Typo list for *Asset Pricing*

April 16, 2003

My deepest thanks to all typo contributors, and to RodrigoBueno, Tom Engsted, Alan Neal, Beat Naef, John van der Hoek, Karl Ludwig Keiber, Samir Dutt, Claus Munk, and Denis Sokolov in particular.

Typos to equations and things that are wrong

p. 6. Add the following footnote to "The limit" at the bottom of the page: To be precise, if you want to think about this limit add a constant to the utility function and write it as

$$u(c_t) = \frac{c_t^{1-\gamma} - 1}{1-\gamma}.$$

p.11, second from last line, $x_{t+1}z_{t+1}$ should be $x_{t+1}z_t$

p.12, three lines above 1.4, "R_t^e, r_{t+1}" should read "R_{t+1}^e, R_{t+1}".

p.19, below (1.15), β_{im} should be $\beta_{i,m}$

p.25, second line of (1.22) needs a negative sign. It shoud read

$$= -\frac{\sigma_t(m_{t+1})}{E_t(m_{t+1})}\sigma_t(R_{t+1})\rho_t(m_{t+1}R_{t+1})$$

Below the equation, add "where Δc_t denotes percentage or log consumption growth."

p.26. The sum should read $\sum_{j=1}^{\infty}$

p.27, (1.23) both sums should read $\sum_{j=1}^{\infty}$ not $\sum_{j=0}^{\infty}$

p.27, 4 lines below (1.24) $\lim_{t\to\infty}$ should be $\lim_{j\to\infty}$

p. 30, top. Sum should read $\sum_{j=1}^{\infty}$ not $\sum_{j=0}^{\infty}$

p.31, l.11 $p_t u'(c_t) = E_t\left(m_{t+1}\left(p_{t+1} + d_{t+1}\right)\right)$ should read $p_t = E_t\left[m_{t+1}\left(p_{t+1} + d_{t+1}\right)\right].$

p.33, 1a, the equation needs a negative sign, it should read

$$-\frac{u''(c)}{u'(c)}$$

p.33, 1b. Another negative sign. The equation should read

$$rra = -\frac{cu''(c)}{u'(c)}$$

p.33 just below the equation in 1(b). "For power utility $u'(c) = c^{-\gamma}$" should read "For power utility $u(c) = \frac{c^{1-\gamma}}{1-\gamma}$."

p.38. Last formula (Taylor expansion) is missing a $u(c_t)$ term and a negative sign. It should read

$$u(c_t - v_t\xi) - u(c_t) = -u'(c_t)v_t\xi + \frac{1}{2}u''(c_t)(v_t\xi)^2 + ...$$

p.39, middle, after "the value of a project not already taken," $E\sum_j \beta^j u(c_{t+j} + x_{t+j})$ should read

$$E_t \sum_j \beta^j \left[u(c_{t+j} + x_{t+j}) - u(c_{t+j})\right]$$

p. 44, (2.3) $\left(\frac{c_{t+1}}{c_t}\right)^{-\gamma}$ should be $\beta\left(\frac{c_{t+1}}{c_t}\right)^{-\gamma}$

p.48, Q1, 3 lines from the end. $\gamma > 0$ should be $\gamma > 1$.

p.49. 2c. Delete the sentence "e and k are the only state variables, so the price should be a function of e and k." Substitute "Express the price in terms of c_t." Delete " Interpret that time variation in the price of the consumption stream" Substitute "Interpret the price of the consumption stream as a risk-neutral term, and a time-varying risk premium. Explain the intuition of the risk premium."

p.59 4 lines below the second equation, should read "they must have the same inner product with pc and hence the same price."

p.74, box, second equation. $\Sigma^{-1}dz$ should be $\Sigma^{-1}\sigma dz$.

p.87, fourth formula from bottom, $proj\left[(1|R^e) \times R^e\right]$ should read $proj\left[(1|\underline{R}^e) \times R^e\right]$

p.88, 3 lines above figure 5.2, "$E = 1,\ E = 2$" should read "$E = 0,\ E = 1$".

