# LIVING WITH NOISE: VALUING YOUNG COMPANIES

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# Valuation is simple. We choose to make it complex!



**Value of growth**

The future cash flows will reflect expectations of how quickly earnings will grow in the future (as a positive) and how much the company will have to reinvest to generate that growth (as a negative). The net effect will determine the value of growth. The expected cash flow is computed as net of taxes and reinvestment:

*Expected Cash Flow = E($CF_n$) = Expected After-tax Operating Income in year n - Reinvestment in year n*

**Cash flows from existing assets**

The base earnings will reflect the earnings power of the existing assets of the firm, net of taxes and any reinvestment needed to sustain the base earnings.

$$Value\ of\ Business = \frac{E(CF_1)}{(1+r)} + \frac{E(CF_2)}{(1+r)^2} + \frac{E(CF_3)}{(1+r)^3} \ldots + \frac{Terminal\ Value_n}{(1+r)^n}$$

**Terminal Value**

This is the value that you attach to the business at the end of high growth. It can be a liquidation or going concern value.

$$Going\ Concern\ Value_n = \frac{E(CF_{n+1})}{r-g}$$

**Cost of Capital**

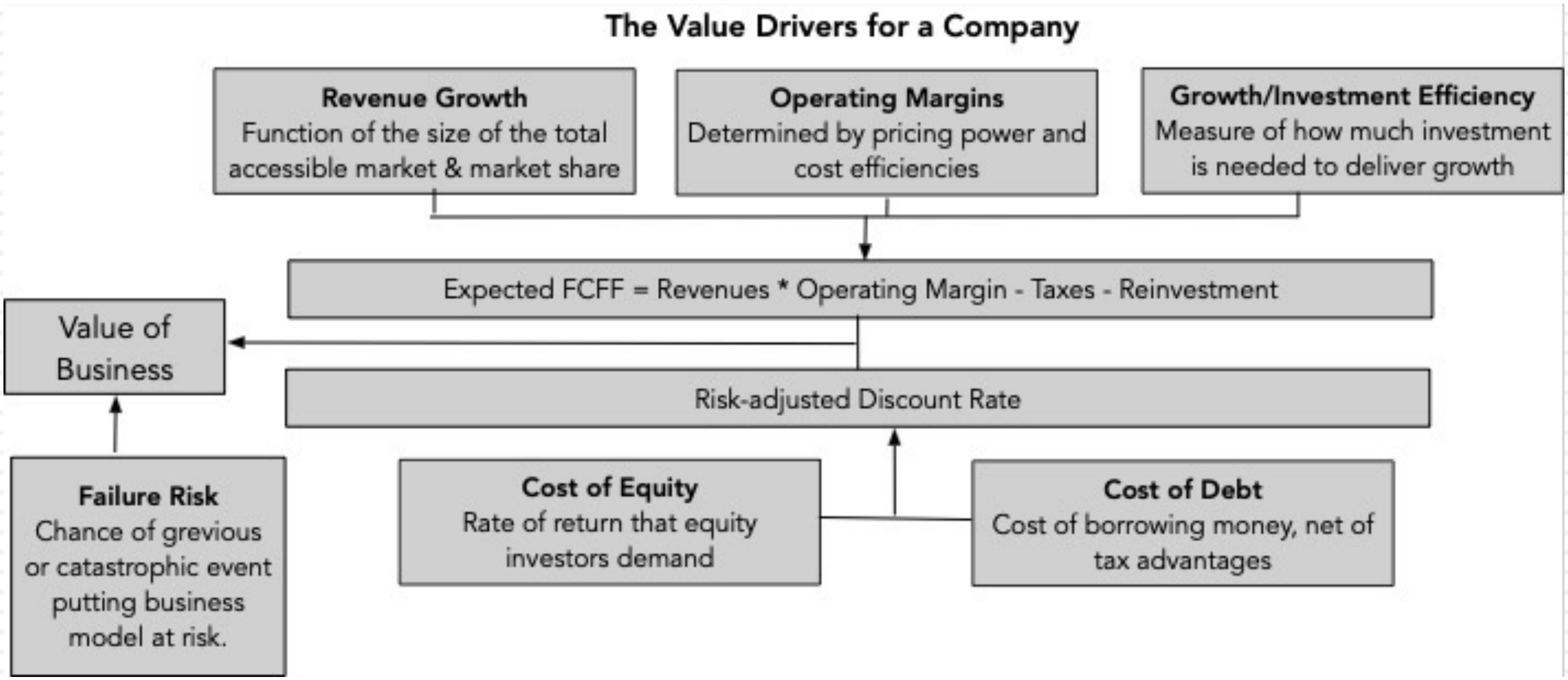
The cost of capital can be affected by the tax code, if it tilts towards debt over equity or vice versa. In much of the world, debt creates a tax benefit, because interest is tax deductible and the tax savings are at the margin (at the marginal tax rate).

*Risk adjusted Discount Rate = r = Cost of capital = Cost of Equity (Equity/(Debt+Equity) + Cost of Debt (1-t) (Debt/(Debt+Equity)*

*Going Concern Va*

# And Business Drivers that determine value… for all businesses



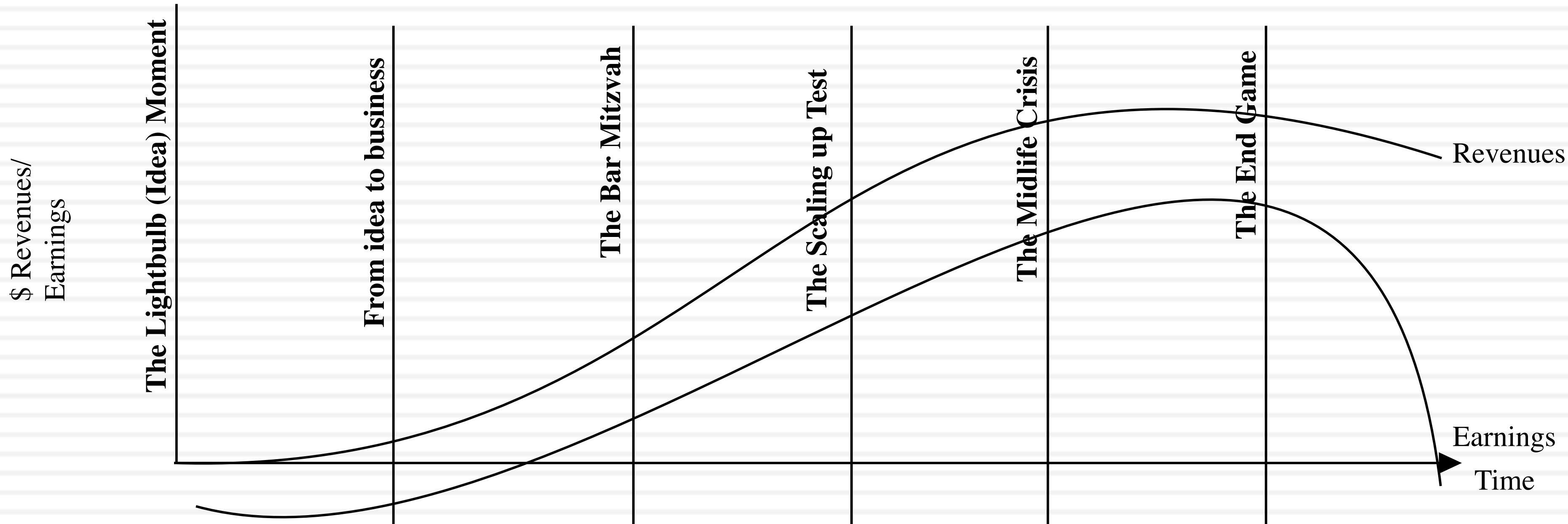


# Uncertainty comes in many forms…



- Estimation versus Economic uncertainty
  - Estimation uncertainty reflects the possibility that you could have the "wrong model" or estimated inputs incorrectly within this model.
  - Economic uncertainty comes the fact that markets and economies can change over time and that even the best models will fail to capture these unexpected changes.
- Micro uncertainty versus Macro uncertainty
  - Micro uncertainty refers to uncertainty about the potential market for a firm's products, the competition it will face and the quality of its management team.
  - Macro uncertainty reflects the reality that your firm's fortunes can be affected by changes in the macro economic environment.
- Discrete versus continuous uncertainty
  - Discrete risk: Risks that lie dormant for periods but show up at points in time. (Examples: A drug working its way through the FDA pipeline may fail at some stage of the approval process or a company in Venezuela may be nationalized)
  - Continuous risk: Risks changes in interest rates or economic growth occur continuously and affect value as they happen.

