Errata: *A Quantitative Primer on Investments with R*

Dale W.R. Rosenthal

27 August 2018

Most of these are trivial, typos, or minor. However, a few errors are more critical. Those are noted with **bold type** and an asterisk (*).

1 Errors

1. p. xiii GPD should be the abbrevation for the generalized Pareto distribution.

2. p. 19 (footnote) "infrastrucuture" → "infrastructure"

3. p. 48 Delivery is when securities move from seller to buyer (not buyer to seller). Thanks to Jonty Zhaoning Zhang for catching this!

4. p. 53 The LME has discontinued their free data service (and thus access via Quandl). Thanks to Haesung Son for catching this change!

5. p. 63 (footnote) The matching engine for futures has been moved to Toronto — even though the exchange continues to be called the Montréal Exchange.

6. p. 72 The problem should read "some fraction γ of the probability mass between $p_0 + c$ and ∞ to a point mass at $p_0 + c$." Thanks to Jianhao Kirk Cui for spotting this!

7. The Chicago Stock Exchange has been purchased by the NYSE and so the URL should be updated to `https://www.nyse.com/markets/nyse-chicago/reports`. Thanks to Lu Zhang for noticing this!

8. p. 86 Instead of "Similarly" I should probably say "Unlike the participation rate (which is skewed by waves of retirements)."

9. p. 118 “weight matrix” should be “weight vector”

10. p. 133 Exercise text should read “for all these equity instruments” and not “for all three equity instruments”. Thanks to Jinhui Zhang for spotting this!

11. p. 134 Exercise text should be “To get a handle on commodity risk, get daily prices for the near futures on WTI crude oil, US natgas, copper, and corn from Quandl.” Also, the commodity questions referring to “equity instruments” should refer to “commodities.”

12. p. 163 (footnote) “45 years” → “35 years”

13. p. 171 “$\sigma_{MV} < \sigma_i$” is more clear than “$\sigma_P < \sigma_i$” since the particular portfolio P we are referring to is the minimum-variance portfolio MV.

14. p. 178 “number of observation” → “number of observations” (*i.e.* pluralize)

15. p. 181 added note that “R has a number of packages like... capable of other optimizations.”

16. p. 197 “to into” → “too into”

17. **p. 226 *** Equations (11.16) and (11.17) should be:

$$P_\tau = \frac{\text{par}}{(1+\frac{r}{n})^{\lceil nT\rceil-\tau}} + \sum_{t=1}^{\lceil nT\rceil} \frac{\text{coupon}}{(1+\frac{r}{n})^{t-\tau}} \tag{1}$$

$$= \frac{\text{par}}{(1+\frac{r}{n})^{\lceil nT\rceil-\tau}} + \frac{\text{coupon}}{r}\left(1 - \frac{1}{(1+\frac{r}{n})^{\lceil nT\rceil}}\right)(1+\frac{r}{n})^{\tau}. \tag{2}$$

Thanks to Wenning Li for spotting this!

18. **p. 226 *** Equations (11.18) and (11.19) should be:

$$P_{\tau,lin} = \frac{\text{par}}{(1+\frac{r\tau}{n})(1+\frac{r}{n})^{\lceil nT\rceil-1}} + \sum_{t=1}^{\lceil nT\rceil} \frac{\text{coupon}}{(1+\frac{r\tau}{n})(1+\frac{r}{n})^{t-1}} \tag{3}$$

$$= \frac{\text{par}(1+\frac{r}{n})}{(1+\frac{r\tau}{n})(1+\frac{r}{n})^{\lceil nT\rceil}} + \frac{\text{coupon}}{r(1+\frac{r\tau}{n})}\left(1 + \frac{r}{n} - \frac{1}{(1+\frac{r}{n})^{\lceil nT\rceil-1}}\right). \tag{4}$$

19. **p. 226 *** Clean and dirty are flipped here. The between-coupon formulas give the dirty price and we then subtract the accrued interest to get the clean price:
$P_{\tau,dirty} = P_\tau + AI_\%$ should be $P_{\tau,clean} = P_\tau - AI_\%$

20. **p. 241 *** Exercise 4 should read:
"Show that if $r < c/100$, the current yield is greater than the market level of interest r. Then show that if $r > c/100$, $CY < r$."

21. p. 260 Added that Svensson (1994) is a working paper

22. p. 266 "part earnings" $\rightarrow$ "past earnings"

23. p. 296 "beat and beta-squared" $\rightarrow$ "beta and beta-squared"

24. p. 325 equation (15.41) The formula should read:
$\Delta\hat{\gamma}_{M\tau} = a + b\Delta\hat{\gamma}_{M,\tau-1} + c\frac{m_\tau}{m_0}\hat{\gamma}_{M,\tau-1} + u_\tau$,

25. p. 349 "individuals" $\rightarrow$ "small investors"

26. p. 354 Give examples: "mean risk (*e.g.* $\hat{\sigma}$)" and "uncertainty of that mean estimate (*e.g.* sd($\hat{\sigma}$))"

27. p. 375 Add "IE" and "Ireland" to footnote since they are also often mis-guessed.

28. p. 376 changed to "outsourcing to mainland China" to be more correct. Thanks to Yue Liu for the suggestion!

