

## Lecture Examples II

**Example 4.1.** A parking garage may be built for \$1.3 million. Apply the IRR Rule in the following cases.

- a. Garage is sold for \$1.5 million in three years, OCC is 8%
- b. Garage is sold for \$1.5 million in two years, OCC is 6%.

**Example 4.2.** For the situation in Example 3.1.a, calculate the IRR to within one percentage point.

**Example 4.3.a.** An Indicative, Inc. bond with a face value of \$10,000 and a coupon rate of 10%, maturing in eight years, currently sells for \$10,500. Interest payments are made annually. What is the Yield to Maturity?

b. Suppose instead that interest is paid semiannually. What is the annualized Yield to Maturity?

**Example 4.4.a.** Shares of Superannuation Company common stock currently trade at \$25.00. Superannuation pays out all FCF as dividends. At the end of this year Superannuation will pay a dividend of \$2.00 per share, and the dividend is expected to grow by 4% per year for the foreseeable future. Calculate the dividend yield, rate of capital gain and return on equity.

b. Suppose Superannuation's projected dividend growth rate is revised upward to 5% per year. Assume that the upcoming dividend and return on equity remain the same.

**Example 5.1.a.** Divergent Ventures, Inc., operates two divisions, producing vitamins and weapons, which generate yearly net cash flows of \$30 million and \$24 million, respectively. Market rates of return for real assets in the vitamin and weapon industries have been estimated at 13% and 10%, respectively. Divergent has 90 million shares of common stock outstanding, and it does not issue debt. Calculate the value of Divergent, its current share price and its CCC.

b. Divergent will pay out all of next year's net asset cash flow as dividends, and it will not issue any new shares. Calculate the dividend per share, dividend yield and rate of capital gain.

c. Suppose instead that Divergent will use \$30 million in internal cash to repurchase shares next year.

d. Suppose Divergent considers purchasing the real assets of X-Ray Corp. for \$80 million. The purchase will be financed by issuing new shares. The market rate of return for X-Ray's real assets has been estimated at 6%. Calculate the value of Divergent, its current share price and its CCC following the purchase, along with the number of new shares that Divergent must issue.

e. Suppose instead that Divergent finances \$30 million of the purchase using internal cash and \$50 million by issuing new shares.

**Example 5.2.a.** Levered Corp.'s current financing consists of a single bond issue and 150 million shares of common stock. The bonds have a face value of \$200 million, a coupon rate of 8% and a current yield of 10.4%, and they mature in six years. Interest is paid annually. Levered will issue no new bonds after the current ones mature. The tax rate is 35%. Calculate the current value and OCC of of Levered's portfolios of debt and ITS.

b. Suppose instead that Levered will finance the repayment of principle in six years by issuing new bonds having a coupon rate of 10%, a yield of 10.4% and a maturity of 10 years. Levered will issue no new bonds after the latter ones mature.

c. Now suppose that, in addition to the bonds in parts a and b, Levered issues \$50 million in one-year debt, having a coupon rate and yield of 7%. Levered plans to maintain this debt issue in all future years.

d. Now suppose that instead of issuing the bonds in part b, Levered retires the original bonds by issuing new bonds having a coupon rate and yield of 10.4% and a maturity of 10 years. Levered will continue to refinance these bonds with equivalent issues whenever they come due, and it will continue to issue the bonds in part c.

e. Suppose that Levered's real assets have an estimated value and OCC of \$600 million and 15.2%, respectively. Calculate the value of firm, the value of equity, the debt ratio, the debt-equity ratio, the share price, the return on equity and the CCC for the situation in part a.

f. Repeat the calculations for the situation in part d.

**Example 5.3.a.** Ideal Industries is financed by \$350 million in debt, yielding 5.6%, and 160 million shares of common stock, currently trading at \$4.20 per share. The return on equity has been estimated at 11.9%. The tax rate is 35%. Calculate the value of Ideal and its CCC, and estimate the unlevered value and unlevered CCC.

b. Suppose Ideal pays a current dividend of \$0.50 per share, and has issued 4 million shares to finance current investments. Estimate the previous year's net cash flow from real assets.

**Example 5.4.** Groovy Grommits Co., a retail hardware chain, is considering entering the wholesale hardware business. Currently there are three major firms that specialize in hardware wholesaling. The following figures have been obtained from financial market data.

|             | Value of Firm | $D$ | $r_D$ | $\beta_E$ |
|-------------|---------------|-----|-------|-----------|
| All-Purpose | 1,250         | 590 | .077  | .90       |
| Builder's   | 700           | 210 | .069  | .95       |
| Craft       | 300           | —   | —     | 1.22      |

Each firm faces a tax rate of 35%. Assume that the risk-free rate is 3% and the market risk premium is 7.5%. Use CAPM to obtain an estimate of the ICC for the hardware wholesaling industry.

**Example 6.1.** Goliath Retail Corp. has a current market value of \$17.5 billion, financed by \$10.5 billion in debt and 350 million shares of common stock. Goliath is considering a shopping complex project requiring an investment of \$300 million, yielding future cash flows having a PV of \$500 million. Goliath faces a tax rate of 35%.

For each of the following financing plans, calculate the APV of the project, Goliath's market value and share price following project adoption, and the number of shares it must issue or repurchase.

- a. Goliath borrows \$150 million and finances the remainder by issuing new equity.
- b. Goliath borrows \$150 million, issues \$75 million in new equity, and finances the remainder using internal cash flow.
- c. Goliath sells an existing property having a value of \$200 million and finances the remainder by borrowing. The property has a book value of \$100 million.
- d. Suppose Goliath arranges debt financing to maintain its target debt ratio of 60%.
- e. Suppose Goliath pays commissions of 1.5% and 5% on new debt and equity issues, respectively, under the financing plan in part a.

**Example 6.2.a.** Uptown Properties, Inc., is considering an investment of \$25 million in an office building, which will yield yearly net cash flows of \$4 million in perpetuity. Uptown has a market value of \$130 million, pays 9% on its debt and maintains a debt ratio of 65%. Analysis of stock market data reveals that Uptown's shares return an average of 17%. Uptown's tax rate is 35%.

What is Uptown's WACC? Calculate the APV of the office project using the WACC method.

- b. Calculate the APV using the conventional method.

**Example 6.3.** Insatiable Industries has a current market value of \$12.6 billion, with \$5.1 billion worth of debt and 120 million shares of common stock outstanding. Insatiable is seeking to acquire Tasty Technologies' frozen pastry division for \$280 million. Based on product synergies, Insatiable calculates that the division will add \$310 million to the value of its real assets. To finance the purchase, Insatiable will issue \$160 million worth of new debt, and the balance will be covered by internal cash flow. For handling the transaction, Insatiable's investment bank will charge a fixed fee of \$4 million. The tax rate is 35%.

Calculate the APV of the asset acquisition and its effect on Insatiable's share price.