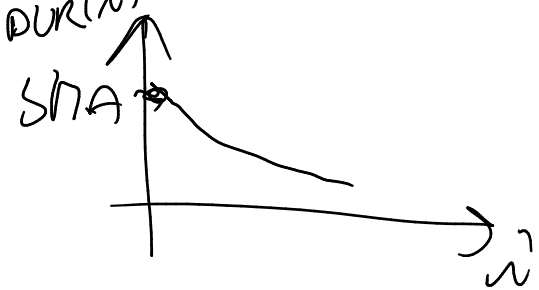
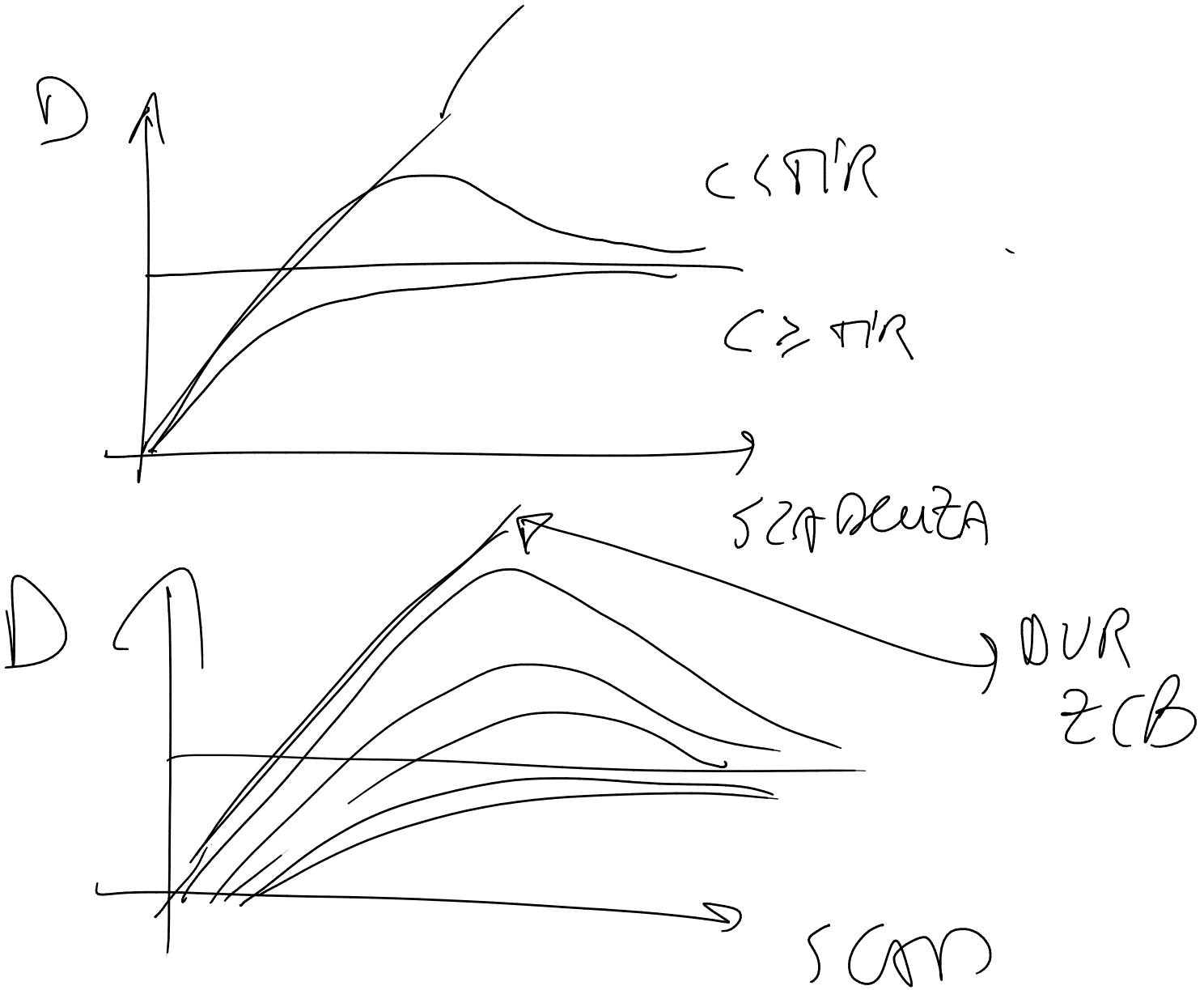
DURATION = $\sum_{k=1}^{n}$ t_k $\frac{C_k (1+i)^{-k}}{P}$

$i = 0$

DURATION = SMA



$\sum_{k=1}^{n} C_k (1+i)^{-k}$


D
C < Π'R
C ≥ Π'R
SZYBKOŚĆ
D
DUR
ZCB
SCAN

$$f(x) - f(x_0) = f'(x_0)(x - x_0) + \frac{1}{2} f''(x_0)(x - x_0)^2 + \dots$$

$$P = \sum_{1}^{t} c_k (1+r)^{-k}$$

$$\frac{\partial P}{\partial r} = \sum_{1}^{t} c_k (-k)(1+r)^{-k-1}$$

$$\frac{\partial P}{\partial r} = -\frac{\sum_{1}^{t} k c_k (1+r)^{-k}}{(1+r)} \cdot \frac{P}{P} = D$$

$$\rho(x) - \rho(x_0) \simeq -\frac{D \cdot P}{(1+r)} \cdot \Delta r + \frac{1}{2} \frac{C \cdot P}{(1+r)^2} \Delta r^2$$

$$\rho''(x_0) = \sum_k c_k (-k)(-k-1)(1+r)^{-k-2}$$

$$\rho''(x_0) = \frac{\sum_k c_k k(k+1)(1+r)^{-k}}{(1+r)^2} \cdot \frac{P}{P} = C$$

$$\sum \frac{k(k+1) \left| c_k (1+r)^{-k} \right|}{P} = C = \sum k(k+1) \cdot \rho_k$$

$$\sigma^2 = S^2 + D^2 + D$$

S^2 = VARIANZA TEMPI DI INCASSO =

$$= \sum [K - D]^2 \cdot p_K$$

A PARITÀ DI DURATA

LO ZCB > CB

CONVEXITY

A PARITÀ DI DURATION

CONV ZCB < CONV C.B.