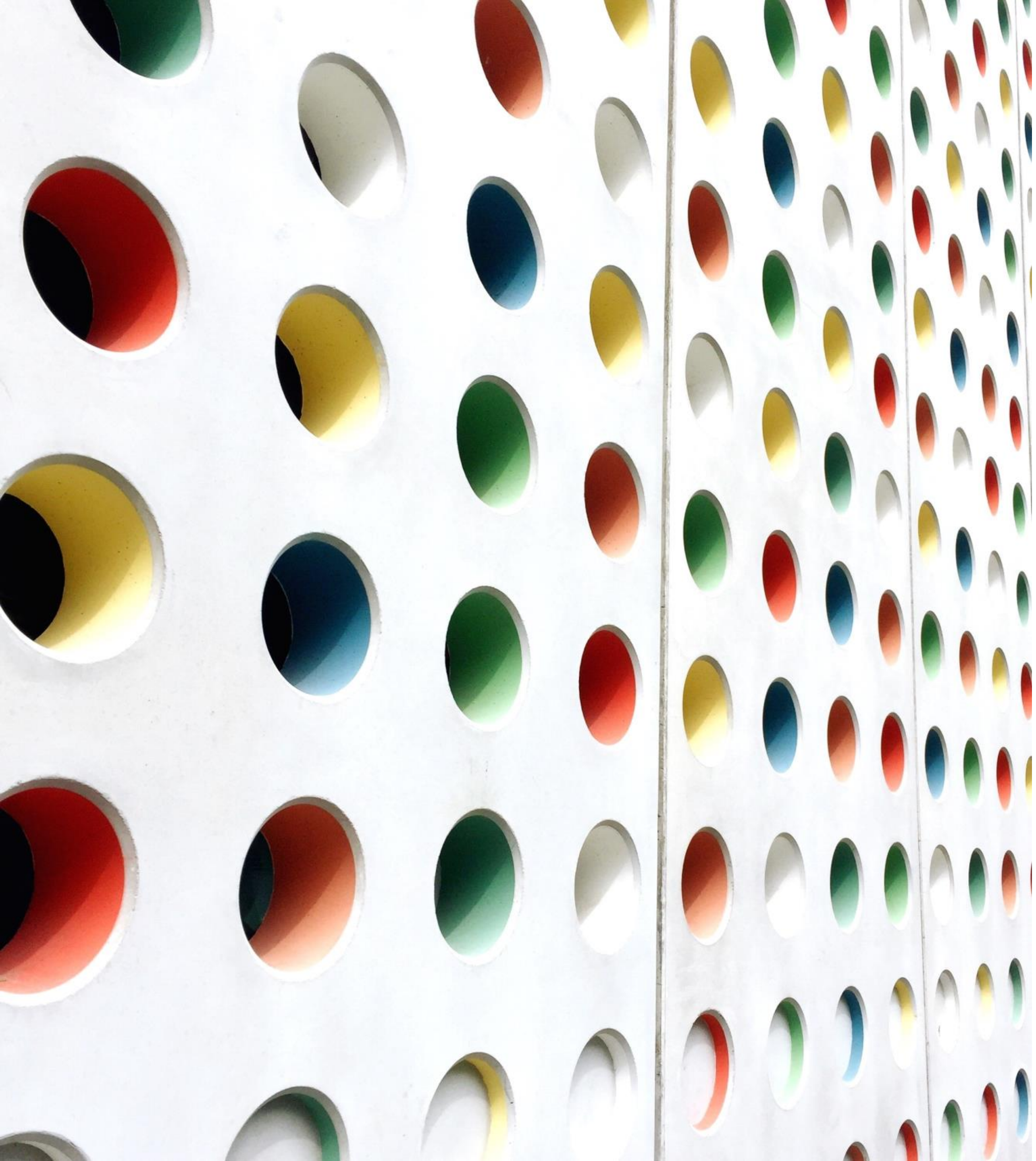

Modelling the Future in Commercial Valuations and Financial Feasibility Studies

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Introduction

- Income approach based valuations and financial feasibility studies share a common analytical framework as both are centered on future cash flow projections and estimations on risks.

