Errata to the 1st and 2nd Printing of Industrial Organization: Theory & Applications

by

Oz Shy

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E-mail : ozshy@ozshy.com

Web-page : www.ozshy.com

Catalog-page : http://mitpress.mit.edu/books/industrial-organization

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Preface:

p.xxii, line 20: should read: and was the first (instead, and the was the)

Chapter 2: Basic Concepts In Noncooperative Game Theory

p.15, line 13: behaves should be behave.

p.20, After Table 2.3: replace Joseph with Jacob (4 times).

p.22, Definition 2.6: 1(b): twice replace i with j (superscripts)

p.23, line 3: Should read: ...thirty thousand feet (instead of thirty thousands feet).

p.31, Line -8: replace $1/(1+\rho)$ by $1/(1-\rho)$.

p.32, line 9, ...that no unilateral [deviation] is beneficial...

p.32, line -9: replace "rate of time preference" with "time discount factor"

p.32, line -8,-7: replace "...when players have a low rate of time preference" with "...when players have a low discount factor"

p.33, line 4: replace "higher rate of time preference" with "higher discount factor"

p.33, line 13: replace "sufficiently large rate of time preference" with "sufficiently large discount factor"

p.40, Exercise 1b: Replace Joseph with Jacob.

p.40, Exercise 2b: Should read: ...in dominant actions; (instead of dominant strategies).

p.40, Exercise 2c: Should read: ...(T,L) Pareto dominates all other outcomes; (instead of (T,L) is Pareto superior to all...).

p.41, Exercise 5: typo: How many subgames are THERE in this...

Chapter 3: Technology, Production, Cost, And Demand

p.45, Definition 3.1, item 2 (3rd row): replace "product" by "factor"

p.46, line 7, should be $F, c \ge 0$ (instead of $F, C \ge 0$).

p.46, Proposition 3.1: a period "." is missing at the end.

p.47, 3.1.3, 2nd paragraph, line 5: should be: "illustrated in the middle part of Figure 3.2," (instead of the "lower part of Fig...")

p.48, Figure 3.2: The AC curve (bottom row) is drawn under the assumption that $0 < \gamma < 1/2$. Observe that when $\gamma = 1/2$,$AC = WQ$ constituting a ray from the origin. When $1/2 < \gamma < 1$, AC is concave to the origin (rather then convex).

p.52, top equation: there is no reason why switching from the "d" operator to the partial derivative operator.

p.54, Fig.3.6: $CS(p)$ should be $CS^0(p)$

p.54, eq.(3.7), last term should be $= U(Q^0, I - p^0) - I$.

Chapter 4: Perfect Competition

p.66, Proposition 4.1, item 2, aggregate-industry [output] level.

Chapter 5: The Monopoly

p.92, Exercise 1d: Should read: $\epsilon \to +1$ (instead of -1)

p.92, Exercise 2b: Add: Assume that the production of G-Jeans is costless.

p.93, Exercise 5 : change ϵ_i to η_i ($i = 1, 2$) (to match the notation used in the formula given on p.51 (Proposition 3.3)).

p.94, 7(b): Inverse-demand should be corrected to $p = Q^{-1/2}$

Chapter 6: Markets For Homogeneous Products

p.99, bottom displayed equation: superscript C can be removed.

p.109, Proposition 6.2(2): This equilibrium is NOT unique since $p_1 = c_2$ and $p_2 = c_2 + \epsilon$ is also an equilibrium.

p.109, Proposition 6.2(2): The condition should be

$$(c_2 - \epsilon - c_1)\frac{a - c_2 + \epsilon}{b} > (c_2 - c_1)\frac{a - c_2}{2b}$$

p.109, Proposition 6.2(2): It is useful to assume that $\lambda \geq 2$ (instead of $\lambda \geq 1$). Under $\lambda = 1$, undercutting by firm 1 may leave it with zero profit.

p.111, line 11: Edgeworth is known as Irish (not British).

p.111, line -14: Consumer 3 a maximum of $1 (instead of $2)

p.111, line -6: Assume that each firm is limited to producing at most 2 units (instead of 1). The reason is that if each firm has a capacity of 1, then $p_1 = p_2$ is a Nash-Bertrand equilibrium.

