Homework Assignment 4

(1) An article in the *Los Angeles Times* noted that "An increasing number of companies are finding that the best investment they can make these days is in themselves." Discuss this view. How is the desirability of repurchase affected by the company prospects and the price of its stock.

(2) Some firms use stock repurchases to increase earnings per share. I want you to decide whether the increase in earnings per share (EPS) is good for shareholders. Consider the case of Garfinkle Inc. a small manufacturer in Chicago.

Net profit	$10 million
Number of shares before repurchase	1 million
Earnings per share (EPS)	$10
Price-earnings ratio	20
Share price	$200

The managers of Garfinkle Inc. have decided to repurchase 200,000 shares at $200 a share. The number of shares declines to 800,000 shares and the earnings per share increase to $12.50 (10,000/800). Assuming the price earnings ratio stays at 20, the share price must rise to $250. Does this calculation make sense? Explain.

(3) Indicate what is wrong with the following arguments. You should be able to answer it completely in a few sentences at most.

(A) As the firm borrows more, both the debt and the equity become riskier. Both stock and bond holders demand higher expected rates of return. Thus by reducing the debt ratio a firm can reduce both the cost of debt and the cost of equity -- making everyone better off.

(B) Moderate borrowing doesn't significantly affect the probability of financial distress or bankruptcy. Consequently, moderate borrowing won't increase the expected rate of return demanded by stockholders.

(4) You are the CEO of ZZ Best carpet cleaners. Initially your firm has 10,000 shares of stock outstanding and the stock price is $100 per share. There is no debt. The “market value” balance sheet of ZZ Best is shown below.

Market Value Balance Sheet

Assets	$1,000,000	Equity	$1,000,000

Now suppose that you discover a perpetual investment opportunity that requires an investment of $110,000 at the beginning of each year and produces positive cash flows of $210,000 at the end of each year (the balance sheet given above does not include this investment opportunity). The risk of the cashflows from this project is the same as the risk of cashflows from ZZ Best's assets-in-place. The risk-free rate is 4%,the asset beta is 1.0, the market risk premium is 8.4%, and the corporate tax rate is 34%.

(A) You have decided to raise the $110,000 required for the first year's investment by issuing equity. All potential purchasers of your common stock have full information--they know with 100% accuracy the value of assets-in-place as well as the value and costs of the project. How many shares of stock must be issued to raise the $110,000? At what price should the shares be sold?

(B) Now suppose that potential investors are not completely informed about the value of assets in place but they are fully aware of the project's value and costs. Would you expect the number of shares required to raise $110,000 to increase or decrease? How about the price at which the shares are sold? Explain.

(C) Instead of issuing common stock, you decide to issue $610,000 of perpetual debt that has a promised yield of 10% and a beta of 0.2. Of the $610,000, $110,000 will be invested in the positive NPV project and $500,000 will be invested in government bonds. By increasing the firm's debt level, expected costs of financial distress increase from zero to $50,000. Assuming that investors are completely informed about the value of assets in place and the value of the investment project, what do you expect the stock price to be after the announcement that debt will be issued? There are no personal taxes.

(D) Calculate ZZ Best's weighted average cost of capital after it issues the debt described in part (C).