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Correction list 1

Symbol glossary: "l." means "line"; "f.b." means "from below"; "eq." means "equation"; "n" means footnote. In the third column, in square brackets, occasionally appears a remark.

Corrections to B & S, 2. ed., 2004

page	*reads*	*should read (or comment)*
2-3, figures		[note that the horizontal axis has log scale]
18, l. 17	The equilibrium of the Cass-	The optimal allocation in the Cass-
24, l. 4*	represents the durable physical inputs	represents the produced durable physical inputs
24, l. 11*	as well as their physical strength	as well as their physical and intellectual strength
25, n. 4	$Y(t) - rD(t) = C(t) + I(t) +$	$Y(t) = C(t) + I(t) +$
27, l. 17*	diminishing returns to private	diminishing returns to rival
33, l. 12-13*	net supply is capital	net supply is capital and land (but land is generally ignored in this book)
47, l. 2-3	The further it is from its own steady state value	The further it is below its own steady state value
50, l. 13	that the dispersion of real	that the dispersion of the log of real
57, l. 14	During the transition to the steady state, the convergence rate	During the transition to the steady state, if from below, the convergence rate
60, eq. (1.55)	$\dot{\hat{k}}$	$\dot{\hat{k}}/\hat{k}$
60, eq. (1.55)	$\tilde{A}$	A
61, eq. (1.56)	$\dot{\hat{h}}$	$\dot{\hat{h}}/\hat{h}$
61, eq. (1.56)	$\tilde{A}$	A
68, 1. 14	$Y = \min\left[bK, (1-b)L\right]$, where	$Y = A\min\left[bK, (1-b)L\right]$, where
71, l. 1	is a negative function of k	is a decreasing function of k
71, eq. (1.66)	$\beta^* = -(x+n+\delta)\cdot[....$	$\beta^* = (x+n+\delta)\cdot[....$
75, figure	$-F$	$-F/L$ [or $-b,$ since $F = bL,$ where, by assumption, b is constant over time]
80, l. 10 f.b.	is a measure of the curvature	is an inverse measure of the curvature
82, 1. 9	show that each	show that with perfect competition each
85, l. 9 f.b.	further from its own	further below its own
107		[The first paragraph seems unclear, cf. my comments to p. 109]

Continued next page.

page	*reads*	*should read (or comment)*
109, Fig. 2.3		[In panel a, $1/\theta$ should be placed below the intersection with the vertical axis, and in panel c, $1/\theta$ should be placed above; further, the curves in panel (a) and (c) show only the possible combinations of $\hat{k}$ and s for $\hat{k}_0 < \hat{k}^*$; the complete curves *cross* the line $s = s^*$ at $\hat{k} = \hat{k}^*$]
109, Fig. 2.3	Panel a shows	Panel c shows
109, Fig. 2.3	Panel b considers	Panel a considers
109, Fig. 2.3	Panel c considers	Panel b considers
109, l. 1	rise during the transition.	rise during the transition, if $\hat{k}_0 < \hat{k}^*$.
109, l. 2 f.b.	and the saving rate falls	and, if $\hat{k}_0 < \hat{k}^*$, the saving rate falls
146, l. 10 f.b.	shown in figure 3.1.	shown in figure 3.1 (where $\hat{g} = 0$).
149, eq. (3.13)	$\hat{g} = g\Psi(\frac{G}{C})$	$\hat{g} = G\Psi(\frac{G}{C})$
149, l. 16	where $\Psi(\cdot) > 0$,	where $\Psi(\cdot) \geq 0$,

Continued next page.