p.115, line 5: Replace Definition 2.4 by Definition 6.1

p.115, line 6: replace $p_1^c = p_2^c = 3$ by $q_1^c = q_2^c = 3$

p.118, line 4: replace $t = 0, 1, 2, ...$ by $t = 1, 2, ...$

p.119: Proof of Proposition 6.4, middle of line 7 should be:

$$\text{...is} \quad \frac{1}{1-\rho}\frac{1}{9}. \quad \text{(text shows a “+” instead of a “}-\text{”)}$$

p.121, the 2 first-order condition equations after (6.26): omit the bottom partial derivative signs.

p.128, Exercise 1d: Replace ”output distribution” by ”market shares”

p.128, line -6: “...to enter or the exit...” should be: “...to enter or to exit...”

p.128–129, Exercise 3: Add: Assume that production is costless.

p.130, Exercise 7b: Should be:

$$Q^s = \left[1 - \frac{1}{2^N}\right](a - c).$$

Chapter 7: Markets For Differentiated Products

p.134. Bottom left side of Figure 7.1 should be:

$\boxed{\text{COURNOT}}$ (Subsec. 7.1.1) and $\boxed{\text{BERTRAND}}$ (Subsec. 7.1.2)

p.136, eq.(7.2): delete > 0 after the “c” (that is, we allow $c < 0$ at this stage)

p.140, Definition 7.2: Replace “slopping” by ”sloping” (twice).

p.140, equation (7.8), replace the term on the right by:

$$\pi_i^b = \frac{\alpha^2\beta(\beta - \gamma)}{(2\beta - \gamma)^2(\beta + \gamma)}.$$

p.141, equation (7.11): replace $R_2(q_1)$ by $R_2(p_1)$.

p.142, 1st line below Proposition 7.4: "It is amazing?" should be: "Is this amazing?"

p.143, equation (7.12): From a technical point of view only, it is more appropriate to write it as: $\sum_{i=1}^{N} q_i^{1/2}$, where N is the number of produced brands

p.144, equation (7.13) should be:

$$\sum_{i=1}^{N} p_i q_i \le I \equiv L + \sum_{i=1}^{N} \pi_i(q_i).$$

p.144, the last line: The minus sign in front of λ on the RHS of the Lagrangian should be be replaced by the plus sign.

p.145, (7.14) should be:

$$p_i(q_i) = \frac{1}{2\lambda\sqrt{q_i}}$$

p.145, line -4: ... $-(F + cq_i)$ [replace $-$ by $+$]

p.150: (Style correction: Not a mistake!) the () around $(L - b + a)$ and $(L + b - a)$ in the last two equations are redundant.

p.150, Subsection 7.3.1 (Hotelling): Add: Assume that production is costless.

p.151, line -7: Replace "the distance between the firms" with "the transportation cost parameter, τ ."

p.155, Definition 7.4 (2), second line: $\pi_i(q^o) = 0$ should be $\pi_i(p^o, p^o) = 0$.

p.155, last line: τ/N and $1/N$ should be: τ/N^o and $1/N^o$ respectively.

p.157, Fig. 7.9, 3rd line: π_2 should be

$$\pi_2 = 1 - x_2 + \frac{x_2 - x_3}{2}$$

p.160, Line 13: (Style correction: Not a mistake!) replace maintaining by obtaining

p.162, the last term of the last equation: should be $\beta^2 - \gamma^2$ (not α^2)

p.163, first line in Sec. 7.5: replace "proof" by "prove."

p.164, line 8: the equilibrium $p_B = \tau L$ (instead of $p_B - \tau L$)

p.164, line 9, equation (7.38) should be

$$\pi_A = p_A L - \frac{(p_A)^2}{2\tau} \qquad (7.38)$$

p.165, Problem 3: there is no typo here, however to avoid any confusion, it should be mentioned that both $1 and $R are per unit of distance (mentioned for R but not for 1).

