

The Three Cash Flow Valuation Methods

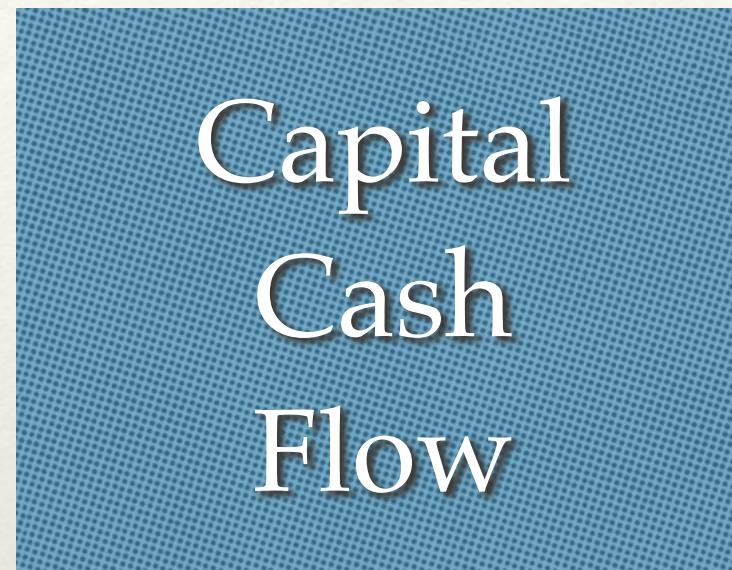


The Three Cash Flow Valuation Methods

- ❖ While we frequently discuss Discounted Cash Flow valuations, there are actually three variants which you need to understand
 - ❖ Capital Cash Flow
 - ❖ Equity Cash Flow
 - ❖ Free Cash Flow
- ❖ As these can be quite confusing I have prepared this summary of the three methods

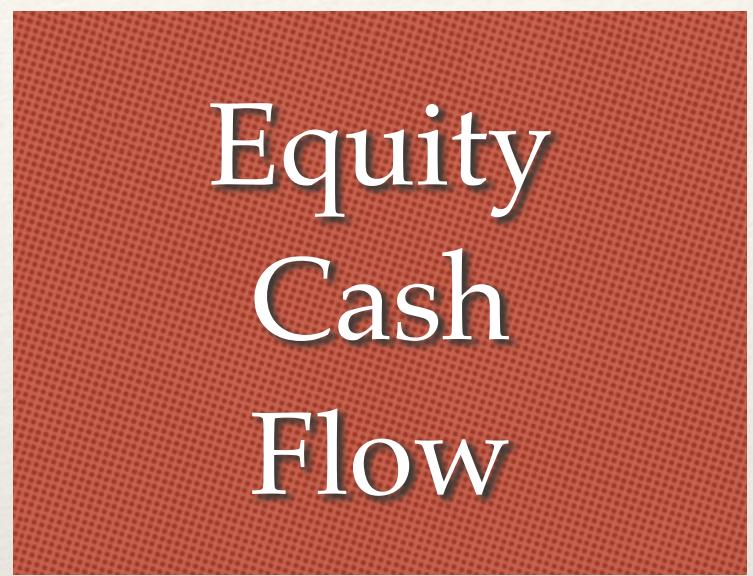
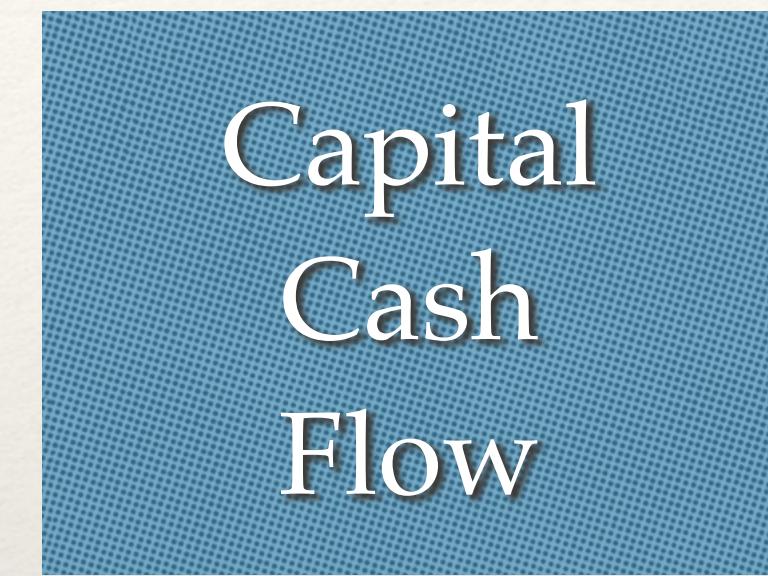
The Three Cash Flow Valuation Methods

- ❖ Capital Cash Flow represents cash flow available to both equity and debt holders
- ❖ It includes the benefits of tax deductible interest payments
- ❖ The Discount Rate is therefore a pre-tax rate which corresponds to the whole risk of the firm



