

# Typo List

of first print of first edition of textbook

## **Fixed Income Securities:** Valuation, Risk, and Risk Management

by Pietro Veronesi

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Notwithstanding the best efforts of the author and copy editors, and the careful read of many students, unfortunately various typos found their way into the new book. Apologies for any confusion they may have caused. Here is a list as of today: I first list the typos that may generate some confusion (e.g. mistakes in numerical values of some quantities), by chapter, and at the end the minor typographical errors which should generate no confusion. If you find any other typo not listed here, please send me an email at [pietro.veronesi@ChicagoBooth.edu](mailto:pietro.veronesi@ChicagoBooth.edu). Thank you.

P.V.

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## Chapter 1

- On p. 24, two lines above Equation 1.2, in the second parenthesis we should have (LIBOR+2%) instead of (LIBOR+1%) to read  
“... is only 1% (= (LIBOR+3%) – (LIBOR+2%)).”

## Chapter 2

- On p. 54, section 2.5.2, two lines from the bottom: expression “ $\sum_{t=0.5}^n s \times Z(0, t)$ ” should be “ $\sum_{t=0.5}^n \frac{s}{2} \times Z(0, t)$ ” (that is, divide by 2 the spread  $s$ .) Similarly, on the last line, the term “ $s \times \sum_{t=0.5}^n Z(0, t)$ ” should be “ $\frac{s}{2} \times \sum_{t=0.5}^n Z(0, t)$ ”.
- On p. 55, equation 2.39. Same as previous point. The expression “ $s \times \sum_{t=0.5}^n Z(0, t)$ ” should be “ $\frac{s}{2} \times \sum_{t=0.5}^n Z(0, t)$ ”.
- Page 58, Question 4. Add at the end of the sentence the parenthetical suggestion “(for (f) and (h) assume rates were unchanged in the last 6 months)” to read:  
“Using the semi-annually compounded yield curve in Table 2.4, price the following securities (for (f) and (h) assume rates were unchanged in the last 6 months):”

## Chapter 3

- On p. 85, Example 3.6. Last line should say “...stands to lose \$784 for every basis point increase...”  
That is, change \$78,400 into \$784.
- On p. 94, Table 3.3. Columns (3) - (10) do not exactly follow from the path of interest rates in column (2) because of a rounding error in reporting the interest rate. The interest rate path was simulated, but Column (2) rounded the rate to the second decimal point. A spreadsheet is available with all the calculations on the Book Web Site.
- On p. 106. 6 lines from Equation 3.8: Change  $D_{Fixed} = 2.6684$  to  $D_{Fixed} = 2.6685$
- On p. 107. Table 3.9. Second column, bottom value should be 131.32 instead of 103.78. (Note that in addition there are some minor rounding errors)

## Chapter 4

- On p. 122, 2nd line above 4.1.6. A “square” is missing and “ $(T - t)P_z(r, t; T)$ ” should read “ $(T - t)^2 P_z(r, t; T)$ ”.
- On p. 135, section 4.2.4, the first unnumbered equation should be

$$dV = dP + k_S \times dP_z^S + k_L \times dP_z^L = 0$$

(That is, change  $k_F$  into  $k_S$ )

- On p. 138, Question 1. Add at the end of the sentence the parenthetical suggestion “(for (e) assume the relevant floating rate is 6.4%)”
- On p. 146, section 4.6, Eq. (4.36): Replace “ $\alpha$ ”s below the “max” with “ $a$ ”s to read

$$\max_{a_{11}, \dots, a_{1n}} \text{Var}(\Delta\phi_i^{PCA}) = \sum_{k=1}^n \sum_{\ell=1}^n a_{1k} a_{1\ell} \sigma_{k\ell}$$

## Chapter 5

- On p. 160, section 5.1.3, Example 5.2: second to last line should read  $= 0.993123 \times e^{-2.6677\% \times 0.25}$ . That is, the number at the exponent is incorrect.
- On p. 165, section 5.2.1, Example 5.4: second equation (after "Therefore"), second line. Eliminate word "million," that is, change "\$0.319638 million" to just "\$0.319638"
- On p. 172, section 5.4, Example 5.8: First equation in the example should read

$$\text{Cash flow from firm to bank at } T_i = \$200 \text{ m} \times 0.5 \times 5.46 = \$5.46 \text{ million}$$

That is, change \$4.56 into \$5.46.