Chapter 8: Concentration, Mergers And Entry Barriers

p.172, line 9: delete "was a measure"

p.179, Proposition 8.3: 1. The [combined] profit of the merging...

p.179, 3rd line below Proposition 8.3: "...firm B or firm 1..." should be: "...firm B or firm 2..."

p.179, lines -5, -4: A & B are upstream (not downstream)

p.182, line 8: ...Nash equilibrium were... should be: ...Nash equilibrium where...

p.183, line -5: increasing returns to scale for low output levels

p.184, line -8: "less than the entry cost" should be: "less the entry cost"

p.185, line 1 of 3rd paragraph: "...this analysis be..." should be: "...this analysis by..."

p.186, Proposition 8.6: (Style correction: Not a mistake!) Add: Formally, ((Exit, Stay-in), Enter) is a unique SPE.

p.189, equation (8.17): replace $-k_1$ by $-\bar{k}_1$.

p.194, Subsection 8.4.2: Relaxing the Bain-Sylos postulate: The point E_2 in the middle part of Figure 8.7 is not well defined. Point E_2 should be where point E_3 is (intersection of the incumbent's best-response with no cost and the entrants' cost-ridden best-response function). Now, the right figure shows that overaccumulation is not needed since equilibrium final output levels is at E_3 (where E_2 should also be); so $k > \bar{k}_3$ is not utilized beyond E_3. *Note for the 2nd edition:* I would like to add a preliminary proposition stating that a leader does not benefit from entry deterrence. This proposition will explain why the introduction of irreversible capital is important. Also, I will add an appendix that will prove that the incumbent's best-response function for $k > \bar{k}$, coincides with (part of) the best-response function derived for a marginal cost of c. In other words, I intend to prove that both the 'high' and 'low' best-response functions do NOT change when $\bar{k}$ is changed. This is correctly and implicitly assumed in Figure 8.7, but it must be proved.)

p.196–197: Equation (8.21) should be:

$$\frac{F}{H} < \rho < \left(\frac{F-L}{H-L}\right)^{\frac{1}{2}} \qquad (8.21)$$

The proof of Proposition 8.8 should be modified:

We look at the equilibrium strategies where firm 1 invests in every t and firm 2 does not invest.

First, observe that since firm 1 invests at t and still has capacity at $t+1$, if firm 2 deviates and invests at t, it will earn $L-F$ at t, $L-F$ at $t+1$, and $H-F$ in every period thereafter. Firm 2 will not deviate and invest at t it only if

$$\pi^2 = (1+\rho)(L-F) + \rho^2 \frac{H-F}{1-\rho} < 0, \quad \text{or} \quad \rho^2 < \frac{F-L}{H-L}.$$

Secondly, if firm 1 deviates, i.e., ceases investing at $t-1$, then it has no capacity at t and firm 2 will earn $H-F$ at t. Hence, firm 2 will enter.

Thirdly, if firm 1 stops investing at $t-1$, it will earn a profit of H in period $t-1$ and zero thereafter. Thus, in order for having firm 1 engaging in continuous investment, it must be that

$$H < \frac{H-F}{1-\rho}, \quad \text{or} \quad \rho > \frac{F}{H}.$$

Therefore, the specified strategies form a NE if the modified (8.21) holds. *Q.E.D.*

p.199, Figure 8.9: The curve should be convex to the origin (rather than concave).

p.204, eq. (8.27): replace $q_1^1(4) = 5$ by $q_1^1(4) = 3$

p.210, line -5: However, at a [high] postmerger ...

p.214, Exercise 3 (line 5): Replace ”perfect substitutes” by ”perfect complements”

p.214, Exercise 3: Should be ...where $Q = x = y/2$ (instead of $Q = x = 2y$). Also, assume that production is costless.

Chapter 9: Research and Development

p.222, line 12: add) after innovation

p.227, Proposition 9.1 should read:

$$E\pi^S(1) > E\pi^S(2) \text{ but } E\pi_k(2) > 0, \quad \text{when} \quad \alpha(1-\alpha)V < I < \frac{\alpha(2-\alpha)V}{2}.$$

p.228, line (after Lemma 9.1): replace "at least at least..." by: "when at least..."

p.230, eq.(9.6) Restrict β to satisfy $(3-\sqrt{7})/2 < \beta < 1$.