p.92, line 2, R^a should read R^α (alpha, not a)

p.93, (7) 2 lines below equation. $w^2E(R^{e2})$ should read $w^2E(R^{e*2})$

p.94. item (12). Remove underlines to R^*, R^{e*}.

p.96, last paragraph. "As we increase $E(m)$" should read "As we increase $1/E(m)$"

p.97, (5.25) add a ' before Σ, i.e. $[p - E(m)E(x)]'\,\Sigma^{-1}\,[x - E(x)]$

p.97, below (5.26). "cup-shaped" and "parabolic" should both read "hyperbolic"

p.99, equations below (5.28). The expression for $E(m^{*2})$ is wrong, as it's missing w. It's easiest to fix this by deleting "It is easiest...second moment" and below the equations, "Variance follows...(5.26)" and change the second equation to

$$\sigma^2(m^*) = [p - wE(x)]'\,cov(x, x')\,[p - wE(x)]$$

p.114, box, and p.118, (6.23), R^a should read R^γ (gamma, not a)

p.120 in the second line of the third paragraph replace at the beginning "spanning the unit payoff ..." by "spanned by the unit payoff ..." and at the end "plane containing the discount factor" by "line containing the discount factors"

p.137, paragraph 3, line 1, $x_{t+1}z_{t+1}$ should read $x_{t+1}z_t$

p.137, paragraph 3, line 8,(the equation) $\forall x_t$ should be $\forall x_{t+1}$

p. 139, second from last equation. Change this to $m_{t+1} = a_t + b_t R^W_{t+1}$ (or, better, change all following equations to $-b_t$)

p. 141 5 lines past "a precise statement." $p_t = E_{t+1}(...$ should be $p_t = E_t(...$

p. 146 (8.6) left hand variable should be m_{t+1} not m_t

p.157. Remove $-\frac{1}{2}$ from equation

p. 162 third equation, $\frac{\partial g}{\partial t}$ should be multiplied by dt and $\frac{df_t}{f_t}$ should be just df_t. The equation should read

$$d\Lambda_t = \frac{\partial g}{\partial t}dt + \frac{\partial g}{\partial f}df_t + \frac{1}{2}\frac{\partial^2 g}{\partial f^2}df_t^2$$

p. 167 last equation ΔW_{t+1} should read $\Delta W_{t+1}/W_t$

p.196 Delete $\frac{1}{T}$ from the first equation.

p. 210 just before 11.5. $\sum_{j=-k}^{k}$ should read $\sum_{j=-k+1}^{k-1}$.

p. 224 (11.20) $\sum_{j=-k}^{k}$ should read $\sum_{j=-k+1}^{k-1}$.

p. 233, below $\hat{\Omega} = ...$, add

$$\hat{\Sigma} = \frac{1}{T}\sum_{t=1}^{T}\hat{\varepsilon}_t\hat{\varepsilon}_t'$$

p. 253, 254, 256 (twice), 257. $(d'S^{-1}d)$ should be $(d'S^{-1}d)^{-1}$ in all the second stage GMM formulas.

p. 255. second from last equation. b should be $\hat{b}$.

p. 256 below "We have" should read

$$d' = \left[\frac{\partial g_T(b)}{\partial b'}\right]' = -E(fR^{e\prime}),$$

and the following equation should read

$$d'W\left[-db + E_T(R^e)\right] = 0.$$

p. 267 last formula, no negative sign. $-\frac{1}{T}$ should be $\frac{1}{T}$.

p. 269 second to last formula needs a negative sign. $\mathcal{I}$ should be $-\mathcal{I}$

p. 271, above (14.11). Remove "= 0".

p.297, the $(1-\beta)$ should be in the nuerator of the second equation, i.e.

$$c_t - c_{t-1} = (E_t - E_{t-1})(1-\beta)\sum_{j=0}^{\infty}\beta^j y_{t+j} = \frac{(1-\beta)}{(1-\beta\rho)}\varepsilon_t$$

p.319, last equation. The t subscripts should be 0, i.e. should read

$$C_0 = E_0\left\{\frac{\Lambda_T}{\Lambda_0}\max(S_T - X, 0)\right\} = \int\frac{\Lambda_T}{\Lambda_0}\max(S_T - X, 0)df(\Lambda_T, S_T),$$

p.321 (17.6) and the equation below "*Doing the Integral*". Λ_t in the denominator should be Λ_0.