- Both have a common primary objective → to forecast surprises about projects or businesses from the future into the present.

- Unlike other valuation approaches incomes approaches and financial feasibility studies depends on the precise estimation of future transactions.

Analytical Approach for Commercial Valuations and Feasibility Studies

- Literature and the existing valuation standards have tried to develop a working methodology to model the future.

- The widely adopted methodology is to discount cash flows mostly using DCF.

- Discounted cash flow (DCF) techniques has been appropriate for valuations and financial feasibility studies, the uncertainty that characterize future cash flows and risks pose significant challenges.

Analytical Approach for Commercial Valuations and Feasibility Studies

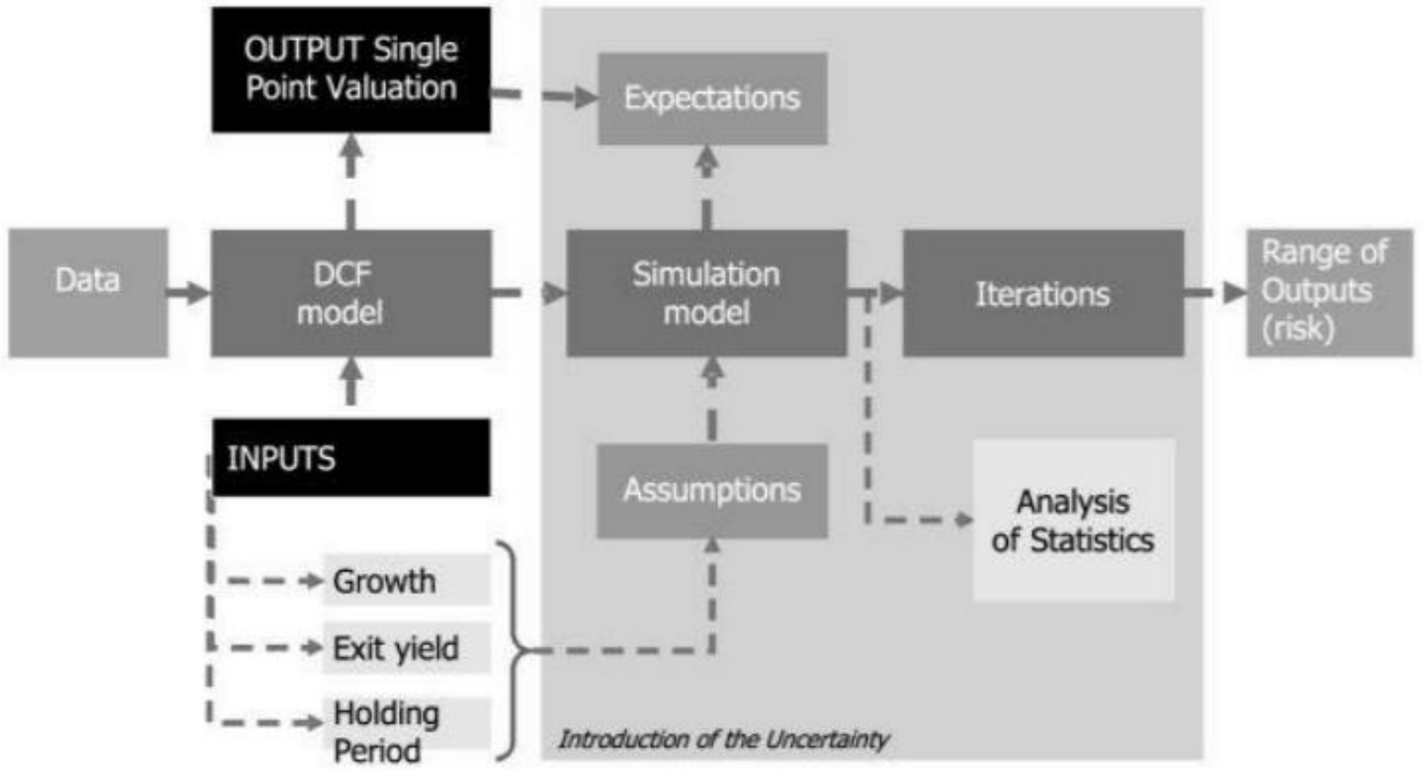
- Generally the DCF uses three common components for valuations; discount rates, cash flows and deterministic terminal values (IVS, 2020).
- The limitations of the DCF method have been extensively documented. Challenges emerge over proper identification of discount rates, future rent and expense levels and terminal value estimates.
- DCF can only generate point estimates of returns, which, by ignoring the full range of probable outcomes necessarily tend to distort the picture used for decision-making.
- understanding the how to model uncertainties about the future is key to delivering more meaningful and realistic Commercial Valuations and Feasibility Studies.

