Errata for Campbell, *Financial Decisions and Markets*, 8/11/2018.

Page xi, section title for Section 11.4.3 should be "Endogenous Margin Requirements".

Page 20, equation (1.49), expectations operator E should be in Roman font.

Page 36, first full paragraph, last line should read "Problem 2.3 asks you to perform further analysis of the geometry of the minimum-variance frontier" (not "the mean-variance efficient set" as written).

Page 46, problem 2.3 part c), two instances of R^c should be R_c for consistency with Figure 2.6.

Page 50, the last complete sentence above equation (3.16) should read "...the expected return $\overline{R}_z$ on the minimum-variance portfolio z..." (not "the mean-variance efficient portfolio z" as written).

Page 60, section 3.2.3, reference to "(Hansen and Richard 1987)" should be to "(Hansen and Richard 1987, Jagannathan and Wang 1996)".

Page 60, immediately below equation (3.39), the definition of β_{im} should use excess returns: $\beta_{im} = \text{Cov}(R^e_{i,t+1}, R^e_{m,t+1})/\text{Var}(R^e_{m,t+1})$.

Page 61, immediately before equation (3.40), reference to "Lewellen and Nagel (2006) and Boguth et al. (2011)" should be to "Jagannathan and Wang (1996) and Lewellen and Nagel (2006)". At the end of the paragraph below equation (3.40), reference to "Boguth et al." should be to "Boguth et al. (2011a)".

Page 69, footnote 10 should read "...growth if this ratio is less than the 30th NYSE percentile...".

Page 79, immediately above equation (3.61) should read "... define the deviation α_i of its average excess return from the average excess return predicted by arbitrage pricing theory as".

Page 79, problem 3.4 part a), first sentence should read "Consider a cross-sectional regression of excess stock returns onto a constant (normalized to unity)."

Page 80, problem 3.4 part b), second sentence should read "We run a cross-sectional regression of excess returns onto a constant and historical betas."

Page 95, paragraph following equation (4.45), "Problem 8.2" should be "Problem 4.2".

Page 97, immediately below equation (4.55), sentence should read "Problem 4.3 asks you to show that Hansen and Richard's (1987) orthogonal decomposition of returns implies that the benchmark return is the traded return with the smallest second (uncentered) moment."

Page 106, equation (4.85) should read

$$\widehat{b} \sim \mathcal{N}\left(b_0, \frac{1}{T}\left(D'S^{-1}D\right)^{-1}\right).$$

Page 106, equation (4.87) should read

$$T g_T(\widehat{b})' S^{-1} g_T(\widehat{b}) \sim \chi^2_{N-K}.$$

That is, there should be a prime after the first instance of $g_T(\widehat{b})$.

Page 106, equation (4.88) should read

$$\widehat{b}_2 = \text{argmin}_b : g_T(b)' \left(\widehat{S}(\widehat{b}_1) \right)^{-1} g_T(b).$$

Page 117, problem 4.3 part b), last sentence should read "Then prove that Z^* is the excess return with the maximum Sharpe ratio." (The qualifier "in absolute value" is not needed.)

Page 129, immediately below equation (5.16), "g_t" should be "G_t".

Page 142, the horizontal axis of Figure 5.3 is misaligned as can be seen by comparing the labeled dates with the dates marked on the axis.

Page 156, problem 5.1, immediately below equation (5.91) should read "where $G \geq 0$ and η_{t+1} has mean zero and variance σ^2."

Page 156, problem 5.1, immediately below equation (5.93) should read "where $\phi < 1$ and the mean-zero shock ε_{t+1} is independent of the dividend growth shock η_{t+1}."

Pages 157–8, problem 5.2 statement should be corrected as follows.