page	*reads*	*should read (or comment)*
151, eq. (3.22)	$\hat{y} = A\hat{k}^{\alpha}\hat{g}^{\beta}$	$\hat{y} = A\hat{k}^{\alpha}\tilde{g}^{\beta}$
207, n. 1	converges to infinity	goes to infinity
209, l. 2 f.b.	$\dot{c} = 0$ schedule does not exist	$\dot{c} = 0$ schedule does not exist (apart from the positive part of the abscissa axis)
212, l. 13	model with two types of capital is essentially the same as the AK model that we analyzed in the previous section.	model with two types of capital is to some extent similar to the AK model that we analyzed in the previous section (but only "to some extent" since the rate of interest is no longer A, but *smaller* than A).
212, l. 19-20	then the AK model may be a satisfactory representation of this broader model	then the AK model may in some respects be a satisfactory representation of this broader model (only "in some respects" since, although the rate of interest will be constant, it will be *smaller* than A).
224, eq. (4.52)	$\frac{\partial y}{\partial G} = L \cdot$ ...	$\frac{\partial y}{\partial G} = \frac{1}{L} \cdot$ ....
241, eq. (5.5)	$u(C)$	$u(c)$
241, eq. (5.5)	$+\omega(AK^{\alpha}H^{1-\alpha} - C - I_K -$	$+\omega(AK^{\alpha}H^{1-\alpha} - cL - I_K -$
241, l. 9	$u(C) = (C^{1-\theta} - 1)/(1-\theta)$	$u(c) = (c^{1-\theta} - 1)/(1-\theta)$
289, Fig. 6.1		[X should be X_j in order not to be confused with X in (6.12) and (6.13)]
292, l. 16	determined from equations (6.2) and (6.12)	determined from equations (6.2) and (6.12) (using that X_i/L_i is the same across firms, hence, equal to $\sum_i X_i / \sum_i L_i$)
297, l. 7-8 f.b.	Kremer (1993) argues that ...	[In my understanding, Kremer does not argue for a *strong* scale effect, but only for a positive relationship, in the Malthusian era, from L to population growth (hence also to Y growth, but not Y/L growth), and thereafter a *weak* scale effect (i.e., from L to the Y/L *level*)]

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page	*reads*	*should read (or comment)*
309, n. 25	A large value of p implies $r < 0$	A large value of p implies $r \leq \rho$
311, l. 9. f.b.		[see comment below]
445, p. 7*	is a generalization of Arrow's	is a limiting case of Arrow's
449, eq. (10.22)	$Y = F(A, K_1, K_2, L_1, L_2)$	$Y = F(T, K_1, K_2, L_1, L_2)$
458, Fig. 10.1		[the vertical axis should have y instead of c]
458, Fig. 10.1		[The upper curve should be denoted $y = f(k, T')$ instead of $y = f(k)$]
458, Fig. 10.1		[The lower curve should be denoted $y = f(k, T)$ instead of $y = f(k)$]
462, l. 8 and 10 f.b.	Equation (2.35)	Equation (2.42)

Comment to the formula for γ on p. 311

The formula displays a general problem of the original Romer model's parameter link between the "intermediate input share", α, and the degree of monopoly, $1/\alpha$. The formula for γ on p. 311 implies that

$$\frac{\partial \gamma}{\partial \alpha} > 0,$$

so that

$$\frac{\partial \gamma}{\partial (1/\alpha)} = \frac{\partial \gamma}{\partial \alpha} \frac{\partial \alpha}{\partial (1/\alpha)} = -\frac{\partial \gamma}{\partial \alpha} \alpha^2 < 0. \tag{1}$$

Thus one gets the impression that increasing the degree of monopoly implies lower growth. But this result is misleading and only arises because of the automatic link in *this* version of the model between increasing the degree of monopoly and *decreasing* the "intermediate input share", α.

Inspired by footnote 2 on p. 286, let us call the degree of monopoly $1/\sigma$, and let this be an independent parameter. Then one can show that

$$\frac{\partial \gamma}{\partial (1/\sigma)} > 0. \tag{2}$$

This is the opposite of (1) and is the general result, when one disentangles the arbitrary link between the degree of monopoly and the "intermediate input share". For a more general discussion of implicit parameter links in the original Romer model, see Alvarez and Groth, Too little or too much R&D?, EER 2005, 437-456.

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