

**Updates and Errata: ACTEX Study Manual for SOA Exam FM, Spring 2018 Edition
as of June 13, 2019**

Please note the following errors in the Spring 2018 Edition of the manual.
In each item, the change is shown in **red**.

Page M2-89, solution to Problem 15.

The second paragraph should begin:

Since **Susan** gets the next m payments ...

Page M3-9, Exercise (3.14).

The balance shown in the first line of the solution should be 19,363.**52** (not 19,363.82).
However, the equation and the answer are correct as shown.

Page M3-27, solution to Problem 3.

The interest rate is 7.2%, not 8%. The 2nd line of the solution should read as follows:

The interest due on the 6th payment date is $7,500 \cdot (0.072) = 540$.

Page MT1-4, Problem 3.

The formula after the large paragraph should be:

$$FV = 8 \cdot s_{\overline{10}|i}^{5.25\% (4)} = 8 \cdot \frac{(1+i)^{10} - 1.0525^{10}}{i - 0.0525} \cdot \frac{i}{i^{(4)}}$$

Page M5-29, solution to Problem 5.

The 2nd line of the formulas in the middle of the solution requires an additional “0”:

$$1,050 - 100x = 90/0.08852 = 1,016.72 \rightarrow x = 0.333$$

Page MT2-3, Problem 11., 2nd paragraph, 2nd line

Replace “8 annual payments” with “**5** annual payments”

Page M7-18.

A minus sign was omitted in Formula (7.36). The formula should be:

$$(7.36) \quad D_{\text{mod}}(i^{(m)}) = \frac{-P'(i^{(m)})}{P(i^{(m)})} = \frac{D_{\text{mac}}(i^{(m)})}{1 + \frac{i^{(m)}}{m}}$$

A minus sign was also omitted in the 7th line of the paragraph below Formula (7.36).
The fraction shown in that line should be:

$$\frac{-P'(i^{(m)})}{P(i^{(m)})}$$

Page M7-47, solution to Problem 4.

The first formula in the solution to part (a) should read as follows:

$$P(i) \approx P(i_0) \cdot \left(\frac{1+i_0}{1+i} \right)^{D_{\text{mac}}(i_0)} = 940.29 \cdot \left(\frac{1.07}{1.071} \right)^{6.5317} = 934.57$$

Page M8-15, last large paragraph.

The 3rd sentence should begin:

That is, the **real** interest rate is

Page MT3-9, solution to Problem 7.

The 3rd paragraph should read:

More importantly, $i^{(2)} / 2 = 0.044$. This is the semi-annual effective rate. Calling this value j , we can use it to calculate D_{mac} **in coupon periods (half-years)**:

$$\begin{aligned} D_{\text{mac}} &= \frac{40 \cdot (Ia)_{\overline{32}|j} + 1,000 \cdot 32 \cdot v_j^{32}}{932} = \frac{40 \cdot [\ddot{a}_{\overline{32}|j} - 32v_j^{32}] / j + 32,000 \cdot v_j^{32}}{932} \\ &= \frac{40 \cdot \left[\frac{1 - 1.044^{-32}}{0.044 / 1.044} - 32 \cdot 1.044^{-32} \right] / 0.044 + 32,000 \cdot 1.044^{-32}}{932} \\ &= \mathbf{18.0959 \text{ half-years} = 9.04796 \text{ years}} \end{aligned}$$

Page PE1-9, solution to Problem 3.

The first equation should read as follows:

$$K = 475 + 475v = 570v^2 + 570v^3$$

Page PE1-16, solution to Problem 23.

The 8th line should read as follows:

The yield to **first call** is: $i^{(2)} = 0.0279434 \times 2 = 0.0558868$ or 5.59%

Page PE5-6, Problem 25.

The answer choices should be:

- A) 8,639 B) 8,985 C) 9,143 D) 9,282 E) 9,434

Page PE5-11, solution to Problem 9.

The solution shown is correct, and the resulting answer is 0.1293 (as shown). However, the answer choice should be **B**, not **D**.

Page PE5-17, solution to Problem 26.

The equation in the second paragraph should be:

$$1.10^{0.75} + 1.10^{0.50} + 1.10^{0.25} + 1 = 4.147$$

Page PE6-9, Problem 35.

The first sentence should read as follows:

A 4-year interest rate swap has a notional principal amount of **100,000**.

Page PE6-23, solution to Problem 33.

The equation in the last paragraph should be:

$$6,000 \cdot 1.003333^{10} = 6,203.03$$

Page PE7-2, Problem 5.

The second paragraph should read as follows:

What actual yield does Joel earn on this bond if it is called after 8 years?
(**deleting** the words “**and redeemed for its face amount**”)

Page PE7-22, solution to Problem 26.

The formula for $f_{[1,2]}^*$ should be:

$$f_{[1,2]}^* = \frac{P_1}{P_2} - 1 = \frac{0.9525}{0.8995} - 1 = 0.05892$$

Page PE8-9, Problem 33.

In the second paragraph, delete the comma and the words that follow it.

The paragraph should read as follows:

The account earns an annual effective interest rate of **7%**.

Page PE8-18, solution to Problem 17.

The correct answer choice is **D**, not **B**.

Page PE9-24, solution to Problem 29.

The first equation on the last line should be:

$$v^2 = 0.90525$$

Page PE10-2, Problem 5.

The first sentence should read as follows:

A bond with par value X pays semi-annual coupons at a **4% annual rate**.

Page PE10-10, solution to Problem 1.

The end of the first paragraph should read (for the 15-year mortgage):

$$\text{CPT PMT} = -1,951.04.$$

(The remainder of the solution is correct, since it uses the correct value (1,951.04) in the subsequent calculations.)

Page PE11-7, Problem 25.

The problem should specify:

notional amounts of 1 million, 2 million and 3 million
(*not* 2 million, 3 million, and 4 million)

Page PE11-25, solution to Problem 32.

In the last paragraph, the 3rd line should list the following values:

$i = 0.05$, $d = 0.05 / 1.05 = 0.047619$, and $\delta = \ln 1.05 = 0.048790$