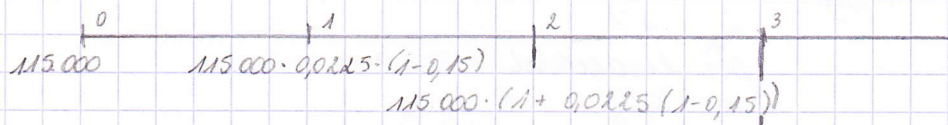


I Hoofdstuk 2: 6. Opdrachten: oefeningen

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1) vraag 1: geg € 115.000
3 jaar
opl

• BNP: kasbon (3j): $i = 2,25\%$
 $RV = 15\%$



$$\sim 0,0225 \cdot (1 - 0,15) = 0,019125$$

$$\sim \text{stokkapitaal na 3j} = 115.000 \cdot (1 + 0,019125)^3 = 121.725,1186$$

X

• Argenta: kapitalisatiebon (3j): $i = 2,20\%$
 $RV = 15\%$

$$\sim \text{bruto bedrag na 3j} = 115.000 \cdot (1 + 0,0022)^3 = 115.760,671$$

• Cenera: spaarboekje (3j): $i = 1,25\%$
premie = 0,50%
 $RV = 15\%$

$$\sim \text{stokkapitaal na 3j} = 115.000 \cdot (1 + 0,0125)^3 = 119.366,6309$$

2) geg € 4000
i-bedrag = € 270
9 maanden

opl $I = C \cdot i \cdot n$
 $\rightarrow i = \frac{I}{C \cdot n} = \frac{270}{4000 \cdot \left(\frac{9}{12}\right)} = 0,09 = 9\%$

3) geg € 20.000

$$\rightarrow € 21.250$$

$i = 5\%$ enkelvoudig

opl $C_n = C \cdot (1 + i \cdot n)$
 $21.250 = 20.000 \cdot (1 + 0,05 \cdot n)$

$$1,0625 = 1 + 0,05n$$

$$n = \frac{0,0625}{0,05} = 1,25 = 1\frac{1}{4} \text{ 3m}$$

4) geg € 10.000

3 jaar

$$\rightarrow € 8.163$$

} zero-coupon obligatie

opl $P = \frac{B}{(1+i)^n}$

$$8.163 = \frac{10.000}{(1+i)^3}$$

$$i = \left(\frac{10.000}{8.163}\right)^{\frac{1}{3}} - 1 = 0,05999 = 6\%$$

5) geg: $i_m = 8\%$
 driemaandelijkse $\rightarrow m = 4$
opl: $1+i = \left(1 + \frac{i_m}{m}\right)^m$
 $1+i = \left(1 + \frac{0,08}{4}\right)^4$
 $i = 0,0824 = 8,24\%$

6) geg: €10.000
 $i_m = 7\%$
 per kwartaal $\rightarrow m = 4$
 $n = 8,5j$
opl: $C_n = C \left(1 + \frac{i_m}{m}\right)^{n \cdot m}$
 $= 10.000 \left(1 + \frac{0,07}{4}\right)^{4 \cdot 8,5}$
 $= 18.037,25$

7) geg: $i_n = 5\%$
opl: a) semestrieel $\rightarrow m = 2$
 $i = \left(1 + \frac{0,05}{2}\right)^2 - 1 = 0,050625 = 5,06\%$
 b) maandelijks $\rightarrow m = 12$
 $i = \left(1 + \frac{0,05}{12}\right)^{12} - 1 = 0,051162 = 5,12\%$
 c) continu $\rightarrow m = \infty$
 $i = e^{i_n} - 1 = e^{0,05} - 1 = 0,05127 = 5,12\%$

8) geg: 18.000 - 1 jaar
 5.000 - 5 jaar
 13.000 - 7 jaar
 $i = 7\%$
opl: $\frac{18.000}{1+0,07} + \frac{5000}{(1+0,07)^5} + \frac{13.000}{(1+0,07)^7} = \frac{B}{(1+0,07)^0}$
 $B = \left(\frac{18.000}{1+0,07} + \frac{5000}{(1+0,07)^5} + \frac{13.000}{(1+0,07)^7} \right) \cdot (1+0,07)^0$
 $= 37.335,54$

9) geg: $i = 7$
opl: $P = \frac{ZC_1}{1,07} + \frac{ZC_2}{(1,07)^3} + \frac{ZC_3}{(1,07)^6} = \frac{198875}{1,07} + \frac{100000}{(1,07)^3} + \frac{400000}{(1,07)^6}$
 $= 534.031,1632$

↑

$$P = \frac{B}{(1,07)^2} = \frac{600000}{(1,07)^2} = 524.063,237$$

$$P = \frac{C}{(1,07)^4} = \frac{700000}{(1,07)^4} = 534.026,6484 \quad X$$

$$P = \frac{D}{(1,07)^7} = \frac{900000}{(1,07)^7} = 560.474,7677$$

2) geg: $n = 30$ jaar

$$A = €50.000$$

$$i = 5\%$$

$$\begin{aligned} \text{opl: } AW &= A \cdot a_n \overline{i} = A \cdot \left(\frac{1 - v^n}{i} \right) = A \cdot \left(\frac{1 - \left(\frac{1}{1+i} \right)^n}{i} \right) \\ &= 50.000 \cdot \left(\frac{1 - \left(\frac{1}{1,05} \right)^{30}}{0,05} \right) \\ &= 768.622,5513 \end{aligned}$$

