

2022 CFA Program: Level III Errata

23 February 2023

If you find something in the curriculum that you think is in error, please submit full details via the form at <http://cfa.is/Errata>.

- Corrections below are in bold, and new corrections will be shown in red; page numbers shown are for the print volumes.
- The short scale method of numeration is used in the CFA Program curriculum. A billion is 10^9 and a trillion is 10^{12} . This is in contrast to the long scale method where a billion is 1 million squared and a trillion is 1 million cubed. The short scale method of numeration is the prevalent method internationally and in the finance industry.

Volume 1

Reading 3

- In Exhibit 6 (page 140 of print), under Bond Yields and the Yield Curve for Early expansion should read, “Yields rising. Possibly stable at longest maturities. **Curve is flattening.**”
- In the Solution to Practice Problem 1B (page 242 of print), the fifth sentence should be, “To see whether this result is significantly less than 2.0, refer to the Durbin–Watson table in Appendix E at the end of this volume, in the column marked $k = 1$ (one independent variable) and the row corresponding to **80** observations.”

Reading 4

- In Section 4.1, second-to-last paragraph (page 175 of print), the fifth sentence should read, “A persistent ratio above **4%** is likely a cause for concern.”
- In the paragraph after Equation 6 (page 183 of print), the second sentence should read, “A pragmatic approach to specifying the Sharpe ratios for each asset under complete **integration** is to assume that compensation for non-diversifiable risk (i.e., “market risk”) is the same in every market.”

Reading 6

- In Example 2, the last paragraph (page 301 of print), the first sentence should read, “Placing about 85% of assets in Portfolio 4 and 15% in the risk-free asset achieves an efficient portfolio with expected return of **6.5** with a volatility of $0.853(11.65) = 9.94\%$.”
- In Exhibit 16 (page 316 of print), the x-axis should read (left to right): 0.7, 2.9, 5.1, 7.4, 9.6, 11.9, 14.1, 16.3, 18.6, 20.8, 23.0”

- In the numbered list after Example 11 (page 355 of print), the last sentence in 3 should read, “Module D is the best module, and the **US\$6,691,000** required capital reflects the discounting of a US\$10 million payment in 10 years at the 4.1% indicated in Exhibit 36.” The last sentence in 4 should read, “Module F is again the best module, and the discounting of a US\$10 million payment 20 years from now at the 6.8% expected return from Exhibit 36 points to a required capital of **US\$2,683,000** today.” The second panel of Exhibit 37 should read as follows:

Module	A	F	D	F	C	
Required Capital						
In currency	2,430	6,275	6,691	2,683	6,921	25,000
As a % of total	9.7%	25.1%	26.8%	10.7%	27.7%	100.0%

In the paragraph below Exhibit 37, the second sentence should read, “Our assumptions suggest that, in fact, they have excess capital representing **27.7%** of their total financial wealth.”

Reading 7

- In the box immediately after Example 3, in the table (page 407 of print), the Upper Boundary after 15 years should read, “**1,304,376**”

Volume 2

Reading 8

- In Example 5 (page 31 of print), the seventh sentence of Solution to 1 should read, “This would cost her $\text{€}0.0134/\text{US}\$1 \times \text{US}\$1,237,624 = \text{€}16,584$ or **US\$19,901** upfront.”
- In the last paragraph of Section 11.1 (page 57 of print), the sixth sentence should read, “Parker’s MNZA shares may be called away at 170, limiting her profit to the option premium of **\$32,250** plus the \$5,000 from selling her MNZA shares at a profit of \$1 (= \$170 – \$169) as shown in Exhibit 34.”

Reading 10

- In Section 7.3, fifth paragraph (page 168 of print), the second sentence should read, “Trading the forward rate bias involves buying currencies **trading** at a forward discount and selling currencies trading at a forward premium.
- In the Solution to Question 18 (page 227 of print), the third sentence should read, “Applying this bias involves buying currencies **trading** at a forward discount and selling currencies trading at a forward premium.
- In the Solution to Question 34 (page 233 of print), three of the calculations need to be corrected:

$$1 \text{ USD}2,500,000 / 0.8875 = \text{EUR}2,816,901$$

$$2 \text{ USD}2,650,000 / 0.8901 = \text{EUR}2,977,193$$

3 Therefore, the net cash flow is equal to **EUR2,977,193 – EUR2,816,901**, which is equal to **EUR160,292**.

Reading 11

- At the very end of Section 5 (page 257 of print), there should be an additional bullet: “As a funding cost arbitrage transaction, the TRS can allow investors to gain particular access to subsets of the fixed-income markets, such as bank loans or high-yield instruments for which cash markets are relatively illiquid or the cost and administrative complexity of maintaining a portfolio of these instruments is prohibitive for the investor.”
- [Updated] Equation 7 (page 259 of print) should read as follows,

$E(\Delta\text{Price based on investor's views of yield spreads})$

$$= (-\text{Mod}\mathbf{SpreadDur} \times \Delta\mathbf{Spread}) + [\frac{1}{2} \times \text{Convexity} \times (\Delta\mathbf{Spread})^2].$$

- In the Solution of Example 4 (page 260 of print), each instance of £97.11 should be **£97.12**:

Solution:

The portfolio's coupon income is 2.83%. The portfolio has an average coupon of £2.75 on a £100 notional principal and currently trades at £97.12. The coupon income over a one-year horizon is 2.83% = £2.75/£97.12.