Explanation: making $\beta < 1$ would make the own R&D effect stronger than the rival effect. Now, when $\beta < (3-\sqrt{7})/2$, the slope of the best-response functions implicitly defined by the FOC of (9.8) is less than -1, which make the system unstable.

Remark: Using the implicit function theorem, the FOC of (9.8) becomes

$$\frac{2(2\beta^2-5\beta+2)}{2\beta^2-8\beta-1},$$

which is negative for $\beta < 0.5$, and positive for $\beta > 0.5$. Finally, note that the model is unstable when there are no spillovers, i.e., when $\beta = 0$.

p.233, line 12: Shaffer and Salant (1998) instead of (1994)

p.235, line 7: Nordhous should be Nordhaus

p.237, line -3: society's welfare is $CS_0 + M$ from the date... (i.e, add CS_0)

p.237, line -2: and $CS_0 + M + DL$ from... (i.e., add CS_0)

p.238, eq.(9.14) should be:

$$\begin{aligned} \max_T W(T) &\equiv \sum_{t=1}^{\infty} \rho^{t-1}\left[CS_0 + M(x^I)\right] + \sum_{t=T+1}^{\infty} \rho^{t-1} DL(x^I) - \frac{(x^I)^2}{2} \\ \textbf{s.t. } x^I &= \frac{1-\rho^T}{1-\rho}(a-c). \end{aligned}$$

p.238, eq.(9.15) should be:

$$W(T) = \frac{CS_0 + (a-c)x^I}{1-\rho} - \frac{(x^I)^2}{2}\frac{1-\rho-\rho^T}{1-\rho} \quad \textbf{s.t. } x^I = \frac{1-\rho^T}{1-\rho}(a-c).$$

p.238–239: The Proof of Proposition 9.4 must be divided into 2 cases: First, for $\rho < 0.5$

$$W(1) = \frac{CS_0 + (a-c)^2}{1-\rho} - \frac{(a-c)^2}{2}\frac{(1-2\rho)}{1-\rho} = \frac{CS_0}{1-\rho} + \frac{(a-c)^2}{1-\rho}\frac{(1+2\rho)}{2} \qquad (9.16)$$

$$W(\infty) = \frac{CS_0}{1-\rho} + \frac{(a-c)^2}{(1-\rho)^2} - \frac{(a-c)^2}{2(1-\rho)^2} = \frac{CS_0}{1-\rho} + \frac{(a-c)^2}{2(1-\rho)^2} \qquad (9.17)$$

$$W(1) > W(\infty) \iff \frac{(a-c)^2}{1-\rho}\frac{1+2\rho}{2} > \frac{(a-c)^2}{2(1-\rho)^2} \iff \rho < \frac{1}{2} \qquad (9.18)$$

Second, for $\rho \geq 1/2$ we approximate T as a continuous variable. Differentiating (9.15) with respect to T, and equating to zero yields

$$T^* = \ln[3 + \sqrt{(}6 + \rho^2 - 6\rho) - \rho] - \frac{\ln(3)}{\ln(\rho)} < \infty.$$

Instead of verifying the second order condition, it is easier to verify that for $T = 1$,

$$\frac{dW(T)}{dT} = \frac{(a-c)^2\rho(1-5\rho)\ln(\rho)}{2(1-\rho)^2},$$

which is greater than zero for $\rho > 0.2$.

p.239, line 8 & 16: should be Proposition 9.4 (not 9.18)

p.251: Nordhous should be Nordhaus

p.251: Shaffer, G., and S. Salant. 1998. "Optimal Asymmetric Strategies in Research Joint Ventures." International Journal of Industrial Organization 16: 195–208. (updated reference)

Chapter 10: The Economics Of Compatibility And Standards

p.260, line -11: "...the aggregate the number..." should be: "...the aggregate number..."

p.263, line -9: Church and Gandal 1992ab, 1993

p.268, line 13: replace $\langle n_A^0, n_B^0 \rangle$ by $\langle n_A^1, n_B^1 \rangle$

