



### DCF Valuation: Practical Issues

**Over-riding of assumptions**

Over-riding of assumptions is a common issue in DCF valuation. It occurs when the assumptions used in the model are not consistent with the underlying business plan or market conditions. This can lead to significant errors in the valuation.

**Identify the Error**

Identifying the error is a critical step in the DCF valuation process. It involves a thorough review of the model and the underlying assumptions to determine the source of the error. This can be a time-consuming process, but it is essential for ensuring the accuracy of the valuation.

### DCF: Common Errors

**DCF Typical & Common Errors**

Typical errors in DCF valuation include: incorrect discount rates, inconsistent assumptions, and errors in cash flow projections. Common errors include: over-optimistic growth rates, incorrect risk premiums, and errors in the terminal value calculation.

### DCF Valuation: Finer Points

**Finer Points**

Finer points in DCF valuation include: the impact of debt, the treatment of minority interests, and the treatment of non-controlling interests. These points are often overlooked but can have a significant impact on the final valuation.

### Valuation Teasers

As an investor you are interested in the emerging markets of Asia. You are trying to value some stocks in Malaysia, which does not have a long history of financial markets. During the last three years, the stock market has gone up 60% a year, while the government borrowing rate has been 15%, yielding an historical risk premium of 45%. Would you use this as your risk premium, looking into the future?

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Q & A







# **DCF Valuation: Finer Points**

# DCF Valuation Finer Points

- Nominal v/s. cash flow
- Risk free rate of return
  - Historical or current or futuristic?
  - Short term or long term?
- Market risk premium
  - Short term vs long term instruments
  - Past vs future
- Beta
  - Leveraged vs unlevered
  - Historic vs forward looking
- Tax rate for WACC
  - Effective rate or marginal rate of tax?
- Adjusted taxes
  - Impace of MAT/Deferred taxes



# DCF Valuation Finer Points

- Target, D:E ratio
  - Target, long term, future sustainable ratio
  - Ignore minor variations
- Value of debt
  - Book value vs market value
- Short term interest cost
  - Two schools of thoughts (so, whats new??)
- Terminal growth rate
  - A very sensitive value driver
- Sensitivity analysis
  - Scenarios building
- Appropriate capitalization rate
  - Depends on expected return/ beta/ D:E ratio

# DCF Valuation Finer Points

- Synergy/ control value
- Liquidity discount
- Non- core assets
- WACC for diversified entity?
- Country specific risk for international investor
- Mid-year vs year-end discounting
  - Best approximated by mid-year discounting for annual cash flows
  - Year-end often used as an approximation
- Mid- period valuations
  - Adjustment required to valuation at last balance sheet date to current date

## DCF Valuation Finer Points

- Adjusted Present Value v/s WACC
- Adjusted Present Value (APV)
  - Value of un-levered firm
  - Add: PV of leverage benefits
- Economic Value Added (EVA)
  - Based on principle that firm's profit should reflect all financing cost
  - Surplus value created on firm's investment over it's cost of capital
  - More of a management appraisal tool
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- Market Value Added (MVA)
  - Difference b/w market valuation and book value
  - PV of future expected EVAs



# DCF: Common Errors



# DCF: Typical & Common Errors

- 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 Financial Statements as is, without adjusting 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

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- WC not being recovered in fixed life projects
- Release of working capital towards the end in case of a growing company
- Sustainance 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
- CAGR being different from latest growth rate
- FCFE vs FCFF approach – wrong application

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- 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: Practical Issues**

# Cross holding of investments

- Co A, a conglomerate, holds certain shares of co B, which is loss-making, and is a BIFR case. Similarly, co B holds share of co A.
- You have been appointed for providing the valuation report for the shares of A & B for High Court approval.
- How would you value the respective cross holdings?

# High level of Uncertainty

- YoYo mining Ltd (YML) holds certain mining rights, which are currently under suspension by virtue of a state gov order, which YML believes is in defiance of the central govt directive in this regard.
- The issue is under judicial consideration. If the issue is decided against YML, its profitability would be tremendously impacted. Even its existence (going concern) might be questioned

# Underlying Assumptions

- USSL, a highly profitable and growing co., is looking at merging co BDDL, a sick unit, within itself. Both operate in the same industry and have hitherto been each others customers as well as competitors
- You arrived at the swap ratio for the merger, using following assumptions:
  - Terminal growth rate: higher for USSL
  - Unlevered beta: higher for BDDL
  - D:E ratio: higher for BDDL per past history



# Terminal Growth Rate

- A company in a low-growth sector has been growing @ 20% CAGR for last 4 years.
- Hence, when you value the co, your valuation report reads as under:
  - “.. Given the growth rate of the co in the recent past, the terminal growth rate has been considered at 7%...”

