Errata

Fundamentals of Supply Chain Theory — Snyder and Shen

Last updated: June 11, 2013

1. p. 23, equation (2.42): Change denominator in first case to $e^{V_0} + \sum_j e^{V_j}$
2. p. 198, equation after (7.47): Change to
$$\frac{a_1}{h_1} \leq \frac{a_2}{h_2} \leq \ldots \leq \frac{a_{|I|}}{h_{|I|}}.$$
3. p. 212, last line and p. 213, line 2: Change "annual" to "daily"

The following errors have been corrected in the fourth printing (January 2014):

1. p. 230, para 2, line 4: Delete "than" before "$640,000"
2. Sec 2.6.3:
   - p. 23, Sec 2.6.3, para 1: Last sentence should be "The retailer's estimate V_i of the customer's utility U_i for product $i \in I$ is given by"
   - Second sentence after equation (2.41) should be "If $i = 0$, then U_i and V_i denote the actual and estimated utility of making no purchase."
   - p. 24, para 2, line 6: Change V_i to U_i
3. p. 274, problem 10.1, line 1: Change to "Suppose that the price of the raw material for a given product is stochastic..."
4. p. 130, para 2, last two lines: Change both occurrences of $\sqrt{SI + T - S}$ to $\sqrt{SI + T}$
5. p. 164, equation (6.26): Change π_n to π_i
6. p. 170, last para before Sec 6.7.2, line 3: Change Var$[Y]$ to Var$[Z]$
7. p. 136, bullet 2, line 3: Change "outbound" to "inbound"
8. p. 136, para 3, line 1: Change to "we know $\theta_i^o(S)$ for $i < k$ and $\theta_j^i(SI)$ for $j < k$"
9. p. 137, middle of para before Example 5.2: Change to "Computing the cost for a given value, $\theta_k^o(S)$, requires knowing $c_k(S, SI)$, which in turn requires knowing $\theta_i^o(x)$ for all stages i that are immediately upstream and $\theta_j^i(y)$ for all stages j that are immediately downstream from k, for all appropriate values of x and y."
10. p. 344, equation (D.12): Change $z(x, y)$ to $z(x)$
11. p. 52, first equation after last para: Change $g(Q, x)$ to $g(Q, x^*)$

12. p. 56, next-to-last line before Example 3.9: Change s to 5

13. p. 123, equation (5.9): Change subscript j to 1 throughout equations

14. p. 138–9, calculations for θ_3^o and θ_4^i: These calculations erroneously use $\theta_i^o(SI)$ and $\theta_j^i(S)$ instead of $\min_{0\le x\le SI}\{\theta_i^o(x)\}$ and $\min_{S\le y\le M_j-T_j}\{\theta_j^i(y)\}$. This makes no difference for θ_3^o because $\theta_1^o(x)$ is decreasing in x and $\theta_2^i(y)$ is increasing in y for this network. For $\theta_4^i(2)$, replace $\theta_3^o(2) = 7.19$ with $\theta_3^o(1) = 6.69$ (so that $\theta_4^i(2) = 10.93$); for $\theta_4^i(3)$, replace $\theta_3^o(3) = 7.41$ with $\theta_3^o(1) = 6.69$ (so that $\theta_4^i(3) = 11.89$); and for $\theta_4^i(4)$, replace $\theta_3^o(4) = 6.71$ with $\theta_3^o(1) = 6.69$ (so that $\theta_4^i(4) = 12.69$). The optimal solution and cost do not change

15. p. 152, line after (6.3): Change c_j to j

16. p. 154, Figure 6.2: Replace I_1 and I_2 with IL_1 and IL_2, respectively, throughout figure

17. p. 57, second line after equations: Change 110 to 210

18. p. 66, line 1: Change 4.3.4 to 4.3.3

19. p. 198, line beginning "and set": Change $z_{r+1} = v_j - \sum_{i=1}^{r} h_i$ to $z_{r+1} = \left(v_j - \sum_{i=1}^{r} h_i\right)/h_{r+1}$

20. p. 275, problem 10.3: Change formula for σ_t^L to

$$\sigma_t^L = \frac{\sigma}{1-\rho}\sqrt{L - 2\rho\frac{1-\rho^L}{1-\rho} + \rho^2\frac{1-\rho^{2L}}{1-\rho^2}}.$$

21. p. 179, problem 6.9(b), Hint 2: Change $g(0,0) = 4$ to $g(0,0) = 2$ and $g(2,0) = 3$ to $g(2,0) = 3.5$

22. p. 292, line after first equation: Change $b_1 < 0$ to $b_1 > 0$

23. p. 152, definition of p_i: Change to "backorder cost per unit per period at retailer i, for $i = 1, 2$"

24. p. 174, Thm. 6.7, bullet 1: Change NS_C^* to NS^*

The following errors have been corrected in the second printing (December 2011):

1. p. 115, problem 4.22(c): $c' \to c - h$ should be $c' \to -h$

2. p. 115, problem 4.22(e): Replace second sentence with "Suppose $h = 0.4$, $p = 4.8$, $c = 3$, and $c' = 1.7$."

3. p. 121, Sec 5.2.1, para 2: Replace third sentence with "Stage j incurs a holding cost of h_j' per item per time unit, which is charged on the on-hand inventory at stage j as well as on the inventory in transit to stage $j-1$. (One can show that the expected number of units in transit is a constant, and therefore the in-transit holding cost does not affect the optimization.)" Delete the last sentence of the paragraph.

4. p. 122, Proposition 5.1: Replace proposition with the following: "If OH'_j and OH_j are the local and echelon on-hand inventory levels (respectively) at stage j, i.e., $OH_j = \sum_{i=1}^{j} OH'_i$, and h'_j and h_j are the local and echelon holding costs (respectively) at stage j, then

$$\sum_{j=1}^{N} h_j OH_j = \sum_{j=1}^{N} h'_j OH'_j.$$

5. p. 122, equation (5.3): Replace equation with

$$C(\mathbf{S}) = E\left[\sum_{j=1}^{N} h'_j((IL'_j)^+ + IT_{j-1}) + p(IL'_1)^-\right],$$

and add "where IT_j is the in-transit inventory to stage j and $IT_0 \equiv 0$." after the equation.

6. p. 131, Theorem 5.4: Replace "$S_{i+1} + T_i$" with "$S^*_{i+1} + T_i$".

7. p. 132, Figure 5.6: Replace constraint label "$SI_2 + T_2 - S_1 = 0$" with "$S_2 + T_1 - S_1 = 0$".

8. p. 140, problem 5.3, last line: Replace "($\tilde{S}_j$ and $\tilde{S}'_j$)" with "(S^*_j and $(S')^*_j$)".

9. p. 141, problem 5.9, figure: top-right stage should be labeled with index 1, not 3.

10. p. 179, problem 6.10: ψ should be $\hat{\psi}$ throughout both equations.

11. p. 204, problem 7.5, line 6: Delete "to" after "enough DCs".

12. p. 206, problem 7.8, line 3: Insert "demand-weighted" before "distances".

13. p. 233, Theorem 8.2: Change "(RPMP)" to "(RFLP)".

14. p. 288: Replace c_s with c_r in equation (11.22) and two lines after it.

15. p. 301, problem 11.9: Replace "$w(b) \to c_s$" with "$w(b)$ approaches the w that ensures $Q^*_r = Q^*_s = Q^0$ in the wholesale price contract."

16. p. 324, problem A.6: Change delivery probability from p to q throughout problem (¶2 line 2 and part (c) lines 2, 3).

17. p. 326, problem A.9: Delete note.