p.322, last equation in the first group. $f(\varepsilon)$ should be $f(\varepsilon)d\varepsilon$

p.323, top equation. $\sigma\sqrt{T-t}$ should be $\sigma\sqrt{T}$ and $e^{-r(T-t)}$ should be e^{-rT}

p. 323, middle, in the paragraph that starts "Guess that the solution.." Delete "$C_t =$".

p. 350 middle term last equation is missing an exponential; it should be

$$e^{-\sum_{j=0}^{N-1} f_t^{(j\to j+1)}}.$$

A better version of the equation is

$$p_t^{(N)} = -\sum_{j=0}^{N-1} f_t^{(j\to j+1)};\ P_t^{(N)} = \left(\prod_{j=0}^{N-1} F_t^{(j\to j+1)}\right)^{-1}$$

p. 356 equation (19.8) and p. 357 last equation in the middle of the page. ρ^{N+1} should be ρ^N.

p.359 (19.9) has several small typos. The right version:

$$\begin{aligned}
y_t^{(1)} - E\left(y^{(1)}\right) &= \rho\left[y_{t-1}^{(1)} - E\left(y^{(1)}\right)\right] - \rho\varepsilon_t \\
y_t^{(2)} &= \delta + \frac{1+\rho}{2}\left(y_t^{(1)} - E\left(y^{(1)}\right)\right) - \frac{1+(1+\rho)^2}{4}\sigma_\varepsilon^2 \\
y_t^{(3)} &= \delta + \frac{1+\rho+\rho^2}{3}\left(y_t^{(1)} - E\left(y^{(1)}\right)\right) - \frac{1+(1+\rho)^2+(1+\rho+\rho^2)^2}{6}\sigma_\varepsilon^2 \\
y_r^{(N)} &= \delta + \frac{1-\rho^N}{N(1-\rho)}\left(y_t^{(1)} - E\left(y^{(1)}\right)\right) - \frac{\sigma_\varepsilon^2}{2N}\sum_{j=1}^{N}\left(\sum_{k=1}^{j}\rho^{k-1}\right)^2
\end{aligned}$$

p. 361 (19.12) $\sigma_\Lambda\sqrt{\Lambda}dz$ should read $\sigma_\Lambda\sqrt{r}dz$

p.362 (19.13) dz should be dz_s

p. 364, second equation from bottom. $\frac{\partial P}{\partial r^2}$ should be $\frac{\partial^2 P}{\partial r^2}$.

p.368, last line. Delete ρ.

p. 374. Sign is wrong in $B(N)$. It should read

$$B(N) = \frac{2(e^{\gamma N}-1)}{(\gamma+\phi+\sigma_r\sigma_\Lambda)(e^{\gamma N}-1)+2\gamma}$$

p. 375, (19.40)-(19.41). A Σ is missing in the $b_{\Lambda i}$ terms. They should read

$$\frac{\partial A(N)}{\partial N} = \sum_i\left(\left[\Sigma' B(N)_i\right] b_{\Lambda i} + \frac{1}{2}\left[\Sigma' B(N)\right]_i^2\right)\alpha_i - B(N)'\phi\bar{y} - \delta_0$$

$$\frac{\partial B(N)}{\partial N} = -\phi' B(N) - \sum_i\left(\left[\Sigma' B(N)\right]_i b_{\Lambda i} + \frac{1}{2}\left[\Sigma' B(N)\right]_i^2\right)\beta_i + \delta.$$

p. 376-377 A Σ is missing from the equation above (19.44) and following. It should all read as follows

$$-E_t\left(\frac{dP}{P}\frac{d\Lambda}{\Lambda}\right)=-B(N)'\Sigma dwdw'b_\Lambda$$

$$-E_t\left(\frac{dP}{P}\frac{d\Lambda}{\Lambda}\right)=-\sum_i\left[\Sigma'B(N)\right]_i b_{\Lambda i}\left(\alpha_i+\beta_i'y\right) \tag{19.44}$$

