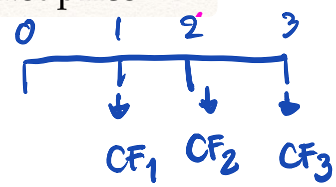
from P.13

- Duration $= \left|\dfrac{\Delta\%P}{\Delta\%(1+i)}\right| = \sum_{t=1}^{n} \dfrac{PV(CF_t)}{\text{market price}} \times t$



$$D = \left(\frac{PV(CF_1)}{P} \times 1\right) + \left(\frac{PV(CF_2)}{P} \times 2\right) + \left(\frac{PV(CF_3)}{P} \times 3\right)$$

$PV(CF_1) + PV(CF_2) + PV(CF_3) = P$

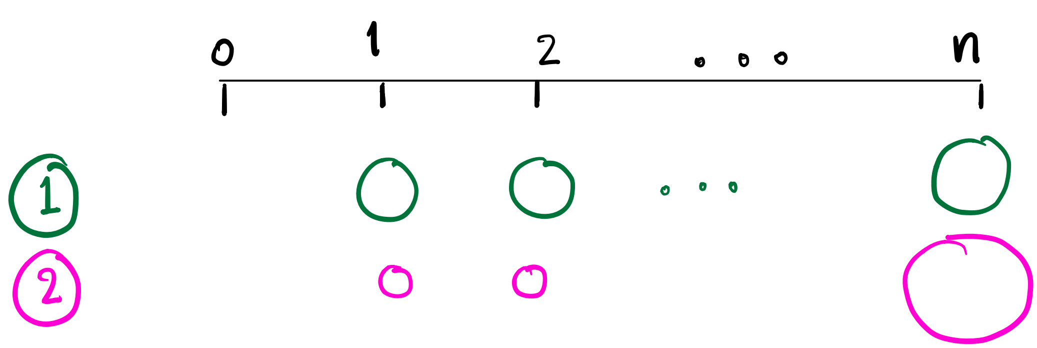
$\dfrac{PV(CF_1)}{P} + \dfrac{PV(CF_2)}{P} + \dfrac{PV(CF_3)}{P} =$

$\text{Duration} \le \underset{\text{maturity}}{\underset{\uparrow}{n}}$

- Duration is weighted average the times until those fixed cash flows are received. Thus, duration is measured in "years"

Payback Period = the length of time required to recover the cost of an investment

Duration is not "Payback Period" but they share some similar properties



from P.14

Example: Consider a coupon bond, par value 1,000 Baht, coupon rate 8%, maturity 3 years, sold at 1026.2456 Baht, find modified duration and interpret its meaning.

t	$PV(CF_t)$	$PV(CF_t)/P$	$\frac{PV(CF_t)}{P} \times t$
1	$= 74.7664$	0.07285	0.07285
2	$= 69.8752$	0.06822	0.13644
3	$= 881.604$	0.85905	2.57715
	1026.2456		2.78644

Example : A 5-year corporate bond paying an annual coupon of 8% is sold at a price reflecting a yield-to-maturity of 8% per year. One year passes and the interest rates remain unchanged. Assuming a flat term structure and holding all other factors constant, the bond's price during this period will have

(1) increased (2) decreased (3) remained constant (4)cannot be determined with the data given

Example : A 5-year corporate bond paying an annual coupon of 8% is sold at a price reflecting a yield-to-maturity of 6% per year. One year passes and the interest rates remain unchanged. Assuming a flat term structure and holding all other factors constant, the bond's price during this period will have

(1) increased (2) decreased (3) remained constant (4)cannot be determined with the data given