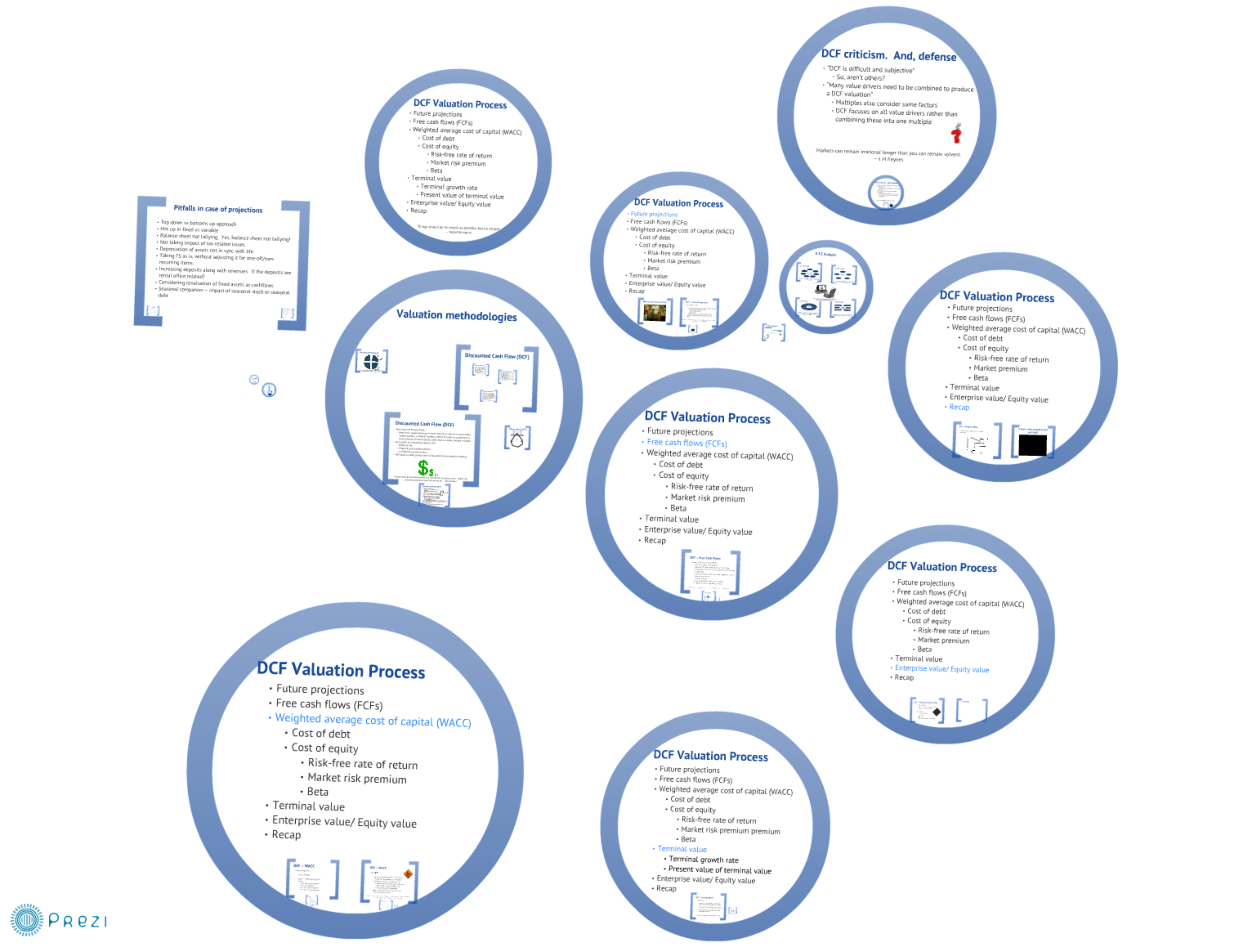

Pitfalls in case of projections
• Top down vs bottoms up approach
• Mix up in fixed vs variable
• Balance sheet not tallying. Yes, balance sheet not tallying!
• Not taking impact of tax related issues
• Depreciation of assets not in sync with life
• Taking FS as is, without adjusting it for one-off/non-recurring items
• Increasing deposits along with revenues. If the deposits are rental office related?
• Considering revaluation of fixed assets as cashflows
• Seasonal companies – impact of seasonal stock or seasonal debt
DCF Valuation Process
• Future projections
• Free cash flows (FCFs)
• Weighted average cost of capital (WACC)
• Cost of debt
• Cost of equity
• Risk-free rate of return
• Market risk premium
• Beta
• Terminal value
• Terminal growth rate
• Present value of terminal value
• Enterprise value/ Equity value
• Recap
Valuation methodologies
Discounted Cash Flow (DCF)
DCF criticism. And, defense
• "DCF is difficult and subjective"
• So, aren't others?
• "Many value drivers need to be combined to produce a DCF valuation"
• Multiples also consider same factors
• DCF focuses on all value drivers rather than combining these into one multiple
Markets can remain irrational longer than you can remain solvent.
– J M Keynes
DCF Valuation Process
DCF Valuation Process
DCF Valuation Process
DCF Valuation Process
DCF Valuation Process
DCF Valuation Process
Prezi

Valuation

CA Pratik K. Singhi
April 2013

LAKSHYA CONSULTING

Agenda

- Valuation - Art or Science
- Valuation Myths
- Valuation Techniques' Overview
- DCF Methodology: Detail
- DCF Valuation Finer Points
- DCF Valuation: Practical Issues
- DCF Valuation: Common Errors

Agenda

- Valuation - Art or Science
- Valuation Myths
- Valuation Techniques' Overview
- DCF Methodology: Detail
- DCF Valuation Finer Points
- DCF Valuation: Practical Issues
- DCF Valuation: Common Errors

Valuation - Art or a Science

- Bradford Cornell, in 'Corporate Valuation: Tools for Effective Appraisal and Decision Making':

"Valuation is neither an Art nor a Science, but an odd combination of both. There is enough Science that appraisers are not left to rely solely on experience, but there is enough Art, that without experience and judgments, failure is assured."