Now, substituting..., we get

$$\begin{aligned}&-B(N)'\phi\left(\bar{y}-y\right)+\frac{1}{2}\sum_i\left[\Sigma'B(N)\right]_i^2\left(\alpha_i+\beta_i'y\right)-\left(\frac{\partial A(N)}{\partial N}-\frac{\partial B(N)'}{\partial N}y+\delta_0+\delta'y\right)\\ =\ &-\sum_i\left[\Sigma'B(N)\right]_i b_{\Lambda i}\left(\alpha_i+\beta_i'y\right).\end{aligned}$$

Once again, the terms on the constant and each y_i must separately be zero. The constant term:

$$-B(N)'\phi\bar{y}+\frac{1}{2}\sum_i\left[\Sigma'B(N)\right]_i^2\alpha_i-\frac{\partial A(N)}{\partial N}-\delta_0=-\sum_i\left[\Sigma'B(N)\right]_i b_{\Lambda i}\alpha_i.$$

$$\frac{\partial A(N)}{\partial N}=\sum_i\left(\left[\Sigma'B(N)\right]_i b_{\Lambda i}+\frac{1}{2}\left[\Sigma'B(N)\right]_i^2\right)\alpha_i-B(N)'\phi\bar{y}-\delta_0$$

The terms multiplying y :

$$B(N)'\phi y+\frac{1}{2}\sum_i\left[\Sigma'B(N)\right]_i^2\beta_i'y+\frac{\partial B(N)'}{\partial N}y-\delta'y=-\sum_i\left[\Sigma'B(N)\right]_i b_{\Lambda i}\beta_i'y.$$

Taking the transpose and solving,

$$\frac{\partial B(N)}{\partial N}=-\phi'B(N)-\sum_i\left(\left[\Sigma'B(N)\right]_i b_{\Lambda i}+\frac{1}{2}\left[\Sigma'B(N)\right]_i^2\right)\beta_i+\delta.$$

p.392, 5 lines from the bottom. "Small values of b ..." should be "Small values of a ..." Two lines later, delete b.

p.396: below (20.7) add "where $k\equiv\log(1+P/D)-\rho(p-d)$."

p.399. (20.12) The last expression should read

$$\lim_{j\to\infty}E_t\left(\prod_{k=1}^{j}R_{t+k}^{-1}\Delta D_{t+k}\right)\frac{P_{t+j}}{D_{t+j}}$$

p. 400. Last equation should read

$$\text{prob}=\frac{P_tR\left(\gamma-1\right)}{\gamma P_tR-1}$$

p.403, (20.21) E_td_{t+j} should read $E_t\Delta d_{t+j}$. E_tr_{t+1} should be E_tr_{t+j}.

p.408. Delete footnote. I got the construction of ETF's wrong.

p. 414 (20.35) denominator only, $-(\rho+b)$ should be $-(1+\rho b)$.

p.415, 4 lines from bottom. "no dividend growth" should be "constant dividend growth."

p. 419, below (20.40). $E(y_{t+1}y_t) = ... - (\rho+b)\sigma(\varepsilon_d, \varepsilon_{dp})$ should be $... + (1+\rho b)\sigma(\varepsilon_d, \varepsilon_{dp})$

p.420 top equation, denominator only, $-(\rho+b)$ should be $-(1+\rho b)$.

p. 452, problem 6. "same variance ratio" should read "same limiting variance of kth differences (as $k \to \infty$)".

p. 457, last equation. The left hand side should be $1/R_t^f$ instead of R_t^f.

p. 463 ρ_t goes in the numerator. The equation should read

$$\frac{E_t\left(R^e_{t+1}\right)}{\sigma_t(R^e_{t+1})} = -\rho_t\left(R^e_{t+1}, m_{t+1}\right)\frac{\sigma_t(m_{t+1})}{E_t(m_{t+1})}$$

p.469, last line. $\bar{S} = 0.057$ not $\bar{S} = 0.57$.

p.476. (21.17) change sign on right hand side, i.e.

$$\ln m_{t+1} \geq -\left(\delta + \gamma \ln \frac{C_{t+1}}{C_t}\right)$$

p.484. Add expectations to problem 1, i.e.

$$\max E\sum_{t=0}^{\infty}\delta^t\frac{(C_t - X_t)^{1-\gamma}}{1-\gamma} \;\; s.t. \;\; E\sum_t \delta^t C_t = E\sum_t \delta^t e_t + W_0, \;\; X_t = \theta\sum_{j=1}^{\infty}\phi^j C_{t-j}$$

p.485, problem 2, the right hand side of the equation should read $= -\frac{1}{2}(c^* - c_t + \theta c_{t-1})^2$

p.491. Strike from the top of the page "for every sample path....to section A.2. It isn't this easy!

