ACTEX MFE/3F Study Manual

Spring 2012 Edition

Errata

(April 17, 2012)

1. P-2: Change point #3 to "After studying all 22 lessons, …"

2. M1-7: The equation for E*[S_h] should be E*[S_h] = $p^*S_0u + (1 - p^*)S_0d = S_0e^{(r-\delta)h}$.

3. M1-10, Ex 1.1.1 (a): Change "for the stock" to "for the call option".

4. M1-10, Ex 1.1.3 (b): Replace "Calculate of" with "Calculate the price of".

5. M1-29, Ex 1.2.7: Replace "straddle" in lines 1 and 4 with "strangle".

6. M1-35, Solution to Ex. 1.2.7: Replace "straddle" in the second last line with "strangle".

7. M1-37, Solution to Ex. 1.2.9 (b): The formula in line 4 should be $d = \exp[(0.05 - 0.035) - 0.4]$.

8. M1-47, Solution to Example 3(a): Replace "become" in line 6 "becomes".

9. M1-55, Solution to Ex. 1.3.6: Replace "114" in the tree with "144".

10. M2-15: The second last line of the solution to Question 7 should write

$$P(0.5 < X(20) < 1 \mid X(10) = 0.7).$$

11. M2-20: In the second last line, replace $a(x, t)$ and $b(x, t)$ with $a(t, x)$ and $b(t, x)$, respectively.

12. M2-58, the stem for Ex. 2.3.14 and 15: Add "(v) The stock price follows a geometric Brownian motion".

13. M2-58, Ex. 2.3.16: Change the last sentence to "Assuming that the stock price follows a geometric Brownian motion, find the "one standard deviation move" in the stock price in six months".

14. M2-58, Ex. 2.3.18: Add "(iv) The stock price follows a geometric Brownian motion".

15. M2-79: The formula for Case (3) should be

$$S^{-1}(t)e^{[-r-(r-\delta)+0.5(-1)(-1-1)\sigma^2](T-t)} = S^{-1}(t)e^{-[(2r-\delta)-\sigma^2](T-t)}.$$

16. M2-91, Solution to Ex.2.4.14:
    Change the first equation to $F_{t,T}(S) = S(t)e^{(r-\delta)(T-t)}$.
    Change the equation on line 4 to $F_{t,T}(S^{-1}) = \frac{1}{S(t)}e^{-(2r-\delta)(T-t)+\sigma^2(T-t)}$.
    Change the equation on line 5 to $F_{1,3}(S^{-1}) = \frac{1}{S(1)}e^{-2\times 0.08\times 2+0.5^2\times 2} = \frac{e^{0.18}}{S(1)}$.
    Change final answer on line 6 to 0.18.

17. M2-93: The equation in line 5 should write

$$F_{0,1}(S^{-0.5}) = S^{-0.5}(0)\exp[-0.5(r-\delta)+0.375\sigma^2]$$

18. M2-93: Change line 6 to "The product of the two forward prices is"

19. M3-3: Replace Observation 1 with the following:

    The time-t prices are of the form $F^P_{t,T}(S)N(d_1)$, $F^P_{t,T}(S)N(-d_1)$, $F^P_{t,T}(1)N(d_2)$, $F^P_{t,T}(1)N(-d_2)$. It is natural to have the prepaid forward prices of S and 1 in the pricing formulas, since ultimately the claim pays either 1 share or 1 dollar.

20. M3-7: The formula in the last line should write

$$d_2 = \frac{\ln[F^P_{t,T}(S)/F^P_{t,T}(K)] - 0.5\sigma^2(T-t)}{\sigma\sqrt{T-t}} = d_1 - \sigma\sqrt{T-t}.$$

21. M3-9, Example 3.1.5: Replace the British pound symbol in line 1 with a Euro symbol.

22. M3-14, Ex.3.1.12: Replace the British pound symbol in line 1 with a Euro symbol.

23. M3-19, Solution to Ex.3.1.12: Replace the British pound symbol in line 2 with a Euro symbol.

24. M3-8: For options on currencies, the prepaid forward price is $x(t)\exp[-(r-r_f)(T-t)]$. The same change is needed for the summary table on the same page.

25. M3-45, Ex. 3.2.18: Change "a 1.5-year 25-strike American option" to "a 1.5-year 25-strike American call option".

26. M3-49: Change the final answer of Question 12 to 0.279.

27. M4-67, Question11: Change the last line to "Compute Christine's estimate of the price of the contingent claim."

    M4-68, Solution to Question 11: Change the 3rd line to "..., Carole's estimate of the square of the time-2 stock price is ...", and change the last line to "Christine's estimate of the square of the time-2 stock price is ..."

    M4-69, Solution to Question 11: Following the last equation, add: "Hence, Christiane's estimate of the price of the contingent claim is $e^{-2\times 0.07}6.5422 = 5.6875$.

28. M5-14: In the second line of the solution, change $r_{ddd} = 9\%$ to $r_{ddd} = 8.90091\%$.

29. M5-17: Change the last 4 lines of the solution to:

    $$P(0.093,\ 1,\ 4) = \frac{1}{1.093}\times\frac{1}{4}\left[\frac{1}{1.135}\left(\frac{1}{1.1359412}+\frac{1}{1.11}\right)+\frac{1}{1.10596}\left(\frac{1}{1.11}+\frac{1}{1.089}\right)\right]$$

    $= 0.735188$

    giving $r(1,\ 4) = 0.735188^{-\frac{1}{3}} - 1 = 10.7985\%$.

    The year-3 yield volatility is $\frac{1}{2}\ln\frac{13.8636}{10.7985} = 12.4929\%$.

30. T2-9: In line 2, change “call option” to “asset-or-nothing call”.

31. T2-21: Change 68.25 to 68.55.

32. T3-17: Change the answer key for Question 5 to (B).

33. T3-18: The last sentence should be: “At time 0, we have -100 units of S_1, so we need $-100N = -100(0.3 \times 50) / (0.25 \times 75) = -80$.

34. T7-19: The answer key to Question 28 is (D).

35. T7-31: Add “The sum of the total and quadratic variations is 3 + 9 = 12”. The correct answer is (D).

36. T10-20: In the solution to Question 5 (line 4), the equation should be $f_z(t,z) = f_{zz}(t,z) = \exp(z - t/2)$.

37. T10-27: In the solution to Question 23, the second last line should be written as “Putting $t = 2$, $\ln P_2(2,4) = \ln P(2,4) \sim N(-0.5 - \ln(90/93),\ 0.1)$”.