29. p. 397 (footnote) More correct would be to say that the USD/CNY exchange rate is subject to a "soft peg" maintained by China. (Added an article about differences in pegs.) Thanks to Yue Liu for spotting this!

30. p. 400 Subsection 18.2.2 should begin "If EUR depreciates versus USD". Thanks to Harsh Baheti for spotting this!

31. **p. 406 *** Eric Hao Zheng caught big errors in the relative PPP FX valuation formula (equations (18.9,18.10)). The equations should be:

$$\tilde{X}_{t+\tau,EUR/CAD} = \frac{1 + \%\Delta CPI_{t\rightarrow t+\tau,CAD}}{1 + \%\Delta CPI_{t\rightarrow t+\tau,EUR}} X_{t,EUR/CAD}, \text{ or} \quad (5)$$

$$\%\Delta\tilde{X}_{t\rightarrow t+\tau,EUR/CAD} \approx \%\Delta CPI_{t\rightarrow t+\tau,CAD} - \%\Delta CPI_{t\rightarrow t+\tau,EUR}; \text{ and,} \quad (6)$$

$$\tilde{X}_{t+\tau,CAD/JPY} = \frac{1 + \%\Delta CPI_{t\rightarrow t+\tau,JPY}}{1 + \%\Delta CPI_{t\rightarrow t+\tau,CAD}} X_{t,CAD/JPY}, \text{ or} \quad (7)$$

$$\%\Delta\tilde{X}_{t\rightarrow t+\tau,CAD/JPY} \approx \%\Delta CPI_{t\rightarrow t+\tau,JPY} - \%\Delta CPI_{t\rightarrow t+\tau,CAD}. \quad (8)$$

32. p. 411 (quiz) "JPY/USD" should be "USD/JPY." Thanks to Bruce Dizhou Wu for catching this!

33. p. 422 \$0.1225 should be \$0.1325; Thanks to Yi Liu for seeing this! (footnote) remove extraneous "or"

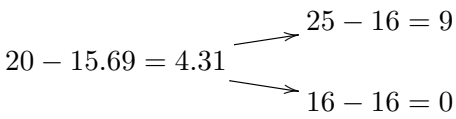
34. p. 424 remove extraneous "to" before "hedge risks"

35. p. 426 add "could" to read "farmer could sell futures"

36. p. 456 change "?" after "price" to a period ("."); and, change "on how" to "in how"

37. **p. 495 *** Quiz question 1 is missing the stock and option trees! They should be:

Similarly, the answer in the back is missing the note that selling the bond and buying stock has value:



38. p. 506 delete the first "have" in the "Probabilities of Default" section's first paragraph. Thanks to Stephen Pretto for catching this!

39. p. 514 Added "(for a stock with dividend yield δ)" to clarify the KMV option model.

40. p. 580, 581 "Markowitz-Ray" $\rightarrow$ "Markowitz-Roy"

41. p. 592 "might might" $\rightarrow$ "might"

42. p. 608 "ratio" $\rightarrow$ "ratios"

43. p. 611 delete "two" before "managers"

44. p. 677 Add "how" before "Oversight Partners I"

45. p. 708 the EAR should be 1.5×1.5. Thanks to Jack Yue Liu for spotting this!
The divisor for the kurtosis should be $n - 2$. As we see in Ch. 8, however, the divisor for kurtosis is not so clear-cut.)

46. p. 711 The answers to question 1 should be 69 and 70 days, not 70 and 71. This is an obvious error on my part; 70 and 71 would only be correct if the bond had paid a coupon just *prior* to June 1.
Thanks to Eduardo Toledo da Silva for spotting this!

47. P. 713 The answer for question 13.6 should be:
"Somewhere near \$28. Tobin's q suggests a current market price of $\$100/3 = \$33\frac{1}{3}$ is too high; and, only the Gordon model suggests a price nearly that high. So our models suggest \$30.30 (DDM), \$33.36 (Gordon-Shapiro), $\$23\frac{1}{3}$ (Tobin's q), and \$24.47 — so \$28 seems like a good price expectation."
Thanks to Yi Liu for catching this!

48. p. 714: the WML factor should be "winners-minus-losers" (not lowers).
Thanks to Stephen Pretto for pointing this out!

49. p. 720: equation (C.9) should be for d_2, not d_1.
Thanks to Stephen Pretto for spotting the error!

2 Slides Errors

1. Lecture 6, Slide 18: log-returns should be defined as:

$$r_1 = \ell n(p_2/p_1) = \ell n(p_2) - \ell n(p_1), \tag{9}$$

and

$$\frac{r_N + \cdots + r_1}{N} = \frac{\ell n(\frac{p_{N+1}}{p_N}) + \cdots + \ell n(\frac{p_2}{p_1})}{N} \tag{10}$$

$$= \frac{\ell n\left(\frac{p_{N+1}}{p_1}\right)}{N} = \ell n((p_{N+1}/p_1)^{1/N}). \tag{11}$$

Thanks to Zhanjie Shen for catching this!

2. Lecture 13, slide 12: the second term in the Jensen-corrected valuation formula should be:

$$+ \frac{1}{2} \sum_t \frac{t(t+1)C_t}{(1+k)^{t+2}} \sigma_k^2. \tag{12}$$

Thanks to Wei Guo for spotting this!