- On p. 192, middle of the page (after Equation 5.54), fix typos to read:

$$\begin{aligned} \text{Total expected net cash flow per year} &= 2 \times \$285,499.73 - 4 \times \$59,525.00 \\ &= \$332,899.50 \end{aligned}$$

## Chapter 6

- On p. 207, a negative sign is missing from Equation 6.7, which should read

$$\text{Daily P\&L from short futures} = (P/L)_t = - [P_z^{fut}(t, T_1, T_2) - P_z^{fut}(t - dt, T_1, T_2)]$$

## Chapter 7

- On p. 258, section 7.3.2, second line after equation (7.13). Change " $T = \tau - t$ " to " $T = t + \tau$ "
- On p. 267, section 7.4.3, Equation 7.26. Multiply the last term  $Z^{real}(t, T)$  by 100.

## Chapter 8

- On p. 298, Formula 8.12 should be

$$Pay_t^{prepaid} = p_t \times (L_t - Pay_t^{scheduled})$$

This changes has some small impact on some numbers in Tables 8.3 and 8.6. See new spreadsheets.

- On p. 298, Equation 8.16. The first term after the equality should be  $I_t^{PT}$ , that is, the superscript "PT" is missing.

- On p. 299, Table 8.8. The whole column 11 (last column) is incorrect.

Discount $Z(0, T)$ (11)
0.9958
0.9917
0.9876
0.9835
0.9794
0.9753
0.9713
0.9672
0.9632
0.9592
0.9552
0.9512
0.9473
0.9433
0.9394
0.9355
0.9316
0.9277
0.9239
0.9200
0.9162
0.9124
0.9086
0.9048
0.9011
0.8973
0.8936
0.8899
0.8862
0.8825
0.8788
0.8752
0.8715
0.8679
0.8643
0.8607

- On p. 304. Table 8.5. “Bid” and “Ask” columns are inverted. So, change “Bid” heading in second column into “Ask” and the “Ask” heading in third column into “Bid”

## Chapter 9

- On p. 345, section 9.3.2, line 5 in the paragraph. A ”100” is missing. Specifically, it should read “...Equivalently, we could substitute the same value of  $N_2$  into Equation 9.8, in which case we would obtain  $N_1 \times 100 = V_{1,d} - N_2 \times P_{1,d}(2)$ ...”
- On p. 348, Section 9.3.4, end of second paragraph (second line on page 348). Need to change the value \$0.5385 into \$0.3697.

- On p. 351, section 9.4.4, a “%” sign is missing after the number “0.95” in Equation 9.27. That is, it should be “...= 0.6448 × 3.39% + 0.3552 × 0.95% = 2.5234%...”
- On p. 451, the un-numbered formula for the forward rate has a “2” in the wrong spot, that is, it should read

$$f(0, 1, 2) = -2 \times \ln \left( \frac{P_0(1)}{P_0(2)} \right) = 2.52\%$$

## Chapter 10

- On p. 363, the subscript  $u$  in the unnumbered equation in the middle of the page should be  $d$ . That is, change

$$N_{1,u}^L = 1; \quad N_{1,u}^S = -0.9873$$

to

$$N_{1,d}^L = 1; \quad N_{1,d}^S = -0.9873$$

## Chapter 11

- On p. 390. Example 11.4. The strike price on the second line should be “ $r_K = 2.5\%$ ” and not 3%.
- On p. 393. Example 11.5. In equation (11.16), the “ $\frac{1}{2}$ ” should be “2.”
- On p. 398, section 11.3. The the last line of the second paragraph should read “..... the discount factors  $Z(0, T)$  in column three...” (instead of “column four”)
- On p. 407, Table 11.15. Some entries in the last set of trees (for 1-year Futures) are erroneous.