- In first paragraph, delete "together with an accompanying explanatory document offering more details on the suggested implementation of the predictive regressions."
- Equation (5.94) should read

  $$R^e_{t+1} \equiv R_{t+1} - R_{f,t+1} = \alpha + \beta x_t + u_{t+1},$$

- Immediately below equation (5.94) should read "where R_{t+1} denotes the one-quarter-ahead real return..."
- Equation (5.95) should read

  $$R^2_{OS} = 1 - \frac{\sum_{t=0}^{T-1} \left(R^e_{t+1} - \widehat{R}^e_{t+1} \right)^2}{\sum_{t=0}^{T-1} \left(R^e_{t+1} - \overline{R}^e_{t+1} \right)^2}$$

  that is, there should be superscripts denoting excess returns on the right hand side of this equation.
- Immediately below equation (5.95) should read "where $\widehat{R}^e_{t+1}$ is the fitted value from regression (5.94) estimated from the start date $-T_{IE}$ of the initial estimation sample through date t and $\overline{R}^e_{t+1}$ is the historical arithmetic average excess return estimated from $-T_{IE}$ through t."

- Equation (5.96) should read

$$\widehat{R}^e_{t+1} = \max\left\{0, \widehat{\alpha}_{t+1} + \max\left\{0, \widehat{\beta}_{t+1}\right\} x_t\right\},$$

- Delete "and $\overline{x}_{t+1}$ is the historical arithmetic average value of x" from the sentence following equation (5.96).

- Above equation (5.97) should read "... and the real interest rate as our predictor variable:"

- The left hand side of equation (5.97) should be

$$x_t - \mathrm{E}_t[1 + R_{f,t+1}]$$

- Add to the end of the sentence following equation (5.97) ", and $\mathrm{E}_t[1 + R_{f,t+1}]$ is the conditional expectation of the real riskfree rate."

- Part d), first sentence should read "Construct an estimate of (5.97) using the historical sample means of dividend growth and the real riskfree rate, and the historical sample variance of log stock returns up to date t."

- Part d), last sentence should read "Discuss alternative procedures that you could use to construct real-time estimates of $\mathrm{E}_t[g_{t+1}]$, $\mathrm{Var}_t\,(r_{t+1})$, and $\mathrm{E}_t[1 + R_{f,t+1}]$."

- Part f), first sentence, reference to equation (5.97) should be to equation (5.87).

- Equation (5.98) should read

$$\widehat{R}^e_{t+1} = x_t,$$

Page 159, problem 5.3, part a), the footnote number should follow the period at the end of the last sentence, not precede it.

Page 160, problem 5.3, part c), two references to "(NCC)" should be to "(5.101)".

Page 169, the last term on the right hand side of equation (6.9) should be

$$\{\mathrm{E}[\exp((\lambda - \gamma)g)]\}^j,$$

with a left parenthesis following the exponent rather than preceding it.

Page 172, last complete paragraph of the page, two instances of "$c(0)$" should be "$\mathbf{c}(0)$" with a bold letter **c**.

Page 174, immediately below equation (6.28) should read "where $\overline{H}_i$ is a constant and $\widehat{H}_{it}$ is the deviation of H_{it} from that constant, the process is". Below equation (6.29), the last sentence of the paragraph should read "The shock $\eta_{i,t+1}$ is assumed to have mean zero and to be uncorrelated with the disaster event. [Footnote 4 here, as in the text.] To a first-order approximation, $\overline{H}_i$ is the unconditional mean of H_{it}."

Page 194, equation (6.89) should be

$$M_{t+1} = \delta \left(\frac{S_{t+1}}{S_t} \right)^{-\gamma} \left(\frac{C_{t+1}}{C_t} \right)^{-\gamma}.$$

Page 202, problem 6.1, part a), the fourth and fifth sentences should be combined to read "The four Arrow-Debreu securities are denoted by $p_{ij} > 0$ for $i, j \in \{H, L\}$, where p_{ij} is the price of the claim to one unit of consumption in state j tomorrow given state i today."

