Finance 510-B

Second Set of Questions to Prepare for Quiz 6

1. The "traditional approach" to capital budgeting can be summarized: *The Net Present Value of a project is the sum of the discounted present value of its current and expected future cash flows.*

    (a) Does the "real options" or dynamic optimization approach to capital budgeting contradict this maxim? If it does, what aspect of the traditional approach is wrong? If it does not, how does it differ from the "traditional approach?"

2. Pfizer, Inc. is a large diversified pharmaceutical firm with market cap of equity of $213 billion. Its capital structure is 83% equity and 17% debt. It has AA- -rated debt, and its 30-year debt trades at a 75 basis point spread to the 30-year US Treasury Bond. The yield to maturity on the 30-year Bond is 3.3%. It has a beta of 1.1, and the equity market risk premium is 5%.

    (a) Suppose Pfizer is considering rebuilding the pharmaceutical production facilities that it owns in Puerto Rico to restore full capacity following Hurricane Maria and modernize the facilities. What cost of capital should it use to evaluate this project? Explain.

    (b) Suppose Pfizer is considering conducting a new R&D program to develop a new analgesic drug that is both more effective and less addicting than opioids. What cost of capital should it use to evaluate this project? Explain.

    (c) Suppose Pfizer is considering purchasing a 40-acre piece of land in San Juan Puerto Rico on which it may build a new regional headquarters building. What cost of capital should it use to evaluate this project? Explain.

3. You run a small high-end (specialty) bicycle manufacturing shop in Cleveland. You have a small but dedicated customer base. You manufacture bikes for $3,500 and sell them for $5,000. Several shops in Italy and Germany have expressed interest in stocking your bicycles. They say that you could sell 1,000 bikes a year for €4,000 each, for each of the next 8 years. The current exchange rate is one euro buys $1.23. Your income tax rate is 28%, and your weighted average cost of capital is 11%. You can start a robust exporting platform for after-tax fixed costs of $3 million, which you would incur immediately. Once you do this you can start exporting bikes to Europe immediately. Our best exchange rate models say that the best predictor of an exchange rate in the future is the current exchange rate.

    (a) What is the NPV of starting the exporting project?

    (b) Exchange rates are very volatile. You think that there is a 40% probability that in one year the dollar will appreciate to a rate of one-to-one (that is one euro buys $1). There is a 20% probability that the exchange rate will be unchanged, and there is a 40% probability that the dollar will depreciate so that one euro buys $1.46.

        i. As an exporter, are you hurt or helped by depreciation of the dollar? Explain.

        ii. In light of the exchange rate uncertainty, should you start the export program immediately or wait a year? Explain.