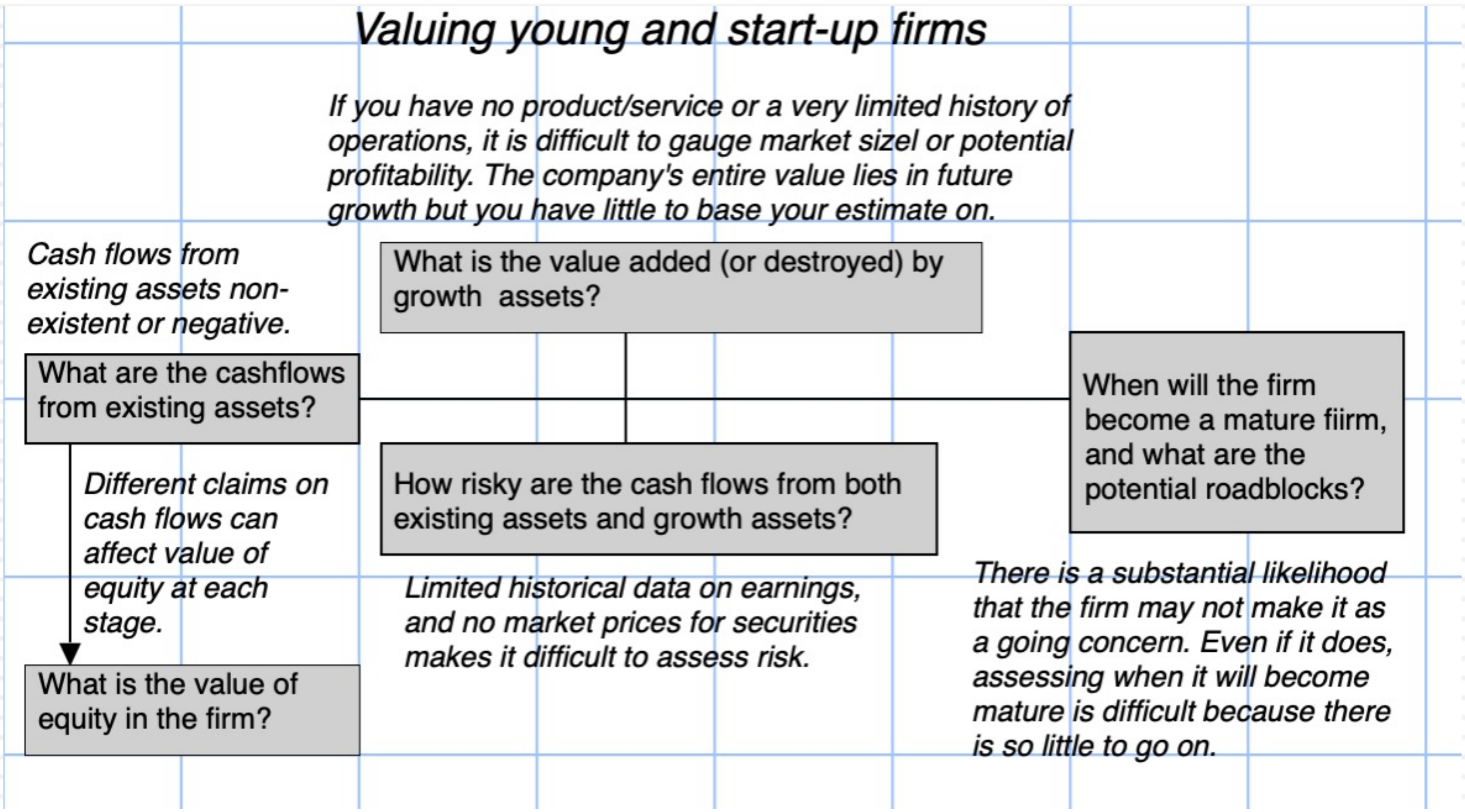
# And shifts over the corporate life cycle…




| | | | | | | |
|---|---|---|---|---|---|---|
| ***Growth stage*** | Stage 1<br>Start-up | Stage 2<br>Young Growth | Stage 3:<br>High Growth | Stage 4<br>Mature Growth | Stage 5<br>Mature Stable | Stage 6<br>Decline |
| ***Uncertainty about*** | Does the idea have potential? | Is there a business model for the idea to be commercialized? | Will the business model generate profits? | Can the business be scaled up? | Can the business be defended? | Will management face reality? |
| ***Type & Magnitude*** | *High & company specific* | → | → | → | → | *Low & sector or macro driven* |

# The Young Company Valuation Challenges..





# Why many (analysts, VCs, founders) find young companies difficult to value…



1. No or very little past data: Young companies often have short financial histories, and those histories tend to contain less "information" about the base business model (growth, profitability, reinvestment).
2. No clear market or business model: With an unformed business model, it is more difficult to forecast markets/revenues, and there is a greater chance of failure.
3. Don't know much about founder/managers: You do not know whether the founder/managers have the capacity to build businesses.
4. Unclear on how larger and more established competitors will react: If the young business is going up against established players, whether it succeeds or not will be a function of how the status quo reacts.
5. Macro and Regulatory Risks: Young businesses face legal and regulatory challenges that can put their existence at risk and are particularly exposed to changes in the macro environment (access to risk capital, economic slowdowns, country risk etc.)

*What is your primary concern?*

# Pushing them towards pricing…

- As investors/analysts face more uncertainty about the future, they become less willing to grapple with it and make estimates for the future, a requirement for valuation.
- Instead, they choose to price companies/assets, thus anchoring what they are willing to pay to what others are paying for similar assets.
- Note that while this reaction is understandable, the uncertainty remains.
  - You are in denial. Hiding from uncertainty does not make it go away.
  - You are letting the crowd, just as uncertain as you are, determine what you should pay.

# Value versus Price



Drivers of intrinsic value
- Cashflows from existing assets
- Growth in cash flows
- Quality of Growth

*Drivers of price*
- Market moods & momentum
- Surface stories about fundamentals

Accounting Estimates

Valuation Estimates

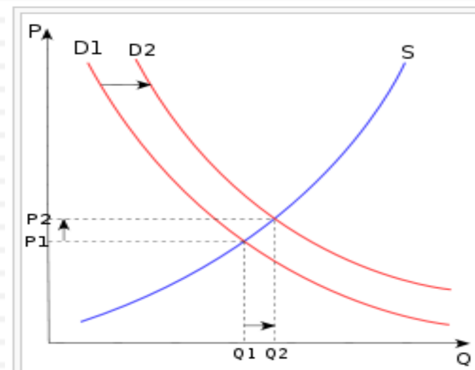
INTRINSIC VALUE

Value

THE GAP
Is there one?
If so, will it close?
If it will close, what will cause it to close?

Price

PRICE



# Zomato

***A Bet on India (and Indian eating habits)***

Zomato is at its core a food delivery company, but with its Blinkit acquisition, it is clearly signaling that it is ambitious about growing its grocery delivery business, representing a large total market but with a much slimmer revenue share than the restaurant food deliver market. The company will continue with its acquisition-driven growth strategy and while economies of scale have been slow to show up, they will over the next few years. The restaurant-supplies business (Hyperpure) and overseas growth (Australia & Middle East) will remain marginal businesses.