Additions and clarifications:

p.97, Equation (5.24) states

$$\min_{\{\text{all } m \text{ that price } x\in\underline{X}\}}\frac{\sigma(m)}{E(m)} = \max_{\{\text{all excess returns } R^e \text{ in } \underline{X}\}}\frac{E(R^e)}{\sigma(R^e)}$$

Here is a proof.

Proof with risk free rate. From $0 = E(mR^e)$ we quickly get $\frac{\sigma(m)}{E(m)} = -\frac{1}{\rho}\frac{E(R^e)}{\sigma(R^e)}$ and hence $\frac{\sigma(m)}{E(m)} \geq \frac{|E(R^e)|}{\sigma(R^e)}$ for any R^e priced by m. We just have to show that there is an R^e and an m for which the inequality is an equality. The obvious m candiate is x^*. All other m are formed by $x^* + \varepsilon$, so x^* is already the minimum second moment discount factor. The obvious R^e candidate is R^{e*} since assets on the frontier maximize Sharpe ratio. Thus, we just need to show that

$$\frac{\sigma(x^*)}{E(x^*)} = \frac{\sigma(R^*)}{E(R^*)} = \frac{E(R^{e*})}{\sigma(R^{e*})}.$$

(Equivalently, since $E(R^*R^{e*}) = 0$, we need to show that R^* and R^{e*} are perfectly correlated.)

If there is a risk free rate,

$$\begin{aligned}
R^{e*} &= 1-\frac{E(R^*)}{E(R^{*2})}R^* \\
E\left(R^{e*}\right) &= 1-\frac{E(R^*)}{E(R^{*2})}E\left(R^*\right)=\frac{\sigma^2(R^*)}{E(R^{*2})} \\
\sigma\left(R^{e*}\right) &= \frac{E(R^*)}{E(R^{*2})}\sigma\left(R^*\right) \\
\frac{E\left(R^{e*}\right)}{\sigma\left(R^{e*}\right)} &= \frac{\sigma^2(R^*)E(R^{*2})}{E(R^{*2})E(R^*)\sigma\left(R^*\right)}=\frac{\sigma(R^*)}{E(R^*)}.
\end{aligned}$$

If there is no risk free rate

$$R^{e*}=proj\left(1|X\right)-\frac{E(R^*)}{E(R^{*2})}R^*$$

so this does not go through.

Proof with no risk free rate (more general, less intuition)

We know all m are of the form

$$\begin{aligned}
m &= x^*+we^*+n \\
x^* &= \frac{R^*}{E(R^{*2})} \\
e^* &= 1-proj(1|X)=1-R^{e*}-\frac{E(R^*)}{E(R^{*2})}R^*
\end{aligned}$$

(The last equation comes from (6.18)) Choose $w=1/E(R^*), n=0$. (If there is a risk free rate, $e^*=0$, so $m=x^*$ as above.) I show that *this* m has$\frac{\sigma(m)}{E(m)}=\frac{E(-R^{e*})}{\sigma(-R^{e*})}$. Since the inequality holds for all m and R^e, we are done.

$$\begin{aligned}
m &= \frac{R^*}{E(R^{*2})}+\frac{1}{E(R^*)}\left(1-R^{e*}-\frac{E(R^*)}{E(R^{*2})}R^*\right) \\
m &= \frac{1-R^{e*}}{E(R^*)}
\end{aligned}$$

$$\frac{\sigma(m)}{E(m)}=\frac{\sigma(R^{e*})}{1-E(R^{e*})}=\frac{\sqrt{E(R^{e*})}\sqrt{1-E(R^{e*})}}{1-E(R^{e*})}=\frac{\sqrt{E(R^{e*})}}{\sqrt{1-E(R^{e*})}}=\frac{E(R^{e*})}{\sqrt{E(R^{e*})}\sqrt{1-E(R^{e*})}}=\frac{E(R^{e*})}{\sigma(R^{e*})}$$

