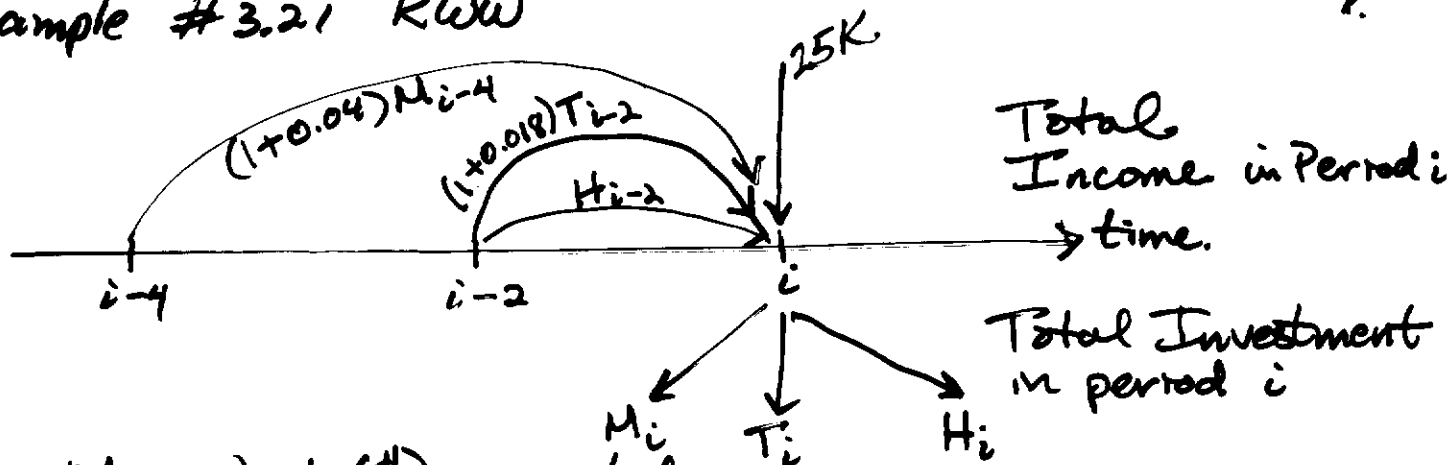


Example #3.21 RWV



Let $M_i = \text{Amt } (\$)$ invested in 4 mo. money market during mo. i
 $T_i = \text{Amt } (\$)$ invested in 2-mo. treasury note during mo. i
 $H_i = \text{Amt } (\$)$ held during month i , outside of any investment.
 $TR = \text{Total Return } (\$)$ at end of July.
 $TI_i = \text{Total amt. invested at mo. } i$

Initial Formulation w/o Futures Option.

(Modifications for Futures option are circled \bigcirc)

Money Balance Constraints

Date.

8/1	$M_0 + T_0 + H_0 = 25K$
10/1	$M_2 + T_2 + H_2 = 25K + 1.018T_0 + H_0$
12/1	$M_4 + T_4 + H_4 = 25K + 1.04M_0 + 1.018T_2 + H_2$
2/1	$\bigcirc F + M_6 + T_6 + H_6 = 25K + 1.04M_2 + 1.018T_4 + H_4$
4/1	$M_8 + T_8 + H_8 = 25K + 1.04M_4 + 1.018T_6 + H_6$
6/1	$T_{10} + H_{10} = 25K + 1.04M_6 + 1.018T_8 + H_8$

Total Investment Definition Constraints

Date.

8/1 $TI_0 = M_0 + T_0$

$$10/1 \quad TI_2 = M_2 + T_2 + M_0$$

$$12/1 \quad TI_4 = M_4 + T_4 + M_2$$

$$2/1 \quad TI_6 = M_6 + T_6 + M_4 + F$$

$$4/1 \quad TI_8 = M_8 + T_8 + M_6 + F$$

$$6/1 \quad TI_{10} = T_{10} + M_8 + F$$

DIVERSIFICATION CONSTRAINTS

Date

$$8/1 \quad M_0 \leq 0.6 TI_0 ; \quad T_0 \leq 0.6 TI_0$$

$$10/1 \quad M_0 + M_2 \leq 0.6 TI_2 ; \quad T_2 \leq 0.6 TI_2$$

$$12/1 \quad M_2 + M_4 \leq 0.6 TI_4 ; \quad T_4 \leq 0.6 TI_4$$

$$2/1 \quad M_4 + M_6 \leq 0.6 TI_6 ; \quad T_6 \leq 0.6 TI_6 ; \quad F \leq 0.6 TI_6$$

$$4/1 \quad M_6 + M_8 \leq 0.6 TI_8 ; \quad T_8 \leq 0.6 TI_8 ; \quad F \leq 0.6 TI_8$$

$$6/1 \quad M_8 \leq 0.6 TI_{10} ; \quad T_{10} \leq 0.6 TI_{10} ; \quad F \leq 0.6 TI_{10}$$

OBJECTIVE FUNCTION

$$\text{Max } Z = 1.04 M_8 + 1.018 T_{10} + H_{10} + 1.081 F$$

(Revenue at end of July)

Require that Future Funds Come from money held on 1/1

$$F \leq H_4$$