# Partly paid up shares

- A debt-free entity, having paid up equity capital of Rs14 lakh is valued at Rs 7 cr. It had 20k outstanding thousand shares:
  - 10,000 shares fully paid up
  - 6,000 shares paid up Rs 5.0
  - 4,000 shares paid up Rs 2.5
  - Accordingly, you certified the equity shares' value as under:

10,000 shares	Valued @ Rs500 each	Rs5000,000
6,000 shares	Valued @ Rs250 each	Rs1500,000
4,000 shares	Valued @ Rs125 each	Rs500,000

# Spot the Error

ANNEXURE-- XXIII								
N.P.V. & I.R.R. ANALYSIS								
SR. NO.	PARTICULARS	Const.	I	II	III	IV	V	VI
	<b>A. CASH INFLOW</b>							Rs mill
	Sales Realisation	0.00	1238.15	1863.32	2485.42	2488.39	2488.39	2488.39
	<b>B. CASH OUTFLOW</b>							
	Total Investment Outlay	411.17	0.00	0.00	0.00	0.00	0.00	0.00
	Working Capital	0.00	109.99	54.95	54.94	0.00	0.00	0.00
	Operating Cost	0.00	1088.56	1613.25	2135.64	2135.93	2135.93	2135.93
	Taxes paid	0.00	8.45	20.55	45.40	47.08	48.62	49.94
	<b>SUB TOTAL (B)</b>	<b>411.17</b>	<b>1207.01</b>	<b>1688.75</b>	<b>2235.98</b>	<b>2183.01</b>	<b>2184.55</b>	<b>2185.87</b>
	<b>C. SALVAGE VALUE</b>							
	Fixed Assets	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Working Capital	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<b>SUB TOTAL (C)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>D. NET CASH FLOW (A-B)</b>	<b>-411.17</b>	<b>31.14</b>	<b>174.57</b>	<b>249.44</b>	<b>305.38</b>	<b>303.84</b>	<b>302.52</b>
	<b>E. IRR ASSUMPTION FOR ITERATION</b>	<b>21.00%</b>						
	<b>F. INTERNAL RATE OF RETURN</b>	<b>36.71%</b>						
	<b>G. N.P.V. AT IRR OF</b>	<b>36.71%</b>						
						<b>0.00million</b>		

# Spot the Error

## FREE CASH FLOW TO THE FIRM (Rupees)

Particulars		Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
Cash Operating Profit (EBITDA)		(7,33,493)	3,74,524	2,56,92,589	3,85,55,038	3,90,63,375	3,90,63,375
Less: Taxes paid		-	-	(36,56,727)	(1,02,11,110)	(1,03,86,781)	(1,03,94,701)
Less: Tax shields	33.00%	-	-	(79,200)	(31,680)	(23,760)	(15,840)
<b>NOPLAT</b>		<b>(7,33,493)</b>	<b>3,74,524</b>	<b>2,19,56,662</b>	<b>2,83,12,248</b>	<b>2,86,52,834</b>	<b>2,86,52,834</b>
Less : Increase in W/C			(7,46,730)	(25,86,871)	(15,01,606)	(73,008)	-
Less : Capex			(2,44,70,000)				
<b>Free Cash Flow to the Firm</b>		<b>(7,33,493)</b>	<b>(2,48,42,206)</b>	<b>1,93,69,790</b>	<b>2,68,10,642</b>	<b>2,85,79,825</b>	<b>2,86,52,834</b>

## VALUATIONS (Rupees)

Particulars		Mar-10	Mar-11	Mar-12	Mar-13	Mar-14	Mar-15
<b>PV of FCFF</b>	<b>14.2%</b>		(2,17,61,377)	1,48,63,372	1,80,21,703	1,68,28,461	1,47,79,122
Terminal Growth rate	<b>2.00%</b>						
Terminal Value at end of forecast							<b>12,39,96,866</b>
		<b>In INR</b>	<b>In USD</b>				
PV of forecasted FCFF		4,27,31,281	9,49,584				
PV of TV		6,39,57,541	14,21,279				
<b>Value of Cash Flows</b>		<b>10,66,88,822</b>	<b>23,70,863</b>				

# Spot the Error

WEIGHTED AVERAGE COST OF CAPITAL					
Particulars	Date	Rate	MRP		
Gov. Bonds (Rf = Risk free rate of Return)	2010-2032	8.22%			
BSE returns, (Rm, being return on market)	1991-2010	12.40%	4.18%		
Beta, being indicator of co.-specific business risk		0.60			
Market Risk Premium considered for Ke		5.00%			
<b>Cost of Equity (Ke)</b>	=	<b>Rf</b>		<b>Beta</b>	<b>(Rm-Rf)</b>
(Note: the compny is a start-up, 8 months old)	=	8.22%	+	0.60	5.00%
	=	<b>11.22%</b>			
Average (pre-tax) rate of interest					14.00%
Tax rate					33.00%
Thus, Kd					9.4%
Debt:Equity ratio		0.40	:		1
Thus, WACC					<b>10.7%</b>

globally, the levered beta of dairy companies in listed space is around 0.5 to 0.6. In case of Hatsun, the only listed Indian dairy co., the 3-year and 1-year (as at 31Mar10) betas are <0.30!

**Be careful of how you use your  
knowledge!!**

# Q & A

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