***The Assumptions***

| | *Base year* | *Years 1-5* | *Years 6-10* | *After year 10* | *Story link* |
|---|---|---|---|---|---|
| Total Market | $500,000 | B3. Strongly higher growth rate in first 5 years | | ₹ 4,000,000 | Food delivery market + Grocery delivery market, in India |
| Gross Market Share | 42.60% | -> | | 30% | Duopoly in restaurant delivery, but more competition in grocery delivery |
| Revenue Share | 16.95% | - > | | 15.00% | Expansion in grocery delivery comes with lower revenue slice |
| Operating Margin | -42.04% | -> | | 35.00% | Economies of scale kick in on operating expenses, as company scales up. |
| Reinvestment | 5.00 | Sales to capital ratio stays stable | | 39.83% | Mostly in acquisitions of small technology businesses |
| Cost of capital | 12.50% | -> | | 11.00% | Median Indian company cost of capital, in INR. |
| Risk of failure | 10.00% | | | | Improved liquidity reduces failure risk, but still a cash-burning firm. |

***The Cash Flows***

| | *Total Market* | *Market Share* | *Revenues* | *EBIT (1-t)* | *Reinvestment* | *FCFF* |
|---|---|---|---|---|---|---|
| 1 | $ 708,089 | 41.34% | $ 49,054 | $ (13,062) | $ 2,589 | $ (15,651) |
| 2 | $ 1,002,781 | 40.08% | $ 66,567 | $ (7,470) | $ 4,378 | $ (11,848) |
| 3 | $ 1,420,118 | 38.82% | $ 90,230 | $ 8,466 | $ 5,916 | $ 2,550 |
| 4 | $ 2,011,141 | 37.56% | $ 122,159 | $ 22,640 | $ 7,982 | $ 14,657 |
| 5 | $ 2,848,135 | 36.30% | $ 165,177 | $ 43,359 | $ 10,754 | $ 32,605 |
| 6 | $ 3,014,004 | 35.04% | $ 166,667 | $ 43,750 | $ 372 | $ 43,378 |
| 7 | $ 3,189,533 | 33.78% | $ 167,926 | $ 44,081 | $ 315 | $ 43,766 |
| 8 | $ 3,375,284 | 32.52% | $ 168,934 | $ 44,345 | $ 252 | $ 44,093 |
| 9 | $ 3,571,853 | 31.26% | $ 169,665 | $ 44,537 | $ 183 | $ 44,354 |
| 10 | $ 3,779,869 | 30.00% | $ 170,094 | $ 44,650 | $ 107 | $ 44,542 |
| Terminal year | $ 4,000,000 | 30.00% | $ 180,000 | $ 47,250 | $ 18,821 | $ 28,429 |

***The Value***

| | |
|---|---|
| Terminal value | ₹ 457,053.86 |
| PV(Terminal value) | ₹ 146,520.87 |
| PV (CF over next 10 years) | ₹ 94,084.86 |
| Value of operating assets = | ₹ 240,605.73 |
| Probability of failure | 10% |
| Value in case of failure | ₹ 0.00 |
| Adjusted Value for operating assets | ₹ 216,545.15 |
| + Cash on hand | ₹ 68,786.00 |
| + IPO Proceeds | ₹ 35,356.00 |
| - Debt | ₹ 704.00 |
| Value of equity | ₹ 319,983.15 |
| - Value of options | ₹ 16,246.58 |
| / Number of shares | 8502.08 |
| Value per share | ₹ 35.32 |

# Valuing Young Companies: Ten Rules for the Road



1. Start with a story that you tie to numbers
2. Less is more (the rule on detail….) (Revenue & margin forecasts) and build in internal checks on reasonableness… (reinvestment and ROC)
3. Use the offsetting principle (risk free rates & inflation at Tata Motors)
4. Draw on economic first principles (Terminal value at all the companies )
5. Use the "market" as a crutch (equity risk premiums, country risk premiums)
6. Use the law of large numbers (Beta for all companies
7. Don't let the discount rate become the receptacle for all uncertainties.
8. Confront uncertainty, if you can
9. Don't look for precision
10. You can live with mistakes, but bias will kill you…

# 1. Tell a story



**Favored Tools**
- Accounting statements
- Excel spreadsheets
- Statistical Measures
- Pricing Data

A Good Valuation

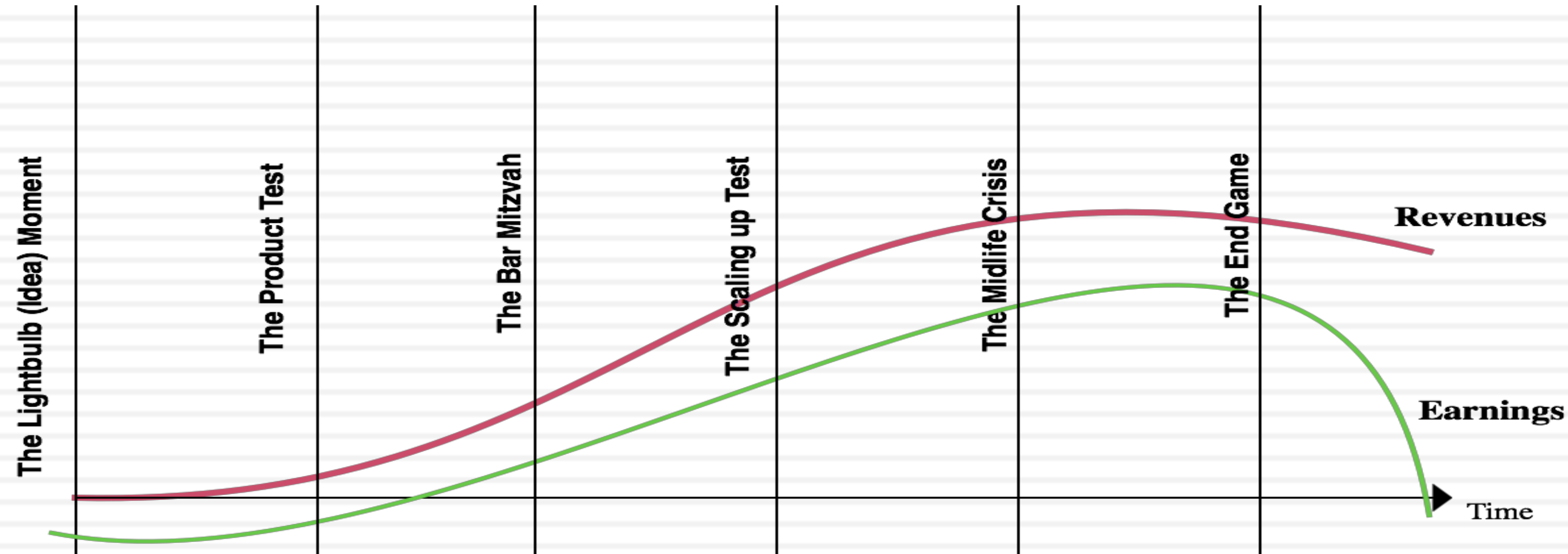
**Favored Tools**
- Anecdotes
- Experience (own or others)
- Behavioral evidence

The Numbers People ⟷ The Narrative People

**Illusions/Delusions**
1. Precision: Data is precise
2. Objectivity: Data has no bias
3. Control: Data can control reality

**Illusions/Delusions**
1. Creativity cannot be quantified
2. If the story is good, the investment will be.
3. Experience is the best teacher