P.271: The sentence before Proposition 10.13 should be deleted, since it contradicts the statement made about the 3rd equilibrium of the proposition.

p.272, line 15: AB will not purchase any system instead of: AB will switch to purchasing system BB.

p.272: Equations (10.16) and (10.17) hold for the two equilibria in which all three consumers are served (see Proposition 10.13 on p.271). However, for the third equilibrium, in which consumer AB is not served, equations (10.16) and (10.17) should be modified to $CS^I = 0$ and $W^I = 4\lambda$, respectively.

p.273, Proposition 10.14 (last line): Replace $\pi^I_A = \pi^I_B = 3\lambda$ by $\pi^c_A = \pi^c_B = 3\lambda$ (i.e., superscript should be "c" not "I").

p.276, Church and Gandal: 1993a should be 1993, 1993b should be 1992a, 1993c should be 1992b Chou and Shy: forthcoming should be 1996.

Chapter 11: Advertising

p.282, line -8: remove the "." in the middle of the sentence

p.285, equation (11.13): insert 8 after the integral sign (the calculation itself is correct

p.289, Figure 11.2: The graph of $1/[\delta(1-\delta)]$ should be upward sloping for all $\delta > 0.5$, and slope $+\infty$ at $\delta = 1$.

p.289 (bottom 2 lines) and p.290 (first 2 lines): This discussion should be rewritten since in the specified range firms overadvertise (not underadvertised as stated).

p.294, part 2 of the proof, line 2: Replace $\pi^1(I,P) = N$ by $\pi^1(P,I) = N$.

p.294, Part 3 of the Proof, line 3–4:

$\pi^1(P,I) = (1-\theta)E$ should be $\pi^2(P,I) = (1-\theta)E$.

$\pi^(P,P) = N/2$ should be $\pi^2(P,P) = N/2$

p.294, line -6, $\min\{N/E; 1 - N/(2E)$ should be $\min\{N/E; 1 - N/(2E)\}$

p.295, line 12, "principle" should be "principal"

p.303, Exercise 2 (first displayed equation): Replace n_A by n_α and n_B by n_β

Chapter 12: Quality, Durability, And Warranties

p.311, Figure 12.1 provides a good comparison of horizontal versus vertical differentiation for the Hotelling-type utility function given by

$$U_x = \begin{cases} -p_A - |x - A| & \text{if buying brand } A \\ -p_B - |x - B| & \text{if buying brand } B \end{cases}$$

Thus, for the lower part of this figure all consumers prefer A to B if $p_A = p_B$. Therefore, the last sentence appearing before 12.2.2 is not needed.

Remark: Notice that the above utility function is slightly different from the Hotelling utility function (7.17), in terms of how distance is measured.

p.314, equation (12.8), line 2 should be:

$$\pi_B(a,b) = \frac{1}{b-a}\left[\frac{2(b-a)^2}{3} - \frac{4(b-a)^2}{9} + \frac{2(b-a)^2}{9}\right] = \frac{4(b-a)}{9}.$$

p.316, top line should be: "and who desires..."

p.317, first paragraph: In principle, this should be a utility comparison rather than only a price comparison. For this specific example, there is no difference, but it should matter when consumers attach extra utility to durability.

p.320, Proposition 12.6: Third line should be: $I \le \max\left\{2(v^N - v^O)\,;\, v^N\right\} - v^0$. That is, the cost of innovation should not exceed the *difference* between profit made from selling the new technology and the profit that could be made without innovation.

p.326, Figure 12.5: There is no reason for assuming that $U^G > N^G/2$. In fact, this assumption may be misleading since it implies that in regions (I) and (II), $p^U > p^N$ (i.e., used cars are priced higher than new cars).

p.330, 1st displayed equation: $p^m q^m$ should be: $(p^m - c - H)q^m$

p.331, line 4: "care or it" should be: "care of it"

p.337, Exercise 3 (end of line 4): Replace p^N by $\bar{p}^N$

p.337, Exercise 3: last sentence should read: "...four types of agents..." (instead of four agents).

