Duration: 

\[ D = \sum_{t=1}^{T} w_t \times t \]

where 

\[ w_t = \frac{CF_t}{(1 + y)^t} \times \frac{PV(CF_t)}{PV(\text{asset})} \]

**Duration Rules**

1. The duration of a zero-coupon bond is equal to its maturity.

2. Holding maturity constant, a bond’s duration is inversely/negatively related to its coupon rate. That is, when the coupon is lower, the duration is higher.

3. Holding the coupon rate constant, a bond’s duration increases with the time to maturity.

4. Holding all else constant, the duration of a coupon bond is higher when the bond’s YTM is lower.

5. The duration of a level perpetuity is

\[ D = \frac{1 + y}{y} \]

6. The duration for a level annuity with \( T \) payments remaining is

\[ D = \frac{1 + y}{y} - \frac{T}{(1 + y)^T - 1} \]

7. The duration for a coupon bond with coupon rate \( cr \), YTM \( y \), and time to maturity \( T \) is

\[ D = \frac{1 + y}{y} - \frac{(1 + y) + T (cr - y)}{cr [(1 + y)^T - 1] + y} \]

8. The duration for a coupon bond that is selling at par with YTM \( y \), is

\[ D = \frac{1 + y}{y} \left[ 1 - \frac{1}{(1 + y)^T} \right] \]