If you can keep your head when everyone around is losing theirs, then yours is the Earth and everything that's in it. --Rudyard Kipling

Valuation - Art or a Science

- Valuation is all about judgment!
- Benjamin Graham, in "The Intelligent Investor" quips:
  - "Mathematics is ordinarily considered as producing precise and dependable results; but in the stock market the more elaborate and abstruse the mathematics the more uncertain and speculative the conclusions we draw therefrom

If you are wondering when to bank a profit, wait until all the brokers say buy and the stock is tipped in the Newspapers. -- Tom Winnifrith

Valuation Myths

- Valuation techniques are quantitative, hence valuation is objective
  - Valuation is an art, not an exact science. Mathematical certainty is neither demanded, nor indeed is it possible
  - Influenced by perception of the buyer/ seller
- Good valuation provides a 'precise' estimate of value
  - There is no 'right' value. Beyond number crunching, Valuation requires exercise of judicious discretion and judgment
- Well-done valuation is timeless
  - Actual value depends on the needs, perceptions and negotiation power of the parties involved in the deal
  - Highly sensitive to changes in circumstances

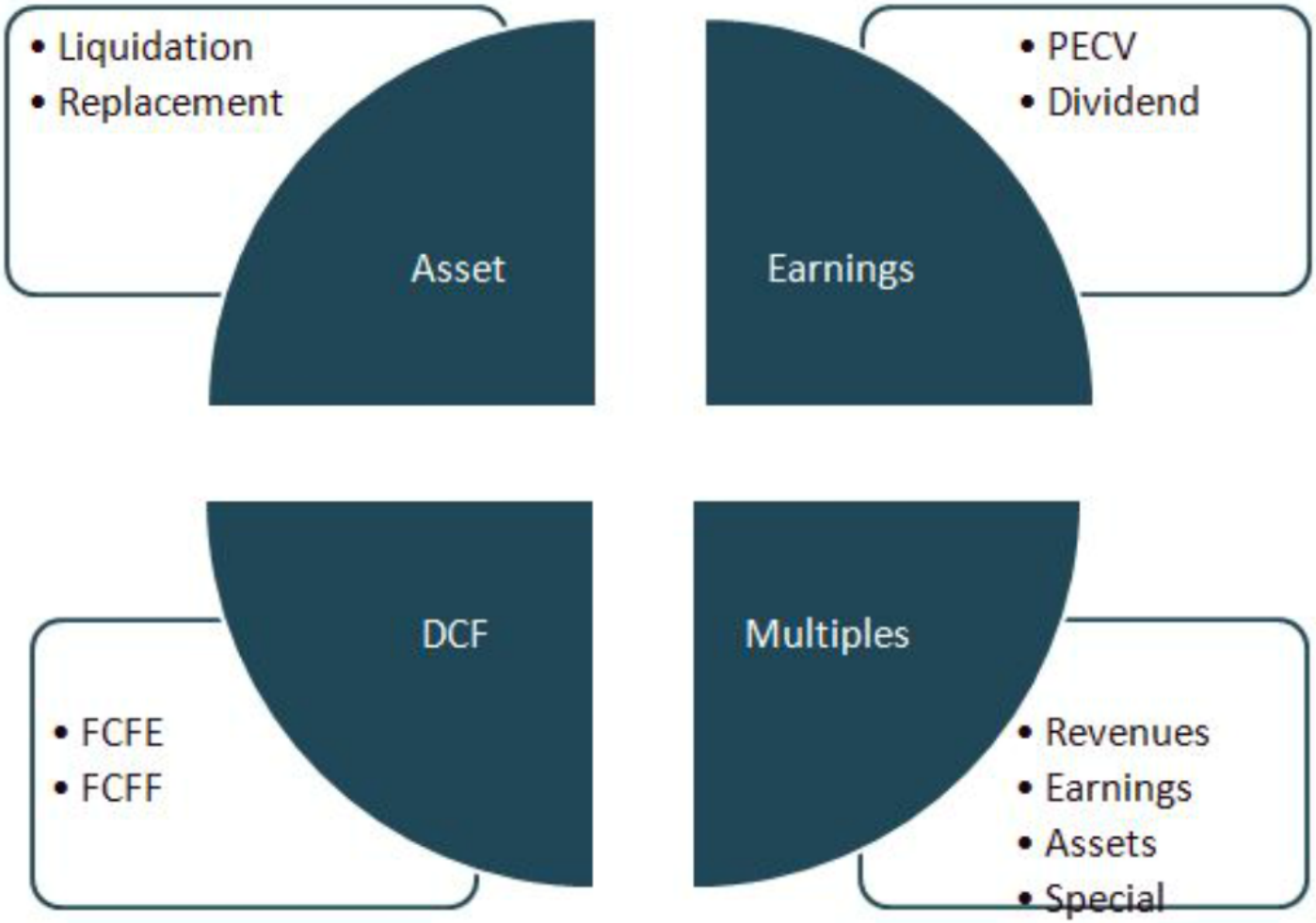
"This time its different" is amongst the most costly four words in the market history.
--Sir John Templeton

Most important ingredient!

Valuation methodologies

Discounted Cash Flow (DCF)

Valuation Methodologies



Of two equivalent theories or explanations, all other things being equal, the simpler one is to be preferred. –-William Ockham

Discounted Cash Flow (DCF)

Discounted Cash Flow (DCF)

- Profit, an accounting convention, does not represent cash generated by business
- Profit can be influenced by accounting assumptions, but not cash.
- Cash generated in the business cannot be hidden; nor can it be falsely created by accounting gimmickry

Revenue is vanity, Profit is sanity, Cashflow is reality! --Warren Buffett

Discounted Cash Flow (DCF)

- Been used in some form since money was first lent at interest in ancient times
- Following the stock market crash of 1929, DCF analysis gained popularity
- 1930: Irving Fisher in'Theory of Interest' talked about modern DCF method
- 1938: John Burr Williams in 'The Theory of Investment Value' formally expressed DCF method in modern economic terms

Discounted Cash Flow (DCF)

- Foundation in Present Value (PV) rule
- Assumes CFs are the only source of value
- Value can be measured as PV of future CFs
- Most contemporary & universally applied
- International Good Practice Guidance (IGPG) encourages professional accountants in business to promote use of DCF analysis and NPV to evaluate investments

Paper profits on accrual accounting basis is of no more than secondary/tertiary importance for a start up. But cash is what keeps the doors open and pays the bills. -- Guy Kawasaki

Discounted Cash Flow (DCF)

- Profit, an accounting convention, does not represent cash generated by business
- Profit can be influenced by accounting assumptions, but not cash.
- Cash generated in the business cannot be hidden; nor can it be falsely created by accounting gimmickry

Revenue is vanity, Profit is sanity, Cashflow is reality! --Warren Buffett

Discounted Cash Flow (DCF)

