

Mathematics of Investment and Credit 5-th Ed

Errata List, by S. Broverman, Updated January 7, 2012

Table of Contents, page vii, bottom line should be 1.10 Exercises 52

Page 146, Exercise 2.1.15 should read

... , find the present value on June 1, 2007 of all of the payments made in 2007, 2008 and 2009 combined.

Page 183, Solution to Example 3.3, the equation in the 2nd line should

$$100,000 = Z a_{\overline{72}|.01} + 2Z v_{.01}^{72} a_{\overline{72}|.01} \quad (\text{the } .005 \text{ should be } .01)$$

Page 231, In the definition of bonds purchased a premium, at par and at a discount, F should be replaced by C . For instance, the first statement should be

(a) If $P > C$, the bond is said to be bought at a premium.

Page 265, In Definition 5.1, “times $0, 1, \dots, n$ ” should be “times t_0, t_1, \dots, t_n ”

Page 284, Solution to Example 5.6, in the line “ $t=2$ ”, the $-8,000$ should be $-8,500$

Page 306, 3 lines below boxed definition 6.3, s_t should be $s_0(t)$

Page 318, in the line above Equation (6.4), $i_{n-1,n}$ should be $i_0(n-1, n)$

Page 318, in the line below Equation (6.4), $i_{0,1}$ should be $i_0(0,1)$ and s_1 should be $s_0(1)$

Page 322, line 2 of 2nd paragraph in the box, “Italy”, should be “Italy.”

Page 341, first line of solution to Example 6.9, $i_0(n-1, n)$ should be $i_0(n, n+1)$

Page 405, in line 4 of Section 8.2, “IF” should be “If”

Page 431, in Figure 9.2, the two occurrences of S_t should both be S_T

Page 435, in Equation (9.2) delete “= K ”

Page 438, 4th line of paragraph 2, $F_{0,25}^P$ should be $F_{0,1/3}^P$

Page 439, line 7, $(e^{-\gamma T})^{\gamma T} = 1$ should be $e^{-\gamma T} \cdot e^{\gamma T} = 1$

Page 440, 2nd line from bottom should be

stock purchase = forward contract + zero coupon bond

Section 9.3, All the graphs should have the origin labeled, and the vertical intercepts should be more correctly positioned

Pages 444-445, Last paragraph on page 444 through to the end of page 445 should be replaced by:

Suppose a 6-month forward contract to purchase 100,000 Canadian dollars is bought on January 15 with a price of .85 US per Canadian dollar to be paid on July 15. The exchange of funds relating to this contract will not take place until July 15. On January 15, a 6-month futures contract for 100,000 Canadian dollars that expires July 15 may also have a future delivery price .85 US per Canadian dollar. There are two types of purchasers of futures contracts: **hedgers** and **speculators**. Hedgers (see Example 9.5 below) wish to take a position in the futures market that will reduce the risk of holding a commodity or investment they currently own. Speculators seek to make a gain by choosing a position in a futures contract that they think will rise in value. A long futures contract is like a long forward contract. It obligates the holder to purchase the asset at expiry. The futures markets are arranged so that for every long contract there is someone who takes the opposite position with a short contract obligating the holder to sell the asset at expiry.

Purchaser of futures contracts do not invest the full value of the contract, but invest a relatively small percentage of the value of the contract. The amount needed to open the contract may depend on whether it is a hedger or speculator buying the contract. The amount needed to open a futures account is called the **initial margin**. At the time this is being written, initial margin for a speculator on the 100,000 Canadian dollar contract is \$3,192 and for a hedger it is \$2,400.

To maintain order in the futures market, there are daily limits on the movement of future prices. At the end of each trading day, a futures account is **marked-to-market**. This essentially means that any profit or loss resulting from a change in the futures price from the previous day's close is added or deducted from the account balance. In the example of a long contract cited in the previous paragraph, if the value of the Canadian dollar had risen from 85 cents US to 86 cents US in one day as of the closing of trading, then the account would be marked-to-market and the account balance would be increased by \$1,000 (this is $.01 \times 100,000$). In the case of a speculator, the account balance would be increased to \$4,192. If, on the other hand, the Canadian dollar had dropped to 84 cents US, then the account balance for the speculator would have dropped to \$2,192. The brokerage companies that administer futures accounts want the account holders to hold sufficient funds in their futures accounts, and if the balance goes below a certain level, the contract owner may be required to add funds to the account, or close the account. A **margin call** is a request from the broker to the contract holder to add funds to the account because it has fallen below a predefined level called the **maintenance margin**. When this happens, the contract holder must add funds to the account to bring it up to the level of the initial margin. The maintenance margin for a speculator in the Canadian dollar contract is \$2,400, so in the example just mentioned where the Canadian dollar dropped to 84 cents US, there would be a margin call, and the contract holder would be required to deposit \$1,000 in the account to bring it back to the initial margin level of \$3,192.

It can be seen from the simple example in the previous paragraphs that futures contracts can involve a high amount of risk. If the Canadian dollar rises by one cent US, that is about a 1.18% rise in the value of the dollar. The corresponding percentage rise in the value of the speculator's account is $\frac{1,000}{3,192} = 31.33\%$ (with the same potential downside risk).

Page 470, 471, 473, In Figures 9.7, 9.8 and 9.9 (a and b) there is an exponential e^{rT} which should be e^{rT} , this occurs once in Figure 9.7, twice in 9.8, twice in 9.9a and once in 9.9b

Page 471, Figure 9.8, the lower light colored horizontal line segment from the vertical axis to the “elbow” of the graph should be deleted

Page 472, In the line before Equation 9.16, “covered put” should be boldface

Page 473, In the labeling of Figure 9.9a – a should be boldface, and the upper horizontal light colored line segment from the vertical axis to the elbow in the graph should be deleted; also in Figure 9.9b – in the label, 9b should be boldface, and $S_0 - P_0$ in parentheses should be $S_0 + P_0$

Page 476, Line 4, “a call option” should be “call options”

Page 476, Figure 9.10, the upper light colored horizontal line segment from the vertical axis to the “elbow” of the graph should be deleted

Page 479, Figure 9.12, $K - ST$ should be $K - S_T$, and the Payoff is the upper graph, and Profit is the lower graph

Pages 479-481, Figures 9.12, 9.13 and 9.14 should have labels on the vertical axis, and in 9.13 and 9.14 “Pavoff” should be “Payoff”

Page 481, Figure 9.14, the graph is incorrect, the payoff graph should be below the horizontal axis and peak at the axis, and the profit graph should be above the payoff graph

Page 492, Exercise 9.1.4, line 6, June 2005 should be June 2006

Page 512, Answer to 2.2.7 should be
1161.36 can be paid on Sept. 1, 1999 and 2000 can be paid every Sept. 1 from 2000 on.