Errata in 1st printing of *Statistical Models: Theory and Practice*
Author: *David A. Freedman*
Publisher: *Cambridge University Press*

After the display math on page 113—

The diagonal elements of I_θ^{-1}/n give asymptotic variances...

should read

The diagonal elements of $I_{\theta_0}^{-1}/n$ give asymptotic variances...

i.e., change θ to θ_0.

Figure 3 on page 158—

Change n to m, in the box and in the draws (four occurrences).

The first full paragraph on page 179 should read—

By slightly tedious algebra, $\hat{\beta}_{\text{IISLS}} = \hat{\beta}_{\text{IVLS}}$. To begin the argument, let $H_Z = Z(Z'Z)^{-1}Z'$. The IVLS estimator in (10) can be rewritten as

$$\hat{\beta}_{\text{IVLS}} = (X'H_Z X)^{-1} X'H_Z Y. \tag{16}$$

Now H_Z is the hat matrix which projects onto the column space of Z (section 4.2). So H_Z is a symmetric idempotent matrix. Thus,

$$X'H_Z X = (H_Z X)'(H_Z X) \quad \text{and} \quad X'H_Z Y = (H_Z X)'Y.$$

Substitute into (16):

$$\hat{\beta}_{\text{IVLS}} = [(H_Z X)'(H_Z X)]^{-1}(H_Z X)'Y.$$

In short, regressing Y on $H_Z X$ gives $\hat{\beta}_{\text{IVLS}}$. But that is also the recipe for $\hat{\beta}_{\text{IISLS}}$: the fitted values in Stage I are $H_Z X = \hat{X}$. The proof that $\hat{\beta}_{\text{IISLS}} = \hat{\beta}_{\text{IVLS}}$ is complete. The message of this section: old-fashioned IISLS coincides with new-fangled IVLS.

Figure 1 on page 297—

Unbold the $-.06$ and $-.35$, these are the standardized regression coefficients. Bold the $-.26$ and $-.42$, these are the correlation coefficients.

Errata in 1st and 2nd printing of *Statistical Models: Theory and Practice*

On page 113, in exercise 6A2(a)—

Change $\hat{\mu}$ to μ.

Pages 130, 133—

In the bivariate probit model, excluding the instrument from the behavioral equation may not be necessary to achieve identification, although the exclusion probably stabilizes the estimates. See—

Altonji JG, Elder TE, Taher CR (2005). An evaluation of instrumental variable strategies for estimating the effects of catholic schooling *The Journal of Human Resources* XL: 791–821

Briggs DC (2004). Causal inference and the Heckman model. *Journal of Educational and Behavioral Statistics* 29: 397–420.

Copas JB, Li HG (1997). Inference for non-random samples. *Journal of the Royal Statistical Society, Series B* 59: 55–77.

Heckman JJ (1978). Dummy endogenous variables in a simultaneous equation system. *Econometrica* 46: 931–959, esp. sec. 3.

Monfardini C, Radice R (2007). Testing exogeneity in the bivariate probit model: A Monte Carlo study. *Oxford Bulletin of Economics and Statistics*, in press.

Wilde J (2000). Identification of multiple equation probit models with endogenous dummy regressors. *Economics Letters* 69: 309–12.

Third display from the bottom on page 227—

$$\langle XY\rangle - \langle Y\rangle\langle Y\rangle = \mathrm{cov}(X, Y)$$

should read

$$\langle XY\rangle - \langle X\rangle\langle Y\rangle = \mathrm{cov}(X, Y),$$

i.e., change $\langle Y\rangle$ to $\langle X\rangle$.

Page 237, answer to 14(c)

Change 96 to 94.

Page 261, second to last line, should read—

X_i is endogenous because $b > 0$,

i.e., change $a > 0$ to $b > 0$.

Page 274, at end of hypothesis testing paragraph—

if $b < 0$ then $\mathcal{P}_\theta(P_{\text{obs}} < p) > p$ for $0 < p < 1$

should read

if $b < 0$ then $\mathcal{P}_\theta(P_{\text{obs}} < p) < p$ for $0 < p < 1$

i.e., reverse the inequality. (With a one-sided null hypothesis, P_{obs} is generally computed assuming $b = 0$—the worst-case scenario.)

Page 324—

In Table II, Family Income \$38000 → Family Income ≥ \$38000
Second line of Section A: Y; → Y_i

Page 334—

In second line of first full paragraph, X_i, → X_i.

Page 351—

In second line of main text, there should be a comma after the callout to footnote 1.
In the first line of second paragraph, "roles," should be "roles."

Page 352—

Fourth line from bottom of page: "needs," should be "needs."

Page 354—

Third line from bottom of page: "Finally;" should be "Finally,"

Page 355—

In the third paragraph, third line, "ofthe" should be "of the"
Five lines below, delete the comma after "Since"