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15.997 Practice of Finance: Advanced Corporate Risk Management
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Case Assignment #3: Antamina

There are 2 cases inside this one case. The first case is a risk and valuation case. The second case is a bidding and negotiation case. We will focus on the first and ignore the second. Assume for purposes of our discussion that the company is outright buying the property. As anywhere, it may pay royalties and taxes on what it produces, but there is no negotiation on these rates. The task is to decide what the company should be willing to pay today to purchase the mine.

1. Treat this first as a traditional capital budgeting problem. Set up and execute a discounted cash flow valuation of the mine. What is the DCF value? Be prepared to explain the valuation to the class...which line items do you use, what are the key calculations or adjustments and assumptions you need to make, what is the result.
2. Create a timeline detailing the key decisions down the road that will be shaped by new information after the initial purchase of the property. For each decision, outline how the decision will be made—i.e., what is the underlying factor that will impact a decision, what are the tradeoffs and what is the rough 'formula' determining the right action.
3. Lay out a range of scenarios for the underlying risk factors shaping the realized project value. How does the realized project value change as you vary the underlying risk factors?
4. How do the underlying risk factors evolve and change through time? Describe the dynamics in casual terminology.
5. How does the project's risk evolve and change over time? Is it more or less risky before or after the decision to develop the property?
6. How do the results of questions 2-5 feedback to your evaluation of the original DCF? Is the original valuation probably about right, probably too low or too high?
7. How would you use the 'real options' approach to value the property? Start by trying to represent this project valuation in the framework of 'real options' – i.e. constructing the 'option' analogy for this valuation problem: what is the underlying asset, what is the strike price, what is the time to maturity and so on. Use the Brealey/Myers/Allen textbook chapter on Real Options as a point of reference.