Page 202, problem 6.1. For consistency with the notation of the main text, this problem's notation could be altered as follows: state prices should be q_{ij} and not p_{ij}, transition probabilities should be π_{ij} and not f_{ij}, the time discount factor should be β and not δ, and Bernoulli utility should be small u and not capital U.

Page 205, problem 6.3, part c), the last sentence should end "...with zero means, variances σ_c^2 and σ_x^2, and covariance σ_{cx}."

Page 208, second paragraph, three instances of "labor supply" should all be "labor demand".

Page 217, top line "sta ndard" should be "standard".

Page 223, line 14, "In the top panel" should be "In the bottom panel".

Page 223, line 18, "In the bottom panel" should be "In the top panel".

Page 234, section 8.1.2, line 5, "This pays \$1 at time $t + n$" should be "This pays \$1 at time $t + n + 1$".

Page 239, equations (8.25) and (8.26), the last summation should start from $i = 1$, so should be

$$\sum_{i=1}^{n-1} \left(1 - \frac{i}{n} \right) \Delta y_{1,t+i}.$$

Page 241, section 8.3, fourth line of text, "terminal condition $P_{0t} = 1$" should be "terminal condition $P_{0,t+n} = 1$".

Page 243, immediately following equation (8.38), "the second inequality" should be "the second equality".

Page 247, equation (8.57), λ_1 should not be transposed, so the equation should read

$$\Lambda_t = \Sigma^{-1}(\lambda_0 + \lambda_1 x_t).$$

Page 249, second paragraph, two instances of "dy_t^2" should be "$d(y_t^2)$".

Page 266, problem 8.3, part a), third sentence should read "Explain why z_t can be interpreted as the price of aggregate market risk."

Page 267, problem 8.4, part b), immediately below equation (8.110) should read "where $L_t(M_{t+1}^P)$ $(L_t(M_{t+1}^{*,P}))$", not "$L_t(M_{t+1}^P)$ – $(L_t(M_{t+1}^{*,P}))$".

Page 272, equation (9.7), "$\text{Cov}_t\,(r_{p,t+1}, r_{p,K-1,t+1})$" should be "$\text{Cov}_t\,(r_{p,t+1}, r_{p,K-1,t+K})$".

Page 289, first paragraph beginning on this page should begin "As a summary of the models discussed in this section, Figure 9.2 plots the history of the SDF shocks $-(m_{t+1} - \mathrm{E}_t m_{t+1})$ that drive..."

Page 290, reference to Boguth et al. (2011) should be (2011b).

Page 296, equation (9.68), both sides of this equation should be multiplied by σ^2 in order that the equation gives the posterior variance as stated above. Thus (9.68) should read

$$A_{t+1}\sigma^2 = \left(\frac{1}{A_t} + 1\right)^{-1} \sigma^2.$$

Page 300, equation (9.72), the expectations operator E on the right hand side should be in Roman font.

Page 300, footnote 12, the unnumbered equation should have a comma at the end.

Page 302, problem 9.3, second sentence should read "For $t \geq 1$, define $X_t = Y_1 Y_2 \cdots Y_t$."

Page 302, problem 9.4, part a), the reference to equation (8.29) should be followed by a comma.

Page 308, equation (10.1), the first line is missing a bracket and should read

$$\max - \log E[\exp(-A(W(1+R_f) + \tilde{Y} + \theta(\tilde{R} - R_f)))].$$

The second line is missing several brackets and a square in the last term. It should read

$$= A(W(1+R_f) + \overline{Y} + \theta(\overline{R} - R_f)) - \frac{1}{2}A^2\sigma_Y^2 - \frac{1}{2}A^2\theta^2\sigma_R^2 - A^2\theta\sigma_{YR}.$$

Page 308, equation (10.2) should be

$$\theta^* = \frac{(\overline{R} - R_f) - A\sigma_{YR}}{A\sigma_R^2} = \frac{(\overline{R} - R_f)}{A\sigma_R^2} - \beta_{YR}.$$

Page 336, problem 10.1, part d) (ii), the first sentence should begin "Use a Taylor approximation around the average inflation rate π to show that..."

