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Bond Yield Formulas

Calculators! Examples! Conversions!

List of 10 Bond Yield Formulas

Bond Yield

1) Bank Discount Yield

Open Calculator

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

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

2) Bond Convexity Approximation

Open Calculator

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

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

3) Coupon Bond Valuation

fx Open Calculator

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

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

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

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

6) Money Market Yield

Open Calculator

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

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

7) Yield to Call for Callable Bond

Open Calculator

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

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

8) Yield to Maturity

Open Calculator

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

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

9) Zero Coupon Bond Effective Yield

Open Calculator

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

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

10) Zero Coupon Bond Value

Open Calculator

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

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

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 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

Constants, Functions, Measurements used

Check other formula lists

- **Bond Yield Formulas**
- **Interest Rate Formulas**

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