1-year Futures Rates Tree						1-year Eurodollar Futures Price					
$j$						$j$					
0	3.08	3.55	4.08	4.70	5.41	0	96.92	96.45	95.92	95.30	94.59
1		2.62	3.01	3.47	3.99	1		97.38	96.99	96.53	96.01
2			2.23	2.56	2.95	2			97.77	97.44	97.05
3				1.89	2.18	3				98.11	97.82
4					1.61	4					98.39

## Chapter 12

- On p. 432, Example 12.3, last equation. The “ $V_0$ ” after the equality sign should be changed into “ $P_0(3)$ ” to read

$$\begin{aligned} \Pi_0 &= N_0^L \times P_0(3) + N_0^S \times (Z_0(1) \times 100) = 0.5852 \times 100.5438 + 0.4188 \times 99.1338 \\ &= 100.3564 \end{aligned}$$

- On p. 441, Equation (12.9), a plus sign should be a minus sign, to read

$$\text{Value of mortgage} = \text{Value of mortgage without prepayment} - \text{Value of option to prepay}$$

## Chapter 13

- On p. 484, three lines from the bottom of second paragraph. Change “\$2791” to “\$3134”.

- On p. 485, last line of point 3: “[...]  $RAND() < q_i^s$ .” That is, eliminate “1–”.

## Chapter 16

- On p. 573, line above equation (16.16), change “ $t_B$ ” into “ $T_B$ ”, that is “..The position in  $Z(0, r; T_B)$  is then...”

## Chapter 17

- On p. 605, last equation: In the second parenthesis of the denominator we have  $LIBOR_2^j$  but it should be  $LIBOR_1^j$ , that is, change the subscript from 2 to 1.

## Chapter 18

- On p. 628, two lines before equation (18.6), change a “ $t$ ” into “ $T$ ”, namely, from “ $Z(r, t; t) = \dots$ ” into “ $Z(r, t; T) = \dots$ ”
- On p. 629 example 18.1.
  1. Line 3. The signs of  $\lambda_0$  and  $\lambda_1$  are inverted. It should be “... follows that  $\lambda_0 = -0.5892$  and  $\lambda_1 = 6.3541$ . ”
  2. Line 3. Change “negative  $\lambda_1$ ” to “positive  $\lambda_1$ ”
  3. Line 4. (A) Change “more negative” to “less negative” ; and (B) Change “higher risk” to “lower risk”
- On p. 641, 2 lines above equation (18.43), a closing parenthesis is missing from the formula of  $B(t; T)$ . We should have “...., as  $B(t; T) = (1 - e^{-\gamma(T-t)}) / \gamma$  is decreasing...”

## Chapter 19

- On p. 657, three lines from the bottom. Change “ $t_B$ ” into “ $T_B$ ” in  $\mathcal{S}_Z(T_O; t_B)$  to read “... while under the Ho-Lee model the same quantity comes out as  $\mathcal{S}_Z(T_O; T_B) = 0.0886\dots$ ”
- On p. 666, Eq. (19.46): subscript “ $Z$ ” is missing from “ $\mathcal{S}$ ” to read

$$d_2 = d_1 - \mathcal{S}_Z(T - \Delta; T)$$

- On p. 678, first line after “Fact 19.13”, there is a reference mistake. Now it reads: “...The solution to the differential Equations 19.61 and 19.61 can be obtained numerically in a relatively straightforward manner...”  
but it should be  
“... The solution to the differential Equations 19.60 and 19.61 can be obtained numerically in a relatively straightforward manner...”

