Introduction to Finance - II

Quiz 4

Read the questions carefully. Don't make them harder than they are! Answer succinctly and precisely. Show all of your work.

Suppose that you are a financial analyst at Amazon. At this point Amazon makes all of its shipments through the United States Post Office and Federal Express.

Dave Clark, head of operations, proposes that Amazon buy a fleet of specialized vans to ship many products from one of its many warehouses directly to its consumers who live within a 100-mile radius of each warehouse. Dave estimates that this will result in a net savings of $1.00 for every eligible package. The vans are a 3-year MACRS asset under the IRS code. The relevant MACRS depreciation schedule is provided below.

Amazon's CFO, Brian Olsavsky, has asked you to evaluate the financial consequences of Dave's recommendation. The market value of Amazon's equity is $1 trillion, and Amazon has $100 billion in debt. Brian thinks that Amazon's beta is 1.7. The risk-free rate is 3.5% and the expected return of the overall stock market is 8%. Amazon's long-term debt has an AA- credit rating, and the yield to maturity on its long-term debt is 4.5%. Amazon's marginal tax rate is 23%.

The initial cost to purchase the vans is $60 million. Dave believes that the vans will enable the cost savings for 15 million units in the first year. Dave expects that this number of eligible units will increase by 10% per year in each of the subsequent three years. The vans would be sold after four years, for an estimated salvage value of $5 million. Dave also notes that Amazon would have to maintain inventory of $5 million in parts and equipment to service the vans over the four-year project life.

MACRS 3-year depreciation schedule

Year	Depreciation (%)
1	33.33
2	44.45
3	14.81
4	7.41

1. **(20 points)** What is the appropriate discount rate to evaluate the present value of this project – What is the value, what is it called, why do we use it?

2. **(80 points)** What is this project's Net Present Value? What does this mean in terms of your recommendation to Mr. Olsavsky concerning Dave Clark's proposal?