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Bond Yield Formulas

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List of 10 Bond Yield Formulas

Bond Yield

1) Bank Discount Yield

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

[Open Calculator !\[\]\(a870788d6ed9b8fd294b7654a8c8526b_img.jpg\)](#)

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

2) Bond Convexity Approximation

$$\text{fx } \text{BC}_A = \frac{P_+ + P_- - 2 \cdot (P_0)}{2 \cdot P_0 \cdot (\Delta_y)^2}$$

[Open Calculator !\[\]\(c50c8b7b2cc2cf9ff925edec0ee94c0d_img.jpg\)](#)

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



3) Coupon Bond Valuation

fx

Open Calculator 

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

ex

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

4) Current Bond Yield

fx

Open Calculator 

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

ex

$$0.133333 = \frac{20}{150}$$

5) Holding Period Yield

fx

Open Calculator 

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

ex

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



6) Money Market Yield 

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

Open Calculator 

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

7) Yield to Call for Callable Bond 

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

Open Calculator 

$$\text{ex } 0.252346 = \left(\frac{20 + \frac{1220-150}{7}}{\frac{1220+150}{2}} \right)$$

8) Yield to Maturity 

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

Open Calculator 

$$\text{ex } 0.015686 = \frac{20 + \left(\frac{800-900}{15} \right)}{\frac{800+900}{2}}$$



9) Zero Coupon Bond Effective Yield

[Open Calculator !\[\]\(bd1a142de767a21e5362c595f844a4ff_img.jpg\)](#)

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

$$\text{ex } 8.42809 = \left(\frac{800}{9} \right)^{\frac{1}{2}} - 1$$

10) Zero Coupon Bond Value

[Open Calculator !\[\]\(830769b31eeeaca920791081939ff8ba_img.jpg\)](#)

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

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



Variables Used

- **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 Decrementing
- **P₊** Bond Price when Incrementing
- **P₀** 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



Constants, Functions, Measurements used



Check other formula lists

- [Bond Yield Formulas](#) 
- [Interest Rate Formulas](#) 

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