Chapter 13: Pricing Tactics: Two-Part Tariffs And Peak-Load Pricing

p.343, Figure 13.1 the quasi-linear indifference curves are not parallel but they should be parallel.

p.345, Figure 13.2 the quasi-linear indifference curves are not parallel but they should be parallel.

p.346 r-3 (not a typo, just better exposition): $MR_H(Q_H) = MR_B(Q_B) = MC(Q_H+Q_B) = 0$ (same order as on p.77).

p.347, line 5: replace "to consumers" with "to consume"

Section 13.2: Nonuniform pricing: There are mistakes in the calculations of consumer surpluses for the case where consumers purchase quantity-discount program. Under the discount program, consumer surplus should be the gross-consumer surplus (the area under the demand curve) minus the total expenditure on phone calls (i.e., -3×9). Therefore, the first half of p.348 should be replaced by:

If households adopt the discount program, then they are "forced" to buy 9 phone calls (and actually use only 6), which makes the gross-consumer surplus equals the entire area under the demand curve that equals to $(12\times 6)/2$. Since households must pay for 9 phone calls, their net consumer surplus is:

$$CS_H(\text{discount}) = \frac{12\times 6}{2} - 3\times 9 = 9 = CS_H(6).$$

Given that households are indifferent between the two plans, we can assume that they do not purchase the discount plan (see an alternative example below that produces different numbers which make households strictly prefer the regular payment plan over the discount plan).

Clearly, when $p = 6$, businesses will purchase zero on the regular payment program. However, when they choose the discount plan:

$$CS_B(\text{discount}) = \frac{(6-1.5)9}{2} + 1.5\times 9 - 3\times 9 = 6.75 > 0.$$

Hence, businesses will choose the discount payment program.

Finally, we need to show that nonuniform pricing yields a higher profit than uniform pricing (not shown in the book). Under nonuniform pricing,

$$\pi^{NU} = 6\times 3 + 3\times 9 = 45.$$

Under uniform pricing, we look for the monopoly uniform price. Under $p < 6$, the aggregate demand is $Q = q_H + q_B = 18 - 5p/2$. Hence, the monopoly's output, price, and profit under uniform pricing are:

$$Q^U = 9, \quad p^U = \frac{18}{5}, \quad \text{and} \quad \pi^U = 32.4 < 45.$$

Hence, nonuniform pricing yields a higher profit to this telephone company.
Note: If we slightly change this example by making the minimum amount of phone calls needed to be purchased equal to 10 (not 9). In this case, using the above techniques, we can show that:

$$CS_H(\text{discount}) = \frac{12 \times 6}{2} - 3 \times 10 = 36 - 30 = 6 < 9 = CS_H(6),$$

and

$$CS_B(\text{discount}) = \frac{(6-1)10}{2} + 1 \times 10 - 3 \times 10 = 5 > 0.$$

Hence, households strictly prefer the regular payment program whereas businesses strictly prefer the discount payment program.)
Section 13.3: Peak-load pricing: The analysis is conducted under the assumption that low-season demand is "significantly" lower than the high-season demand. This assumption must be added to Proposition 13.4 on page 350. In future editions, I will add an analysis of peak-load pricing when the two demand functions are similar, in which case capacity should be treated as a "public" good.
p.351, line 2: Replace "determined by is..." by "determined by..."
p.354, line 16: The assumption $c_D \geq c_N$ is not needed. Replace it with $c_D \geq 0$ and $c_N \geq 0$.
p.354, equation (13.11) should be:

$$TC(\hat{\delta}) = r \max\left\{\hat{\delta} - a, b - \hat{\delta}\right\} + (\hat{\delta} - a)c_N + (b - \hat{\delta})c_D. \qquad (13.11)$$

p.354, last line should be: $K = (b-a)/2$ instead of $K = (a+b)/2$.
p.355, Figure 13.6 should be:

$$\frac{(b-a)(r + c_D + c_N)}{2}$$

p.357, Proposition 13.7, the signs of the r should be reversed (twice) so that

1. under vertical differentiation

$$\hat{\delta} = \min\left\{\frac{\beta(1+b)+r+c_D-c_N}{2\beta}; \frac{a+b}{2}\right\}, \quad \text{and}$$

