Estimating Cash Flows

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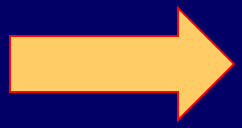

Categorizing Cash Flows

- Categorizing cash flows
  - FCFE = Net Income – (Capex – Depreciation) – Δ Non-Cash Working Capital + (New debt raised – Debt repaid)
  - FCFF = Operating Income (1 – Tax rate) – (Capex – Depreciation) – Δ Non-Cash Working Capital
- Let us compute these numbers for Wockhardt
- Earnings:
  - Importance of updating earnings
  - Correcting misclassification
    - Capital expenses treated as operating expenses
    - For example, research … restate earnings and also restate the book value

Restating Earnings Numbers

- Capitalizing R&D Expenses
  - Adjusted book value = book value of equity + value of the research asset
  - Adjusted operating income = operating income + R&D expenses – amortization of research asset
  - Adjusted net income = net income + R&D expenses – amortization of research asset
- Adjustment for Financing Expenses
  - Adjusted debt = debt + present value of lease commitments
  - Adjusted operating income = operating income + operating lease expenses – depreciation on leased asset

In search of True Earnings?

- Techniques for managing earnings
  - Planning income or expenses ahead (especially investments and asset sales)
  - Revenue recognition
  - Book revenues early
  - Capitalize operating expenses
  - Write offs & using reserves
  - Income from investments

In search of True Earnings?

- Extraordinary, recurring, and unusual items
  - One-time expenses or income that is truly one time
  - Expenses and income that do not occur every year but seem to recur at regular intervals
  - Items that recur every year but with volatility
  - Items that recur every year but with change signs – positive in some years and negative in others

Tax Effect!

Effective Tax Rate	FY 2007	FY 2006	FY2005	FY2004	FY 2003	FY 2002
Bharti	12.7%	12.0%	26.9%	15.4%	-0.1%	-4.9%
Dhandapani Finance	-0.6%	36.6%	33.9%	35.1%	30.3%	na
Hexaware Tech	3.9%	2.4%	3.1%	0.4%	8.1%	na
Jaiprakash Associates	33.1%	16.3%	36.8%	36.5%	67.7%	na
Moser Baer	8.4%	-0.2%	-100.8%	1.4%	-0.4%	na
Punjab National Bank	29.0%	29.3%	31.1%	37.3%	0.0%	29.7%
South Asian Petrochemicals	13.3%	17.8%	2.8%	0	na	na
Wockhardt	na	15.5%	10.2%	13.6%	8.7%	9.4%

Tax Effect

- Effective versus marginal tax rate
  - Reasons for difference – (a) following difference accounting standards (b) use tax credits (c) defer taxes to future periods (d) tiered tax structure
- Marginal tax rates for multinationals
  - Use weighted average of marginal tax rates
  - Use marginal tax rate of the country in which the firm is incorporated
  - Use different marginal tax rate for each country
- Effects of tax rate on value
  - If the same tax rate is to be applied for every period then the safer choice is the marginal tax rate
  - But, what should be the marginal tax rate taken?

Tax effect for a firm in losses!

- In such scenarios, during the years when the losses shelter income … the tax rate would be zero for both
  - Computation of after tax operating income
  - Cost of capital
- So, you can think of having the following columns for computing cash flows:
  - Year; Revenues; Operating Income; Net Operating Losses at the end of the year; Taxable Income; Taxes; Tax Rate;
- Tax benefits, tax subsidies and tax credits by tax authorities (windmill, backward area, etc.)
- Tax books and reporting books and its complications

Net Capital Expenditure

Three issues

- Firms often do capital spending in chunks
  - Can do smoothening
  - Firms with limited information can use the industry averages for capex (depending on size)
  - Go for Net Capex as a percent of EBIT
  - || Bharti Airtel, Jaiprakash Associates || Hexaware Technologies, South Asian Petrochem || Moser Baer, and Wockhardt ||
- Accounting definition of capex does not include R&D, and similar spending
- Acquisitions are not classified as capex by accountants