# And particularly so for young companies..

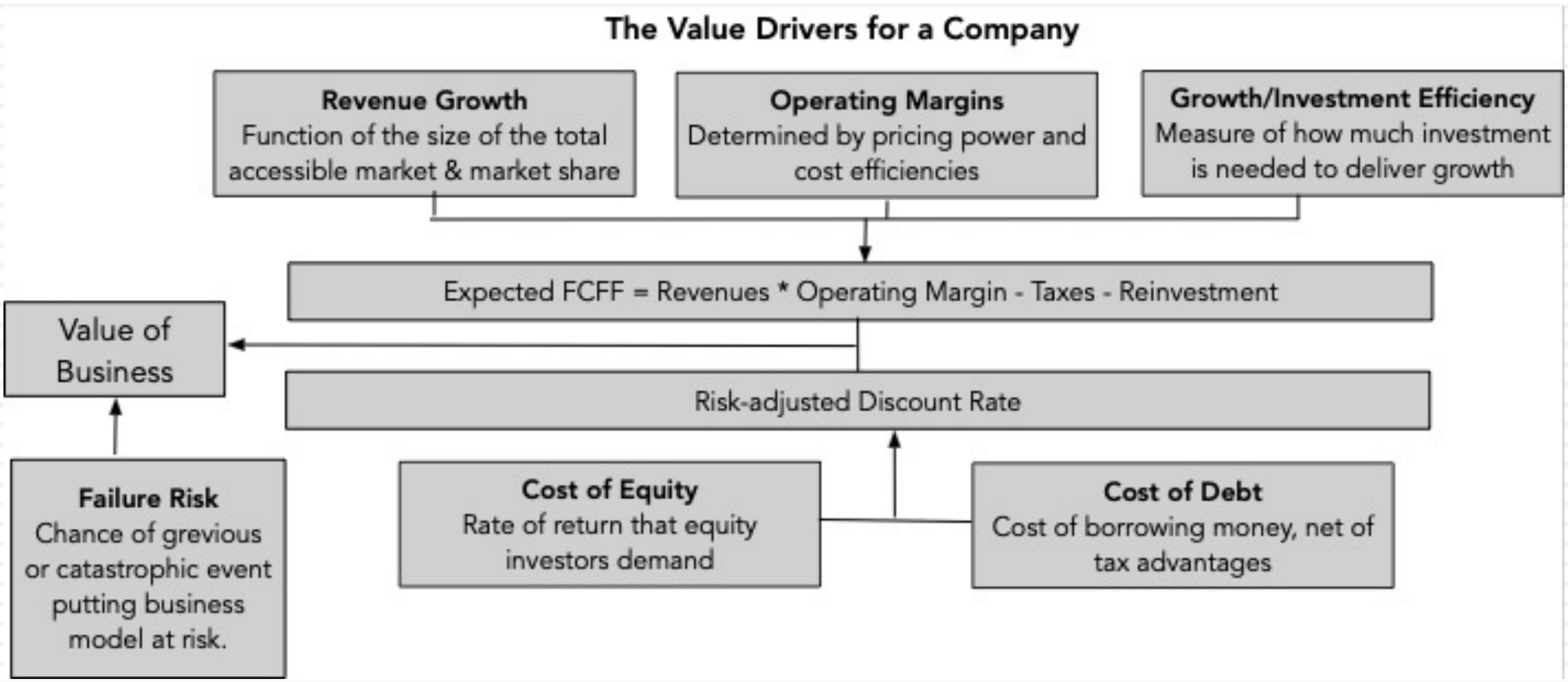



| *Lifecycle stage* | Start-up | Young Growth | High Growth | Mature Growth | Mature Stable | Decline |
|---|---|---|---|---|---|---|
| *Narrative versus Numbers* | All Narrative | Mostly narrative | Narrative + Numbers | Numbers + Narrative | Mostly Numbers | All Numbers |
| *Narrative Drivers* | How big is the narrative? | How plausible is narrative? | How profitable is narrative? | How scalable is narrative? | How sustainable is narrative? | How happy is the ending? |
| *Narrative Differences* | Unconstrained & Large differences | *Constraints mount as numbers build up*<br>*Differences across investors narrow, as history deepens* | | | | Constrained & Narrow differences |

# Zomato: Story Pieces

- Total Market:, I find it hard to see the *total market exceeding $40 billion, with US $20-$30 billion, in ten years,* being a more likely outcome. (In rupee terms, this will translate into a market that is roughly 1800-2000 billion INR.)
- Market Share: Expecting any company to have a *market share that exceeds 40%* of this market is a reach, and I will assume that Zomato will be one of the winners/survivors
- Revenue Share: That number was 23.13% in FY 2020, but dropped to 21.03% in FY 2021, as shut downs put a crimp on business. I will assume a *partial bounce back to 22% of GOV*, starting in 2022, but the presence of Amazon Food will prevent a return to higher values in the future.
- Profitability: I will assume that *pre-tax operating margins will trend towards 30%*, largely because I believe that the market will be dominated by a few big players, but with the very real possibility that one rogue player that is unwilling to play the game can upend profitability.
- Reinvestment: One of the advantages of being an intermediary business is that you can grow with relatively little capital investment, defined in conventional form (as plant, equipment or manufacturing facilities). That said, reinvestment takes a different form for online intermediaries, like Zomato, with investments in technology and in acquisitions, driving future growth.
- Risk: In terms of operating risk, the company, in spite of its global ambitions, is still primarily an Indian company, dependent on Indian macroeconomic growth to succeed, and my rupee cost of capital will incorporate the country risk. Zomato is a money losing company, but it is no start-up, facing imminent failure. On the plus side, its size and access to capital, as well as its post-IPO augmented cash balance, push down the risk of failure. Overall, I will attach a likelihood of failure of 10%, reflecting this balance.

# 2. Less is more



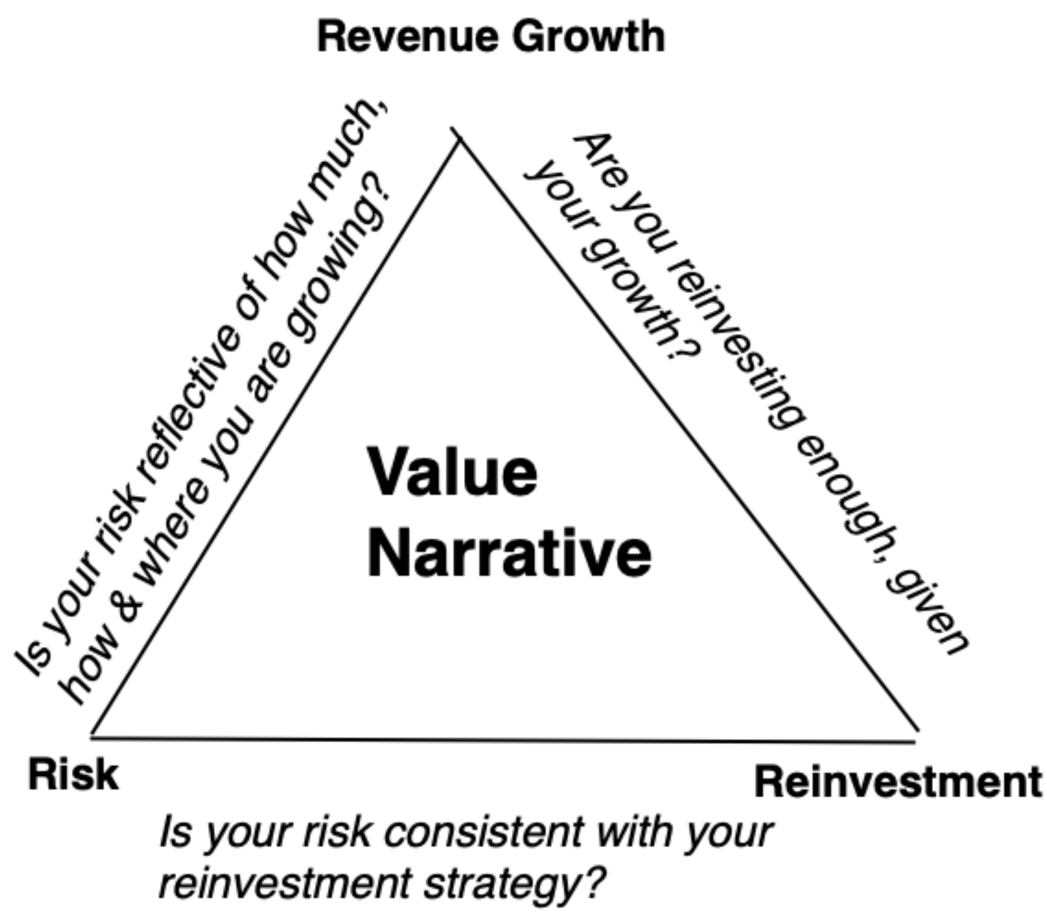
# From story to numbers



| The Assumptions | | | | | | |
|---|---|---|---|---|---|---|
| | *Base year* | *Next year* | *Years 2-5* | *Years 6-10* | *After year 10* | *Link to story* |
| Indian Food Delivery | ₹ 500,000 | ₹ 700,000 | 30.00% | 15.72% | ₹ 4,149,008 | *Indian food market rebounds in 2021 and grows to about $25 billion in year 10* |
| Market Share | 42.60% | 40.08% | | 30.00% | 30.00% | *Zomato is one of two or three lead players in Indian food delivery market* |
| Revenues as % of GOV | 16.95% | 16.76% | | | 15.68% | |
| Revenues (a) | ₹ 36,110.00 | ₹ 47,016 | Total Market * Market Share* Revenue as % of GOV | | ₹ 195,182 | COVID rebound in 2021 + Growth in food delivery market in India long term |
| Operating margin (b) | -42.04% | -10.0% | -10.00% | 35.00% | 35.00% | Margins improve as growth wanes |
| Tax rate | 25.00% | | 25.00% | 25.00% | 25.00% | Indian corporate tax rate over time |
| Reinvestment (c ) | | 5.00 | 2.50 | 3.00 | 39.83% | Acquisitions & technology investments needed to sustain growth |
| Return on capital | -15.65% | Marginal ROIC = | 157.92% | | 12.00% | Newworking benefits allow for high ROIC, near and long term. |
| Cost of capital (d) | | | 13.56% | 11.00% | 11.00% | Cost of capital reflects Indian country risk |

# 3. Consistency is key in the numbers...





# 4. Draw on economic first principles and mathematical limits…



Myth 5.1: The only way to estimate terminal value is to use the perpetual growth model.