The Three Cash Flow Valuation Methods

- ❖ Equity Cash Flow measures all cash flow available to shareholders after payments to debt holders are deducted from operating cash flow
- ❖ Capital Cash Flow minus Debt Cash Flow
- ❖ Higher risk means that the discount rate is higher



The Three Cash Flow Valuation Methods

- ❖ Free Cash Flows measures value of the whole firm but do not include the benefits of tax deductible interest
- ❖ After tax discount rate is appropriate

Capital
Cash
Flow

Equity
Cash
Flow

Free
Cash
Flow

Discount
Rate
Pre Tax

Higher
Discount
Rate - Post
Debt

After Tax
Discount
Rate

The Three Cash Flow Valuation Methods

- ❖ The starting point is Earnings before Interest and Tax = EBIT
- ❖ The objective is to convert the accounting measure of EBIT into cash flows
- ❖ Adjustments include:
 - ❖ Subtracting capital expenditures
 - ❖ Adding back depreciation
 - ❖ Subtracting changes in working capital



The Three Cash Flow Valuation Methods

- ❖ The Discount Rates are derived from the Capital Asset Pricing Model - CAPM
- ❖ These are subtly different for each measure of Cash Flow

The Three Cash Flow Valuation Methods

- ❖ Capital Cash Flow
- ❖ This measure uses the Asset Beta since Capital Cash Flows values the whole firm
- ❖ Expected Return = Risk Free Rate / (Asset beta x Risk Premium)

The Three Cash Flow Valuation Methods

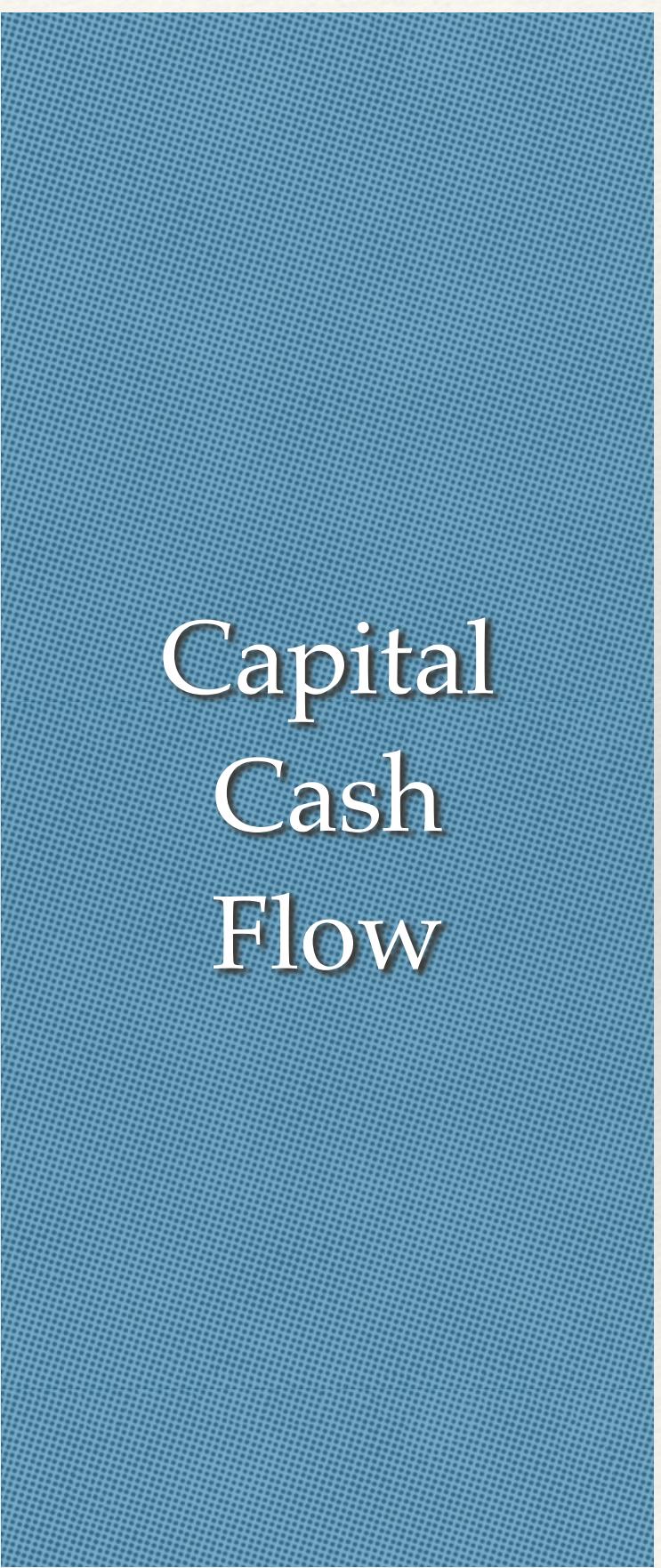
- ❖ Equity Cash Flows
- ❖ Uses the Equity Beta since this is only measuring the cash flows to equity
- ❖ This beta should be unlevered
- ❖ Expected Return = Risk Free Rate / [(Equity beta x (Risk Premium)]
- ❖ Unlevered Equity Beta = Levered Equity Beta / (1+D/E Ratio)