## Chapter 20

- On p. 701, Eq. (20.18), delete parenthesis “ $(T_O, T_S)$ ” following “ $\sigma_f^s$ ” so that the last term reads  
“.... $d_2 = d_1 - \sigma_f^s \sqrt{T_O}$ ”

## Chapter 21

- On p. 716, 4 lines from the bottom, closing parenthesis “)” is missing, so that “ $G(r_n(\tau, T))$ ” should be “ $G(r_n(\tau, T))$ ”

- On p. 736, Eq. (21.62). Subscript “ $K$ ” of the last “ $r$ ” in the expression should be capitalized, to read:

$$V = Z(0, \tau) \Delta E_f^{* \tau} [r_n(\tau, T) - r_K]$$

## Chapter 22

- On p. 757, Eq. (22.43), subscript of the letter “ $d$ ” after the equality should be “1” and not “2”, to read

$$d_2 = d_1 - \mathcal{S}_Z(T_O)$$

- On p. 774, one line after the first unnumbered equation. A subscript “1” should be “ $i$ ” to read “...where  $f_i(\phi_i, T_O)$  is the normal distribution density ... ”
- Page 775: equation (22.86). A subscript “ $n$ ” is missing from the letter “ $f$ ” on the left-hand-side of the equation, both at the numerator and the denominator. That is “ $df()/f()$ ” should be “ $df_n(...)/f_n(...)$ ”

## Minor Typographical Errors

- On p. 26, 2nd paragraph, line 2, “a adjustable” should read “an adjustable”
- On p. 27, line 11, change “dinamic” to “dynamic”
- On p. 37, section 2.2.1.3. Example 2.5, line 8. Change “continously” into “continuously”
- On p. 37, section 2.2.1.3. Fact 2.7, change “given” into “defined” and “formula” into “equation”
- Page 59. Table 2.4. Change title to the simple “A Yield Curve.” and remove note to table.
- On p. 87, section 3.2.8. Example 3.7, Point 2. Two typos:
  1. Line 1: “assumptin” should be “assumption”
  2. Line 2: “stadard” should be “standard”
- On p. 90, section 3.2.9. Example 3.8, Line 12. Change “precedure” to “procedure”
- Page 99. Section 3.6., Question 1. Change first sentence  
“Today is May 15, 2000, and the current, semi-annually compounded yield curve is in Table 3.6”  
into  
“Assume that the current, semi-annually compounded yield curve is as in Table 3.6”
- Page 100. Table 3.6. Change title to the simple “A Yield Curve.” and remove note to table.
- Page 100. Question 2, line 4. Change sentence  
“Assume that today is March 15, 2000, which means you may use the yield curve presented in Table 3.6.”  
into  
“Assume that the current, semi-annually compounded yield curve is the one presented in Table 3.6.”
- On p. 108, line 3, change “us” to “as”
- On p. 125 (line 5). Change “ore” into “more”
- On p. 128 (line 1 after figure 4.7). Change “ore” into “more”
- On p. 132 (line 1 in section 4.2.3). Change “uch” into “much”
- Page 138. Table 4.6. Change title to the simple “A Yield Curve.” and remove note to table.
- Page 138. Section 4.4. Exercise 1. Change sentence  
“On May 15, 2000 the semi-annually compounded yield curve was as in Table 4.6.”  
into  
“Assume the current, semi-annually compounded yield curve is as in Table 4.6.”
- Page 138. Section 4.4. Exercise 2. Two changes:
  1. Line 1. Delete “It is May 15, 2000 and.. ” and capitalize “An” to read “An investor is planning to invest...”
  2. Line 3. Add “Using the data in Table 4.6,” right before “Compute the change...” to read  
“Using the data in Table 4.6, compute the change in price...”
- On p. 141 Table 4.9. Missing “M” in front of “Maturity” in first column.
- On p. 169, [section 5.3, Example 5.7:] 3rd line after (5.30), eliminate first “more”.