The paradigms of the uncertainty in future estimations

Type of Uncertainity	Meaning	Examples	Assessment Method
Known Unknown	Uncertainty about specific conditions	Variation in prices due to seasons, market demand	Sensitivity Analysis, Stochastic modelling
Unknown Knowns	Answers available to questions that have not been considered or asked.	Reference data and information that is not known to the project team	Critical searching and evaluation
Unknown Unknown	Ambiguity about systems and long-term factors impacting feasibility	Unknown variables and dynamics. Outcomes not previously encountered	
Epistemic Uncertainity	Uncertainty about the relevance and accuracy of questions and answers	The impact of strategic misrepresentation, optimism bias, bounded analysis, and bounded rationality	Self-reflection, metacognition, discursive methods,

Source: McLeod S. 2021

Modelling all unknowns into Commercial Valuation and Feasibility Studies



Source; French & Gabrielli, 2004

Procedures for Modelling

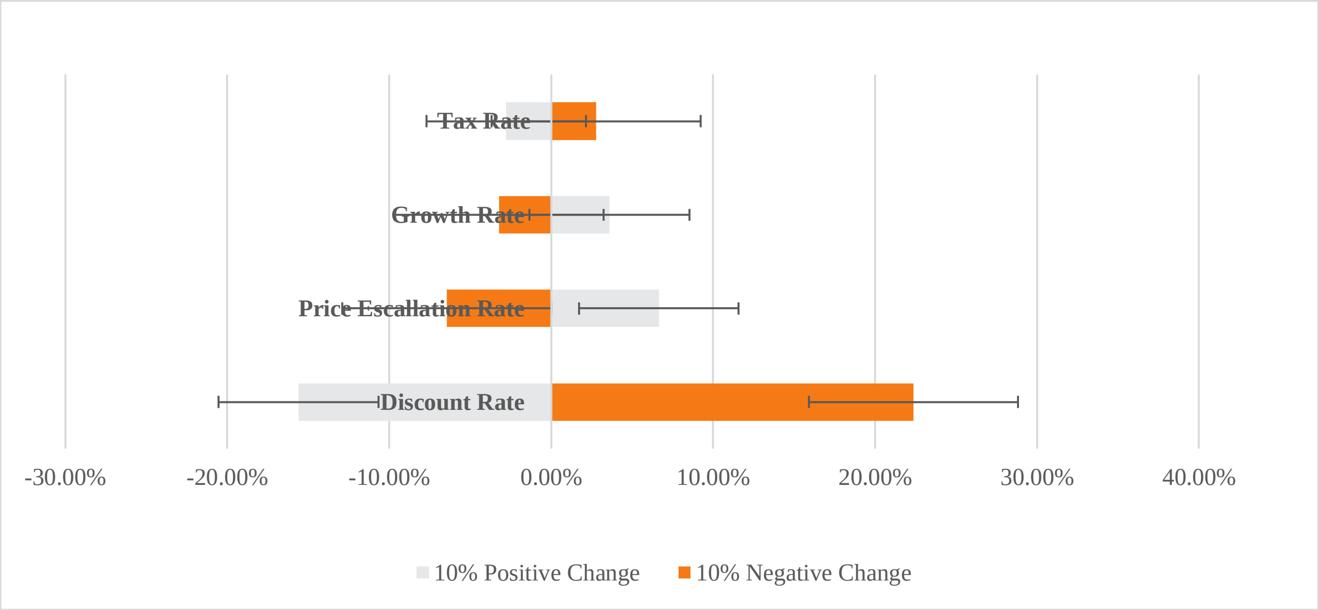
1) Understand the business or project case
2) Define the Data
3) Build a comprehensive DCF Model
4) Undertake simple sensitivity analysis to determine the effect known unknowns
5) Develop a Monte Carlo simulation