Myth 5.2: The perpetual growth model can give you an infinite value.

Myth 5.3: The growth rate is your biggest driver of terminal value.

Myth 5.4: Your growth rate cannot be negtive in a perpetual growth model.

Myth 5.5: If your terminal value is a high proportion of your DCF value, it is flawed.

$$\text{Value of an asset with life} > n \text{ years} = \frac{E(CF_1)}{(1+r)^1} + \frac{E(CF_2)}{(1+r)^2} + .. + \frac{E(CF_n)}{(1+r)^n} + \frac{\text{Terminal Value}_n}{(1+r)^n}$$

Truth 5.1: The terminal value can be based on annuities or a liquidation value.

Truth 5.2: Not if growth forever is capped at the growth rate of the economy.

Truth 5.3: Growth is not free & increasing growth can add or destory value.

Truth 5.4: Growth can be negative forever & is often more reflective of reality.

Truth 5.5: The terminal value should be a high percent of value today.

# 5. Use the market as a crutch… ERP as an illustration

In 2021, earnings recovered almost entirely from the 2020 collapse and dividends & buybacks surged as well.

**Base year cash flow (last 12 mths)**
Dividends (TTM): 59.20
+ Buybacks (TTM): 88.05
= Cash to investors (TTM): **147.24**

**Expected earnings/cashflow growth in next 5 years**
Analysts were on target in 2021, with estimated earnings of 206.38 for the year. They were projecting compunded annual growth rate of 6.47% a year for next five years.

**Modified Payout**
This computation assumes that the payout ratio stays constant over time. If you assume that it changes to a sustainable level (given stable growth & ROE), the implied ERP = 4.90%

Actual numbers

Forecasted numbers

| | 2019 | 2020 | *LTM* | *2021E* | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|
| Expected Earnings | 157.18 | 139.76 | 190.34 | 206.38 | 219.74 | 233.96 | 249.11 | 265.23 | 282.40 |
| Cash payout as % of earnings | 146.31 | 118.66 | 77.36% | 77.36% | 77.36% | 77.36% | 77.36% | 77.36% | 77.36% |
| Dividends + Buybacks = | 93.08% | 84.90% | 147.24 | 159.65 | $169.99 | $180.99 | $192.71 | $205.18 | $218.46 |

Earnings and Cash flows grow @1.51% (set equal to risk free rate) a year forever.

S&P 500 on 1/1/22=
**4766.18**

$$4766.18 = \frac{169.99}{(1+r)} + \frac{180.99}{(1+r)^2} + \frac{192.71}{(1+r)^3} + \frac{205.18}{(1+r)^4} + \frac{218.46}{(1+r)^5} + \frac{218.46\,(1.0151)}{(r-.0151)(1+r)^5}$$

The last term in this equation is the expected index level at the end of year 5 (capturing price appreciation)

**Solve for r**

You can solve for this r either iteratively or using the solver function in Excel

r = Implied Expected Return on Stocks = 5.75%

*Minus*

Risk free rate = T.Bond rate on 1/1/22= 1.51%

*Equals*

Implied Equity Risk Premium (1/1/22) = 5.75% - 1.51% = 4.24%

# ERP : July 2023

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Andorra | Baa2 | 2.89% | 7.89% | Italy | Baa3 | 3.33% | 8.33% |
| Austria | Aa1 | 0.61% | 5.61% | Jersey (States of) | Aa3 | 0.91% | 5.91% |
| Belgium | Aa3 | 0.91% | 5.91% | Liechtenstein | Aaa | 0.00% | 5.00% |
| Cyprus | Ba1 | 3.80% | 8.80% | Luxembourg | Aaa | 0.00% | 5.00% |
| Denmark | Aaa | 0.00% | 5.00% | Malta | A2 | 1.28% | 6.28% |
| Finland | Aa1 | 0.61% | 5.61% | Netherlands | Aaa | 0.00% | 5.00% |
| France | Aa2 | 0.75% | 5.75% | Norway | Aaa | 0.00% | 5.00% |
| Germany | Aaa | 0.00% | 5.00% | Portugal | Baa2 | 2.89% | 7.89% |
| Greece | Ba3 | 5.46% | 10.46% | Spain | Baa1 | 2.43% | 7.43% |
| Guernsey (States of) | Aa2 | 0.75% | 5.75% | Sweden | Aaa | 0.00% | 5.00% |
| Iceland | A2 | 1.28% | 6.28% | Switzerland | Aaa | 0.00% | 5.00% |
| Ireland | Aa3 | 0.91% | 5.91% | Turkey | B3 | 9.86% | 14.86% |
| Isle of Man | Aa3 | 0.91% | 5.91% | United Kingdom | Aa3 | 0.91% | 5.91% |
| | | | | **W.Europe** | | **1.37%** | **6.37%** |

| | | | |
|---|---|---|---|
| Canada | Aaa | 0.00% | 5.00% |
| United States | Aaa | 0.00% | 5.00% |
| **US & Canada** | | **0.00%** | **5.00%** |

| | | | |
|---|---|---|---|
| Caribbean | | 14.38% | 19.38% |

| | | | |
|---|---|---|---|
| Argentina | Ca | 18.21% | 23.21% |
| Belize | Caa2 | 13.66% | 18.66% |
| Bolivia | Caa1 | 11.38% | 16.38% |
| Brazil | Ba2 | 4.57% | 9.57% |
| Chile | A2 | 1.28% | 6.28% |
| Colombia | Baa2 | 2.89% | 7.89% |
| Costa Rica | B2 | 8.35% | 13.35% |
| Ecuador | Caa3 | 15.18% | 20.18% |
| El Salvador | Caa3 | 15.18% | 20.18% |
| Guatemala | Ba1 | 3.80% | 8.80% |
| Honduras | B1 | 6.83% | 11.83% |
| Mexico | Baa2 | 2.89% | 7.89% |
| Nicaragua | B3 | 9.86% | 14.86% |
| Panama | Baa2 | 2.89% | 7.89% |
| Paraguay | Ba1 | 3.80% | 8.80% |
| Peru | Baa1 | 2.43% | 7.43% |
| Suriname | Caa3 | 15.18% | 20.18% |
| Uruguay | Baa2 | 2.89% | 7.89% |
| Venezuela | C | 24.82% | 29.82% |
| **Latin America** | | **6.03%** | **11.03%** |

| | | | |
|---|---|---|---|
| Angola | B3 | 9.86% | 14.86% |
| Benin | B1 | 6.83% | 11.83% |
| Botswana | A3 | 1.82% | 6.82% |
| Burkina Faso | Caa1 | 11.38% | 16.38% |
| Cameroon | B2 | 8.35% | 13.35% |
| Cape Verde | B3 | 9.86% | 14.86% |
| Congo ((DR) | B3 | 9.86% | 14.86% |
| Congo (Rep) | Caa2 | 13.66% | 18.66% |
| Côte d'Ivoire | Ba3 | 5.46% | 10.46% |
| Egypt | B3 | 9.86% | 14.86% |
| Ethiopia | Caa2 | 13.66% | 18.66% |
| Gabon | Caa1 | 11.38% | 16.38% |
| Ghana | Ca | 18.21% | 23.21% |
| Kenya | B3 | 9.86% | 14.86% |
| Mali | Caa2 | 13.66% | 18.66% |
| Mauritius | Baa3 | 3.33% | 8.33% |
| Morocco | Ba1 | 3.80% | 8.80% |
| Mozambique | Caa2 | 13.66% | 18.66% |
| Namibia | B1 | 6.83% | 11.83% |
| Niger | B3 | 9.86% | 14.86% |
| Nigeria | Caa1 | 11.38% | 16.38% |
| Rwanda | B2 | 8.35% | 13.35% |
| Senegal | Ba3 | 5.46% | 10.46% |
| South Africa | Ba2 | 4.57% | 9.57% |
| Swaziland | B3 | 9.86% | 14.86% |
| Tanzania | B2 | 8.35% | 13.35% |
| Togo | B3 | 9.86% | 14.86% |
| Tunisia | Caa2 | 13.66% | 18.66% |
| Uganda | B2 | 8.35% | 13.35% |
| Zambia | Ca | 18.21% | 23.21% |
| **Africa** | | **9.26%** | **14.26%** |

