Important Bond Yield Formulas PDF

Formulas
Examples
with Units

List of 10
Important Bond Yield Formulas

1) Bank Discount Yield Formula

Evaluate Formula

Formula

$$BDY = \left(\frac{D}{FV}\right) \cdot \left(\frac{360}{DTM}\right) \cdot 100$$

Example

$$2.25 = \left(\frac{0.15}{800}\right) \cdot \left(\frac{360}{3}\right) \cdot 100$$

2) Bond Convexity Approximation Formula

Evaluate Formula

Formula

$$BC_A = \frac{P_+ + P_- - 2 \cdot \left(P_0\right)}{2 \cdot P_0 \cdot \left(\Delta_y\right)^2}$$

Example

$$13750 = \frac{35 + 30 - 2 \cdot \left(5\right)}{2 \cdot 5 \cdot \left(0.02\right)^2}$$

3) Coupon Bond Valuation Formula

Evaluate Formula

Formula

$$CB = C_A \cdot \left(\frac{1 - \left(1 + YTM\right)^{-n_{PYr}}}{YTM}\right) + \left(\frac{P_{vm}}{\left(1 + YTM\right)^{n_{PYr}}}\right)$$

Example

$$976.7569 = 0.05 \cdot \left(\frac{1 - \left(1 + 0.01\right)^{-12}}{0.01}\right) + \left(\frac{1100}{\left(1 + 0.01\right)^{12}}\right)$$

4) Current Bond Yield Formula

Evaluate Formula

Formula

$$CBY = \frac{CP}{CBP}$$

Example

$$0.1333 = \frac{20}{150}$$

5) Holding Period Yield Formula

Evaluate Formula

Formula

$$HPY = \frac{Int.p + FV - P}{FV}$$

Example

$$8.4 = \frac{6000 + 800 - 80}{800}$$

6) Money Market Yield Formula

Evaluate Formula

Formula

$$MMY = HPY \cdot \frac{360}{mt}$$

Example

$$17 = 8.5 \cdot \frac{360}{180}$$

7) Yield to Call for Callable Bond Formula

Evaluate Formula

Formula

$$YTC = \left(\frac{CP + \frac{C - CBP}{n_y}}{\frac{C + CBP}{2}} \right)$$

Example

$$0.2523 = \left(\frac{20 + \frac{1220 - 150}{7}}{\frac{1220 + 150}{2}} \right)$$

8) Yield to Maturity Formula

Evaluate Formula

Formula

$$YTM = \frac{CP + \left(\frac{FV - Price}{Yrs} \right)}{\frac{FV + Price}{2}}$$

Example

$$0.0157 = \frac{20 + \left(\frac{800 - 900}{15} \right)}{\frac{800 + 900}{2}}$$

9) Zero Coupon Bond Effective Yield Formula

Evaluate Formula

Formula

$$ZCB\ Yield = \left(\frac{FV}{PV} \right)^{\frac{1}{n}} - 1$$

Example

$$8.4281 = \left(\frac{800}{9} \right)^{\frac{1}{2}} - 1$$

10) Zero Coupon Bond Value Formula

Evaluate Formula

Formula

$$V = \frac{FV}{\left(1 + \frac{RoR}{100} \right)^{T}}$$

Example

$$519.6647 = \frac{800}{\left(1 + \frac{4}{100} \right)^{11}}$$

Variables used in list of Bond Yield Formulas above

- BC_A Bond Convexity Approximation
- **BDY** Bank Discount Yield
- **C** Theoretical Price of Call Option
- C_A Annual Coupon Rate
- **CB** Coupon Bond
- **CBP** Current Bond Price
- **CBY** Current Bond Yield
- **CP** Coupon Payment
- **D** Discount
- **DTM** Days to Maturity
- **FV** Face Value
- **HPY** Holding Period Yield
- **Int.p** Interest Paid
- **MMY** Money Market Yield
- **mt** Time till Maturity
- **n** Number of Periods
- n_{PYr} Number of Payments Per Year
- n_y Number of Years to Track Growth
- **P** Purchase Price
- P_- Bond Price when Decremented
- P_+ Bond Price when Incremented
- P_0 Bond Value
- P_{vm} Par Value at Maturity
- **Price** Price
- **PV** Present Value
- **RoR** Rate of Return
- **T** Time to Maturity
- **V** Zero Coupon Bond Value
- **Yrs** Years to Maturity
- **YTC** Yield to Call
- **YTM** Yield to Maturity (YTM)
- **ZCB Yield** Zero Coupon Bond Effective Yield
- Δ_y Change in Interest Rate

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