Investment in Working Capital

- Estimating expected changes in non-cash working capital
  - as a percent of revenue can be used, in conjunction with expected revenue changes for each period
    - By looking at the firms history
    - By looking at industry standards
  - Base it on the marginal working capital as a percent of revenues in the most recent year
  - Base our changes on the non-cash working capital as a percent of revenues over a historical period
  - Also try to look at the non-cash working capital relation to assets ratio
  - Remember, firms may have a negative non-cash working capital (especially the large ones!)

Cash Flows to Equity

- Cash Flows to Equity for a Levered Firm at a desired Leverage
  - FCFE = Net Income – (1 – δ) (Capex – Depreciation) – (1 – δ) Δ non cash Working Capital
  - Otherwise, it would be, FCFE = Net Income – (Capex – Depreciation) – (Δ non cash Working Capital) + (New debt issued – debt repayments)
- Net Income and Accounting Standards
  - China's requirement of statutory reserve
  - Japan's regulation of not taking out any money
  - But the cash therein can be used by the firm internally

FCFF: Cash Flows to the Firm

- Approach 1: Cumulate the cash flows to different claim holders
- Approach 2: Operating Income (1 – tax rate) + Depreciation – Capital Spending - Δ Working Capital Needs
- We prefer approach 2 for its ease

Inflation, Cash Flows, and Value

- Nominal cash flows do incorporate expected inflation
- Most books do make a small mention of the influence of inflation and relevant formulas
- Real discount rate = Nominal discount rate – Expected inflation
- The discounting rule:
  - Real cash flows ~ Real discounting rates
  - Nominal cash flows ~ Nominal discounting rates
  - Cash Flows to Equity ~ Cost of Equity
  - Cash Flows to Firm ~ Cost of Capital

Personal Taxes and Cash Flows

- The effect of personal taxes depends on:
  - What portion, if any, of the cash flows on an asset are taxable?
  - What rate will cash flows be taxed at?
  - When the tax has to be paid?
- Cash flows adjusted for personal taxes have to be discounted at discount rates also adjusted for personal taxes
  - After tax cost of equity = $\mathcal{D}_p (1 - t_o) + \Omega (1 - t_{cg})$
  - Cost of debt = Interest rates $(1 - t_0)(1 - t)$
  - Which investors' tax rates are reflected in the markets?

Cash Flows and Asset Life

- Most valuations are done over a finite time horizon
  - For finite life assets, we use salvage value
  - For infinite life assets, we use terminal value
  - In a infinite life asset, capex is needed not only to maintain existing assets but also for future growth
  - In a finite life asset, working capital would be liquidated at the end of asset's life time

Wockhardt	2006	2005	2004	2003
Net Income	214	238	208	133
Capex	109	202	159	69
Depreciation	35	24	18	16
Change in Non Cash Working Capital	124	(62)	147	1
New Debt Raised - Debt Repaid	(102)	(7)	515	251
FCFE	(86)	117	435	330

Wockhardt	2006	2005	2004	2003
Operating Income (1- tax rate)	223	255	222	143
Capex	109	202	159	69
Depreciation	35	24	18	16
Change in Non Cash Working Capital	124	(62)	147	1
FCFF	25	140	(66)	89

Wockhardt Limited	2006	2005	2004	2003
R&D current as % of sales (included above)	4.8%	6.4%	5.8%	6.1%
R&D total as % of sales (not included above)	11.9%	8.7%	7.9%	7.9%

Wockhardt Limited

2006	2005	2004	2003	2002
CA				
1,201	1,162	1,210	486	317
CL				
316	274	237	181	154
NWC				
885	888	973	304	163
NWC-to-Sales Ratio				
83%	96%	110%	40%	20%
NWC-to-Assets Ratio				
43%	45%	56%	30%	28%