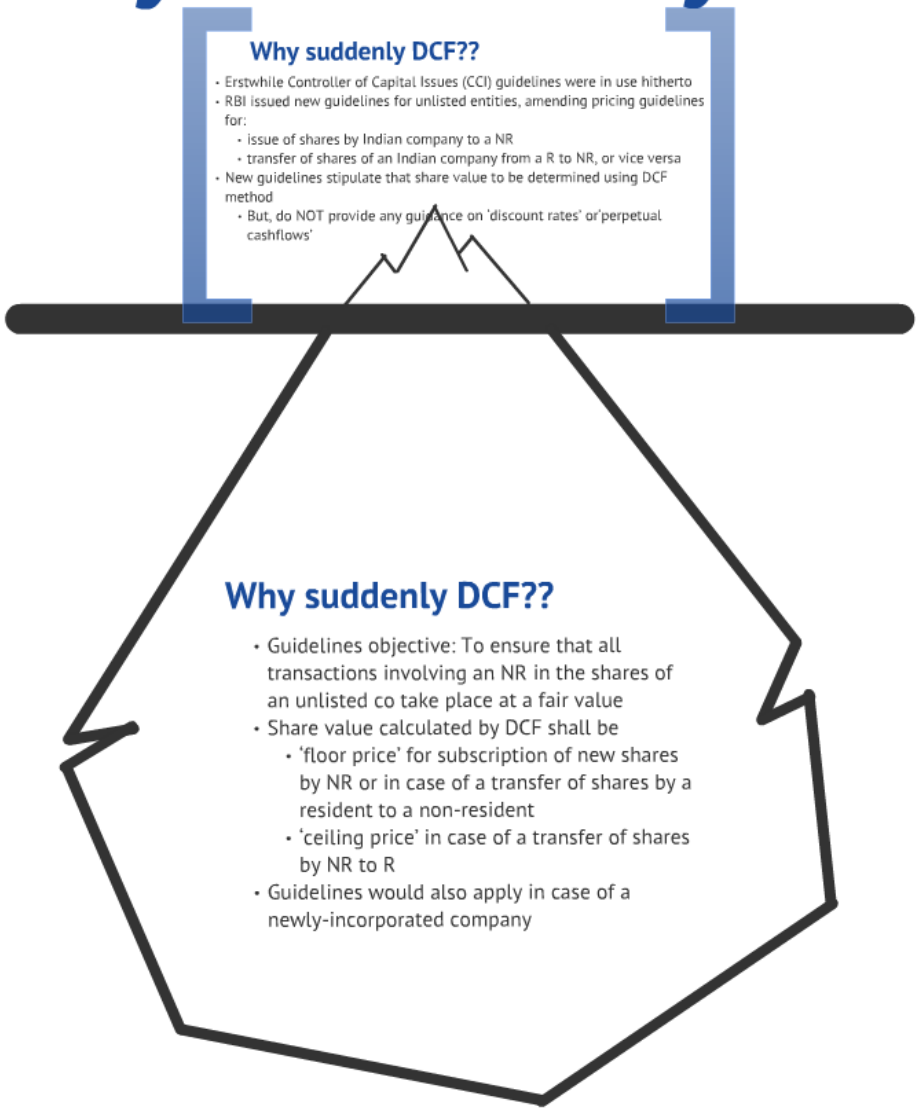
- Been used in some form since money was first lent at interest in ancient times
- Following the stock market crash of 1929, DCF analysis gained popularity
- 1930: Irving Fisher in‘Theory of Interest’ talked about modern DCF method
- 1938: John Burr Williams in 'The Theory of Investment Value’ formally expressed DCF method in modern economic terms

Discounted Cash Flow (DCF)

- Foundation in Present Value (PV) rule
- Assumes CFs are the only source of value
- Value can be measured as PV of future CFs
- Most contemporary & universally applied
- International Good Practice Guidance (IGPG) encourages professional accountants in business to promote use of DCF analysis and NPV to evaluate investments

Paper profits on accrual accounting basis is of no more than secondary/tertiary importance for a start up. But cash is what keeps the doors open and pays the bills. -- Guy Kawasaki

Why suddenly DCF??



Suddenly

Why suddenly DCF??

- Erstwhile Controller of Capital Issues (CCI) guidelines were in use hitherto
- RBI issued new guidelines for unlisted entities, amending pricing guidelines for:
  - issue of shares by Indian company to a NR
  - transfer of shares of an Indian company from a R to NR, or vice versa
- New guidelines stipulate that share value to be determined using DCF method
  - But, do NOT provide any guidance on 'discount rates' or 'perpetual cashflows'

Why suddenly DCF??

- Guidelines objective: To ensure that all transactions involving an NR in the shares of an unlisted co take place at a fair value
- Share value calculated by DCF shall be
  - 'floor price' for subscription of new shares by NR or in case of a transfer of shares by a resident to a non-resident
  - 'ceiling price' in case of a transfer of shares by NR to R
- Guidelines would also apply in case of a newly-incorporated company

Pitfalls in case of projections

- Top down vs bottoms up approach
- Mix up in fixed vs variable
- Balance sheet not tallying. Yes, balance sheet not tallying!
- Not taking impact of tax related issues
- Depreciation of assets not in sync with life
- Taking FS as is, without adjusting it for one-off/non-recurring items.
- Increasing deposits along with revenues. If the deposits are rental office related?
- Considering revaluation of fixed assets as cashflows
- Seasonal companies – impact of seasonal stock or seasonal debt

Possible pitfalls

- WC not being recovered in fixed life projects
- Release of working capital towards the end in case of a growing company
- Sustenance capex missing
- Still growing co but projected financials ended
- Growth rates to be tempered over a period of time. Use of geometric mean vs CAGR
- In case of CAGR being different from latest growth rate
- FCFE vs FCFF approach – wrong application

Possible pitfalls

- Market share of over 35% in 5 years for a startup is scary! Not impossible (twitter facebook are eg), but be very careful
- Broad ratio between TV and EV
- Interest cost for WACC different from interest cost for projections
- D:E ratio for WACC different from D:E ratio for projections. Possible!
- Pre-money vs post-money conundrum

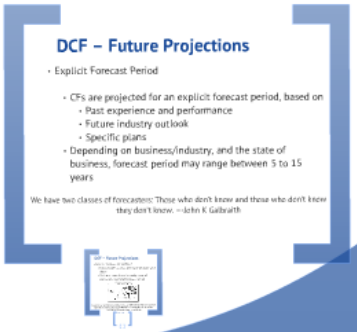
DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
  - Terminal growth rate
  - Present value of terminal value
- Enterprise value/ Equity value
- Recap

Things should be as simple as possible, but no simpler
-- Albert Einstein

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap



E-I-C Analysis

Economic Analysis

If you laid all economists in the world end to end, you still wouldn't reach a conclusion.

Economic Analysis

An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today.

"Due to recent economic conditions, picture worth has dropped to an all time low of 842 words."

