



RAMA UNIVERSITY

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FACULTY OF COMMERCE AND MANAGEMENT

COURSE: B.COM V SEM.

SUBJECT: INTRODUCTION TO FINANCIAL MANAGEMENT

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LECTURE: 10

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LECTURE-10



1.6 VALUATION OF BONDS AND SHARES

Introduction: Valuation is the process that links risk and return to determine the worth of an asset. It can be applied to expected benefits from real/physical as well as financial to determine their worth at a given point of time. We will focus on valuation of two financial assets, namely, bonds/debentures and shares. The key inputs to valuation process are i) expected returns in terms of cash flows together with their timing and ii) risk in terms of the required return.

The value of an asset depends on the return (cash flow) it is expected to provide over the holding

ownership period. The cash flow stream can be (1) annual, (2) intermittent and (3) even one-time. In addition to total cash flow estimates, their timing/pattern (e.g. amount year-wise) is also required to identify the return expected from the bond/share. The required return is used in the valuation process to incorporate risk into the analysis. Risk denotes the chance that an expected cash flow would not be realized. The level of risk associated with a expected cash flow/return has a significant bearing on its value, that is, the greater the risk, the lower the value and *vice versa*. Higher risk can be incorporated into the valuation analysis by using a higher capitalization/ discount rate to determine the present value.

Valuation of securities will be discussed in following parts:

- The basic valuation model

- Valuation of Bond / Debenture

 - Basic bond valuation

 - Yield to maturity

 - Semi-annual interest and bond value

- Valuation of preference shares

- Valuation of ordinary shares

 - Zero growth model

 - Constant growth model / Gordon model

 - Variable growth model

The Basic Valuation Model: The value of an security is the present value of all future cash flows associated with it over the specified period. The expected returns are discounted, using the required return matching with the risk of asset as the appropriate discount rate. Symbolically,

$$V = \frac{A_1}{(1+k)^1} + \frac{A_2}{(1+k)^2} + \dots + \frac{A_n}{(1+k)^n}$$

Where V = Value of security at time zero (t = 0)

A_t = cash flow stream expected at the end of year

k = appropriate discount rate

Alternatively, where expected cash flows is a mixed stream

$$V = [(A_1 \times PVIF_{k,1}) + (A_2 \times PVIF_{k,2}) + \dots + (A_n \times PVIF_{k,n})]$$

Where'

$PVIF_1, PVIF_2, PVIF_n$ = present value interest factor in different period at discount rate k . If expected cash flow is an Annuity,

$$V = A * PVIFA_{(k,n)}$$

Illustration 6: Assuming a discount rate of 10 percent, and the associated cash flows detailed below. Compute the value of assets X and Y.

Year	Expected cash flow	
	X	Y
1	Rs.10,000	5,000
2	10,000	10,000
3	10,000	15,000

Solution:

Value of asset X = Rs 10,000 x $PVIFA_{(10,3)}$ = Rs 10,000 x 2.4870 = Rs.24,870

Value of asset Y: = [(Rs.5, 000 x $PVIF_{10,1}$) + (Rs. 10,000 x $PVIF_{10,2}$) + (Rs. 15,000 x $PVIF_{10,3}$)

$$[(Rs.5, 000 \times 0.909) + (Rs. 10,000 \times 0.826) + (Rs. 15,000 \times 0.751)]$$

$$Rs.4545 + Rs.8260 + Rs.11265 = Rs. 24,070$$