3) geg: $V_0 = €50.000$

$$i = 6\%$$

$$n = 20$$
 jaar

$$\begin{aligned} \text{opl: } A &= \frac{AW}{a_n \overline{i}} = \frac{AW}{\left(\frac{1 - \left(\frac{1}{1+i} \right)^n}{i} \right)} = \frac{50.000}{\left(\frac{1 - \left(\frac{1}{1,06} \right)^{20}}{0,06} \right)} = \frac{50.000}{11,46992122} \\ &= 4359,2278 \end{aligned}$$

4) geg: $V_0 = €100.000$

$$n = 10$$
 jaar

$$i = 10\%$$

31/12/20xx+2 $\rightarrow \Delta = 2$ jaar (tijdstip v. waardebepaling $t=3$)

1/1/20xx 1/1/20xx+2

$$AW = V_0 = A \cdot a_n \overline{i} \cdot \left(\frac{1}{1+i} \right)^\Delta = A \cdot \left(\frac{1 - \left(\frac{1}{1+i} \right)^n}{i} \right) \cdot \left(\frac{1}{1+i} \right)^\Delta$$

$$\begin{aligned} \rightarrow 100.000 &= A \cdot 6,144567106 \cdot \left(\frac{1}{1,1} \right)^2 \\ A &= 19.692,19278 \end{aligned}$$

5) geg: $V_0 = €20.000$

$$n = 20 \quad \text{in} \quad m = 2$$

$$i = 6\%$$

$$\begin{aligned} \text{opl: } 1+i &= \left(1 + \frac{i_m}{m} \right)^m \rightarrow 1,06 = \left(1 + \frac{i_2}{2} \right)^2 \\ \rightarrow \frac{i_2}{2} &= \sqrt[2]{1,06} - 1 = 0,029563 = 2,96\% \end{aligned}$$

$$\begin{aligned} \bullet \quad AW = \frac{V_0}{a_n \overline{i}} &= A \cdot a_n \overline{i} \rightarrow A = \frac{V_0}{a_n \overline{i}} = \frac{V_0}{\left(\frac{1 - \left(\frac{1}{1+i} \right)^n}{i} \right)} = \frac{20.000}{14,93264412} \\ &= 1339,347529 \end{aligned}$$

6) geg: $n = 16$ jaar

$$A = 7500 \text{ €}$$

$n_2 = 10$ jaar

$$i = 6\%$$

$$\text{opl: } A \cdot a_{\overline{n}|i} = A_2 \cdot a_{\overline{n_2}|i}$$

$$\rightarrow 7500 \cdot a_{\overline{16}|0,06} = A_2 \cdot a_{\overline{10}|0,06}$$

$$75.794,21454 = A_2 \cdot 11,46992122$$

$$A_2 = \frac{75.794,21454}{11,46992122} = 6608,085015$$

7) geg: $B = €1000$

$n = 3$ jaar

bruto- $i = 5\%$

$$i = 4\%$$

$$\text{opl: } \cdot \text{bruto: } C = 0,05 \cdot 2000 = 100$$

$$\cdot \text{netto: } C \cdot (1 - \tau) = 100 \cdot (1 - 0,15) = 85$$

$$\rightarrow B + \text{Netto-waarde incl. interest} = 2000 + 85 \cdot a_{\overline{3}|0,04}$$

$$= 2000 + 85 \cdot \frac{(1 + 0,04)^3 - 1}{0,04}$$

$$= 2265,336$$

$$\rightarrow \text{effectieve jaarlijkse interest: } 2000(1 + i_{\text{eff}}) = 2265,336$$

$$i_{\text{eff}} = \left(\frac{2265,336}{2000} \right)^{\frac{1}{3}} - 1$$

$$= 0,042399538$$

$$= 4,24\%$$

8) geg: $i_0 = 6\%$

$$B = €1000$$

$$i = 8\%$$

$$\text{opl: } P = C \cdot a_{\overline{n}|i} + B_1 / (1+i)^n$$

$$= B \cdot i_0 \cdot \left(\frac{1 - \left(\frac{1}{1+i} \right)^n}{i} \right) + B_1 / (1+i)^n = 1000 \cdot 0,06 \cdot a_{\overline{29}|0,08} + \frac{1000}{(1,08)^{29}}$$

$$= 1000 \cdot 0,06 \cdot \left(\frac{1 - \left(\frac{1}{1,08} \right)^{29}}{0,08} \right) + \frac{1000}{(1,08)^{29}} = 776,83$$

$$\rightarrow 1,08 = \left(1 + \frac{i_{\text{eff}}}{12} \right)^{12} \sim \frac{i_{\text{eff}}}{12} = 1,08^{\frac{1}{12}} - 1 = 0,00643403$$