Industry Analysis

We do not have, never have had, and never will have an opinion about where the stock market, interest rates or business activity will be a year from now. --Warren Buffett

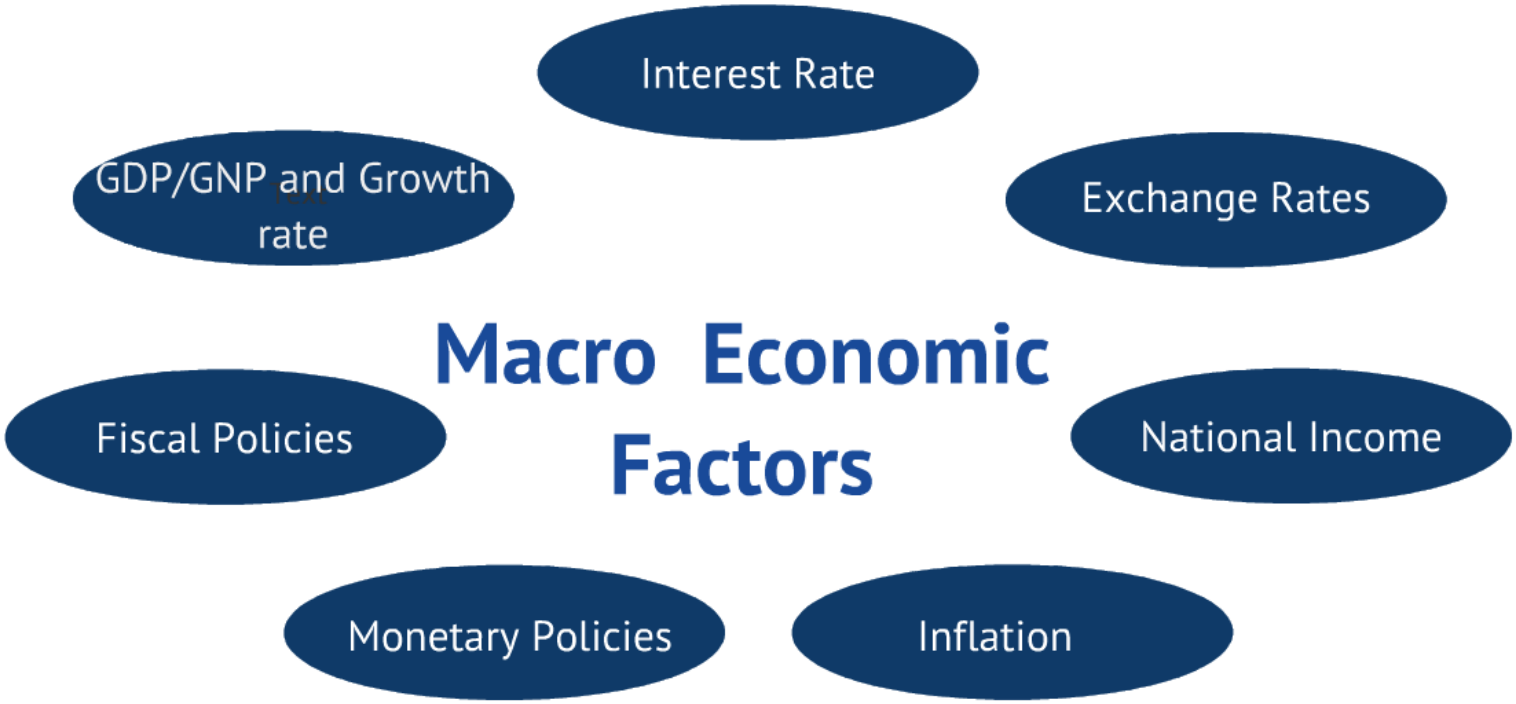
Company Analysis

Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted. --Albert Einstein

Ratio Analysis

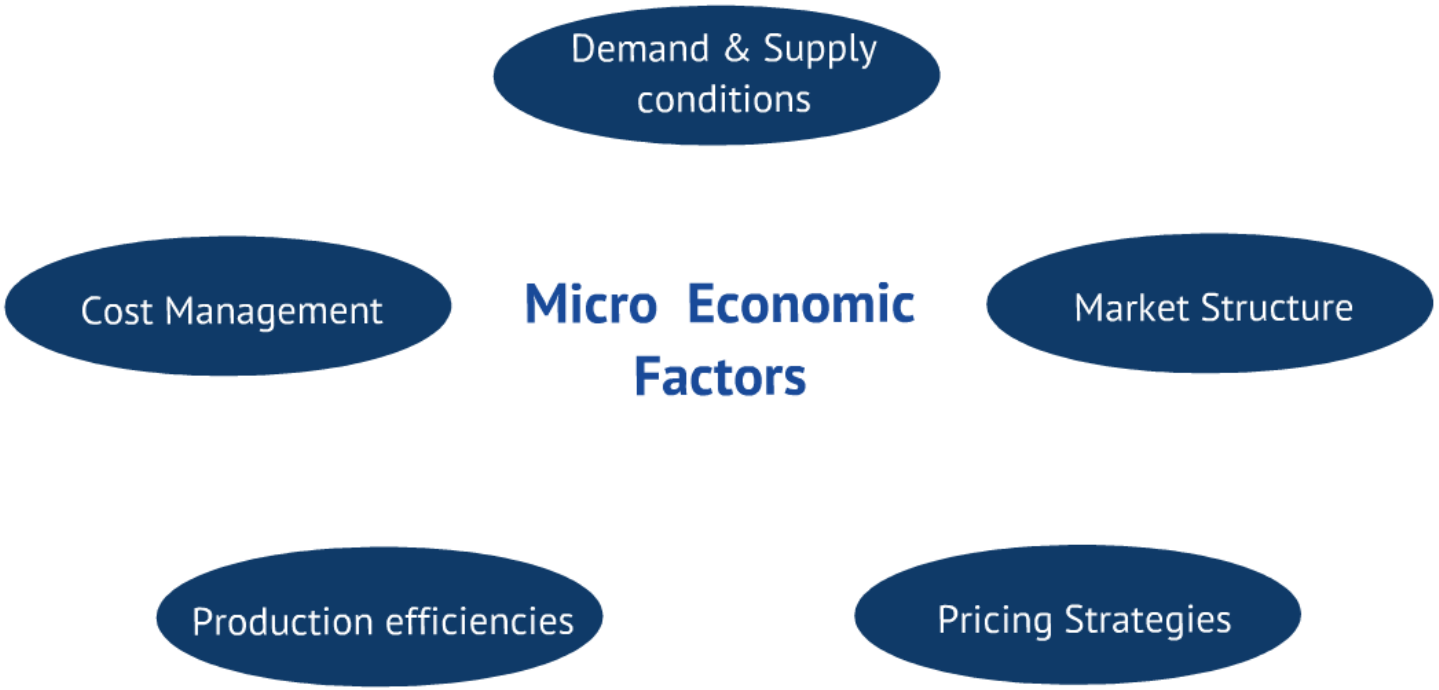
"Due to recent economic conditions, picture worth has dropped to an all time low of 842 words."

Economic Analysis



If you laid all economists in the world end to end, you still wouldn't reach a conclusion.

