1. Slovix Inc. is a publicly traded company that operates in two businesses – it generates 60% of its value from entertainment and 40% from electronics. The company has 100 million shares trading at $10/share, has $500 million (market and book value) in interest bearing debt and lease commitments of $100 million each year for the next 6 years. The current levered beta for the firm is 1.15 and the current bond rating for the firm is BBB, which corresponds to a default spread of 1.5%. The ten-year US treasury bond rate is 3.5%, the equity risk premium is 5% and the marginal tax rate is 40%.

a. Estimate the current cost of capital for the firm. (2 points)
b. Now assume that the firm plans to sell its electronics business at fair value and use 75% of the proceeds to pay a special dividend to equity investors and 25% of the proceeds to retire interest bearing debt. If the unlevered beta of the electronics business is 0.90 and this transaction will lower the rating to BB (with a default spread of 3%), estimate the cost of capital after the transaction. (4 points)
2. Bestburger Inc. is a company that operates fast food restaurants and it is considering producing packaged food for sale at grocery stores. The initial investment in production facilities to start this venture will be $85 million, depreciable straight line over 10 years to a salvage value of $10 million. The packaged food business is expected to generate revenues of $120 million each year for the next 10 years and the EBITDA margin (EBITDA/revenues) is expected be 15% on these revenues. The working capital is expected to be 10% of revenues, with the investment occurring at the start of each period, where needed. The cost of capital for Bestburger is 12% but the cost of capital for other firms in the packaged food business is 9%. The marginal tax rate is 40%.

a. Estimate the NPV of the investment. (3 points)
b. Now assume that you expect this business to continue in perpetuity, after year 10. Estimate the NPV of the investment today. (2 points)

c. Now assume that the packaged food business will increase the after-tax cashflows at the fast food restaurants by $8 million a year for the next 10 years. What value would you attach to this synergy? (1 point)
3. Zolox Inc. is a pharmaceutical company with 150 million shares trading at $20/share and debt outstanding of $1000 million. The firm has a levered beta of 1.00 and a pre-tax cost of debt of 4.5%. The riskfree rate is 3.5%, the marginal tax rate is 40% and the equity risk premium is 5%.

a. Estimate the current cost of capital for the firm. (1 point)

b. Now assume that the firm plans to borrow $1000 million and buy back stock. If this will double the default spread on the debt (both new and existing), estimate the new cost of capital for the firm after the recapitalization. (2 points)
c. Now assume that the firm does buy back stock with the $1000 million and pays $22/share. Estimate the value per share for the remaining shareholders in the company. (You can assume no growth in perpetuity) (2 points)

d. How would your answer to c have changed, if the firm had been able to keep all of its existing debt at the existing interest rate of 4.5% even after the recapitalization?
   i. The value per share after the buyback will be higher than estimated in part c
   ii. The value per share after the buyback will be lower than estimated in part c
   iii. The value per share after the buyback will not change from the value estimated in part c.
4. You have been asked to review the dividend policy of Highpower Inc., a small all-equity funded energy company. In the most recent year, the company had revenues of $ 100 million, net income of $ 20 million and paid out $ 7 million in dividends. During the most recent year, the company also had $ 18 million in capital expenditures and depreciation of $ 10 million. Over the course of the year, its non-cash working capital decreased from $ 12 million at the start of the year to $ 10 million at the end and the total debt outstanding increased by $ 3 million.

a. If Highpower Inc. started the most recent year with $ 3 million as a cash balance, what was the cash balance at the end of the year. (2 points)
b. Highpower expects its revenues, net income and depreciation to increase by 50% next year. During the next year, it also expects capital expenditures to be $20 million and to maintain its working capital at the same percent of revenues it had at the end of the most recent year. If the firm plans to raise the same proportion of its reinvestment needs\(^1\) from debt as it did in the most recent year, what payout ratio can the firm have next year, if it wants to increase its cash balance by $3 million? (3 points)

c. Now assume that you are a stockholder in Highpower and are examining whether to put pressure on the company to return even more cash to its stockholders. Which of the following circumstances relating to the company would make you more likely to pressure the company to return cash to stockholders? (1 point)
   i. Positive Jensen’s alpha, negative EVA
   ii. Positive Jensen’s alpha, positive EVA
   iii. Negative Jensen’s alpha, negative EVA
   iv. Negative Jensen’s alpha, positive EVA

\(^{1}\) Reinvestment needs = Capital expenditures – Depreciation + Change in non-cash working capital
5. Lowell Steel is a small, steel company. In the most recent year, the firm reported $30 million in after-tax operating income on revenues of $200 million. The firm has 20 million shares trading at $18/share and a book value of equity of $100 million; it has $40 million in debt outstanding (book and market) and a cash balance of $20 million. The firm’s current cost of capital is 12%.

a. Assume that the firm can maintain its existing return on capital for the next 5 years and expects after-tax operating income to grow 10% a year. Estimate the expected free cash flows to the firm for the next 5 years. (2 points)

b. At the end of year 5, the firm is expected to be in stable growth and grow at 3% a year in perpetuity. In stable growth, the cost of capital for the firm is expected to drop to 10% and the return on capital will also decline to 15%. Estimate the value at the end of year 5 (the terminal value). (2 points)
c. Estimate the value per share today. (2 points)