2. under horizontal differentiation

$$\hat{\delta} = \max\left\{\frac{\beta(1+b)-r+c_D-c_N}{2\beta}; \frac{a+b}{2}\right\}.$$

p.358. Proof: the signs of the r should be reversed (twice) so that

$$\beta(1+b) - 2\beta\hat{\delta} = -r + c_N - c_D.$$

$$\beta(1+b) - 2\beta\hat{\delta} = +r + c_N - c_D.$$

Chapter 14: Marketing Tactics: Bundling, Upgrading, And Dealerships

p.364, line -8: "bundling" should be "tying"

p.368, Proposition 14.5 (2) "bundling" should be "tying"

p.369, line -4: Replace "the North America" by "North America"

p.375, Line -6: Replace $\equiv$ by $=$.

p.375, Line -5 should be "... if and only if $w > \frac{1}{2}$. Hence,"

p.375, bottom line should be: "That is, $\bar{s} < s^*$."

p.376, Line 3 should be: "That is, $\bar{s} > s^*$."

p.376, line 8: Replace "...to overtaken" by "...to be overtaken"

p.377, line 13: replace use-books market by used-books market

p.378–379, the sentence before (14.16) should be: "...we know that a necessary condition (but not sufficient) for a new edition to be introduced in period 2 is"

p.379, equation (14.17) should be:

$$\pi = n(p_1 - c) + \pi_2 = \begin{cases} n(V-c) + n(V-c) - F & \text{if a new edition is introduced} \\ n(V+c-c) + 0 & \text{no revision is made.} \end{cases}$$

p.379, Table 14.3: Replace $(V - n)$ by $n(V - c)$

p.385–388 (Territorial dealerships): Proposition 14.17 on p.387 is false since the manufacturer can set $d = B$, thereby force dealers to set $p_i^D = B$, which constitute an UPE (since any price reduction will result in a loss to dealers). To obtain this result, the model has to be modified by assuming that the establishment of each dealership requires a fixed (sales independent) investment.

p.388, line 8: $[0, 1/2)$ should be: selling in the neighborhood of consumer 1.

p.388, line 9: $[1/2, 1]$ should be: selling in the neighborhood of consumer 2.

p.391: Exercise 4, line 2 should read: Suppose that the manufacturer sells.. (instead of: Suppose that the dealer sells...)

Chapter 15: Monitoring, Management, Compensation, And Regulation

p.404 line-16: delete the sentence: "In other words, the contract that $w^H - w^L$ is minimized."

p.411 eq.(15.30) should be:

$$\max_{\alpha_i} \left[-a\alpha_i c + 2a\alpha_j c + 6\alpha_i c^2 - 2\alpha_i^2 c^2 - 3\alpha_j c^2 - \alpha_i\alpha_j c^2 + \alpha_j^2 c^2\right] \qquad (15.30)$$

however the best-response function is correct.

p.412, eq. (15.34) should be:

$$\max_{\alpha}(\pi_1 + \pi_2) = 2(ac\alpha - 2c^2\alpha^2 + 3\alpha c^2).$$

However, the solution to the maximization of the joint profit is correct.

p.414, line-10: $1/2$ should be $3/4$

p.417, line 5: $S()$ should be s() [lower case]

p.418, eq. (15.41):

$$[p(c^H) - c^H][a - p(c^H)] + s(c^H) \geq 0 \quad \text{and} \quad [p(c^L) - c^L][a - p(c^L)] + s(c^L) \geq 0.$$

Chapter 16: Price Dispersion And Search Theory

Section 16.1 (Price Dispersion): The model described on pages 422–426 must be fixed !!! What's wrong with the current version? Well, equation (16.9) should read: $s^e = 2L/3$ (i.e., α should be deleted!). Therefore, an equilibrium does not exist, since the 'indifferent' consumer lies outside the interval $[L, H]$! That is, all consumers buy at random.