- On p. 210 (one line before point 1.). Change “...depending of...” to “...depending on...”
- On p. 276 (beginning second paragraph in Section 7.7.1). Change “July 2008” to “July 2007”
- On p. 287, section 8.1.1, Line 6 in point 2: Change “...mantains...” into “...maintains...”
- On p. 289, section 8.1.3, line 3. Change “...forclosure...” into “...foreclosure...”
- On p. 297 (line 3 in Example 8.2) Change “...lower that...” into “...lower than...”
- On p. 343, section 9.2.2, last line. Add “it” to read “How is it possible that....”
- On p. 411, second line after equation (11.40) should say “ ... Table 11.20 illustrates the calculations...”
- On p. 469, eq. (13.18): Remove one multiplication term “ $\times$ ” before the number 100 to read “... $= Z^s(0, T_i) \times 100 \times \max(r_i^s - r_K, 0)$ ...”
- On p. 477, first line: remove one of the two “commas” after  $r_0$ , to read:  $r_0, r_1^s, r_2^s, \dots, r_n^s$
- On p. 505, Fact 14.3, 3rd line. Add “is” before “ $X_0$ ”
- On p. 507, Example 14.3, 2 lines from the bottom: Correct “targe” into “target”
- On p. 541, first line change “then” into “than”
- On p. 550, section 15.4.1, first line, change “is” into “it” after “that”
- On p. 598, section 17.3, line 4, correct “expection” into “expectation”
- On p. 628, Eq. (18.6): eliminate the multiplication sign “ $\times$ ” in the last term after  $\gamma^*$ . That is from: “ $rZdt - B(t; T)Z(\gamma(r - r) - \gamma^* \times (r^* - r))dt$ ” to “ $rZdt - B(t; T)Z(\gamma(r - r) - \gamma^*(r^* - r))dt$ ”
- On p. 645, beginning of very last paragraph “...Figure 18.6 plots the histogram...” [the “s” is missing from “plot”]
- On p. 665, section 19.4.2, line after (19.43): add “the” after “is”
- On p. 671, four lines from above (after figure), change “is” into “are” to read “...A little troubling, also, are the parameter estimates that we obtain to fit the cap prices...”
- On p. 707, 5 lines from the top, a capitalized “Pricing” should not be capitalized.  
From: “...Equation 21.5 differs from the Fundamental Pricing Equation 21.1 in two important respects:...”  
to:  
“...Equation 21.5 differs from the Fundamental Pricing Equation 21.1 in two important aspects:...”
- On p. 713, equation right before point 3. “... $\mu(r_O, T_O) = \dots$ ” should be “... $\mu(r_0, T_0) = \dots$ ”, that is change, the subscript of  $r$  from “ $O$ ” to number zero 0.
- On p. 718, 4 lines below first unnumbered equation correct “dyanmics” into “dynamics”
- On p. 718, two lines before Section 21.4.3. Correct the word “betwee” into “between”
- On p. 722, first line: correct the word “intial” into “initial”
- On p. 728, Second line in “Step 4”. Subscript zero 0 should be capital letter “ $O$ ”. Namely, change “...Because from Equation 21.49 the future swap rate  $c(T_0, T_S) = \dots$ ”  
into  
“...Because from Equation 21.49 the future swap rate  $c(T_O, T_S) = \dots$ ”

- On p. 731, 3 lines before section 21.6.1. Correct word “extention” into “extension”
- On p. 732, two lines before equation (21.58). Correct the word “expectaion” into “expectation”
- On p. 735, 2 lines before first unnumbered equation. Correct word “simplicitly” into “simplicity”
- On p. 758, Equation (22.48), third line, first term. A superscript “1” should be a subscript “1”. That is, the term should read  $(\partial F/\partial\phi_1)$
- On p. 762, two lines before equation (22.54). Correct word “corelation ” into “correlation”
- On p. 774, Eq. (22.85). the last “comma” in the parenthesis of the “ $g()$ ”
- On p. 775, two lines before the second set of unnumbered equations, there is an open parenthesis “(” that should not be there.