

PRÍKLAD:

$$A = (-10\,000, 15\,000, 5\,000)$$

$$NPV(i) = -10\,000 + \frac{15\,000}{1+i} + \frac{5\,000}{(1+i)^2}$$

IRR: $NPV(i^*) = 0$

$IRR = i^* \cdot 100\%$

$$-10\,000 + \frac{15\,000}{1+i} + \frac{5\,000}{(1+i)^2} = 0$$

substitúcia $x = 1+i$ $i \in \langle 0, 1 \rangle \Rightarrow x \in \langle 1, 2 \rangle$

$$-10\,000 + \frac{15\,000}{x} + \frac{5\,000}{x^2} = 0 \quad / \cdot x^2$$

$$-10\,000x^2 + 15\,000x + 5\,000 = 0 \quad / : (-5\,000)$$

$$2x^2 - 3x - 1 = 0$$

$$D = (-3)^2 - 4 \cdot 2 \cdot (-1) = 17 \quad \sqrt{D} = 4,123$$

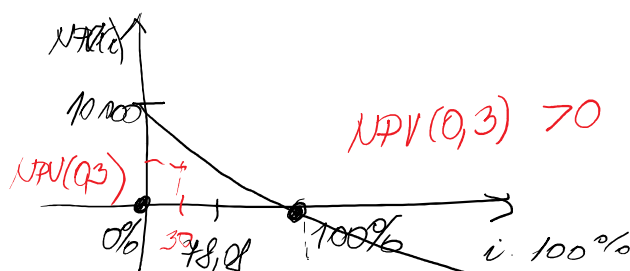
$$x_{1/2} = \frac{3 \pm \sqrt{17}}{2 \cdot 2} = \begin{cases} 1,7808 \in \langle 1, 2 \rangle \\ -1,1231 \notin \langle 1, 2 \rangle \end{cases}$$

$$x = 1+i \Rightarrow i = x - 1$$

$$i^* = x - 1 = 1,7808 - 1 = 0,7808$$

$$IRR = i^* \cdot 100\% = 0,7808 \cdot 100\% = 78,08\%$$

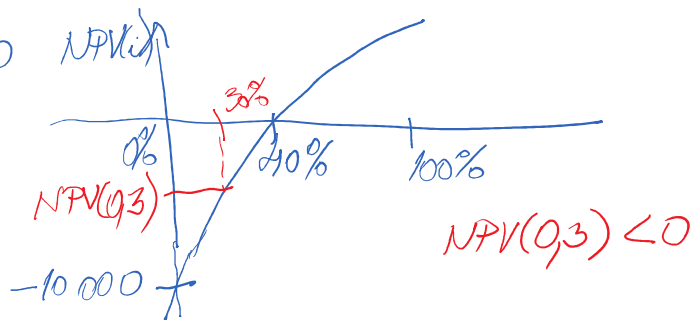
$$NPV(0) = 10\,000$$



INÝ PRÍPAD :

$$NPV(0) = -10\,000$$

$$IRR = 40\%$$

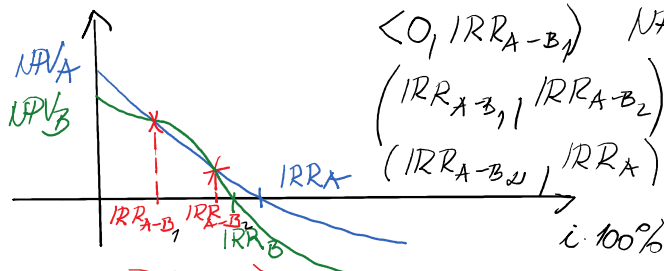


MÔŽE NASTAŤ ✓

↑

$\langle 0, IRR, \dots \rangle \quad NPV_A > NPV_B$

MŮŽE NASTAT ✓



$(0, IRR_{A-B,1})$ $NPV_A > NPV_B$
 $(IRR_{A-B,1}, IRR_{A-B,2})$ $NPV_B > NPV_A$
 $(IRR_{A-B,2}, 100\%)$ $NPV_A > NPV_B$

PŘÍKLAD 1

$$NPV_A(i) = NPV_B(i)$$

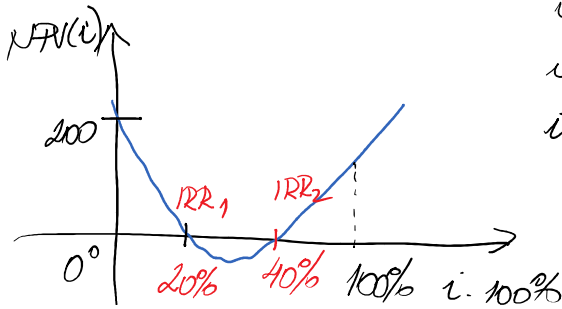
$$-1000 + \frac{1000}{1+i} + \frac{500}{(1+i)^2} = -2000 + \frac{1700}{1+i} + \frac{1000}{(1+i)^2} \quad | +2000 - \frac{1700}{1+i} - \frac{1000}{(1+i)^2}$$

$$1000 - \frac{700}{1+i} - \frac{500}{(1+i)^2} = 0 \quad A - B$$

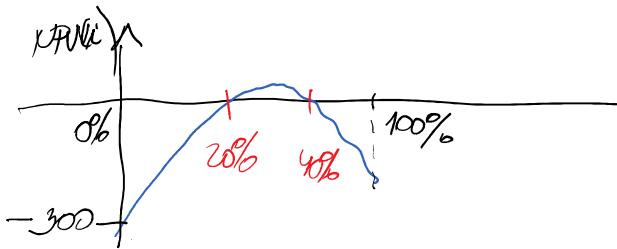
$NPV_{A-B}(i)$

$$X = 1+i \dots$$

PŘÍKLAD



$i \in (0, 20\%)$ VÝHODNÝ
 $i \in (20\%, 40\%)$ NEVÝHODNÝ
 $i \in (40\%, 100\%)$ VÝHODNÝ



$i \in (0, 28\%)$ NEVÝHODNÝ
 $i \in (28\%, 40\%)$ VÝHODNÝ
 $i \in (40\%, 100\%)$ NEVÝHODNÝ