Portfolio Statistic

- $P^{t_0}(y) = \sum_{i=1}^{N} C_i \left[\frac{1}{1+y}\right]^{-\frac{T_i - t_0}{365}}$
  - C_i is the i^{th} cash flow and is y YTM for portfolio
  - N is the number of cash flow in the life of the bond
  - t_0 and T_i are todays date and date the i^{th} cash flow
  - $T_i - t_0$ is the number of calendar days between today t_0 and T_i
  - y_{T_i} is exogenous discount rate for T_i
  - $C_x = \frac{1}{2P^{t_0}(y)} \frac{\partial^2 P^{t_0}(y)}{\partial y^2}$
  - $D = -\frac{(1+y)}{P^{t_0}(y)} \frac{\partial P^{t_0}(y)}{\partial y}$