| | | | |
|---|---|---|---|
| Albania | B1 | 6.83% | 11.83% |
| Armenia | Ba3 | 5.46% | 10.46% |
| Azerbaijan | Ba1 | 3.80% | 8.80% |
| Belarus | C | 24.82% | 29.82% |
| Bosnia and Herzegovina | B3 | 9.86% | 14.86% |
| Bulgaria | Baa1 | 2.43% | 7.43% |
| Croatia | Baa2 | 2.89% | 7.89% |
| Czech Republic | Aa3 | 0.91% | 5.91% |
| Estonia | A1 | 1.07% | 6.07% |
| Georgia | Ba2 | 4.57% | 9.57% |
| Hungary | Baa2 | 2.89% | 7.89% |
| Kazakhstan | Baa2 | 2.89% | 7.89% |
| Kyrgyzstan | B3 | 9.86% | 14.86% |
| Latvia | A3 | 1.82% | 6.82% |
| Lithuania | A2 | 1.28% | 6.28% |
| Macedonia | Ba3 | 5.46% | 10.46% |
| Moldova | B3 | 9.86% | 14.86% |
| Montenegro | B1 | 6.83% | 11.83% |
| Poland | A2 | 1.28% | 6.28% |
| Romania | Baa3 | 3.33% | 8.33% |
| Russia | Ca | 18.21% | 23.21% |
| Serbia | Ba2 | 4.57% | 9.57% |
| Slovakia | A2 | 1.28% | 6.28% |
| Slovenia | A3 | 1.82% | 6.82% |
| Tajikistan | B3 | 9.86% | 14.86% |
| Ukraine | Ca | 18.21% | 23.21% |
| Uzbekistan | Ba3 | 5.46% | 10.46% |
| **E. Europe & Russia** | | 10.35% | 15.35% |

| | | | |
|---|---|---|---|
| Abu Dhabi | Aa2 | 0.75% | 5.75% |
| Bahrain | B2 | 8.35% | 13.35% |
| Iraq | Caa1 | 11.38% | 16.38% |
| Israel | A1 | 1.07% | 6.07% |
| Jordan | B1 | 6.83% | 11.83% |
| Kuwait | A1 | 1.07% | 6.07% |
| Lebanon | C | 24.82% | 29.82% |
| Oman | Ba2 | 4.57% | 9.57% |
| Qatar | Aa3 | 0.91% | 5.91% |
| Ras Al Khaimah (Emirate | A3 | 1.82% | 6.82% |
| Saudi Arabia | A1 | 1.07% | 6.07% |
| Sharjah | Ba1 | 3.80% | 8.80% |
| United Arab Emirates | Aa2 | 0.75% | 5.75% |
| **Middle East** | | **2.16%** | **7.16%** |

| Frontier (unrated) Countries | | | |
|---|---|---|---|
| Algeria | 68.75 | 5.46% | 10.46% |
| Brunei | 81.75 | 0.91% | 5.91% |
| Gambia | 66 | 8.35% | 13.35% |
| Guinea | 57.5 | 13.66% | 18.66% |
| Guinea-Bissau | 64.5 | 8.35% | 13.35% |
| Guyana | 75 | 2.43% | 7.43% |
| Haiti | 54.5 | 18.21% | 23.21% |
| Iran | 62.75 | 9.86% | 14.86% |
| Korea, D.P.R. | 51 | 18.21% | 23.21% |
| Liberia | 56.25 | 15.18% | 20.18% |
| Libya | 73.75 | 2.89% | 7.89% |
| Madagascar | 62.75 | 9.86% | 14.86% |
| Malawi | 52.75 | 18.21% | 23.21% |
| Myanmar | 56 | 15.18% | 20.18% |
| Sierra Leone | 53 | 18.21% | 23.21% |
| Somalia | 51.5 | 18.21% | 23.21% |
| Sudan | 43 | 24.82% | 29.82% |
| Syria | 48.75 | 24.82% | 29.82% |
| Yemen, Republic | 55.75 | 15.18% | 20.18% |
| Zimbabwe | 61.25 | 11.38% | 16.38% |

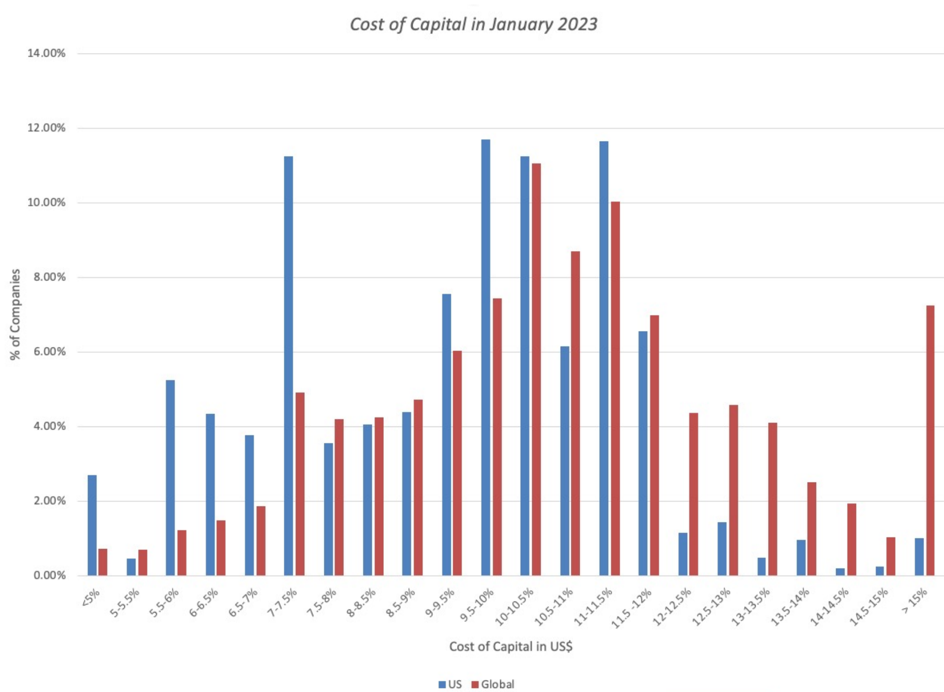
| | | | |
|---|---|---|---|
| Bangladesh | B1 | 6.83% | 11.83% |
| Cambodia | B2 | 8.35% | 13.35% |
| China | A1 | 1.07% | 6.07% |
| Fiji | B1 | 6.83% | 11.83% |
| Hong Kong | Aa3 | 0.91% | 5.91% |
| India | Baa3 | 3.33% | 8.33% |
| Indonesia | Baa2 | 2.89% | 7.89% |
| Japan | A1 | 1.07% | 6.07% |
| Korea | Aa2 | 0.75% | 5.75% |
| Laos | Caa3 | 15.18% | 20.18% |
| Macao | Aa3 | 0.91% | 5.91% |
| Malaysia | A3 | 1.82% | 6.82% |
| Maldives | Caa1 | 11.38% | 16.38% |
| Mongolia | B3 | 9.86% | 14.86% |
| Pakistan | Caa3 | 15.18% | 20.18% |
| Papua New Guinea | B2 | 8.35% | 13.35% |
| Philippines | Baa2 | 2.89% | 7.89% |
| Singapore | Aaa | 0.00% | 5.00% |
| Solomon Islands | Caa1 | 11.38% | 16.38% |
| Sri Lanka | Ca | 18.21% | 23.21% |
| Taiwan | Aa3 | 0.91% | 5.91% |
| Thailand | Baa1 | 2.43% | 7.43% |
| Vietnam | Ba2 | 4.57% | 9.57% |
| **Asia** | | **1.74%** | **6.74%** |

| | | | |
|---|---|---|---|
| Australia | Aaa | 0.00% | 5.00% |
| Cook Islands | B2 | 8.35% | 13.35% |
| New Zealand | Aaa | 0.00% | 5.00% |
| **Aus & NZ** | | **0.00%** | **5.00%** |