Here I have used the property

$$\sigma(R^{e*})=\sqrt{E(R^{e*2})-E(R^{e*})^2}=\sqrt{E(R^{e*})-E(R^{e*})^2}=\sqrt{E(R^{e*})}\sqrt{1-E(R^{e*})}.$$

I thank John van der Hoek of the University of Adelaide, Austraila for this clever proof.

Minor typos

(minor to the reader, not to people whose names I have misspelled and articles mis-cited!)

p. v l.11 Pietro Veronesi's name is misspelled (sorry Pietro!)

p.6, line5: "convariance" should be "covariance".

p. 19. Above (1.16) "in the continuous time limit" add a reference to equation (1.38).

p.40, 5 lines from the bottom: Cox, Ingersoll, and Ross (1986) should be (1985).

p.44, just below box. compete should be complete

p.51, para 1, line 7: "...don't read..." shoud read "...don't need..."

p.65, just above *The Law of One Price*. Should read "$\max[x(s) - K, 0]$."

p.66, figure 4.11 caption. X should be $\underline{X}$

p. 69 box. "Definition of arbitrage" should be "Definition of no-arbitrage."

p.72 Just above the theorem. Delete "As you can see in Figure 4.4." You can't.

p.72, 3 lines from the bottom. "left-hand panel" should read "top panel."

p.75, line 10, "by this postulating" should read "by postulating".

p.76, line 13-14 "formulas for a discount factors." should read "formulas for discount factors."

p.76, below 3d equation, $E(dz_t dz_t') = Idt$

p.89, 4 lines above *Algebraic Argument* "by projecting of 1 onto.." should read "by projecting 1 onto..."

p.102 middle Roll (1976) should be Roll (1977)

p.121. Below theorem, p. 123. Roll (1976) should be Roll (1977)

p.129 in the second paragraph from bottom "Chapter 7" should read "Chapter 6"

p. 155 l.5 "*absolute* risk aversion" should read "constant *absolute* risk aversion."

p. 161 Brown and Gibbons is (1985) not (1981)

p.164, last paragraph, "it allow" should read "it allows"

p. 167, second equation. $\frac{dW}{W}$ should be $\frac{dW_t}{W_t}$

p. 169, in "Should the CAPM price options?" line 5-6, "optimum pricing formula" should be "option pricing formula."

p. 203 just above first equation $g_T'(b)'$ should be $g_T(b)'$

p .203 (11.3), last term, comma missing. It should be $f(x_{t-j}, b)$

p .205, line 4: "move" should be "more".

p. 237, line 1, "Standard error" should read "variance."

p.238, Equation below (12.18), $cov(\sqrt{T}C\alpha)$ should be $cov(\sqrt{T}C'\alpha)$

p. 241 l.1 Shanken (1992b)

p. 266, below equation (14.2). At the end of the sentence, add "and $\Sigma = E(\varepsilon_t \varepsilon_t')$ "

p. 296: Two lines above the section *Lucas' money demand estimate*: Cochrane (1986) should be (1988).

p. 294, line 1. Fama and French (1997) should be (1995)

p. 327, pp2, second to last line. "Section 16.1.2" should be "Section 17.1"

p. 326 (10th from the bottom), 333 (11th from the bottom), 336 (4th from the same place) Cochrane and Saá-Requejo is 2000 not 1999

p. 353, (19.6) $f_t^{N\to N-1}$ should be $f_t^{(N\to N-1)}$.

p. 379. The referece to Das and Foresi (1994) should be to Das, Sanjiv, 2002,"The Surprise Element: Jumps in Interest Rates", *Journal of Econometrics* 106, 27-65.