Page 338, problem 10.3, part a), the unnumbered equation should be numbered (10.42).

Page 339, problem 10.3, part b), the unnumbered equation should be numbered (10.43).

Page 342, equation (11.1), the last equality is missing a bracket and should be

$$= E_t[(R_{i,t+1} - R_{j,t+1})(1 - A_{kt}\Delta C_{k,t+1})].$$

Page 349, third line below equation (11.18), "SDF's" should be "SDFs".

Page 359, the section title for Section 11.4.3 should be "Endogenous Margin Requirements".

Page 365, problem 11.3, equation (11.53) should end with a comma not a period.

Page 366, problem 11.3, part c) (i), immediately below equation (11.54) there should be no paragraph indent. In part c)(ii) the equation number (11.55) should be moved down to the lower equation for consistency with formatting of multi-line equations elsewhere.

Page 377, third line below equation (12.21), "coefficients that would obtain" should be "coefficients that one would obtain".

Page 377, sixth line below equation (12.21), "in the limit where is no supply noise" should be "in the limit with no supply noise".

Page 381, the last two lines of equation (12.31) are bracketed incorrectly, and should be

$$\begin{aligned} = \quad & -c(1+R_f) + \mathrm{E}[v-(1+R_f)P]\mathrm{E}[X_I(P,s)-X_U(P)] \\ & +\mathrm{Cov}(v-(1+R_f)P, X_I(P,s)-X_U(P)). \end{aligned}$$

Page 390, on the first lines below equations (12.52), (12.54), and (12.56), "$\beta = 1/2\lambda$" and "$\alpha = -\mu/2\lambda$" should be "$\beta = 1/(2\lambda)$" and "$\alpha = -\mu/(2\lambda)$" respectively.

Page 393, in equation (12.61) the superscript in "C^i" should be a subscript, so it should be "C_i".

Page 393, on the third line before equation (12.63), "one must must rule out" should be "one must rule out".

Page 401, problem 12.1, note that there is an inconsistency between the notation in this problem, where π denotes a trading probability, and the notation in the main text, where π denotes the insider's profit. This could be fixed by changing π to another letter such as q throughout this problem.

Page 401, problem 12.1, part b), first sentence should read "We first solve for the equilibrium price and return in the market for stock 1."

Page 401, problem 12.1, part c), the unnumbered equation should read

$$P_2(s_2, Z_2) = p_0\mu_0 + p_{\overline{z}}\mu_z + p_s s_2 - p_z Z_2.$$

It should have the number (12.80).

Page 401, problem 12.1, part c) (ii), delete the last two sentences.

Page 401, problem 12.1, part c) (iii), add two final sentences "How does the uninformed agents' conditional variance for v_2 depend on τ_s, τ_z, ϕ, and A? Explain."

Page 401, problem 12.2, first paragraph, the variable z in the third sentence should have a time subscript so it should be z_t. Similarly, the variable x in the fourth sentence should have a time subscript so it should be x_t. Equation (12.80) should be renumbered (12.81) and equation (12.81) should be renumbered (12.82).

Page 402, problem 12.2, text at the very top of the page should read "where μ_1 and σ_1^2 are the marketmakers' posterior mean and variance..." Equation (12.82) should be renumbered (12.83) and equation (12.83) should be renumbered (12.84).

Page 409, bibliography item for Boguth et al. (2011) should be (2011a). There should be a new bibliography item for these authors as follows: ____ (2011b), “Leverage and the Limits of Arbitrage Pricing: Implications for Dividend Strips and the Term Structure of Equity Risk Premia”, unpublished paper.

Page 422, there should be a new bibliography item: Jagannathan, Ravi, and Zhenyu Wang, 1996, “The Conditional CAPM and the Cross-Section of Expected Returns,” *Journal of Finance* 51, 3–53.