

INTRODUCTION TO FINANCE



FORMULAE

Some Important Formulae

- 1) Future Value of a Single Cash Flow Invested for n Periods

$$FV = P * FF(r, n) \quad \text{FV Factor, } FF(r, n) = (1 + r)^n$$

- 2) Present Value of a Single Cash Flow Received n Periods from Now

$$PV = F * PF(r, n) \quad \text{PV Factor, } PF(r, n) = \frac{1}{(1 + r)^n}$$

- 3) Future Value of a Stream of Cash Flows as of n Periods from Now

$$FV = C_1 * (1 + r)^{n-1} + C_2 * (1 + r)^{n-2} + \dots + C_{n-1} * (1 + r) + C_n$$

- 4) Present Value of a Stream of Cash Flows

$$PV = \frac{C_1}{1 + r} + \frac{C_2}{(1 + r)^2} + \dots + \frac{C_n}{(1 + r)^n}$$

Some Important Formulae

5) Future Value of an Annuity Paying \$C at the End of Each of n Periods

$$FV = C * FAF(r, n) \quad \text{FV Annuity Factor, } FAF(r, n) = \frac{1}{r} * \left[(1+r)^n - 1 \right]$$

6) Present Value of an Annuity

$$PV = C * PAF(r, n) \quad \text{PV Annuity Factor, } PAF(r, n) = \frac{1}{r} * \left[1 - \frac{1}{(1+r)^n} \right]$$

7) Present Value of an Annuity growing at rate g:

$$PV = C * PAF(r, n, g) \quad PAF(r, n, g) = \frac{1}{r-g} * \left[1 - \frac{(1+g)^n}{(1+r)^n} \right]$$

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8) Present Value of a Perpetuity

$$PV = \frac{C}{r}$$

9) Present Value of a Constant Growth Perpetuity

$$PV = \frac{C_1}{r - g}$$