A Simple Model

Discounted Cash Flow Model

NOTES TO ACCOMPANY VIDEOS

These notes are intended to supplement the videos on ASimpleModel.com. They are not to be used as stand-alone study aids, and are not written as comprehensive overviews of the topic detailed. The purpose of these notes is to provide a tangible collection of the visuals used in the videos with comments highlighting the more important aspects covered.

005 Discounted Cash Flow Model

This video elaborates on video 002 in this series "A Basic Discounted Cash Flow Model". There are two important differences to note:

1. The calculation for Free Cash Flow ("FCF") is more detailed and links to a fully integrated financial statement model. This permits the flexibility to run scenarios on the company you are analyzing and immediately note the impact on valuation.
2. The calculation for cost of capital incorporates the Weighted Average Cost of Capital ("WACC").

Discounted Cash Flow Analysis

Company Name
(000s)

FREE CASH FLOW (FCF)	20X3	20X4	20X5	20X6	20X7
EBIT	4,667	5,134	5,647	6,212	6,833
Tax	1,634	1,797	1,977	2,174	2,392
Tax Rate	*35.0%*	*35.0%*	*35.0%*	*35.0%*	*35.0%*
Tax-Effected EBIT	3,034	3,337	3,671	4,038	4,442
Plus:					
Depreciation	818	900	990	1,089	1,198
Amortization	0	0	0	0	0
Less:					
Capital Expenditures	(900)	(975)	(1,050)	(1,125)	(1,200)
Change in Working Capital	(693)	(859)	(945)	(1,039)	(1,143)
Free Cash Flow	2,259	2,403	2,666	2,963	3,296

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

Weighted Average Cost of Capital	**12.1%**

Cost of Equity		Cost of Debt	
Risk Free Rate	3.0%	Cost of Debt	8.0%
Expected Market Return	11.0%	Tax Rate	35.0%
Beta	1.5	After Tax Cost of Debt	5.2%
Cost of Equity	15.00%		
E / (D+E)	70.0%	D / (D+E)	30.0%

PRESENT VALUE OF CASH FLOWS (PV of CF)	20X3	20X4	20X5	20X6	20X7
	Year 1	Year 2	Year 3	Year 4	Year 5
Discount Factor	0.89	0.80	0.71	0.63	0.57
Present Value of Cash Flows	**2,016**	**1,914**	**1,895**	**1,879**	**1,865**

FIRM VALUE: PERPETUITY GROWTH RATE METHOD

Grow th Rate in Perpetuity	**3.5%**

WACC		PV of CF		PV of Terminal Value		Firm Value
	12.1%	9,568	+	22,555	=	**32,123**

FIRM VALUE: EBITDA MULTIPLE METHOD

EBITDA Multiple	**6.0x**

WACC		PV of CF		PV of Terminal Value		Firm Value
	12.1%	9,568	+	27,270	=	**36,838**

005 Discounted Cash Flow Model

The variables used to calculate Terminal Value ("TV") (highlighted in yellow below) are deserving of some additional comments.

Below you will notice that the "PV of CF" is equivalent using both the perpetuity growth rate method and the EBITDA multiple method, but that "Firm Value" varies substantially. Clearly the difference is driven by the calculation of "PV of Terminal Value".

In our example we selected these variables at random for the purpose of completing the exercise, but in a real world example a lot of time and thought would be devoted to the "Growth Rate in Perpetuity" and the "EBITDA Multiple" used to calculate TV.

FIRM VALUE: PERPETUITY GROWTH RATE METHOD						
Growth Rate in Perpetuity	3.5%					
WACC		PV of CF		PV of Terminal Value		Firm Value
	12.1%	9,568	+	22,555	=	32,123

FIRM VALUE: EBITDA MULTIPLE METHOD						
EBITDA Multiple	6.0x					
WACC		PV of CF		PV of Terminal Value		Firm Value
	12.1%	9,568	+	27,270	=	36,838