Sample Case:

A business in tourism industry was studied.

Following DCF Analysis, sensitivity analysis was performed.

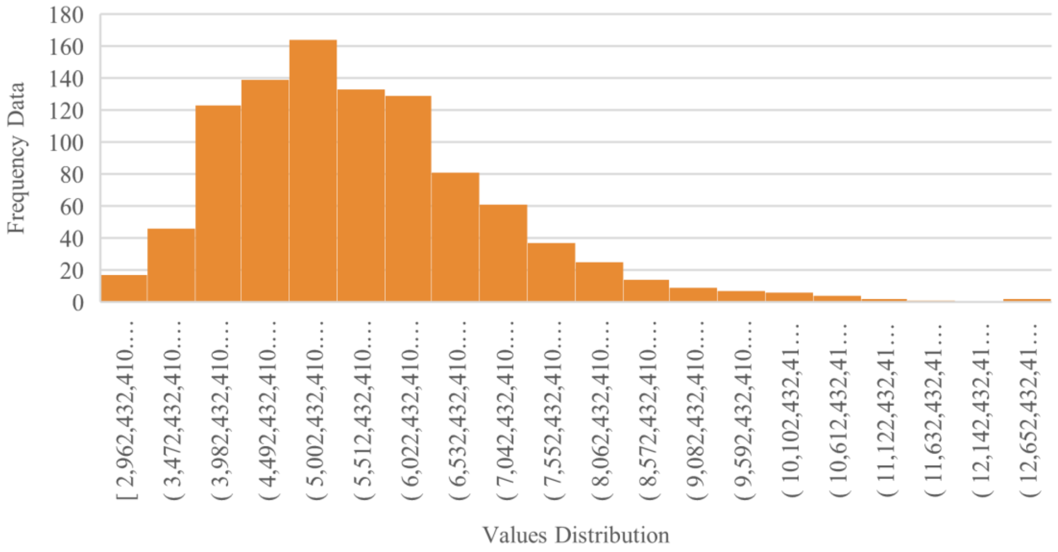
Hence the tornado chart for results.



Sample Case:

TZS. 5,555,000,000 with a terminal value of TZS. 2,144,000,000

More simulations were done using Monte Carlo Analysis



Summary Statistics	
Mean	5,793,615,033.93
Standard Error	48,273,989.63
Median	5,543,564,046.78
Standard Deviation	1,526,557,589.68
Sample Variance	2,330,378,074,617,030,000.00
Kurtosis	2.47
Skewness	1.16
Range	10,747,709,566.61
Minimum	2,873,575,565.53
Maximum	13,621,285,132.13
Sum	5,793,615,033,925.76
Count	1,000.00

Lessons and Concluding Remarks

- Modelling uncertainty provides a true case for determining the worst case and best case for businesses and projects.(Simple tests such sensitivities in terms -+10% of costs and prices are unrealistic)
- Basis for investment disputes reconciliations
- Provides a true picture for volatilities of business/ projects being valued and hence giving out informed opinion.
- Provides a basis for forced sale values of special and complex projects with lots of uncertainty.
- Despite valuation itself being more of art than science, dealing with uncertainty requires understanding of the industrial specifics and scientific approaches to modelling probabilities.