→ 12 maanden van 1/9/11 tot 1/5/12 dus 8 maanden

$$P_1 = \left(1 + \frac{i_{\text{eff}}}{12} \right)^n P = (1,00643403)^8 (776,83) = 812,93$$

? 9) ~~gg~~: $i_0 = 6\%$

$$B = €1000$$

$$P_1 = €970 = \left(1 + \frac{i_0}{12}\right)^3 P$$

apl: $P = C \cdot a_n \overline{7i} + \frac{B_1}{(1+i)^n} = B \cdot i_0 \cdot a_n \overline{7i} + \frac{B_1}{(1+i)^n}$

$$= 1000 \cdot 0,06 \cdot a_3 \overline{7i} + \frac{1000 \cdot 150\%}{(1+i)^3}$$
$$= 600 \cdot a_3 \overline{7i} + \frac{1050}{(1+i)^3}$$
$$P_1 = 970 = \left(1 + \frac{i_0}{12}\right)^3 \left(600 \cdot a_3 \overline{7i} + \frac{1050}{(1+i)^3}\right)$$

I Hoofdstuk 4 : 3. Opdraken : oefeningen

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2) geg : $n = 20j$

$ann = € 10.000$

$i = 13\%$

$$opl : V_0 = A \cdot a_n^{\overline{i}} = A \cdot \frac{1 - \frac{1}{1,13^{20}}}{0,13} = 10.000 \cdot \frac{1 - \frac{1}{1,13^{20}}}{0,13}$$

$$= 70.247,52$$

3) geg : $V_0 = € 100.000$

$n = 4j$

$i = 6\%$

opl :

periode	schuld uitstaand	rente	annuïteit aflossing	schuld afgetoet
1	100.000	6000	22.859,15	22.859,15
2	77.140,85	4628,451	24.230,699	47.089,849
3	52.910,151	3174,609	25.684,541	72.774,3899
4	27.225,61	1633,54	<u>27.225,61</u>	100.000

$$A = 100000 / a_{\overline{4}|0,06} = 28.859,15$$

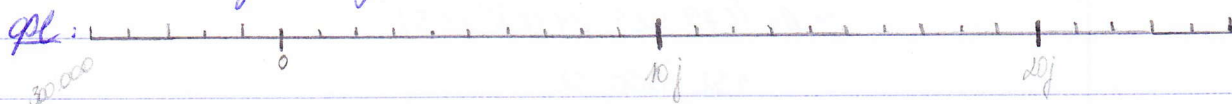
$$! \rightarrow d \quad m_4 = (1+i)^3 \cdot m_1 = (1+i)^3 \cdot \frac{V_0}{a_n^{\overline{i}}} = (1+0,06)^3 \cdot 100000 / a_{\overline{4}|0,06}$$

4) geg : $V_0 = € 300.000$

$i = 5,5\%$

$A = € 21.265,04$

$n = 15j \rightarrow 20j$



de nog uitstaande schuld na de 5^e betaling:

$$V_k = V_0 \cdot \frac{a_{n-k}^{\overline{i}}}{a_n^{\overline{i}}} = 300.000 \cdot \frac{a_{15-5}^{\overline{0,055}}}{a_{15}^{\overline{0,055}}}$$

$$\cdot a_{10}^{\overline{0,055}} = 7,537625829$$

$$\cdot a_{15}^{\overline{0,055}} = 10,03758094$$

$$= 225.282,1434$$

$$225.282,1434 = A \cdot a_{\overline{20}|i}$$

$$\rightarrow 225.282,1434 = a_{\overline{20}|i} = 10,59401456$$

21265,04
nie tabel 5 in boek d:

$$\cdot \text{kel } i = 3\% : a_{\overline{20}|0,03} = 14,88 > 10,59 \text{ dus } i \uparrow$$

$$\cdot \text{kel } i = 5\% : a_{\overline{20}|0,05} = 12,46 > 10,59 \text{ dus } i \uparrow$$

$$\rightarrow \text{kel } i = 7\% : a_{\overline{20}|0,07} = 10,59401456$$

5) geg: $V_0 = €75.000$

$$n = 20j \rightarrow 12 \times 20 = 240m$$

$$i = 6,931\%$$

opl: $75.000 = A \cdot a_{\overline{240}|i}$

$$1+i = \left(1 + \frac{i_m}{m}\right)^m \rightarrow \frac{i_m}{m} = (1+i)^{\frac{1}{m}} - 1 = (1,06931)^{\frac{1}{12}} - 1$$

$$= 0,0056 = 0,56\%$$

$$A = \frac{75.000}{a_{\overline{240}|0,0056}} = 569,94$$

? 6) geg: $i = 6,5\%$

$$k = 10j$$

$$m_1 = 2mio$$

$$n = 5j \sim i = 5\%$$

gd: $V_n = V_0 \cdot (1+i)^n \rightarrow V_{10} = 2mio (1+0,065)^{10} = 3.754.274,931$

$$V_n = SN = A \cdot s_{\overline{n}|i}$$

$$\sim A = \frac{V_n}{s_{\overline{n}|i}} = \frac{V_{10}}{s_{\overline{5}|0,05}} = \frac{3.754.274,931}{\frac{(1,05)^5 - 1}{0,05}} = 679.429,1478$$