The Three Cash Flow Valuation Methods

- ❖ Free Cash Flows
- ❖ The appropriate discount rate is the WACC - Weighted Average Cost of Capital
- ❖ Values the whole firm
- ❖
$$\text{WACC} = (\text{Debt}/\text{Value})(1 - \text{Tax Rate})x k_d + (\text{Equity}/\text{Value})x k_e$$

The Three Cash Flow Valuation Methods

- ❖ We can summarise the calculation of Capital Cash Flow
- ❖ Operating Cash Flow, less Actual Taxes
- ❖ Discounted at the Expected Asset Return



Operating Cash Flow

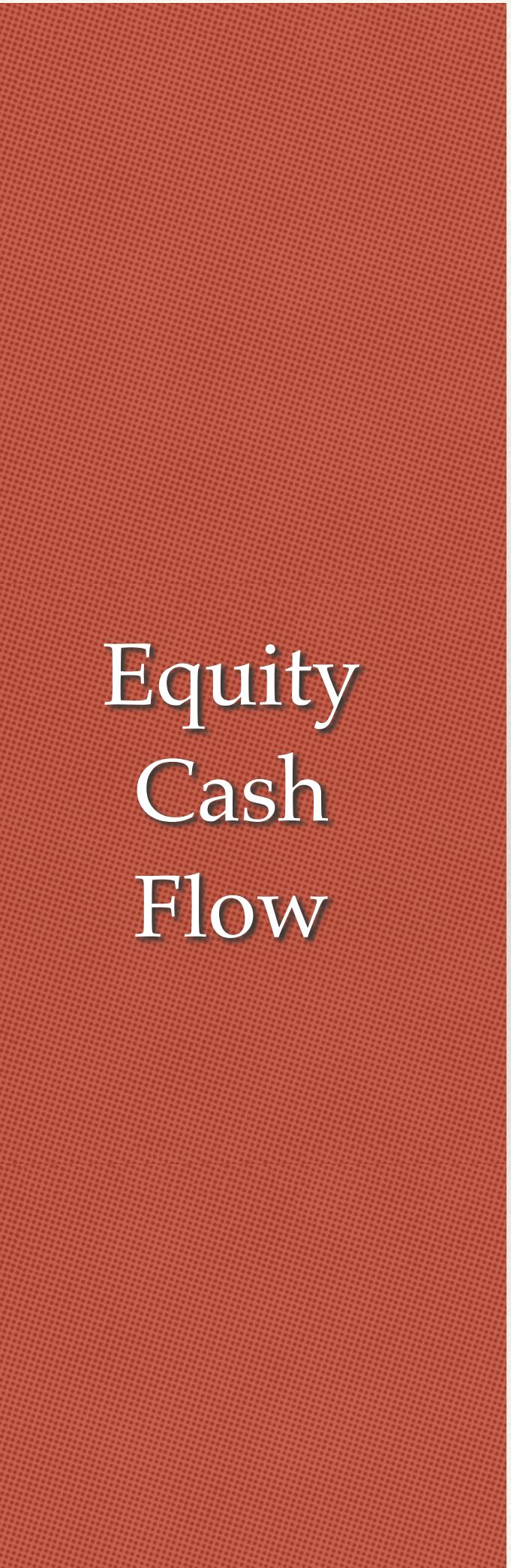
Less actual taxes
(Tax Rate * (EBIT-
Interest))

Equals
Capital CashFlow

Discount at Expected
Asset Return (Before Tax)

The Three Cash Flow Valuation Methods

- ❖ Equity Cash flows can be summarised...
- ❖ Operating Cash Flow less actual taxes
- ❖ Less Interest and Debt Payments
- ❖ Plus Debt Issues
- ❖ Discounted at Expected Equity Return



Operating Cash Flow

Less actual taxes
(Tax Rate * (EBIT-
Interest))

Less Interest, Debt
Payments
Plus Debt Issues

Equals
Equity Cash Flow

Discount at Expected
Equity Return

The Three Cash Flow Valuation Methods

- ❖ Operating Cash flows can be summarised...
- ❖ Operating Cash Flow less actual taxes
- ❖ Less Interest and Debt Payments
- ❖ Plus Debt Issues
- ❖ Discounted at Expected Equity Return

Free
Cash
Flow

Operating Cash Flow

Less hypothetical taxes
(Tax Rate x EBIT)

Equals
Free Cash Flow

Discount at Weighted
Average Cost of Capital
(After Tax Rates)

The Three Cash Flow Valuation Methods

- ❖ Note that the tricky issue here is to understand whether your discount rate is before or after tax and whether it is levered or unlevered.
- ❖ This is one of the primary reasons for setting out this lecture the way I have

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