*Blue: Moody's Rating*
*Red: Added Country Risk*
*Green #: Total ERP*

Regional numbers are GDP-weighted

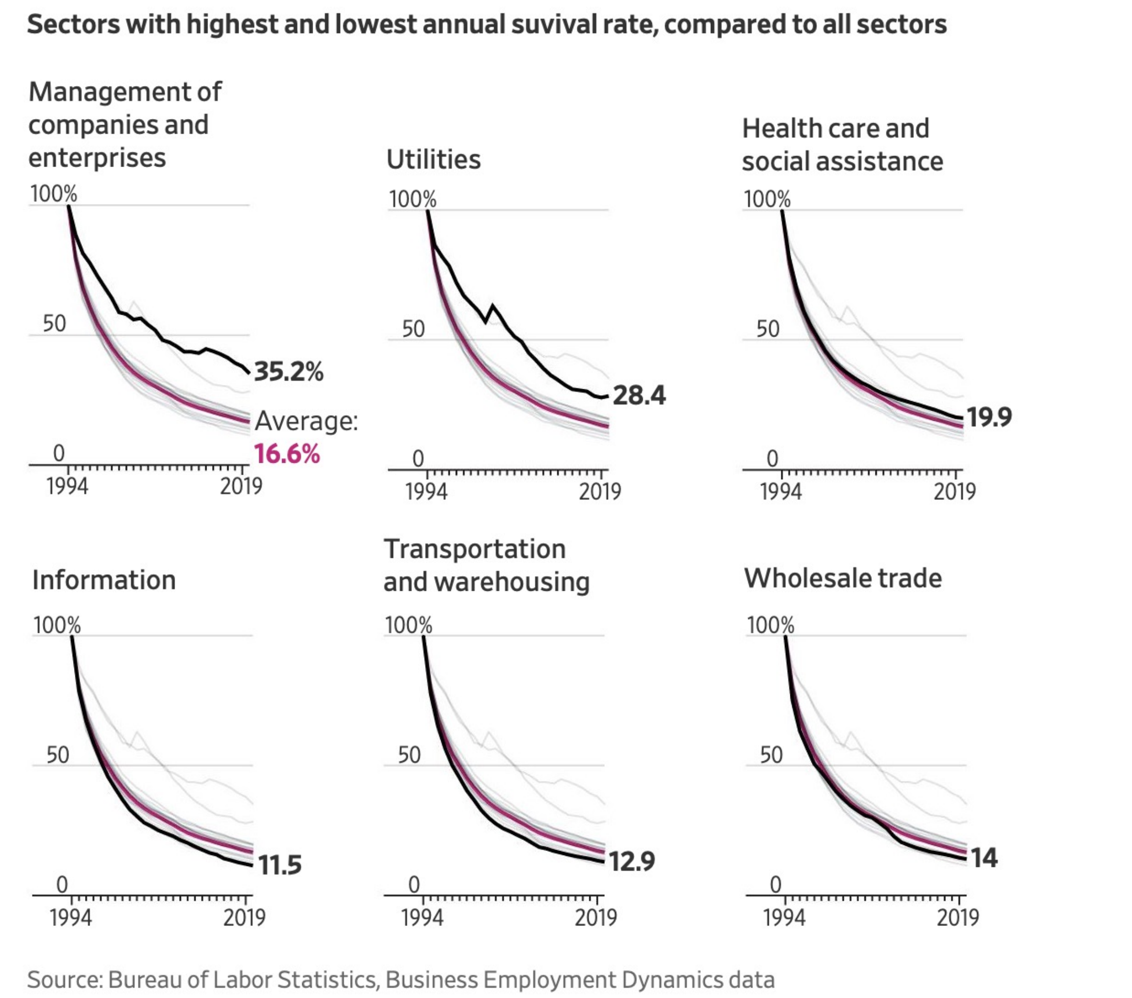
# 6. Draw on the law of large numbers…




| *Sub Group* | *# firms* | *Average* | *10th* | *25th* | ***Median*** | *75th* | *90th* |
|---|---|---|---|---|---|---|---|
| Africa and Middle East | 2,409 | 12.19% | 7.77% | 9.08% | **11.35%** | 14.26% | 18.22% |
| Australia & NZ | 1,895 | 9.67% | 7.09% | 8.76% | **10.39%** | 10.49% | 11.44% |
| Canada | 2,900 | 10.05% | 7.35% | 9.67% | **10.44%** | 10.50% | 11.58% |
| China | 7,266 | 10.72% | 7.86% | 9.24% | **10.97%** | 11.74% | 13.09% |
| EU & Environs | 5,952 | 10.90% | 7.24% | 8.71% | **10.37%** | 12.06% | 14.90% |
| Eastern Europe & Russia | 357 | 11.39% | 7.94% | 8.97% | **10.96%** | 13.29% | 15.05% |
| India | 4,149 | 11.80% | 8.43% | 9.80% | **12.00%** | 13.74% | 14.56% |
| Japan | 3,974 | 10.48% | 7.71% | 9.07% | **10.72%** | 11.50% | 13.10% |
| Latin America & Caribbean | 1,023 | 13.08% | 8.00% | 9.57% | **11.96%** | 14.62% | 20.08% |
| Small Asia | 9,591 | 11.94% | 8.25% | 9.66% | **11.23%** | 12.86% | 15.83% |
| UK | 1,232 | 10.31% | 7.44% | 8.41% | **10.67%** | 11.67% | 12.95% |
| United States | 7,165 | 9.27% | 6.03% | 7.26% | **9.63%** | 10.88% | 11.63% |
| Global | 47,913 | 10.88% | 7.39% | 9.08% | **10.60%** | 12.07% | 14.04% |

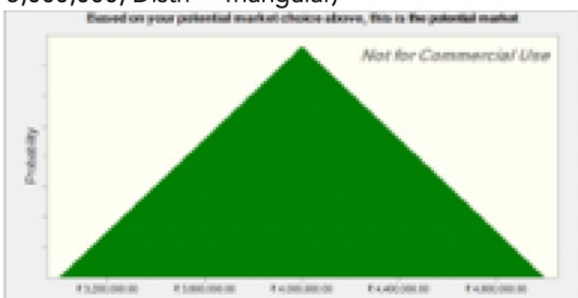
# 7. Don’t let the discount rate become the receptacle for all your uncertainty…



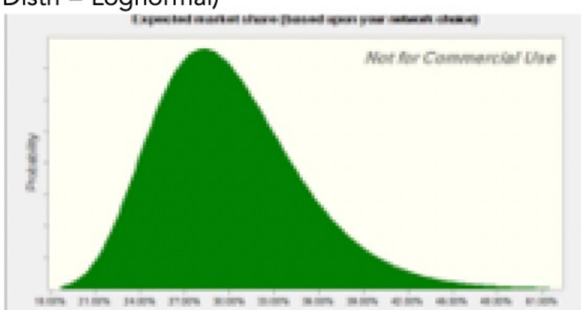


# 8. Confront uncertainty, if you can…

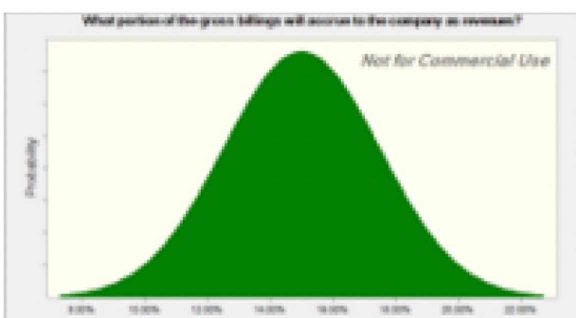
Total Market in 2032 (Range = 3,000,000 - 5,000,000, Distn = Triangular)




Market Share in 2032 (Mean = 30%, Std Dev =5%, Distn = Lognormal)