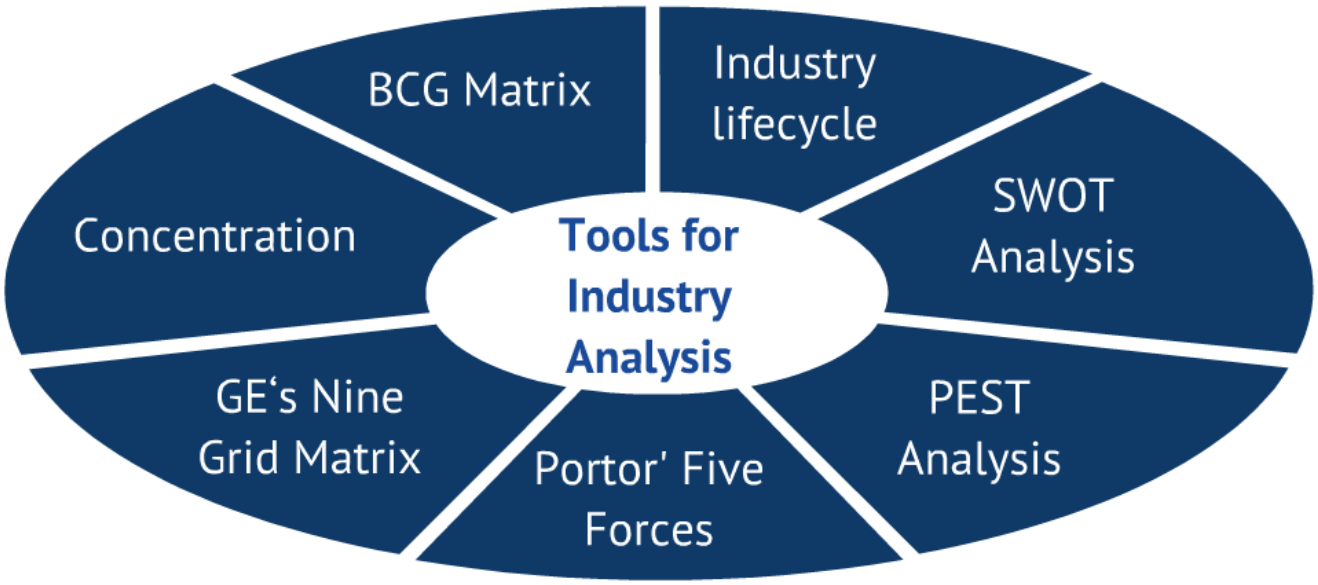
Economic Analysis



An economist is an expert who will know tomorrow why the things he predicted yesterday didn't happen today.

"Due to recent eco
dropped to a

Industry Analysis



We do not have, never have had, and never will have an opinion about where the stock market, interest rates or business activity will be a year from now. --Warren Buffett

ure worth has
words."

Company Analysis

Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted. --Albert Einstein

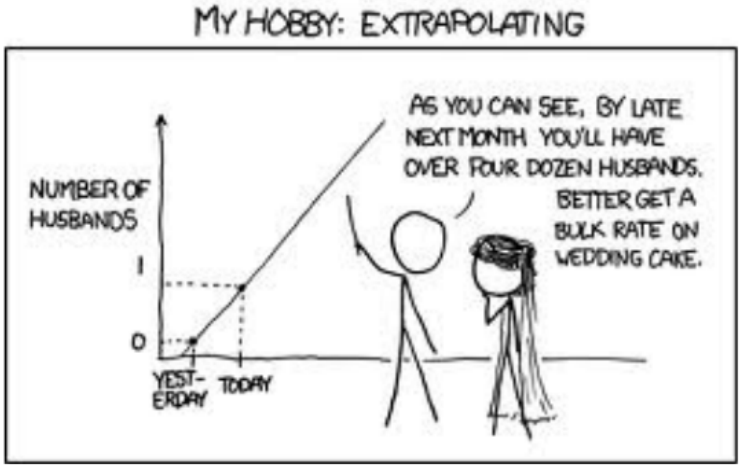
DCF – Future Projections

- Explicit Forecast Period
  - CFs are projected for an explicit forecast period, based on
    - Past experience and performance
    - Future industry outlook
    - Specific plans
  - Depending on business/industry, and the state of business, forecast period may range between 5 to 15 years

We have two classes of forecasters: Those who don't know and those who don't know they don't know. –-John K Galbraith

DCF – Future Projections

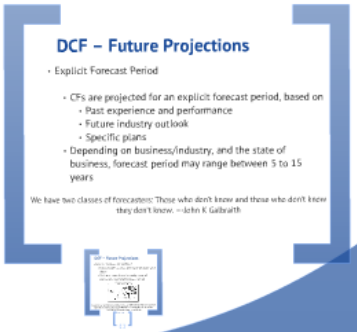
- Explicit Forecast Period Test?
  - Should cover at least one cycle of boom and doom
  - Business should attain steady state of operations by end of forecast period



However good our futures research may be, we shall never be able to escape from the ultimate dilemma that all our knowledge is about the past, and all our decisions are about the future. --Ian Wilson

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap



DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

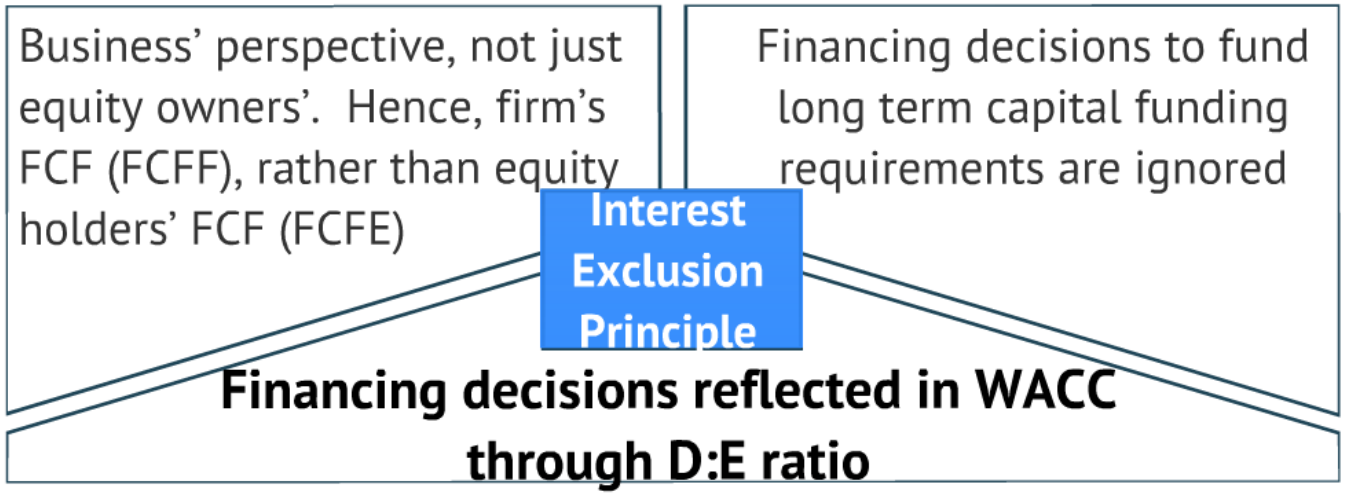
DCF – Free Cash Flows

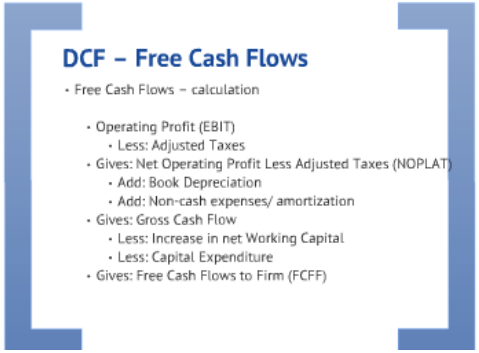
- Free Cash Flows to Firm (FCFF)
  - Not the same as operating CF
  - Residual CF after meeting all cash operating expenditure, but prior to any payments to financing stakeholder
  - Net of working capital and capex needed to support future forecast FCF
  - Always post-tax
  - Cash available to all finance providers
  - = Debt cash flow + Equity cash flow

