# Math 2FM3, Tutorial 9

Nov 17th, 2015

# Interest Rate of Return

- Netcashflows: $C_0$ , $C_1$, … , $C_n$ at time $t_0$ , $t_1$,…, $t_n$
- $C_k = A_k - B_k$ (cashin - cashout)
- $C_0 v^{t0} + C_1 v^{t1} + C_2 v^{t2} + \ldots + C_n v^{tn} = 0$
- Solve interest rate of return i from present value factor v.

# Ex 5.1.1

(a) $t_1 = 1$, $t_2 = 2$, $A_0 = 0$, $A_1 = 2.3$, $A_2 = 0$, $B_0 = 1$,
$B_1 = 0$, $B_2 = 1.33$

Calculate interest rate of return by setting up the equation of value at time $t_2 = 2$.

(b) $t_1 = 1$, $t_2 = 2$, $A_0 = 0$, $A_1 = 2.3$, $A_2 = 0$, $B_0 = 1$,
$B_1 = 0$, $B_2 = 1.32$

Calculate interest rate of return by setting up the equation of value at time 0.

# Ex 5.1.4

- Transactions A and B are to be compared. Transaction A has net cashflows of

  $C_0^A = -5, C_1^A = 3.72, C_2^A = 0, C_3^A = 4,$

  and Transaction B has net cashflows

  $C_0^B = -5, C_1^B = 3, C_2^B = 1.7, C_3^B = 3.$

  Find the yield rate for each transaction to at least 6 decimal places. Show that Transaction A is preferable to B at interest preference rates less than 11.11% and at interest preference rates greater than 25% and Transaction B is preferable at interest preference rates between 11.11% and 25%.