gekapitaliseerd aan 5%:

$$\sim A = (679.429,1478)(1,05)^5$$

$$= 532.350,52$$

I Hoofdstuk 5: 12. Opdrachten: oefeningen

19188

2) geg: $C = €9500$

$$C_n = €10000$$

$$n = 120 \text{ dagen} = \frac{1}{3} \text{ jaar}$$

opl: $C = C_n (1 - nd)$

$$\sim 9500 = 10000 (1 - \frac{1}{3}d)$$

$$0,95 = 1 - \frac{1}{3}d$$

$$\sim \frac{1}{3}d = 0,05 \rightarrow d = 0,15 = 15\%$$

3) geg: $C = €10.000$

$$d = 8\%$$

$$n = 4 \text{ maanden} = \frac{1}{3} \text{ jaar}$$

opl: a) $C = C_n (1 - nd)$

$$\rightarrow C_n = \frac{C}{1 - nd} = \frac{10000}{1 - (\frac{1}{3})(0,08)} = 10273,9726$$

b) ~~1/9/11~~ ~~1/10/11~~ ~~1/11/11~~ ~~1/12/11~~ ~~1/1/11~~

$$i_3 = \frac{d}{1 - nd} = \frac{0,08}{1 - (\frac{1}{3})(0,08)} = 0,08219$$

$$i = (1 + i_3)^3 - 1 = (1 + 0,08219)^3 - 1 = 0,0845 = 8,45\%$$

4) geg: inv. bedrag = €200.000

$$\text{kap. premie } 15\% : 0,15 \cdot 200000 = 30000$$

$$\left. \begin{array}{l} \text{AW} = 170.000 \end{array} \right\}$$

$$i_4 = 12\%$$

$$n = 10j$$

opl: $i_{\frac{4}{4}} = \frac{0,12}{4} = 0,03 = 3\%$

$$AW = A \cdot a_{m \cdot n} \cdot \frac{i_m}{m} \rightarrow 170000 = A \cdot a_{4 \cdot 10} \cdot 7,03 = A \cdot a_{40} \cdot 7,03$$

$$\sim A = \frac{170000}{a_{40} \cdot 7,03} = \frac{170000}{\left(1 - \left(\frac{1}{1,03}\right)^{40}\right) / 0,03} = 7354,6$$

5) geg: ✓

opl: a) risikoskrediet (kaskrediet)

b) documentair krediet

$$6) \text{ geg: } \left. \begin{array}{l} m_1: € 1000 \\ m_2: € 1250 \\ m_3: € 1750 \end{array} \right\} = C$$

opl: a) $i = 0,64\% + 0,10\% = 0,74\% = 0,0074$ X

$$I = C \cdot i = (1000 + 1250 + 1750) \cdot 0,0074$$

$$= 29,6$$

reservatiecommissie: $0,0009 \cdot 3 \cdot 1500 = 4,05$

overschrijdingspenning: $0,006 \cdot (1750 - 1500) = 1,5$

$$T = 29,6 + 4,05 + 1,5 = 35,15 \text{ aan kosten}$$

b) $i = 0,46\% + 0,10\% = 0,56\% = 0,0056$

$$T = C \cdot i = (1000 + 1250 + 1750) \cdot 0,0056$$

$$= 22,4$$

reservatiecommissie: $0,002 \cdot 3 \cdot 2000 = 12$

overschrijdingspenning: $0,006 \cdot 0 = 0$

$$T = 22,4 + 12 = 34,4 \text{ aan kosten}$$

$$7) \text{ geg: } \left. \begin{array}{l} m_1: € 500 \\ m_2: € 2300 \\ m_3: € 2300 \end{array} \right\} = C$$

opl: a) $I = C \cdot i = (500 + 2300 + 2300) \cdot 0,0074 = 37,74$

reservatiecommissie: $0,0009 \cdot 3 \cdot 1500 = 4,05$

overschrijdingspenning: $0,006 \cdot (800 + 800) = 9,6$

$$T = 37,74 + 4,05 + 9,6 = 51,39 \text{ aan kosten}$$

b) $I = C \cdot i = (500 + 2300 + 2300) \cdot 0,0056 = 28,56$ X

reservatiecommissie: $0,002 \cdot 3 \cdot 2000 = 12$

overschrijdingspenning: $0,006 \cdot (300 + 300) = 3,6$

$$T = 28,56 + 12 + 3,6 = 44,16 \text{ aan kosten}$$

8) geg: netto-opdracht: € 1750 - 10%

AW: € 10.000

$n = 7j \sim i = 7\%$

$n = 5j \sim A = 1250 \sim AK\text{-optie} = € 5000$

gl: a) $AW = €10.000 = A \cdot a_{\overline{7}|i}$
 project niet uitvoeren
 ~ kosten = 0

b) $aw = 10.000 = A \cdot a_{\overline{7}|i}$
 $A = AW / a_{\overline{7}|i} = 10.000 / ((1 - 1,07^{-7}) / 0,07) = 1855,532$