We'd rather be vaguely right than precisely wrong. --J M Keynes

DCF – Free Cash Flows

- Interest Exclusion Principle





DCF – Free Cash Flows

- Free Cash Flows – calculation
    - Operating Profit (EBIT)
        - Less: Adjusted Taxes
    - Gives: Net Operating Profit Less Adjusted Taxes (NOPLAT)
        - Add: Book Depreciation
        - Add: Non-cash expenses/ amortization
    - Gives: Gross Cash Flow
        - Less: Increase in net Working Capital
        - Less: Capital Expenditure
    - Gives: Free Cash Flows to Firm (FCFF)

DCF – Free Cash Flows

- Free Cash Flows – calculation

A Corporation Ltd.			
Profitability Statement			
Particulars	year1	year2	year3
Revenues	1,500	1,800	2,100
CoGS	-750	- 900	-1,050
Cash SG&A	-200	- 210	- 220
Depreciation	-100	- 120	- 130
Operat'g Profit	450	570	700
Less: Interest	100	90	80
PBT	350	480	620
Taxes@40%	140	192	248
PAT	**210**	**288**	**372**

A Corporation Ltd.			
Statement of Affairs			
Particulars	year1	year2	year3
Networth	1,700	1,900	2,100
Long-term loans	1,400	1,500	1,600
Funds Sourced	3,100	3,400	3,700
Net Block of Assets	2,700	2,900	3,100
Investments	100	100	100
Net Wkg Capital	250	350	450
Cash & Bank	50	50	50
Funds Applied	**3,100**	**3,400**	**3,700**

DCF – Free Cash Flows

DCF – Free Cash Flows

- Free Cash Flows – calculation

Particulars		Year2	year3
Operating Profit		570	700
Less: Adjusted Taxes	40%	-228	-280
NOPLAT		342	420
Add: Depreciation		120	130
Add: Non-cash expenses		0	0
Gross Cash Flow		462	550
Less: Increase in W/C		-100	-100
Less: Capex		-320	-330
Free Cash Flow to the Firm		42	120

DCF – Free Cash Flows

- Free Cash Flows – calculation

Particulars		Year2	year3
Operating Profit		570	700
Less: Adjusted Taxes	40%	-228	-280
NOPLAT		342	420
Add: Depreciation		120	130
Add: Non-cash expenses		0	0
Gross Cash Flow		462	550
Less: Increase in W/C		-100	-100
Less: Capex		-320	-330
Free Cash Flow to the Firm		**42**	**120**

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

DCF – WACC

- Discounting Factor
  - Generally, WACC
  - WACC = [(Kd*D)+(Ke*E)] /(D+E)
  - where
    - Kd = post-tax cost of debt
    - Ke = cost of equity
    - D = market value of debt
    - E = market value of equity

DCF – WACC

- Cost of Debt
  - Kd = Rd (1 – Tc)
  - where:
    - Kd = post-tax cost of debt
    - Rd = coupon rate of interest
    - Tc = effective rate of tax paid by firm
  - E.g., if a firm borrows debt at interest rate of 12% and lies in 30% effective tax bracket, its Kd is
    - 8.4%. since 12% (1-30%) = 8.4%

DCF – WACC

- Cost of Equity – CAPM
  - Ke = Rf + **(β)** * (Rm – Rf)
  - where:
    - Ke = cost of equity
    - Rf = risk-free rate of return
    - **(β)** = risk factor of the cash-flows
    - Rm = rate of return on a diversified portfolio (SE benchmark index)
  - E.g., if the Rf is 6% and the Rm is 10%, the Ke of a firm with beta of 2 is
    - 14%. since 6% + 2 (10% - 6%) = 14%

DCF – WACC issues

- Cost of Equity – risk premium
  - As seen below for US stock markets, depends heavily on choice of
    - index
    - period of observation

Average returns during period	Stocks	T-Bills	T-Bonds	MRP (T-Bills)	MRP (T-Bonds)
1928-1953	6.49%	1.02%	2.92%	5.47%	3.57%
1928-1999	10.76%	3.87%	4.79%	6.89%	5.96%
1928-2002	9.62%	3.89%	5.09%	5.73%	4.53%
1962-2002	9.90%	5.99%	7.14%	3.90%	2.76%
1992-2002	**9.09%**	**4.40%**	**8.14%**	**4.69%**	**0.95%**

DCF – WACC

- Beta **(β)**
  - Measures volatility of firm's stock price relative to that of given market index
  - Statistically, beta is relationship b/w
    - covariance of selected stock with well-diversified market portfolio and
    - the variance of that portfolio
  - **(β)** = Covariance of asset with Market/ Variance of the market

Uncertainty is not a result of ignorance or the partiality of human knowledge, but is a characteristic of the world itself. --M Taylor

DCF – WACC

- Beta **(ß)**
  - Symbolic representation of riskiness of the underlying cash flows, vis-à-vis those of a well diversified portfolio
  - Directly proportionate to firm's sensitivity to market conditions
  - E.g., if benchmark index moves up by 5% and simultaneously scrip moves:
    - Increase by 7%, its beta is 1.4
    - Decrease by 9%, its beta is -1.8

DCF – WACC

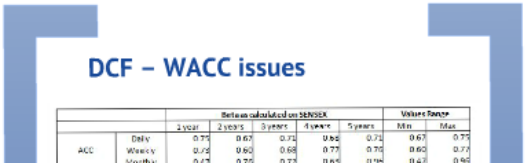
- Beta **(β)**
- In case of calculations based on stock market data
  - Un-levered industry/segment average beta is considered
  - u = lv / [1+ (D:E)*(1-t)]

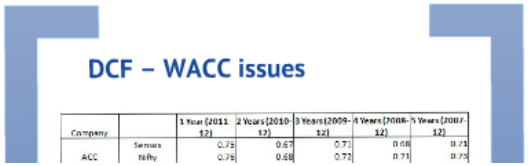
$$\beta_u = \beta_{lv} \;/\; [1+ (D:E)*(1-t)]$$

  - Re-levered to target company's target D:E ratio
  - $\beta_{rlv} = \beta_u * [1+ (D_t:E_t)*(1-t)]$

DCF – WACC

- Beta is a highly sensitive value driver
- To be chosen/calculated carefully. Varies with choice of:
  - market index (for e.g., Sensex, Nifty, BSE 200, NSE 100, etc.)
  - time period covered by underlying observational data points (one year, two years, five years, etc.)
  - return interval (daily, weekly, monthly, bi-monthly, quarterly, semi-annually, annually, etc.)





