

## Corporate Finance MSIN0149 - CW 2 - LSA 2021

This coursework deals with investment decisions for leveraged firms. Clearly state any additional assumptions you think may be necessary in your analysis and reference any external source. Summarize your responses in a report of maximum 250 words. Your answers need to be succinct and to the point; your grade will depend on the quality of the analysis and the clarity of the report rather than its length (longer is not better). Given the nature of the exercise, I do expect reports to be considerably shorter than 250 words. Please carefully write your computations in your report.

### 1 A firm faces the following problem

- There is only 1 period and there are two 2 states (H and L) equally probable.
- There is no tax, there are no bankruptcy costs, and risk is diversifiable.
- The current risk-free interest rate is equal to 0 (to simplify computations).

Initially, the firm has:

- 10 in cash;
- an existing project with cash flows (at the end of the period) equal to 100 (in state H) or 50 (in state L);
- debt with face value 60 (the book value is also 60), which will mature at the end of the year, and will require a payment (interest included) of 75;
- equity with book value 20.

#### Question 1

1.1 What is the book value of the existing project?

1.2 Draw the market value balance sheet.

1.3 Is the market value of equity equal to the book value? Explain why.

#### Question 2

Now, assume that the firm above can invest its cash in two potential projects. In both cases, investing 10 gives a payoff 20 with 50% probability and 5 otherwise. The difference between the projects lie in their correlation with the existing project of the firm.

- Project A is perfectly *positively* correlated with the the existing project
- Project B is perfectly *negatively* correlated with the existing project

2.2 Do the shareholders of the firm prefer project A or project B? Explain why.

2.2 Do the creditors of the firm prefer project A or project B? Explain why.