Fixing the model (step-by-step instructions): Suppose that there is only one discount store, but that there are two (2) expensive (nondiscount) stores managed under a single ownership. Thus, the owner of the discount store sets p_D, whereas the owner of the two expensive stores sets p_{ND} for the two expensive stores. Also, assume that $H > 3L$. Please correct the following equations (adjusted for the revised model):

$$\bar{p} = \frac{p_d + 2p_{ND}}{3} \qquad (16.1)$$

Definition 16.1, item 2: replace "expensive store" by "the owner of the two expensive stores"

$$p_D + \alpha\hat{s} = \bar{p} = \frac{p_D + 2p_{ND}}{3} \qquad (16.3)$$

$$\hat{s} = \frac{2(p_{ND} - p_D)}{3\alpha} \qquad (16.4)$$

$$Eb_D = \hat{s} - L + \frac{H - \hat{s}}{3} = \frac{H}{3} - L + \frac{4(p_{ND} - p_D)}{9\alpha} \qquad (16.5)$$

$$E\pi_D = p_D\left[\frac{H}{3} - L + \frac{4(p_{ND} - p_D)}{9\alpha}\right] \qquad \text{(after (16.5))}$$

(also change the line after stating the first-order condition)

$$p_D = \frac{3\alpha(H - 3L)}{8} + \frac{p_{ND}}{2} \qquad (16.6)$$

$$Eb)ND = \frac{2(H - \hat{s})}{3} = \frac{2H}{3} + \frac{4(p_D - p_{ND})}{9\alpha} \qquad (16.7)$$

$$E\pi_{ND} = p_{ND}\left[\frac{2H}{3} + \frac{4(p_D - p_{ND})}{9\alpha}\right] \qquad \text{(after (16.7))}$$

$$p_{ND} = \frac{3\alpha H}{4} + \frac{p_D}{2} \qquad (16.8)$$

4 2 Figure 16.2: Horizontal intercept = $3\alpha H/4$

Figure 16.2: Vertical intercept = $3\alpha(H-3L)/8$

Figure 16.2: also, change the equilibrium values [given in (16.9) below].

$$p_d^e = \frac{\alpha(2H-3L)}{2}, \quad p_{ND}^e = \frac{\alpha(5H-3L)}{4}, \quad \text{and} \quad \hat{s}^e = \frac{H+3L}{6} \qquad (16.9)$$

Note: $p_D^e < p_{ND}^e$ (i.e., the discount store charges a lower price)

Note: delete ALL the remaining analysis (incl. Proposition 16.1) on p.426

Remark: both equilibrium prices increase with α (search cost parameter).

p.427, Assumption 16.1: Add: From consumers' point of view, the number of stores of each type is "large." Consequently, from consumers' perspective, the price distribution associated with the next search does not vary during the sequential search process.

p.427, Assumption 16.1 (2): Not an error, but an incomplete assumption, which should be: $0 < s < (n-1)/2$.

p.428, line 9: as long as he or she likes instead of as long as he she likes

p.432, delete Exercise 1.

p.431, subsection 16.2.2, line 9: Replace "when he or her" with "when he or she"

p.433, Exercise 2d: Should read: Given the search cost you found in subquestion (c), calculate the probability.........

Chapter 17: Miscellaneous Industries

p.444, Proposition 17.2: Replace "increases exponentially" with increases quadratically"

p.445, eq.(17.6): the last term of profit expression should be:

$$-2c\left(\frac{3n}{4c}\right)^2 \text{ instead of } -2\left(\frac{3n}{4c}\right)^2.$$

I.e., c is missing.

p.452, eq.(17.18): The restriction should include: $0 < \alpha < 1$

p.452, last paragraph: Should read: ...measures the driving [time] that [is] independent...

p.454,line before (17.25): Add: Substituting $(N - n_c)$ for n_T, the first-order...

p.455, Figure 17.4: On the horizontal axis, n_C^s should be placed to equal half of n_C^e, and n_C should be n_C^e. Also,

$$\frac{\partial L_C}{\partial n_C} \quad \text{should be} \quad \frac{\partial (n_C L_C)}{\partial n_C}$$

p.456, Exercise 2b: Should read: ...and charges an airfare $\bar{p}_3$... (instead of $\bar{f}_3$)

p.456, Exercise 3: Should read: $t_c = (n_c)^3$ (i.e., omit the "v").

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