

Econ 466
Spring, 2010
Team Project #7

Problem Description

Three years ago you graduated from Iowa State and returned home to farm with your parents. It is becoming increasingly clear, however, that you are a drain on the farm's resources. Your contribution to the farm's income is less than the meager wages you are paid plus all the pizza and beer you consume.

Your parents have strongly suggested that you find a half-time job to partially off-set the wage you are being paid. Unfortunately off-farm jobs are not easy to find in your area and if you can come up with something it rarely pays more than \$10/hour without benefits.

You have, however, identified an interesting business opportunity. Several of the large poultry producers in your area are seeking individuals with dump trucks to haul dead birds to a composting site. This is year round work – roughly 300 days a year and requires about 4 hours per day. You have done a little research on this opportunity. Here is what you have found:

1. A used dump truck will cost \$35,000.
2. The poultry producers will pay you \$42/hour to load and deliver the birds to the compost site. They indicate that they will increase the payment rate about 1% a year, if your performance is satisfactory.
3. Considering the price of fuel and repairs, you estimate annual expenses will be about 65% of your gross revenue. After five years of operation, you will need to overhaul the truck for approximately \$10,000.
4. Your lender will finance the investment for 7 years at 6.5%. She requires 25% down, however – and your parent's co-signature. Your parents expect you to make the down payment from your savings account.
5. You think this business opportunity will provide you with up to 10 years of work.
6. At the end of 10 years you estimate the salvage value of the truck will be 10% of its initial value.
7. You believe that the **before tax** opportunity cost of your capital is 8%.

8. You want to consider the impact of taxes on the profitability and feasibility of your dead chicken business opportunity. You have determined that the truck is considered 5-year property by the IRS. You can depreciate the truck using the following MACRS cost recovery factors from year 1 to year 6 respectively: 20.0%, 32.0%, 19.2%, 11.52%, 11.52%, and 5.76%.
9. Your tax advisor also reminds you that interest on debt is a deductible expense as well – as are your operating costs
10. You estimate your marginal tax rate including state, federal and self-employment is 30.0%.

Questions

1. Using a spreadsheet, develop a model that will allow you to assess the profitability, feasibility and risk of this business opportunity – **after taxes.**
2. Is this a profitable investment? How have taxes influenced profitability?
3. Is this investment feasible?
4. If you financed the investment entirely from equity would this change the profitability? Why?
5. Operating costs (that are mostly fuel) are obviously unknown. In addition, the performance bonus your poultry producer is offering is unknown. How could you assess the impact of these risks on the profitability of your business opportunity? Can you do it?
6. Would you still proceed with this business opportunity? Carefully explain your reasoning.

Due: Hand in the answers to the above questions and a hard copy of your spreadsheet before 5:00 p.m., March 26, 2010.