GSOE 9830 - Questions for Week 4 Topics

Dear Students

I invite you to write down your answers to the questions set out below. Please do not attempt to submit your answers. They are intended for you to self-assess your understanding of some of the material discussed in the previous lecture.

Regards, Guy

1. What is the difference between deflating a net cash flow and discounting a net cash flow?

2. What is a nominal NPV? In what units are nominal NPVs measured?

3. What is a real NPV? In what units are real NPVs measured?

4. If the nominal discount rate is 12% and inflation is 4%, what is the real discount rate?

5. A US company called "USCo" is considering investing in a project in "Country". Country will not allow the company to expatriate any cash flow generated by the project. The money has to be spent in Country. The rate of inflation in Country is forecast to be 7% per year. Alternatively, USCo could invest in the USA where the return it could earn on its money would be 14% per year in nominal terms. The forecast rate of inflation in the USA is 5% per year.

> 5a. If you wanted to estimate real net cash flow, what deflation rate would you use to deflate the net cash flows of the project in Country and why?
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> 5b. What is USCo's nominal discount rate and why?
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> 5c.What is USCo's real discount rate and why?
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> 5d.Suppose Country relaxed its rules and allowed USCo's cash flow to be expatriated. Assuming that USCo wanted to expatriate its net cash flows to the USA, what would be USCo's deflation rate for its net cash flows?
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> 5e.Suppose Country relaxed its rules and allowed USCo's net cash flow to be expatriated to the USA. Assuming that USCo wanted to expatriate its money to the USA, what would USCo's (a) nominal and (b) real discount rates be?

6. When is a nominal equal to a real NPV?

7. What do the individual words in the title "Internal Rate of Return" tell you about what the Internal Rate of Return (IRR) represents?

8. Imagine a simple net cash flow (invest and then receive a positive return). Why does the NPV against discount rate curve goes down as we increase the discount rate?

9. What is the definition of an Internal Rate of Return?

10. How do we calculate an Internal Rate of Return?

11. How do we use an Internal Rate of Return?

12. A project's nominal Internal Rate of Return is 25%. The decision maker expects the future rate of inflation to be 3% per year. Write an expression showing how to calculate the project's real Internal Rate of Return.

13. Write the format of the Excel function to calculate the Internal Rate of Return using the data below.

Time	Zero	End Yr1	End Yr2	End Yr3	End Yr4
NCF $	-100	150	100	70	50
Cells	A3	B3	C3	D3	E3

14. For the example net cash flow above, why do we put in ALL of the cash flows into the IRR function in Excel including the NCF at time = 0?

15. A project has an IRR of 5% and an IRR of 62%. Which IRR should we choose to make an investment decision? Why?

16. If someone tells you that a new project has an internal rate of return of 28%, what would be your reaction?

17. Why is the Internal Rate of Return a dangerous indicator to use for investment decision making. What would be a more reliable indicator to use? Why?

18. For a net cash flow (NCF) like that below (investment, return, abandonment), explain in detail why the project has two IRRs.

Time	Zero	End Yr1	End Yr2
NCF $	-10.0	+27.0	-17.6