DCF – WACC issues

		Beta as calculated on SENSEX					Values Range	
		1 year	2 years	3 years	4 years	5 years	Min	Max
ACC	Daily	0.75	0.67	0.71	0.68	0.71	0.67	0.75
	Weekly	0.73	0.60	0.68	0.77	0.76	0.60	0.77
	Monthly	0.47	0.76	0.72	0.63	0.96	0.47	0.96
Balrampur Chinni	Daily	0.98	1.05	0.93	0.90	0.99	0.90	1.05
	Weekly	1.06	1.12	0.95	1.09	1.01	0.95	1.12
	Monthly	2.65	1.98	1.24	1.44	1.67	1.24	2.65
Bhel	Daily	1.11	0.99	0.99	0.98	1.00	0.98	1.11
	Weekly	0.92	0.95	0.92	0.94	1.02	0.92	1.02
	Monthly	0.96	0.80	0.85	0.82	0.81	0.80	0.96
Grasim	Daily	0.66	0.59	0.65	0.66	0.69	0.59	0.69
	Weekly	0.76	0.63	0.72	0.72	0.75	0.63	0.76
	Monthly	0.33	0.60	0.70	0.79	1.46	0.33	1.46
Maruti	Daily	0.67	0.72	0.71	0.70	0.70	0.67	0.72
	Weekly	0.69	0.78	0.74	0.76	0.74	0.69	0.78
	Monthly	1.52	1.27	1.11	0.75	0.96	0.75	1.52
WIPRO	Daily	0.83	0.79	0.82	0.88	0.85	0.79	0.88
	Weekly	0.80	0.66	0.67	0.81	0.77	0.66	0.81
	Monthly	0.49	0.55	0.82	0.80	0.78	0.49	0.82

DCF – WACC issues

Company		1 Year (2011-12)	2 Years (2010-12)	3 Years (2009-12)	4 Years (2008-12)	5 Years (2007-12)
ACC	Sensex	0.75	0.67	0.71	0.68	0.71
	Nifty	0.76	0.68	0.72	0.71	0.73
	CNX 500	0.80	0.74	0.78	0.77	0.78
Balrampur Chinni	Sensex	0.98	1.05	0.93	0.90	0.99
	Nifty	0.99	1.06	0.94	0.93	1.02
	CNX 500	1.14	1.22	1.08	1.06	1.15
Bhel	Sensex	1.11	0.99	0.99	0.98	1.00
	Nifty	1.12	0.98	0.98	1.00	1.01
	CNX 500	1.23	1.08	1.04	1.06	1.05
Grasim	Sensex	0.66	0.59	0.65	0.66	0.69
	Nifty	0.66	0.59	0.65	0.69	0.71
	CNX 500	0.70	0.65	0.69	0.73	0.74
Maruti	Sensex	0.67	0.72	0.71	0.70	0.70
	Nifty	0.69	0.73	0.71	0.72	0.70
	CNX 500	0.74	0.79	0.75	0.76	0.73
Wipro	Sensex	0.83	0.79	0.82	0.88	0.85
	Nifty	0.81	0.78	0.80	0.89	0.84
	CNX 500	0.83	0.79	0.79	0.90	0.83

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium premium
    - Beta
- Terminal value
  - Terminal growth rate
  - Present value of terminal value
- Enterprise value/ Equity value
- Recap

DCF – Terminal Value

- Terminal Value
  - Business, as a going concern, is assumed to be carrying on operations in perpetuity, i.e., infinity
  - TV is firm's value at end of explicit forecast period
  - TV captures firm's value for operations beyond explicit forecast period

Do not count your chicken before they stop breeding. --Aesopeus

DCF – Terminal Value

- Terminal Value
  - FCFF(n+1)/ (WACC – g)
  - where:
    - FCFF(n+1) = FCFF in year after explicit forecast period
    - g = steady state growth rate of FCF till infinity
  - E.g., if FCFF for last forecast year is 1000, WACC is 18% and terminal growth rate is 3%, the TV is
    - 6867, being 1000*1.03 / (0.18-0.03)

DCF – Terminal Value

- Terminal Value
  - Perpetuity formula does not work where g ⩾ WACC
  - BUT this is impossible - g exceeding r in perpetuity implies the business eventually would be larger than the whole economy!!

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market risk premium premium
    - Beta
- Terminal value
  - Terminal growth rate
  - Present value of terminal value
- Enterprise value/ Equity value
- Recap

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

DCF – Enterprise/Equity Value

- Enterprise Value
  - PV of FCFs during forecast period
  - Add: PV of terminal value

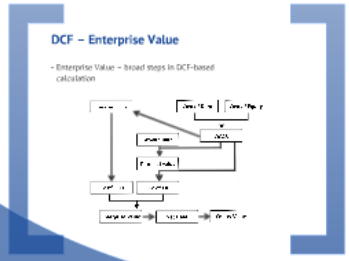
- Equity Value
  - Enterprise value
  - Less: Debt
  - Add: Cash
  - Add: Market value of Investments

DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

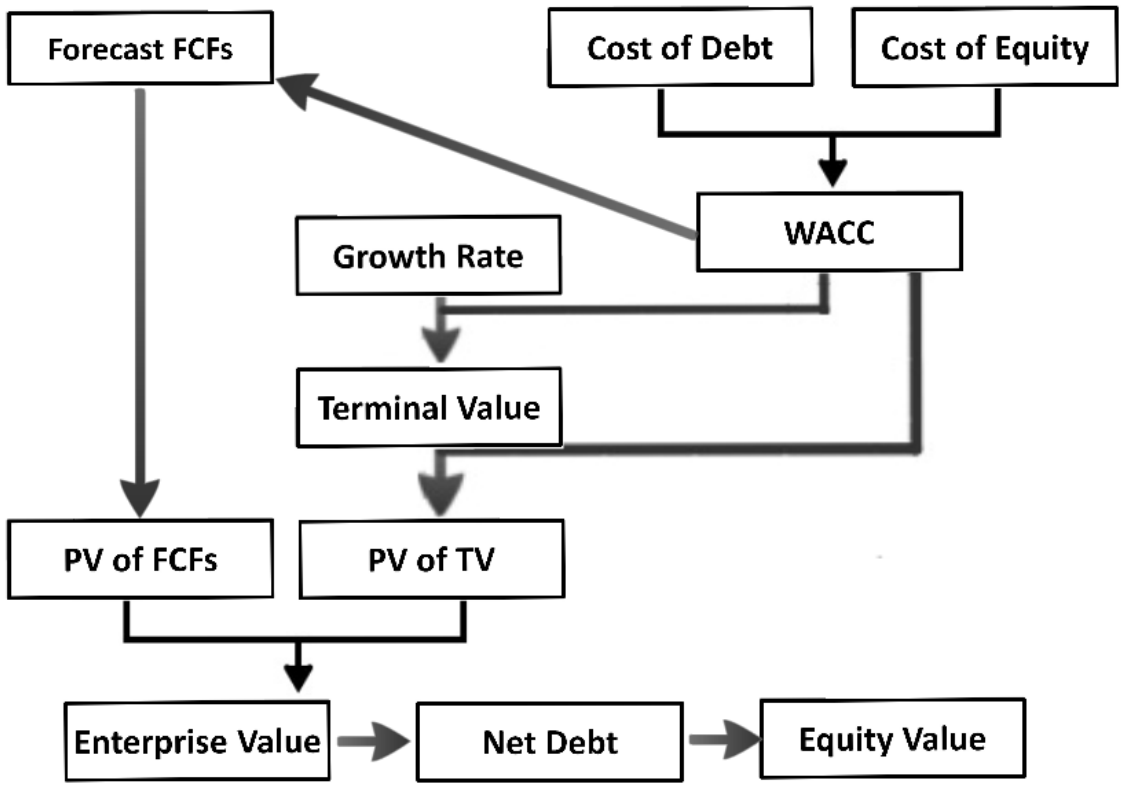
DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap

