Errata for Analysis of Financial Time Series, R.S. Tsay, Nov. 2001

1. Page 9, line 1 after equation (1.13): change $\hat{K}(x)$ to $\hat{K}(x) - 3$.

2. Page 11: Equation (1.17)

$$E(R_t) = \exp(\mu + \frac{\sigma^2}{2}) - 1,$$

3. Page 12: Scale Mixture of Normal Distributions

$$r_t \sim (1 - X)N(\mu, \sigma_1^2) + XN(\mu, \sigma_2^2),$$

where $X$ is a Bernoulli random variable such that $P(X = 1) = \alpha$, ...

In Figure 1.1, the finite mixture of normal is $(1 - X)N(0, 1) + XN(0, 16)$
with $\alpha = 0.05$. The mixture density is standardized.

4. Page 38, first equation of Parameter Estimation: $r_t \not= t_t$.

5. Page 52, last line: delete $r_{h+\ell-l}$ from the summation.

6. Page 89: log likelihood function involving derges of freedom

$$\alpha, v \not= \alpha, v \text{ also } (T-m) \not= (T-m+1)$$

7. Page 92, line 3 [line 1 after equation (3.11)]: The correct order of the standard errors is 0.0061, 0.0019, and 0.1443.

8. Page 95, 2nd paragraph: The literature ... is (not are).

9. Page 110, line -7, $E(a_t^2)$ should be $E(a_t^2) = \exp(\mu_h + \sigma_h^2/2)$.

10. Page 127, line 10: change $\sigma_n$ to $\sigma_t$.

11. Page 156, line -8; page 157, line 4; and page 173, line 24: Keenan not Kenneth.


The pdf is given by

$$f(x|\alpha, \beta, \kappa) = \left\{ \begin{array}{ll} \frac{x^{\kappa-1}}{\beta^\kappa \Gamma(\kappa)} \exp \left[ -\frac{x}{\beta} \right]^\alpha & \text{if } x \geq 0 \\ 0 & \text{otherwise} \end{array} \right.$$ 


14. Page 231, Example 6.3. In the equation of $\hat{\sigma}$, change the numerator $0.00332$ to $0.026303$. The results remain correct, however.

15. Page 258, line 8: change increase to increases.
16. Page 290: missing subscript \( i \). The likelihood function \( \ldots \) becomes

\[
L = \left( \prod_{i=1}^{N_i} \frac{1}{T} g(r_{t_i}; k_{t_i}, \alpha_{t_i}, \beta_{t_i}) \right) \times \exp \left[ -\frac{1}{T} \int_0^T S(\eta; k_t, \alpha_t, \beta_t) \, dt \right],
\]

which reduces to

\[
L = \left( \prod_{i=1}^{N_i} \frac{1}{T} g(r_{t_i}; k_{t_i}, \alpha_{t_i}, \beta_{t_i}) \right) \times \exp \left[ -\frac{1}{T} \sum_{i=1}^{N_i} S(\eta; k_{t_i}, \alpha_{t_i}, \beta_{t_i}) \right].
\]

17. Page 308. Revise \( Q_k(m) \) for IBM and S&P 500 log returns as \( Q_2(1) = 9.81 \), \( Q_2(5) = 47.06 \), and \( Q_2(10) = 71.65 \). Also, for bond returns, \( Q_5(5) = 1065.63 \). The conclusions remain proper.

18. Page 337, line 2: \( y_i = c_i^* r \).

19. Page 368, Example 9.2, line 4: change +0.119 to −0.119.


21. Page 379, Eqs (9.30) & (9.32): change \( r_{2,t-1} \) to \( r_{2,t-2} \).