



IMT Exam – Chapter 8

Debt Securities - Sample

For the exam you should know the basic features of:

Treasury Bills – issued by governments, they are sold at a discount and mature at par.

Bankers' Acceptance (BAs) – sold at a discount and mature at par. They offer a slightly higher yield than t-bills.

Commercial Paper (CP) – issued by corporations, they are sold at a discount and mature at par. They offer a slightly higher yield than t-bills.

Real return bonds provide protection from inflation.

For the exam, you should know how to calculate the following:

$$\text{Periodic interest Payments} = \frac{\text{real coupon rate}}{2} \times (\text{Principal} + \text{Inflation compensation})$$

$$\text{Inflation compensation} = \left(\text{Principal} \times \frac{\text{CPI}_{\text{current}}}{\text{CPI}_{\text{base}}} \right) - \text{Principal}$$

$\text{CPI}_{\text{current}}/\text{CPI}_{\text{base}}$ is known as the "index ratio"

$$\text{Final Payment} = \left(\text{Principal} \times \frac{\text{CPI}_{\text{maturity}}}{\text{CPI}_{\text{base}}} \right) - \text{Principal}$$

$$\text{CPI}_{\text{current}} = \text{CPI}_m + \left(\frac{t-1}{D} \times (\text{CPI}_{m+1} - \text{CPI}_m) \right)$$

Where:

CPI_m = the CPI reading for the third calendar month preceding the month in which the date falls.

t = the calendar day corresponding to the date.

D = the number of days in the calendar month in which the date falls.

Real Return Bond Example:

A Portfolio Manager is looking to buy an inflation protected bond. He is looking at a newly issued 10 year real return bond with a real coupon rate of 5%.

a) Calculate the inflation compensation:

b) Calculate the first coupon payment assuming the CPI has increased from 100 to 105 over the first six months of the year.

c) Assuming the CPI increased from 100 to 240 over the 10 year period. Calculate the final principal payment:

Solutions:

a) Inflation compensation = $[100 \times (105/100)] - 100 = \5

b) Coupon payment = $(5\%/2) \times (100 + 5) = \2.625

c) Final payment = $100 + \{ [100 \times (240/100)] - 100 \} = \240

Bottom Line:

Don't spend time memorizing the formulas, just work a few examples so you know what to do....as a matter of fact, I think the formulas are more complicated than the actual calculation.

Just practice these calculations...they are easy marks on the exam!