CFAspace

Provided by APF

Academy of Professional Finance 专业金融学院

CFA Level II

Equity Investments

Free Cash Flow Valuation Part I

CFA Lecturer: Hillary Wang

Content

- Free cash flow to the firm, free cash flow to equity
- Ownership perspective implicit in the FCFE approach
- Making adjustments to income measures when calculating FCFF and FCFE

Learning Outcome Statement 34

LOS 34 .a: Compare the free cash flow to the firm (FCFF) and free cash flow to equity (FCFE) approaches to valuation.

- FCFF – the cash available to all of the firm's investors, including stockholders and bondholders after the firm buys and sells products, provides services, pays its cash operating expenses, and makes short- and long-term investments.
- FCFE – the amount that's left after the firm has met all its obligations to tis other investors. It is the cash available to common shareholders after funding capital requirements, working capital needs, and debt financing requirements.

Learning Outcome Statement 34

LOS 34 .a: Compare the free cash flow to the firm (FCFF) and free cash flow to equity (FCFE) approaches to valuation.

- Free cash flow valuation: present value of expected future cash flows.
- Firm value = FCFF discounted at WACC
- Equity value = FCFE discounted at ROE
- Equity value = Firm value – Market value of debt

Learning Outcome Statement 34

LOS 34 .a: Compare the free cash flow to the firm (FCFF) and free cash flow to equity (FCFE) approaches to valuation.

- The differences between FCFF and FCFE reflects differences in firm's capital structure.
- FCFE is useful when a company's capital structure is not particularly volatile.
- FCFF is more appropriate if a company has negative FCFE and significant debt outstanding.

Learning Outcome Statement 34

LOS 34 .b: Explain the ownership perspective implicit in the FCFE approach

- Ownership perspective in free cash flow approach: control perspective
- Ownership perspective in dividend discount approach: minority owner
- Free cash flow is usually more preferable as:

1. Many firms pay no, or low, cash dividends
2. Dividends are paid at the discretion of the board of directors.
3. In an acquisition, the acquirer will have discretion over free cash flow's distribution
4. Free cash flows may be more related to long-run profitability of the firm

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- FCFF = NI + NCC + [Int*(1 – tax rate)] – FCInv – WCInv

where:

NI = net income

NCC = noncash charges

Int = interest expense

FCInv = fixed capital investment (capital expenditures)

WCInv = working capital investment

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- Noncash charges – expenses that reduced reported net income but didn't actually result in an outflow of cash:
  - amortization of intangibles
  - Provisions for restructuring charges and other noncash losses
  - Gains or losses on sale of long-term assets
  - Income from restructuring charge reversals and other noncash gains
  - The amortization of a bond discount should be added back to NI while the accretion of the bond premium should be subtracted
  - Deferred taxes. If the analyst expects deferred tax liabilities to continue to increase, increases in deferred tax liabilities should be added back

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- Fixed capital investment (FCInv).
- FCInv = capital expenditures – proceeds from sales of long-term assets.
- Balance sheet if no sale of fixed assets happened during the year:
  - FCInv = capital expenditures = ending gross PP&E – beginning gross PP&E
  - FCInv = ending net PP&E – beginning net PP&E + depreciation

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- Sale of long-term assets happened during the year:
  - Capital expenditures. “purchase of fixed assets”, “purchases of PP&E”, or information from vignette
  - Proceeds from sales of fixed assets. “proceeds from disposal of fixed assets” or info from vignette
  - FCInv = capital expenditures – proceeds from sale of long-term assets
  - When capital expenditures / proceeds from sales are not given directly, find gain (loss) on asset sales from the income statement and PP&E from B/S
  - If there is a loss on sale of assets, add it back.

Learning Outcome Statement 34

	2007	2008
Gross PP&E	8,000	9,000
Accumulated Dep	2,000	2,200
Net PP&E	6,000	6,800

- Example 1. Use the above information calculate the firm's FCInv for 2008. Suppose the firm didn't make any sales of fixed assets during the year.

- Ans: FCInv = ending gross PP&E – beginning gross PP&E
  = 9000 – 8000 =1000

- Example 2. Suppose the same firm reports the proceeds from disposal of fixed assets is $1,000 and capital expenditures is $850 during year 2009. if the long-term assets sold were fully depreciated, what is the firm's FCInv for year 2009?

- Ans: FCInv = capital expenditures – proceeds from sales of long-term assets = 850 – 1000 = -150

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- Working capital investment = change in working capital
- Interest expense (after-tax basis)
- FCFF = (NI + NCC –WCInv) + Int(1-tax rate) – FCInv
  = CFO + Int(1-tax rate) – FCInv
- FCFE = FCFF – Int(1- tax rate) + net borrowing

Learning Outcome Statement 34

LOS 34 .c: Explain the appropriate adjustments to net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation, and amortization (EBITDA), and cash flow from operations (CFO) to calculate FCFF and FCFE

- FCFF = [EBIT*(1 – tax rate)] + Dep –FCInv – WCInv
- FCFF = [EBITDA*(1 – tax rate)] + Dep*tax rate – FCInv –WCInv
- FCFF = CFO + [Int*(1 – tax rate)] – FCInv
- The above formulas assume that the company has no preferred stock.
- With preferred stock: any preferred dividends should be added back the the FCFF; the WACC should also be revised to incorporate the cost of preferred stocks. The only adjustment to FCFE would be to modify net borrowing to reflect new deb borrowing and net issuances by the amount of the preferred stock.

CFAspace

Thank You!