Minicase

M4.1 Discounted Cash Flow Valuation: Coca Cola Company

Price: $62
Trailing P/E: 23.9
P/B: 6.6
P/Sales: 5.0

Annual sales: $28.9 billion
Market cap: $143.7 billion

A. Calculating free cash flow for 2008-2010

As GAAP confuses operating and financing cash flows, the cash flow statement numbers must be adjusted. Equations 4.9 and 4.10 show how the adjustment are made and Box 4.5 demonstrates with Nike, Inc. Here are the adjustments for Coke:

		2010		**2009**		**2008**
Reported cash flow from ops		9,532		8,186		7,571
Interest payments	733		355		438	
Interest receipts	317		249		333	
Net interest payments	416		106		105	
Taxes (35.6%)	148	268	38	68	37	68
Cash flow from operations		9,800		8,254		7,639
Reported cash investment	4,405		4,149		2,363	
Purchase of S/T investments	(4,579)		(2,130)		-	
Sale of S/T investments	4,032	3,858	-	2,019	-	2,363
Free cash flow		5,942		6,235		5,276

Note that interest receipts are usually not reported, so interest income (that may include some accrued interest) is taken as an approximation.

B. Valuation using DCF

Following the template in Exhibit 4.1, the valuation proceeds as follows:

	2007	2008	2009	2010
Fee cash flow		5,276	6,235	5,942
Discount rate (1.09^t)		1.09	1.1881	1.2950
PV of FCF		4,840	5,248	4,588
Total PV of FCF to 2010	14,676			
Continuing value (CV)				
$\frac{5{,}942 \times 1.04}{1.09 - 1.04} = 123{,}594$				123,594
PV of CV = $\frac{123{,}594}{1.295}$	95,439			
Enterprise value	110,115			
Net debt	12,235	(23,417 – 11,182)		
Value of equity	97,880			

Value per share on 2,318 shares outstanding: **$42.23**

The continuing value here is based on FCF growing at the GDP growth rate of 4%. As the market price is $62, it is clear that the market sees higher growth rate if it agrees with the FCF forecasts. One might expect a higher growth rate for Coke than the average GDP rate, given that Coke has competitive advantage due to its brand positioning. Setting the growth rate at 5% (as in Exhibit 4.1), yields a continuing value of $155,978 million and an equity value of $122,887 million or $53.01 per share.

It is clear that, without some more analysis as to what the growth rate should be, we are a bit at sea here (and the long-term growth rate has a big effect on the valuation). The only information we have is the FCF growth from 2009-2010 and that is 18.18% in 2009 but -4.70% in 2010. Not much help.

But therein lies the problem: FCF growth is not a good measure to base a continuing value on. Indeed, FCF in 2010 is not a good base on which to apply a growth rate. The reason is that investment (that is made to yield growth) reduces FCF and thus induces negative growth. For Coke, we see increasing cash flow from operations over the years, 2008-2010, but we see FCF in 2010 has declined from 2009. The reason is, of course, the increased investment in 2010 in acquisitions and PPE. Investment makes free cash flow look bad. All we could say here is that we should have a higher growth rate on the low 2010 base, but what that growth rate should be is largely speculation…..and we would be left with a very speculative valuation.

Can we value Coke in 2004?

The problem is more severe in 2004:

	2004	2005	2006	2007
Cash flow from operations	5,929	6,421	5,969	7,258
Cash investments	618	1,496	2,258	7,068
Free cash flow	5,311	4,925	3,711	190

Here the free cash flows are declining over the four years. If cash flows from operations and cash investments were declining at about the same rate, we might conclude that the firm indeed was in a state of decline: declining cash flows from the business lead to declining investments. However, cash flows from operations are increasing and cash investment is increasing at a faster rate: Coke is investing heavily. While free cash flow is declining over these years, one would thus expect it to increase in future years as cash from the rising investment here comes in. These cash flow are not a good indication of future free cash flows (and nor is the $190 million of free cash flow in 2007 a good base to calculate a continuing value.)

If you put yourself in the position of valuing Coke in early 2004 on the basis of these cash flows, you would be in a stew, particularly in calculating a continuing value at the end of 2007 on the $190 million base. This is another example of why free cash flow does not work, *in principle*: Investment (which is made to generate cash flows actually decreases free cash flow. The cases of General Electric and Starbucks in Exhibit 4.2 are extremes where FCF is actually negative due to investment.

Discussion

The chief discussion point of the case is the concept behind free cash flows. See that section in the chapter. Free cash flow is a liquidation concept, so that a profitable firm, like Starbucks in Exhibit 4.2, that invests heavily to take advantage of its profit opportunities, has negative free cash flow. But a firm that liquidates its investments (possibly destroying value) increases free cash flow. The measure is perverse. It does not capture value added.

Home Depot has negative free cash flow for many years, as did Wal-Mart, and free cash flows turned positive only as these firms slowed their investment.

At this point, introduce accrual accounting and show how it deals with investment (as in the text) and, in addition, attempts to correct the mismatching of value added and value surrendered that is the problem with free cash flow. That will help set up the accrual accounting valuation of the next two chapters.