The Problem Set 1 for NBA5420

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Problem1:

a. Calculate the NPV of each project, and rank the projects using the NPV criterion.

When the discount rate is 12%

Project1NPV -90.0771142

Project2NPV -173.0373874

Project3NPV 30.41123488

Project4NPV -92.95794295

So Porject3 > Project1 > project4 > project2;

b. Calculate the IRR of each project, and rank the projects using the IRR criterion.

Project1IRR = 0.10865

Project2IRR = 0.11326

Project3IRR = 0.12328

Project4IRR = 0.11122

c. Do your answers to a) and b) change if the discount rate decreases to 10%?

When the discount rate is 10%, the NPV of each project changes.

Project1NPV 73.08559005

Project2NPV 393.9204937

Project3NPV 228.2219512

Project4NPV 129.7022618

So Porject2NPV > Project3NPV > project4NPV > project1NPV;

So when the discount rate changes,the net present value also changes.

However, The IRR of each project does not change when the discount rate changes.

Problem 2:

The value for William is 379890.0799

The value for James is 216363.5308

Lesson is that we should do long term investment as early as possible.

So the interest we earn if we at the early stage of investment can make a huge different for the later years.

Problem 3:

A

E(R1) = 5.600%

E(R2) = 4.700%

E(R3) = 5.800%

B

1  = 0.564400%

2 = 0.945100%

3  = 0.655600%

ρ12  = 66.32741326

C

ρ12  = 66.32741326

D

E(P) = 0.0532

E(q) = 0.0537

p   = 0.003658972

q =0.0029688

ρpq   =

E