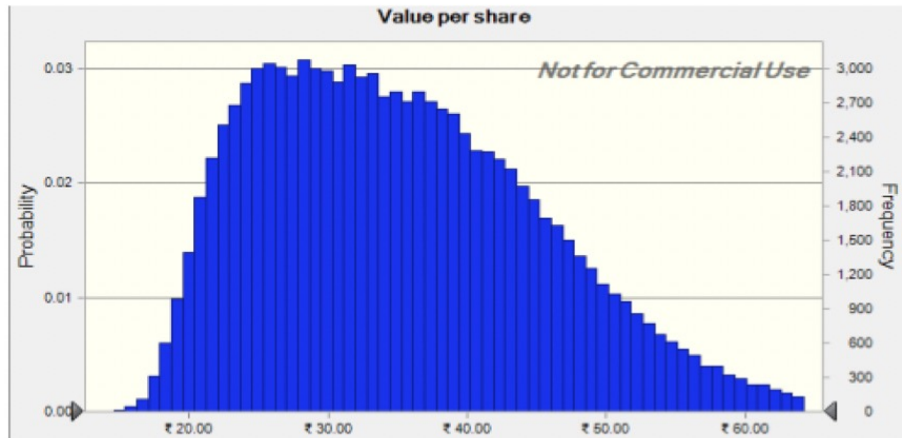



Operating Margin (Mean = 15%, Std Dev = 2.5%, Distn = Normal)




Correlation = 0.50

Zomato: Valuation in July 2022




| *Percentile* | | *Value per share* |
|---|---|---|
| 0.0% | ₹ | 13.78 |
| 10.0% | ₹ | 22.86 |
| 20.0% | ₹ | 25.75 |
| 30.0% | ₹ | 28.50 |
| 40.0% | ₹ | 31.29 |
| **50.0%** | **₹** | **34.12** |
| 60.0% | ₹ | 37.11 |
| 70.0% | ₹ | 40.33 |
| 80.0% | ₹ | 44.12 |
| 90.0% | ₹ | 49.43 |
| 100.0% | ₹ | 89.43 |

# 9. Don't look for precision..



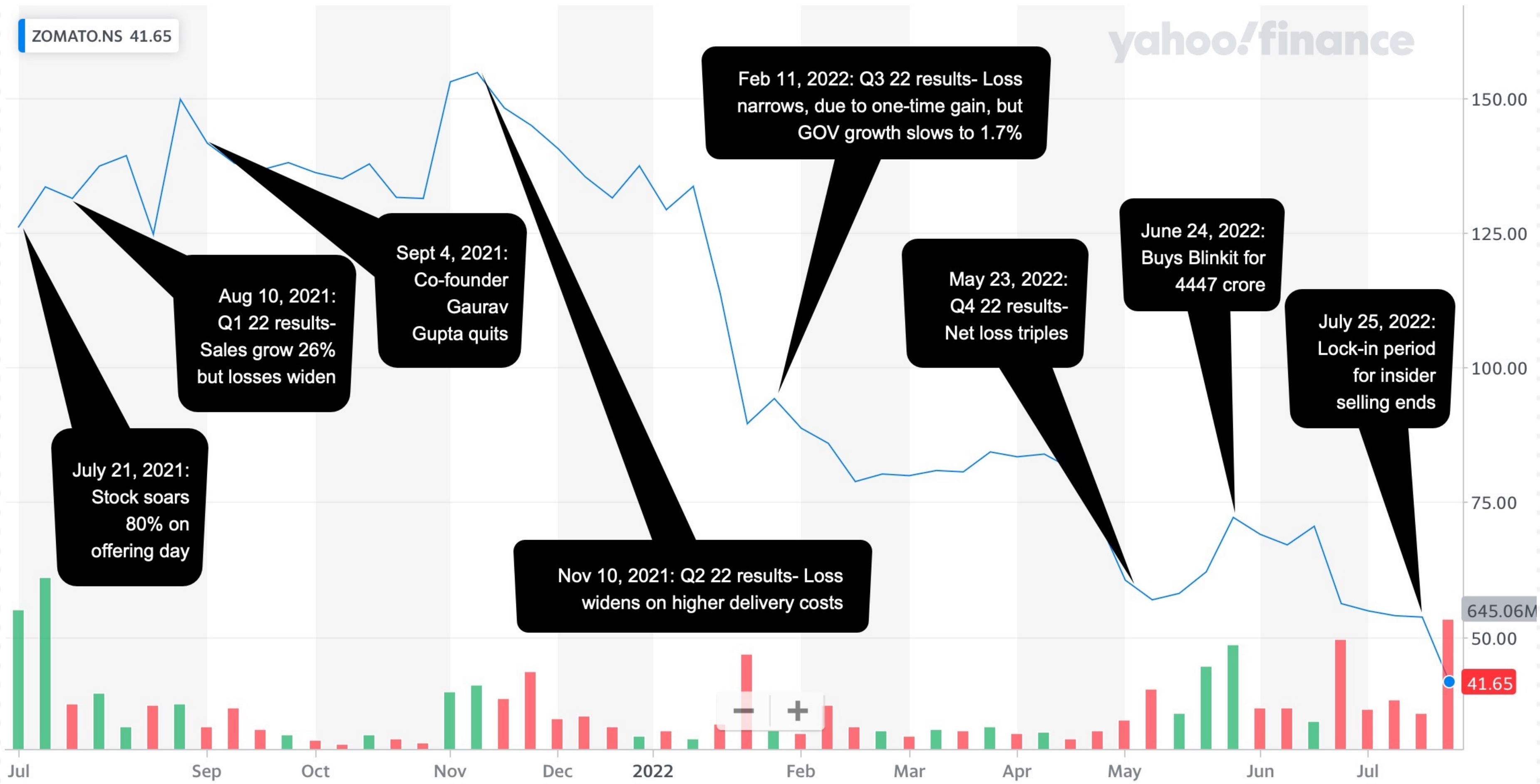
- No matter how careful you are in getting your inputs and how well structured your model is, your estimate of value will change both as new information comes out about the company, the business and the economy.
- As information comes out, you will have to adjust and adapt your model to reflect the information. Rather than be defensive about the resulting changes in value, recognize that this is the essence of risk.

# Remember that you don't have a monopoly on the truth…

| *Story* | *TAM (in ₹ millions)* | *Market Share* | *Revenue Slice* | *Target Margin* | *Cost of Capital* | *Value/share* | |
|---|---|---|---|---|---|---|---|
| Delivery Juggernaut | ₹ 5,000,000.00 | 40% | 25% | 45% | 9.50% | ₹ 150.02 | **Plausible** |
| Delivery Star | ₹ 5,000,000.00 | 40% | 22% | 35% | 9.50% | ₹ 93.00 | |
| Delivery Leader + Competition | ₹ 5,000,000.00 | 40% | 15% | 35% | 10.99% | ₹ 61.55 | |
| Restaurant Delivery Juggernaut + High Growth India | ₹ 3,000,000.00 | 40% | 25% | 45% | 9.50% | ₹ 94.31 | **Probable** |
| Restaurant Delivery Star + High Growth India | ₹ 3,000,000.00 | 40% | 22% | 35% | 9.50% | ₹ 59.02 | |
| Restaurant Delivery + Competition + High Growth India | ₹ 3,000,000.00 | 40% | 20% | 25% | 10.99% | ₹ 35.52 | |
| Base Case, Positive | ₹ 2,000,000.00 | 40% | 25% | 45% | 10.25% | ₹ 56.66 | |
| Base Case | ₹ 2,000,000.00 | 40% | 22% | 35% | 10.25% | ₹ 39.48 | |
| Base Case, Negative | ₹ 2,000,000.00 | 40% | 20% | 25% | 10.25% | ₹ 26.16 | |
| Restaurant Delivery Juggernaut + Low Growth India | ₹ 1,125,000.00 | 40% | 25% | 45% | 9.50% | ₹ 36.48 | **Plausible** |
| Restaurant Delivery Star + Low Growth India | ₹ 1,125,000.00 | 40% | 22% | 35% | 9.50% | ₹ 24.02 | |
| Restaurant Delivery + Competition + low Growth India | ₹ 1,125,000.00 | 40% | 20% | 25% | 10.99% | ₹ 16.58 | |

# And respect the market, even as you disagree with it..





# 10. You can make mistakes but try to keep bias out..