p. 379. Rather than Knez Litterman and Scheinkman (1994), Litterman and Scheinkman, 1991, "Common factors affecting bond returns." *Journal of Fixed Income* 1, 51-61. is a better citation for the eigenvalue decomposition like Table 19.1

p.385, 2 lines from the bottom: "Kocheralkota" should be "Kocherlakota".

p.390, line 5: "price/divided" should be "price/dividend".

p. 390 "Cochrane [1991]" should be "Cochrane [1991d]"

p.390, 11 lines from the bottom. Fama and French (1999) should be (1989)

p.392, 5 lines from the bottom. "Small values of b ..." should be "Small values of a ..." Two lines later, delete b.

p.393, middle: Hodrick (1991) should be (1992).

p.394, 2 lines below the box: Cochrane (1991) should be (1991c).

p.395, last line: Cochrane (1991) should be (1991a).

p.396, first line: Campbell and Shiller (1988) should be (1988a).

p.396: below (20.7) add "where $k \equiv \log(1+P/D) - \rho(p-d)$."

p.397, 12 lines from the bottom: Cochrane (1991b) should be (1991a)

p.399, middle: Vuolteenaho (2000) should be (1999).

p.401, l. 6. Replace "be around" with "die out".

p.403, eq. (20.21): $E_t r_{t+1}$ should be $E_t r_{t+j}$.

p.411, 2 lines from the bottom: "...3-5 year range." should be "...2-4 year range.".

p.424, 10 lines from the bottom: "Engel" should be "Engle".

p.434, 12 lines from the bottom: Lintner (1965) should be (1965b).

p.437, 3 lines below the box, and p.444, 6.line from the bottom: Merton (1971b) should be Merton (1971, 1973a).

p.441, 16 lines from the bottom: Fama and French (1995) should be (1996).

p.442, first line: Heaton and Lucas (1997) should be (1997b)

p.445, just above "Reversal." Jegadeesh is spelled wrong.

p. 445. In "Reversal" "Fama and French (1998a)" should be "Fama and French (1988a)".

p. 466. (21.5) and (21.6) should have - the second term, e.g. $-\frac{zV_{Wz}}{V_W}$.

p. 481 3/4 of the way down. Eichenbaum Hansen Singleton is 1988 not 1989.

p. 498 add Boldrin, Michele, Lawrence Christiano and Jonas Fisher, 1997, "Habit Persistence, Assets Returns and the Business Cycle", forthcoming *American Economic Review*

p.499: Cochrane (1991a) and all references to it should be (1992)

p.501. Add Craine, Roger, 1993, "Rational Bubbles," *Journal Of Economic Dynamics And Control* 17, 829-846.

p. 501 add Duffie, Darrell,1992, *Dynamic Asset Pricing Theory* Princeton, N.J. Princeton University Press

p.501 add DeSantis (1994).

p.502: Fama and MacBeth (1973) delete *Financial*

p. 503 add A. Ronald Gallant, Lars Peter Hansen and George Tauchen, 1990, "Using Conditional Moments of Asset Payoffs to Infer the Volatility of Intertemporal Marginal Rates of Substitution," *Journal of Econometrics,* 45, 141-180

p.504: Heaton and Lucas. references should be 1997a and 1997b.

p. 458, l.1 add "(with constant $\sigma_t(\Delta c_{t+1})$)" at end of line

p. 498 add Brown, David P. and Michael R. Gibbons, 1985, "A Simple Econometric Approach for Utility-based Asset Pricing Models," *Journal of Finance* 40, 359-81.

p.499 add Zhiwu Chen, and Peter J. Knez, 1995, "Measurement of Market Integration and Arbitrage," *Review of Financial Studies*, 8, 287-325.

p.499 add Zhiwu Chen, and Peter J. Knez, 1996, "Portfolio Performance Measurement: Theory and Applications," *Review of Financial Studies,*. 9, 511-555.

p.502. Fama and French (1997b) should be (1995)

p.507: Merton: (1973) should be (1973b).

p.508: Ogaki (1992) should be (1993).

p.508 add Stephen A. Ross 1978, "A Simple Approach to the Valuation of Risky Streams," *Journal of Business,* 51, 453-475.

p.509 add Shiller, Robert J., 2000, *Irrational Exuberance* Princeton N.J.: Princeton University Press