

Constants :

$$T \text{ , } t \in \llbracket 0, T \rrbracket \quad (1)$$

$$C_i^j \text{ , } i \in \llbracket 1, N \rrbracket \text{ , } j \in \{1, 2, 3\} \quad (2)$$

$$y_0^j \text{ , } j \in \{1, 2, 3\} \quad (3)$$

$$z_0^j = 0 \text{ , } j \in \{1, 2, 3\} \quad (4)$$

$$w_1^j = 0 \text{ , } j \in \{1, 2, 3\} \quad (5)$$

Main problem and subproblem (u may be moved to the subproblem if we cannot choose our bets) :

$$(\mathcal{P}) \quad \max f(x, g, u) \quad (6)$$

$$s.t. \quad g_t = x_t^j \sum_i u_{t,i} (C_i^j - 1) \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (7)$$

$$1 = \sum_i u_{t,i} \text{ , } t \geq 1 \quad (8)$$

$$x_t^j \geq 0 \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (9)$$

$$g_t \geq 0 \text{ , } t \geq 1 \quad (10)$$

$$u_{t,i} \in \{0, 1\} \text{ , } t \geq 1 \text{ , } i \geq 1 \quad (11)$$

$$(\mathcal{SP}) \quad f(x, g, u) = \min\{h(y, z, v, w)\} \quad (12)$$

$$h(y, z, v, w) = \sum_j (y_T^j - y_0^j) \quad (13)$$

$$f(x, g, u) = -\infty \text{ if the subproblem is infeasible or unbounded} \quad (14)$$

$$s.t. \quad y_t^j = y_{t-1}^j + v_t^j g_t - (1 - v_t^j)(1 - w_t^j)x_t^j \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (15)$$

$$z_t^j = z_{t-1}^j - w_t^j x_t^j \text{ , } t \geq 2 \text{ , } j \in \{1, 2, 3\} \quad (16)$$

$$z_1^j = (1 - v_1^j)x_1^j \text{ , } j \in \{1, 2, 3\} \quad (17)$$

$$0 = (1 - w_t^j)z_{t-1}^j \text{ , } t \geq 2 \text{ , } j \in \{1, 2, 3\} \quad (18)$$

$$1 = \sum_j v_t^j \text{ , } t \geq 1 \quad (19)$$

$$0 \leq x_t^j \leq w_t^j z_{t-1}^j + (1 - w_t^j)y_{t-1}^j \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (20)$$

$$y_t^j \geq 0 \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (21)$$

$$z_t^j \geq 0 \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (22)$$

$$v_t^j \in \{0, 1\} \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (23)$$

$$w_t^j \in \{0, 1\} \text{ , } t \geq 1 \text{ , } j \in \{1, 2, 3\} \quad (24)$$