project uitvoeren door kopen
 ~ kosten = 10.000

c) $AW = A \cdot a_{\overline{10}|i} = 1250 \cdot (1 - 1,1^{-10}) / 0,1 = 7680,71$

project uitvoeren door leasing zonder AK-optie
 ~ kosten = 7680,71

d) $AW = A \cdot a_{\overline{5}|0,1} = 1250 \cdot (1 - 1,1^{-5}) / 0,1 = 4738,48$
 $\sim A \cdot 5 = 1250 \cdot 5 = 6250$ betaald na 5 jaar
 $\Rightarrow AK \text{ na 5 jaar} = 6250 - A = 6250 - 1250 = 5000$
 $\sim AK \text{ AW} = (AK \text{ na 5 jaar}) / (1+i)^n = 5000 / 1,1^5 = 3104,61$

project uitvoeren door leasing met AK-optie
 ~ kosten = $4738,48 + 3104,61 = 7843,09$

I Hoofdstuk 6: 3. Opdrachten: oefeningen

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2) gg: te betalen bedrag: €10.000

$n = 24$ maanden (= 2j)

$MLP = 0,53\% = 0,0053$

opl: a) • terugbetaling kapitaal = $\frac{\text{lenbedrag}}{\text{lenduurr}} = \frac{10.000}{24}$

$a = 416,667$

• interestlast = lenbedrag $\cdot$ interestpercentage = $10.000 \cdot 0,0053$

$b = 53$

• totale maandelijkse aflossing = $a + b = 416,667 + 53 = 469,667$

b) • $10.000 = A \cdot a \cdot \frac{1}{i_{n/12}} = 469,667 \cdot a \cdot \frac{1}{i_{n/12}}$

$\rightarrow a \cdot \frac{1}{i_{n/12}} = \frac{10.000}{469,667} = 21,292$

~ stel $i = 1\% = 0,01 \rightarrow \frac{1}{a \cdot \frac{1}{i_{n/12}}} = \frac{1 - (\frac{1}{1,01})^{24}}{0,01} = 21,243 < 21,292$

~ stel $i = 0,5\% = 0,005 \rightarrow \frac{1}{a \cdot \frac{1}{i_{n/12}}} = \frac{1 - (\frac{1}{1,005})^{24}}{0,005} = 22,563 > 21,292$

$\Rightarrow$ interpolatie:

$i_{n/12} = 0,005 + \frac{21,292 - 22,563}{21,243 - 22,563} (0,01 - 0,005)$

$= 0,009814 = 0,98\%$

$i_{12} = 0,1178 = 11,78\%$

• $i_{12} = MLP \cdot 12 \cdot 2 = 0,0053 \cdot 12 \cdot 2 = 0,1272 = 12,72\%$

• $i_{12} = MLP \cdot 12 \cdot 2 \cdot \frac{\text{lenduurr} + 1}{25} = 0,0053 \cdot 12 \cdot 2 \cdot \frac{24}{25} = 0,1221 = 12,21\%$

3) gg: te betalen bedrag: €7500

opl: • $7500 = A \cdot a \cdot \frac{1}{i_{n/12}} = 235,33 \cdot a \cdot \frac{1}{i_{n/12}}$

$\rightarrow a \cdot \frac{1}{i_{n/12}} = \frac{7500}{235,33} = 31,87$

~ stel $i = 1\% = 0,01 \rightarrow \frac{1}{a \cdot \frac{1}{i_{n/12}}} = \frac{1 - (\frac{1}{1,01})^{36}}{0,01} = 30,12 < 31,87$

~ stel $i = 0,5\% = 0,005 \rightarrow \frac{1}{a \cdot \frac{1}{i_{n/12}}} = \frac{1 - (\frac{1}{1,005})^{36}}{0,005} = 32,87 > 31,87$

$\Rightarrow$ interpolatie:

$i_{n/12} = 0,005 + \frac{31,87 - 32,87}{30,12 - 32,87} (0,01 - 0,005)$

$= 0,00682 = 0,682\%$

$i_{12} = 0,0818 = 8,18\%$

4) geg: teatliner bedrag: € 100.000

$n = 15j$

$i \approx 5,5\% \rightarrow 7,5\% \text{ na } 5j$ (afwijking $2\% > 1\%$: cap & floor V)

opl: • $100.000 = A \cdot a_{\overline{15}|i} = A \cdot a_{\overline{15}|7,055}$

$$\rightarrow A = \frac{100.000}{a_{\overline{15}|7,055}} = \frac{100.000}{\left(1 - \left(\frac{1}{1,055}\right)^{15}\right) / 0,055} = 9962,56$$

$$\bullet V_k = V_0 \cdot \frac{a_{\overline{n-k}|7i}}{a_{\overline{n}|7i}} = \frac{100.000 \cdot a_{\overline{10}|7,055}}{a_{\overline{15}|7,055}} = \frac{100.000 \cdot 7,53763}{10,03758} = 75.094,089$$

$$\rightarrow V_k = A' \cdot a_{\overline{7}|i'} \rightarrow 75.094,089 = A' \cdot a_{\overline{7}|0,075}$$

$$\rightarrow A' = \frac{75.094,089}{a_{\overline{7}|0,075}} = \frac{75.094,089}{\left(1 - \left(\frac{1}{1,075}\right)^{10}\right) / 0,075} = 10.940,139$$

