

What is a DCF Model?



What is a DCF Model?

- ❖ DCF = Discounted Cash Flow
- ❖ A financial model for valuing a business
- ❖ Forecast future cash flows and discount them back to the present to calculate today's valuation

What is a DCF Model?

- ❖ We have discussed elements of DCF valuation in the previous lectures
- ❖ Now bring these together to understand how to use them in DCF Modelling

What is a DCF Model?

- ❖ A DCF Model has a number of key components
 - ❖ Input Assumptions
 - ❖ Three Financial Statements
 - ❖ Income Statement
 - ❖ Balance Sheet
 - ❖ Cash Flow Statement
 - ❖ DCF Calculation Page

What is a DCF Model?

- ❖ We need several components from our model to calculate our Discounted Cash Flow...

What is a DCF Model?

- ❖ Unlevered Cash Flow
Forecast - discounted to the present
- ❖ Discount Rate
- ❖ Weighted Average Cost of Capital
- ❖ Terminal Value

What is a DCF Model?

- ❖ The Unlevered Free Cash Flow (Free Cash Flow to the Firm - FCFF)
- ❖ Cash available to both debt and equity investors
- ❖ Cash is important because it has economic value
- ❖ We need our model to calculate the forecast FCFF - 5 years

What is a DCF Model?

- ❖ Time Value of Money tells us that cash today is worth more than cash tomorrow
- ❖ It follows that cash tomorrow has a value today but we have to discount it to take account of the time delay in receiving it
- ❖ The “Discounted Cash” flow of the model takes this timing difference into account.
- ❖ For this we use the Discount Rate

What is a DCF Model?

- ❖ The Weighted Average Cost of Capital - WACC represents the investors' required rate of return
- ❖ We have seen how to use the Capital Asset Pricing Model to calculate the WACC

What is a DCF Model?

- ❖ As our model only goes out for 5 years, we have to account for the company's value beyond that period, so we need to calculate a Terminal Value
- ❖ This is done using either the Perpetual Growth Method or the Transaction Multiple method

What is a DCF Model?

- ❖ What does this look like in its most basic form?

What is a DCF Model?

- ❖ Input Assumptions
- ❖ 3 Statement Financial Model
- ❖ DCF Calculation of Cash Flows and Terminal Value

Input Assumptions

Income
Statement

Balance
Sheet

Cash Flow
Statement

DCF Calculation

Forecast
Cash Flows

Present Value
of Cash Flow

Terminal
Value

What is a DCF Model?

- ❖ Very simple model
- ❖ Cash Flow calculated from Financial Statements
- ❖ FCFF - Free Cash Flow to the Firm - Unlevered Cash Flow

DCF Valuation									
Year End	December								
	Actual	Actual	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
	2004	2005	2006	2007	2008	2008/09	2009/10	2010/11	
Growth Assumption									
Forecast EBT			£1.70	£1.94	£2.20	£2.48	£2.80	£3.17	
Plus									
Depreciation			£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	
Interest Expense			£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	
TBC									
TBC									
TBC									
Total			£1.70	£1.94	£2.20	£2.48	£2.80	£3.17	
Less									
Capitalised Items									
Exceptional Items									
TBC									
TBC									
TBC									
TBC									
Cash Flow before Interest and Taxes (A)			£1.70	£1.94	£2.20	£2.48	£2.80	£3.17	
Income Tax (B)									
30%			£0.51	£0.58	£0.66	£0.74	£0.84	£0.95	
Cash Flow before Interest and After Tax (A-B)			£1.19	£1.36	£1.54	£1.74	£1.96	£2.22	
Sustaining Capital Expenditure									
Tax Shield on Sustaining Capex									
Working Capital Investment									
Discretionary Cash Flow from Operations, before Interest and After Taxes			£1.19	£1.36	£1.54	£1.74	£1.96	£2.22	

What is a DCF Model?

- ❖ Discount Rate applied to FCFF
- ❖ High and Low value based on differing Discount Rates

[illegible]

What is a DCF Model?

- ❖ Terminal Value / Residual Value
- ❖ Capitalised using Transaction Multiple
- ❖ Discounted to Present
- ❖ Added to Discounted Cash Flow

Residual Value		Low	High
Cash Flow before Interest and Tax	Yr 5	£2.22	£2.22
Income Tax on Forecast EBIT		-£0.95	-£0.95
Cash flow before interest and after taxes		£1.27	£1.27
Less: Sustaining capital expenditures			
Tax shield on sustaining capital expenditures			
Discretionary cash flow before interest and after taxes		£1.27	£1.27
Capitalization multiple		12	15
Capitalized discretionary cash flow before interest and after taxes		£15.21	£19.01
Discounted value of tax shield on the unamortized cost of capital			
Value as at:		£15.21	£19.01
Discounted factor		50%	56%
Residual value as at the Valuation Date		£7.61	£10.74
Plus Cash Flow		£5.73	£6.16
		Low	High
Total DCF Value		£13.34	£16.90

What is a DCF Model?

- ❖ Discount Factor calculated using Capital Asset Pricing Model
- ❖ Equity Risk Premium based on size of company

Cost of Equity		Low		High	
LT Treasury Bonds (Risk Free Rate)		5.00%		5.00%	
Equity Risk Premium		6.00%		6.00%	
Beta		1.10		1.35	
Cost of Equity		12.10%		14.85%	
Range of Revenues			Premium		
£1m - £10m			7.0%		
£10m - £20m			6.0%		
£20m - £50m			5.0%		
£50m - £100m			4.0%		
£100m - £250m			3.0%		
£250m and above			2.0%		

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