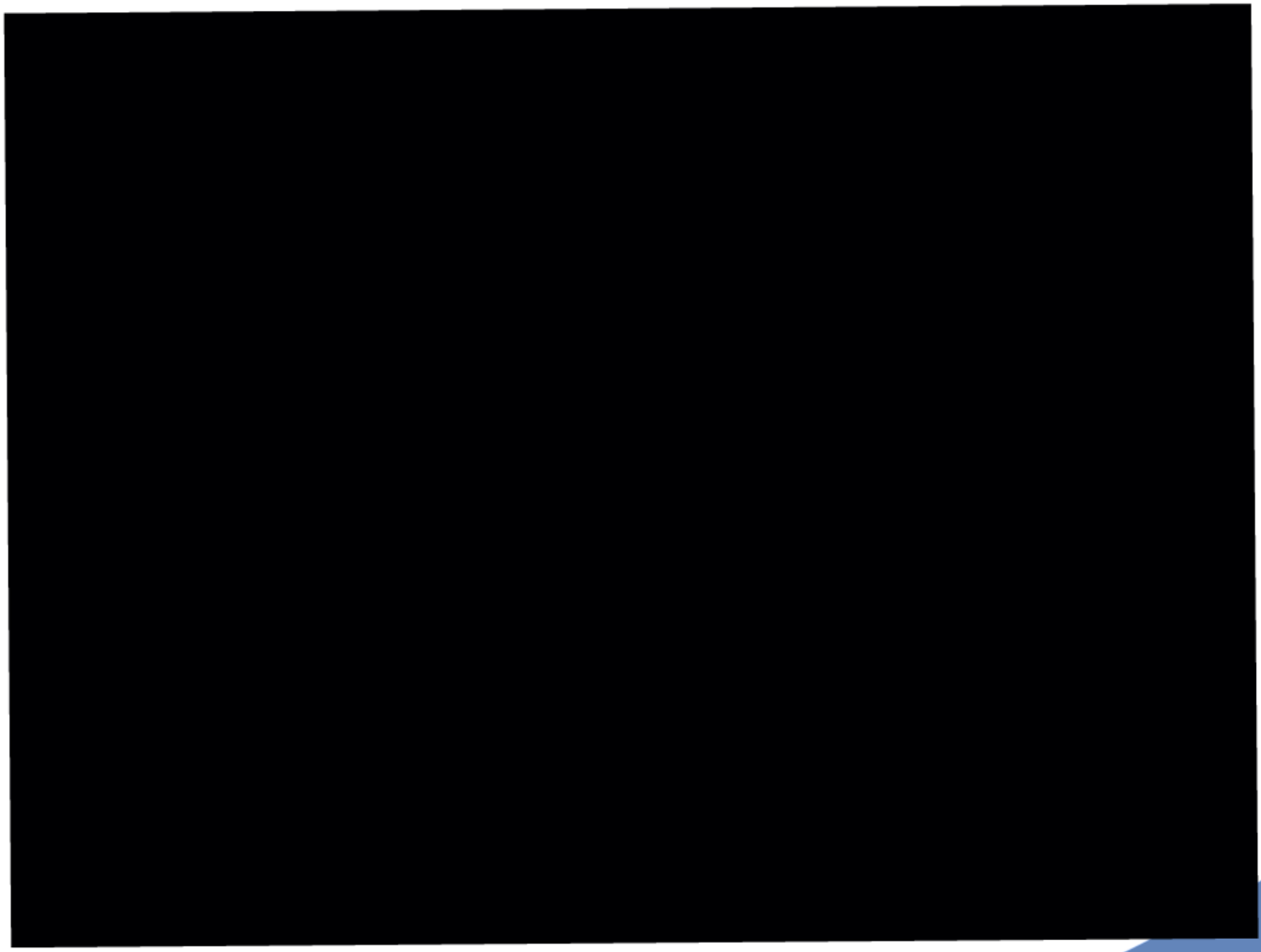


DCF – Enterprise Value

- Enterprise Value – broad steps in DCF-based calculation

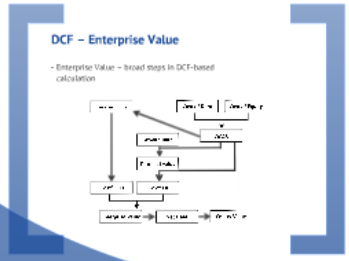


A tool is only as good as you put it to!!



DCF Valuation Process

- Future projections
- Free cash flows (FCFs)
- Weighted average cost of capital (WACC)
  - Cost of debt
  - Cost of equity
    - Risk-free rate of return
    - Market premium
    - Beta
- Terminal value
- Enterprise value/ Equity value
- Recap



DCF criticism. And, defense

- "DCF is difficult and subjective"
  - So, aren't others?
- "Many value drivers need to be combined to produce a DCF valuation"
  - Multiples also consider same factors
  - DCF focuses on all value drivers rather than combining these into one multiple

Markets can remain irrational longer than you can remain solvent.
--J M Keynes

DCF criticism. And, defense

- "DCF requires WACC and nobody seems to have a clue of what it is"
  - Differences in required return is a key factor in valuation
- "DCF is very sensitive to long term growth assumptions"
  - So are multiples. The problem is mitigated by using zero value adding long term growth assumptions

Take every gain without remorse for missed profits.
--Joseph de la Vega

DCF conclusion

- DCF and related techniques are powerful valuation tools
- DCF is a very robust methodology, but can only work right if
  - the assumptions are reasonable
  - the application is realistic

Investing should be dull. It shouldn't be exciting. Investing should be more like watching paint dry or watching grass grow. If you want excitement, take $800 and go to Las Vegas or Wall Street. --Paul Samuelson

Biggest test of Valuation