! ? $a_{\overline{10}|0,075} = a_{\overline{10}|0,075}$
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$$\bullet A' - A = 10.940,139 - 9962,56 = 977,58$$

II Hoofdstuk 1: 4. Opdrachten: oefeningen

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4.2. Mini-cas berekendement versus risico

1) $ROE = \frac{\text{netto-winst}}{\text{eigen vermogen}} = \frac{2851,2}{27.000} = 0,1056 = 10,56\%$

$$\text{solvabiliteitsratio} = \frac{\text{eigen vermogen}}{\text{totaal vermogen}} = \frac{27.000}{225.000} = 0,12 = 12\%$$

2) A) rente- opbrengst: $10.000 \cdot 0,085 = 850 + 12.070 = 12.920$

rente kosten: $10.000 \cdot 0,02 = 200 + 6750 = 6950$

$\Rightarrow$ intermediatie-inkomsten: $T = 12.920 - 6950 = +5970$

$\Rightarrow$ algemene beheerskosten: $T = 10 + 3000 = -3010$

?

$\Rightarrow$ belastingen (aan 34%): $T =$

② minicase

1) $ROE = \frac{2851,2}{27000} = 10,56\% \checkmark$

solvabiliteitsratio = $\frac{\cancel{27000}}{\cancel{225000}} = \cancel{12\%}$
 $27000/252000 = 10,71$

2) A. +10000 deposito's

$\Rightarrow + \text{rente kosten: } 0,02 \cdot 10000 = 200$

$\Rightarrow \text{tot.} = 6950$

+ alg. kosten = 10

$\Rightarrow \text{tot} = 3010$

+ 10000 kredieten

$\Rightarrow + \text{rente-opbrengsten} = 0,085 \cdot 10000$
 $= 850$

$\Rightarrow \text{tot.} = 12920$

$\Rightarrow \text{belastingen} = 1686,4$

netto-winst = 3273,6

$ROE = \frac{3273,6}{27000} = 12,12\% \checkmark$

B. + niet-rente inkomsten = 200 $\Rightarrow \text{tot.} = 220$

$\Rightarrow \text{belastingen} = 1536,8$

netto-winst = 2983,2

$ROE = \frac{2983,2}{27000} = 11,05\% \checkmark$

3) eigen vermogen = 15 000

deposito's + 12 000

→ Rente kosten + $0,03 \cdot 12 000 = 360$

⇒ tot. = 7110

belastingen = 1346,4

netto-inkomsten = 2613,6

ROE = $\frac{2613,6}{15 000} = 17,42\% \checkmark$

Solvabiliteit = $\frac{15 000}{237 000} = 0,06329$

15000/252000 = 5,95

II Hoofdstuk 2: 5 Opdraven: oefeningen

pg 301

2) 1) $SW = 10 \text{ mio} (1+i)^n = 10 \text{ mio} (1+0,06)^5 = 13,382 \text{ mio}$

2) a) $\text{actuele waarde} = \frac{\text{nominale waarde}}{(1+i)^n} = \frac{13,382 \text{ mio}}{(1+0,07)^5} = 9,541 \text{ mio}$

b) $10 \text{ mio} - 9,541 \text{ mio} = 0,4586 \text{ mio}$

c) lange termijn rente dan stijgt onze schuld (obligati
zonder interestcapen) wel veel waard terwijl de waarde id.
rest daalt door rentedaling

3) a) $13,382 = x (1+0,10)^4 \rightarrow x = \frac{13,382}{1,10^4} = 9,14 \text{ mio}$

b) $10 \text{ mio} \cdot \frac{(1+0,07)^n}{(1+0,10)^{n-1}} = 9,14 \text{ mio} \cdot \frac{1,10^4}{(1,07)^n (1,10)^{4-n}} = 0,914 \text{ mio}$

$\sim \frac{(1,07)^n (1,10)}{(1,10)^n} = 0,914 \text{ mio} \sim \left(\frac{1,07}{1,10}\right)^n = 0,8309 \text{ mio}$

$\rightarrow n \ln \left(\frac{1,07}{1,10}\right) = \ln(0,8309)$

$\rightarrow n = \frac{\ln(0,8309)}{\ln(1,07) - \ln(1,10)} = 6,7$

c) $10 \text{ mio} \cdot \frac{(1+0,07)^{6,7}}{(1+0,03)^{6,7-1}} = 10 \text{ mio} \cdot \frac{(1,07)^{6,7}}{(1,03)^{5,7}} = 13,295 \text{ mio}$

$\sim \text{rendement} = \frac{13,295 \text{ mio}}{10 \text{ mio}} - 1 = 0,3295 = 32,95\%$

d) $SW = 13,295 \text{ mio} (1+i)^n = 13,295 \text{ mio} (1+0,03)^4 = 14,964 \text{ mio}$

globaal rendement = $\frac{14,964 \text{ mio}}{10 \text{ mio}} - 1 = 0,4964 = 49,64\%$

gemiddeld rendement der 5 jaar = $\left(\frac{14,964 \text{ mio}}{10 \text{ mio}}\right)^{\frac{1}{5}} - 1 = 0,08395 = 8,4\%$

