  - **Company-specific risks**: Adjust beta for size or sector-specific risks.
  - **Emerging markets**: Add country risk premium to Ke for valuations in volatile regions.

- **Cost of Debt (Kd):**
  - Use the company's current borrowing rates or yields on comparable bonds.

- **Tax Considerations:**
  - Apply the marginal corporate tax rate to interest expenses.
  - For multi-jurisdictional companies:
    - Adjust tax rates based on the weighted contribution of cash flows by region.
    - Incorporate any expected changes in tax policy.

Alternate Formula



Terminal Value Calculation via Gordon Model

Particulars	31-03-2025	31-03-2026	31-03-2027	31-03-2028	31-03-2029
PAT	91,37,463	1,07,97,013	1,42,57,880	2,13,29,687	2,76,52,460
Add: Depreciation	27,79,216	52,67,530	68,60,518	56,16,311	81,69,786
Change in WC	3,63,143	(23,37,669)	(27,80,211)	(32,74,808)	(60,04,343)
Capex	(30,00,000)	(1,50,00,000)	(35,00,000)	(40,00,000)	(2,00,00,000)
Free Cashflow to Firm	**92,79,822**	**(12,73,127)**	**1,48,38,186**	**1,96,71,189**	**98,17,904**
PV Factor	0.84	0.70	0.59	0.49	0.41
PV Free Cashflow to Firm	**77,78,300**	**(8,94,461)**	**87,38,077**	**97,09,808**	**40,62,037**

Sum of Present Values	2,93,93,760
Terminal Value	2,56,61,794
Enterprise Value (I)	**5,50,55,554**
Add: Cash as on 31.03.2024	1,01,04,176
Equity value	**6,51,59,730**
Diluted No. of Shares as on 31st March 2024	18,700
Share price (per share)	**3,484**

→ $\text{FCFF Y5} * \frac{(1+G)}{(WACC-G)} * \text{PV Y5}$

DCF Assumptions:

Weighted Average Cost of Capital (WACC) – 19.30%

Terminal Growth Rate (G) – 3%

Tax Rate – 25.17%

Exit Multiple Approach

Exit Multiple Approach - Conceptual Understanding

- Applying a market-derived multiple (e.g., EV/EBITDA, EV/Revenue) to the company's financial metric at the end of the explicit forecast period.

Choose a relevant metric based on industry and business stage

Identify Comparable Companies with similar size, growth, profitability, and capital structure, Geography

Precedent Transactions: Analyze multiples from recent M&A deals in the industry.

Normalize financials for non-recurring items, accounting policies, and capital structures

Discount the amount and incorporate it into DCF Analysis

Beyond the Basics

EBITDA Multiple: Commonly used for capital-intensive industries due to its focus on operating performance.
Revenue Multiple : Useful for startups or industries with high growth potential but inconsistent profitability (e.g., SaaS).

Terminal Value Calculation via Exit Multiple Approach

Example: Indian Renewable Energy Company
Company: **EcoSpark Energy** – Operates Solar Farms & Ancillary Services

- **Projected Financials**:
  Final forecast year revenue: ₹1,000 crore. EBITDA Margin: 40%.

Peer Profile:

S.No.	Name	CMP Rs.	P/E	Mar Cap Rs.Cr.	PAT 12M Rs.Cr.	Ind PE	EV / EBITDA
1.	Adani Green	1453.80	178.64	230286.64	1289.17	34.06	31.06
2.	JSW Energy	709.15	63.55	123942.97	1951.61	34.06	25.02
3.	SJVN	106.80	45.41	41970.17	924.95	30.95	25.59

Average EV/EBITDA: 27.22

Terminal Value : Metric X Market Multiple
: 400 Crore X 27.22
: 10,889 Crores

Discount this amount by WACC of last year of forecast period & incorporate in DCF

Considerations:

- **Market Conditions:** Adjust multiples for market cycles (bull vs. bear markets).
- **Size Premiums**
- **Discount on Lack of Liquidity:** Applied to value of closely held and Restricted Shares

Income & Multiple Approach – Pros & Cons

Approach	Pro's	Con's
Income Approach	• Theoretically sound, emphasizes intrinsic value • **Public Markets:** Analysts may lean towards Perpetuity Growth Model for established firms.	• Highly sensitive to growth rate assumptions
Exit Multiple	• Reflects current market valuations, easier to explain to stakeholders. • **Private Equity:** Often favors Exit Multiple due to focus on exit strategies.	• Market multiples can be volatile; may not capture long-term value.

Beyond the Basics

Perform both calculations and reconcile differences.

Liquidation Approach

Salvage/Liquidation Method - Concept

•This method calculates Terminal Value (TV) based on the **realizable market value of a company's tangible and intangible assets** after deducting all liabilities and liquidation costs.

•Typically used when a company is expected to cease operations or in highly distressed scenarios.

Distress Discounts:
Asset values may be heavily discounted if the company is in a forced-sale scenario.

FORMULA

TV = Realizable Asset Value – Liabilities – Liquidation Costs

• Realizable Asset Value: Market value of land, equipment, inventory, and intangibles (like IP or goodwill).
• Liabilities: Debt, taxes, and obligations.
• Liquidation Costs: Costs incurred during the sale process (e.g., legal fees, transaction costs).

Common Pitfalls in TV Calculation and How to Avoid Them

Overly optimistic growth rates

Problem	Solution
Assuming high perpetual growth rates that exceed long-term economic growth or industry trends	Anchor growth assumptions to macroeconomic indicators (e.g., GDP growth, inflation). Benchmark growth rates against peers and historical company performance.

Ignoring Capital Needs

Problem	Solution
Failing to account for reinvestments required to sustain growth.	Include **maintenance CapEx** (to preserve existing operations). Incorporate **growth CapEx** (to support expansion).

Common Pitfalls in TV Calculation and How to Avoid Them

Assuming Constant Margins

Problem	Solution
Unrealistically projecting stable margins despite competitive pressures.	Factor in potential margin compression from increased competition or market saturation. Model declining profitability in mature phases for cyclical industries.

Misaligned Time Horizons

Problem	Solution
Terminal value is calculated for a year that does not represent a steady state	Ensure the terminal year reflects a **normalized, steady-state** operation, not a peak or trough.

Common Myths

MYTHS				
The only way to estimate TV is to use perpetual growth model	The perpetual growth model can give you infinite value	The growth rate is your biggest driver of TV	Your growth rate cannot be negative in a perpetual growth model	If Your TV is a high proportion of DCF value , it is flawed
The terminal value can be based on annuities or a liquidation value.	Not if growth forever is capped at the growth rate of the economy-	Growth is not free & increasing growth can add or destroy value.	Growth can be negative forever & is often more reflective of reality.	The terminal value should be a high percent of value Today.

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