Activity 19

Capital Budgeting: IRR, MIRR, PI

Group:

Section:

You are (again) asked to evaluate a new tractor project for Deere. The engineers and marketing and accounting folks have pooled their efforts to generate the following expectations about the project's cash flows (FCFF). The WACC = 10%.

t	0	1	2	3	4	5	6	7	8	9	10
CF	(200)	30	40	50	40	50	50	30	30	20	10

1. What is the IRR of the project? What is the profitability index (PI) of the project?

2. What is the project's MIRR? First, calculate the MIRR using "brute force" to compound each cash inflow individually to the end of the time line and sum these to find TV. Then, devise a shortcut to calculate the TV and continue with the usual steps to calculate MIRR.

Deere has an alternative investment opportunity besides manufacturing a new tractor. The alternative is to build a production facility in Chengdu, China. The FCFFs under the alternative opportunity are expected to be as follows:

t	0	1	2	3	4	5	6	7	8	9	10
CF	-500	(130)	40	80	105	110	115	120	130	130	135

3. What is the cross-over rate (i.e. discount) that makes Deere indifferent between the two projects (assuming they have the same risk)?

4. Explain why MIRR exceeds IRR when a project has a *negative* NPV.