3) a) $P = \frac{(1500 \cdot 0,12)}{(1+0,04)} + \frac{(1500 \cdot 0,12)}{(1+0,05)^2} + \frac{(1500 \cdot 0,12)}{(1+0,06)^3} + \frac{(1500 \cdot 0,12)}{(1+0,07)^4} + \frac{(1500 \cdot 0,12)}{(1+0,08)^5} + \frac{(1500 \cdot 1,12)}{(1+0,09)^6}$
 $= 1749,03$

b) $(1+i_{1,1})(1+i_{2,1}) = (1+i_{1,2})^2 \rightarrow (1,04)(1+i_{2,1}) = (1,05)^2$
 $\rightarrow i_{2,1} = \frac{1,05^2}{1,04} - 1 = 0,06 = 6\%$

$(1+i_{1,1})(1+i_{2,1})(1+i_{3,1}) = (1+i_{1,3})^3 \rightarrow (1,04)(1,06)(1+i_{3,1}) = (1,06)^3$
 $\rightarrow i_{3,1} = \frac{1,06^3}{(1,04 \times 1,06)} - 1 = 0,08 = 8\%$

III Hoofdstuk 2: 3 Oefeningen

pg 371

1) /

2) theoretische waarde = $\frac{198,94}{50+1} = 3,9$

3) bij uitkoop van het leenrecht: $\bullet 50 \cdot 198,94 = 9947$ (wat hij had)

$\bullet 9947 / 50,1 = 195,04$ (prijs per aandeel)

$\rightarrow 51 \cdot 195,04 = 9947$ (wat hij heeft)

bij verkoop van het leenrecht: $\bullet 50 \cdot 198,94 = 9947$ (wat hij had)

$\bullet 50 \cdot 3,9 = 195$ (wat hij krijgt)

$\bullet 50 \cdot 195,04 = 9752$

$\rightarrow 9752 + 195 = 9947$ (wat hij heeft)

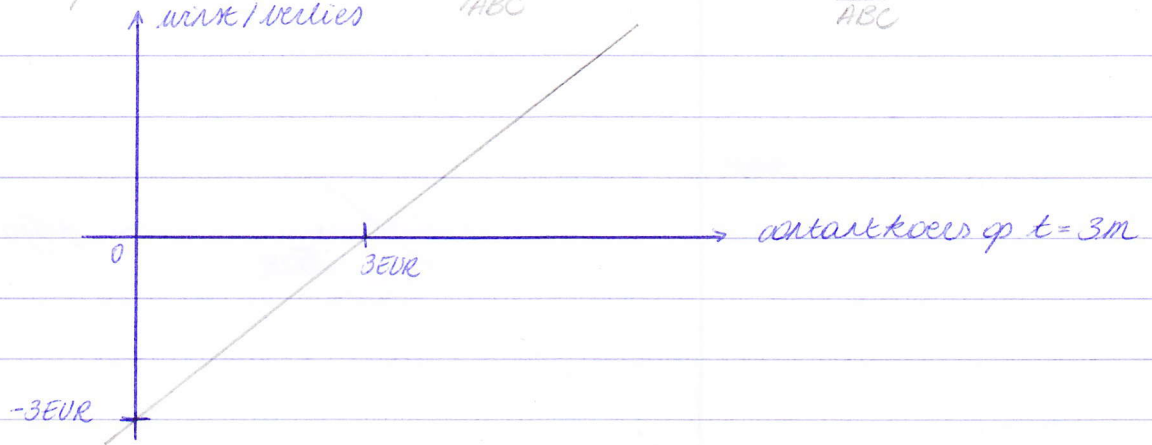
2) rendement = $0,20 = \frac{x - 40}{40} + \frac{3}{40} \rightarrow x = \left(0,20 - \frac{3}{40}\right) \cdot 40 + 40 = 45$

