



SECTION - 4

MODELING AND FORECASTING CASH FLOWS AND FINANCIAL STATEMENTS

This Section includes

- Modeling and Forecasting Cashflows and Financial Statements.

4.1. MODELING AND FORECASTING CASHFLOWS AND FINANCIAL STATEMENTS

Financial strategy requires knowledge of alternatives available. The alternatives have to be each with different new aspect adding value to the proposition. A robust financial model that can facilitate exploration of the consequences of the various alternative choices will be most useful for a finance manager to quickly understand the implications of increasing debt to equity ratio, or a change in tax structure and how it affects the earnings per share or any other chosen objective.

4.1.1 An illustration:

The illustration given below shows how a given set of assumptions can be used to model for forecasting cash flows, financial statements and valuation of the firm.

Sales growth	10%					
Current assets/Sales	15%					
Current liabilities/Sales	8%					
Net fixed assets/Sales	77%					
Costs of goods sold/Sales	50%					
Depreciation rate	10%					
Interest rate on debt	10.00%					
Interest paid on cash and marketable securities	8.00%					
Tax rate	40%					
Dividend payout ratio	40%					
Year	0	1	2	3	4	5
Income statement						
Sales	1,000	1,100	1,210	1,331	1,464	1,611
Costs of goods sold	(500)	(550)	(605)	(666)	(732)	(805)
Interest payments on debt	(32)	(32)	(32)	(32)	(32)	(32)
Interest earned on cash and marketable securities	6	9	14	20	26	33
Depreciation	(100)	(117)	(137)	(161)	(189)	(220)
Profit before tax	374	410	450	492	538	587
Taxes	(150)	(164)	(180)	(197)	(215)	(235)
Profit after tax	225	246	270	295	323	352
Dividends	(90)	(98)	(108)	(118)	(129)	(141)
Retained earnings	135	148	162	177	194	211

- This part of the model shows the projected income statement based the basic assumptions. These assumptions can include capital structure changes like debt, equity, leasing etc.

Balance sheet						
Cash and marketable securities	80	144	213	289	371	459
Current assets	150	165	182	200	220	242
Fixed assets						
At cost	1,070	1,264	1,486	1,740	2,031	2,364
Depreciation	(300)	(417)	(554)	(715)	(904)	(1,124)
Net fixed assets	770	847	932	1,025	1,127	1,240
Total assets	1,000	1,156	1,326	1,513	1,718	1,941
Current liabilities	80	88	97	106	117	129
Debt	320	320	320	320	320	320
Stock	450	450	450	450	450	450
Accumulated retained earnings	150	298	460	637	830	1,042
Total liabilities and equity	1,000	1,156	1,326	1,513	1,718	1,941

- This part of the model shows the projected balance sheet based on the earlier assumptions

Year	0	1	2	3	4	5
Free cash flow calculation						
Profit after tax		246	270	295	323	352
Add back depreciation		117	137	161	189	220
Subtract increase in current assets		(15)	(17)	(18)	(20)	(22)
Add back increase in current liabilities		8	9	10	11	12
Subtract increase in fixed assets at cost		(194)	(222)	(254)	(291)	(333)
Add back after-tax interest on debt		19	19	19	19	19
Subtract after-tax interest on cash and mkt. securities		(5)	(9)	(12)	(16)	(20)
Free cash flow		176	188	201	214	228
Valuing the firm						
Weighted average cost of capital	20%					
Year	0	1	2	3	4	5
FCF		176	188	201	214	228
Terminal value						2,511
Total		176	188	201	214	2,740
NPV	1,598	<-- =NPV(B56,C61:G61)				
Add in initial (year 0) cash and mkt. securities	80					
Enterprise value	1,678					
Subtract out value of firm's debt today	-320					
Equity value	1,358					

- The third part of the model shows how from the projected income statement and balancesheet, one can arrive at the free cash flows to value the equity of the firm
- This model can be subjected to sensitivity analysis, scenario anlaysis and simulation for quantifying risk and generating control parameters