

Some Useful Facts

Simplex algorithm: If A_j is a profitable column, pivot on the entry x_{ij} that minimizes $\min_{i:x_{ij}>0} \left[\frac{x_{i0}}{x_{ij}} \right]$.

Dual simplex algorithm: If row i is a profitable row, pivot on the entry x_{ij} that maximizes $\max_{j:x_{ij}<0} \left[\frac{x_{0j}}{x_{ij}} \right]$.

Revised simplex algorithm: Generate costs by $\bar{c}_j = c_j - \pi' A_j$ and columns by $B^{-1} A_j$.

Primal-dual algorithm: Update $\pi^* = \pi + \theta \bar{\pi}$, where $\theta = \min_{j \notin J: \bar{\pi}' A_j > 0} \left[\frac{c_j - \pi' A_j}{\bar{\pi}' A_j} \right]$.