3) /

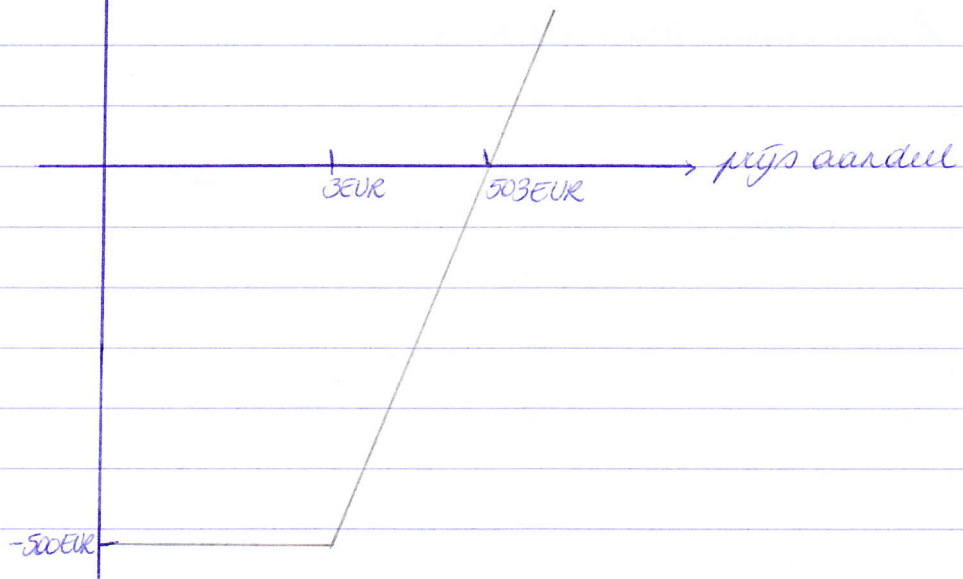
Hoofdstuk 4: 4. Oefeningen

pg 401

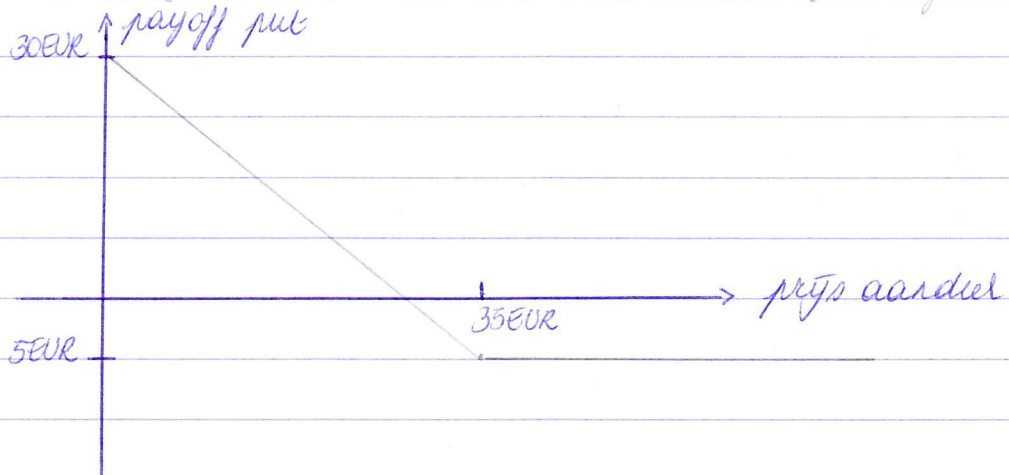
1) a) aankoop 1000 ABC $\sim$ 3EUR/ABC $\rightarrow$ $1000 \cdot \frac{3\text{EUR}}{ABC} = 3000 \text{ EUR}$



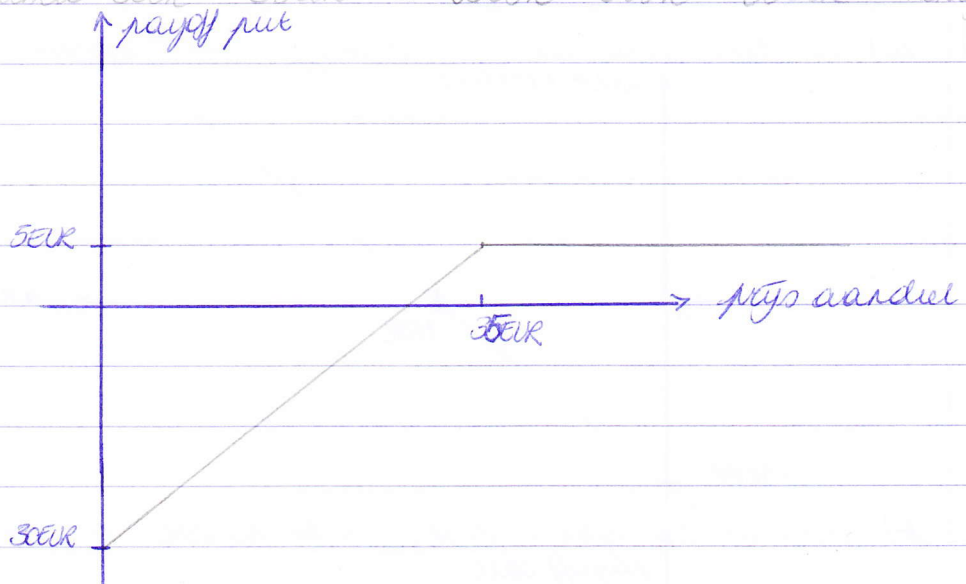
b) aankoop call-optie $\sim$ 3EUR/ABC $\sim$ AK 500EUR $\rightarrow$ 500EUR + 3EUR = 503EUR



2) 1) optiepremie 5EUR $\sim$ 35EUR $\rightarrow$ 35EUR - 5EUR = 30EUR $\sim$ prijs aandeel



2) optiepremie 5EUR $\sim$ 35EUR $\rightarrow$ 35EUR - 5EUR = 30EUR $\sim$ schijfwaarde



3) 1) optiepremie 3EUR $\sim$ 28EUR $\rightarrow$