What about

$$\min \tfrac{1}{2} x^T Q x + c^T x$$
$$\text{subj. to: } Ax = b$$
$$Cx \geq d$$
$$x \geq 0$$

Can change to

$$\min \tfrac{1}{2} x^T Q x + c^T x - \mu \Sigma \ln x_i - \mu \Sigma \ln (r_i x - d_i)$$

where if $C = \begin{bmatrix} r_1 \\ r_2 \\ \vdots \\ r_m \end{bmatrix}$ ($C$: matrix; $r_i$: row vector)

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Using IP on $\min -10x_1 - 9x_2$

$$\text{subj. to: } \begin{aligned} 7x_1 + 10x_2 &\leq 6300 \\ 3x_1 + 5x_2 &\leq 3600 \\ 3x_1 + 2x_2 &\leq 2124 \\ 2x_1 + 5x_2 &\leq 2700 \end{aligned} \qquad x_1, x_2 \geq 0$$

$-7x_1 - 10x_2 \geq -6300 \Rightarrow -7x_1 - 10x_2 + 6300 \geq 0$

Use surplus variable $s_1$ s.t. $-7x_1 - 10x_2 + 6300 - s_1 = 0$ w/ $s_1 \geq 0$

$s_2$ s.t. $-3x_1 - 5x_2 + 3600 - s_2 = 0$
$s_3$ s.t. $-3x_1 - 2x_2 + 2124 - s_3 = 0$
$s_4$ s.t. $-2x_1 - 5x_2 + 2700 - s_4 = 0$

Now $\min$ $-10x_1 - 9x_2 - \mu \Sigma x_i - \mu \Sigma s_i$

$$\text{subj. to } \begin{aligned} -7x_1 - 10x_2 + 6300 - s_1 &= 0 \\ -3x_1 - 2x_2 + 2124 - s_3 &= 0 \\ -3x_1 - 5x_2 + 3600 - s_2 &= 0 \\ -2x_1 - 5x_2 + 2700 - s_4 &= 0 \end{aligned} \qquad C = [-10 \ -9 \ 0 \ 0 \ 0 \ 0]$$

so if $y = \begin{bmatrix} x_1 \\ x_2 \\ s_1 \\ s_2 \\ s_3 \\ s_4 \end{bmatrix}$ Then above is $\begin{bmatrix} -7 & -10 & -1 & 0 & 0 & 0 \\ -3 & -5 & 0 & -1 & 0 & 0 \\ -3 & -2 & 0 & 0 & -1 & 0 \\ -2 & -5 & 0 & 0 & 0 & -1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ s_1 \\ s_2 \\ s_3 \\ s_4 \end{bmatrix} = \begin{bmatrix} -6300 \\ -2124 \\ -3600 \\ -2700 \end{bmatrix}$

$A$ $\quad y$ $\quad b = 0$