In one year's time, assuming an unchanged yield curve and zero interest rate volatility, the rolldown return is 0.17% = (£97.27 – £97.12)/£97.12.

- In Exhibit 12 (page 261 of print), the first column of the third row should read, “+/- $E(\Delta\text{Price due to investor's view of yield spreads})$ ”
- In Exhibit 12 (page 261 of print), the calculation column has several instances of £97.11 that should be **£97.12**:

$$\text{£}2.75/\text{£}97.12 = 2.83\%$$

$$(\text{£}97.27 - \text{£}97.12)/\text{£}97.12 = 0.17\%$$

- In Example 4, Exhibit 12 (page 261 of print), in the Calculation column, the third row from the bottom should be 0.37%

Reading 12

- The title of Exhibit 24 (page 325 of print) should be “**Receiver** Swaption Payoff Profile”
- In the summary, the bullet that begins “The choice among hedging with the receive-fixed swap...” (page 350 of print), the last two sentences should read, “If rates are expected to go up, the **receiver swaption** can become attractive. And if rates are projected to reach a certain threshold that depends on the option costs and the strike rates, the **swaption collar** can become the favored choice.”

Volume 3

Reading 13

- In Exhibit 4 (page 10 of print), the y-axis should be **Price** and the x-axis should be **Yield (%)**
- In Example 1 (page 12 of print), under Portfolio B the equation should read (brackets are adjusted),
 - $-2.390\% = 0.5894 \times \{[-1.994 \times 0.005] + [0.5 \times 5 \times (0.0052)]\} + 0.4106 \times \{[-9.023 \times 0.005] + [0.5 \times 90.8 \times (0.0052)]\}$
- In the paragraph after Example 1 (page 12 of print), the third sentence should read, “Although the bullet and barbell have the same duration, the barbell’s higher convexity (40.229 versus 26.5 for the bullet) results in a larger gain as yields-to-maturity **fall** and a smaller loss when yields-to-maturity **rise**.”
- In Section 3.1 (page 14 of print), fifth sentence of the third paragraph should read, “The **rolling yield** return component of Equation 1 (sometimes referred to as “carry-rolldown”) incorporates not only coupon income (adjusted over time for any price difference from par) but also additional return from the passage of time and the investor’s ability to sell the shorter-maturity bond in the future at a higher price (lower yield-to-maturity due to the upward-sloping yield curve) at the end of the investment horizon.”
- In Exhibit 8 (page 16 of print), the arrows in the first row should only point LEFT. The label on arrows in the first row should read “Post initial margin at t = 0.”
- In Exhibit 9 (page 17 of print), the box on the right should read, “Fixed Rate **Receiver** / Floating-Rate **Payer** / Long Duration Position.”
- In Example 3 (page 17 of print), after the first two sentences, the following sentence should be inserted, “The swap has a modified duration of 8.318.”
- In Example 3 (page 18 of print), after (Δ Price due to investor’s view of benchmark yield), should read, “The difference in price for a 50 bp shift of the 9.5-year bond of £4,075,415, or $[PV(0.029535/2, 19, 1.125, 100)] - [PV(0.024535/2, 19, 1.125, 100)] \times \text{£1 million}$.”
- In the fourth paragraph of Section 3.2.2 (page 24 of print), the third sentence should read, “Portfolio duration is approximately zero, or $[1.994 \times 163.8/(163.8 - 36.2)] + [9.023 \times -36.2/(163.8 - 36.2)]$, and portfolio convexity equals -19.34 , or $[5.0 \times 163.8/(163.8 - 36.2)] + [90.8 \times -36.2/(163.8 - 36.2)]$.”
- In Example 7 (page 24 of print), the last sentence of the second paragraph should read, “We can therefore solve for the modified duration of the 2-year zero as 1.96 (= $2/1.02$) and the 10-year zero as 9.62 (= $10/1.04$), so net portfolio duration equals zero, or $[124.6/(124.6 - 25.41) \times 1.96] + [-25.4/(124.6 - 25.41) \times 9.62]$.”
- [updated] In the second paragraph after Exhibit 16 (page 26 of print), the last sentence should read, “We may use this portfolio BPV to estimate the approximate portfolio gain if the 2-year yield-to-maturity **and** the 10-year yield-to-maturity **fall by 25 bps**, which is equal to \$249,225 (= $25 \text{ bps} \times \$9,969$).”
- In the third-to-last paragraph in 3.2.2, under Rolldown Return (page 28 of print), the second and third sentences should read, “However, under negative yields-to-maturity, amortization of the bond’s premium will typically result in a **negative** rolldown **loss**. In our example, the investor is short the original 2-year zero and therefore realizes a **positive** rolldown **gain** on the short position.” The equations at the end of the paragraph should read:

- “Short” 2-year: $-\text{€}83.24 \text{ MM} \times \{[1/(1 + -0.65\%)^{1.5}] - [1/(1 + -0.65\%)^2]\}$
- “Long” 10-year: $\text{€}17.05 \text{ MM} \times \{[1/(1 + 0.04\%)^{9.5}] - [1/(1 + 0.04\%)^{10}]\}$
- In the second-to-last paragraph in 3.2.2, under Δ Price Due to Benchmark Yield Changes, the equations at the end of the paragraph should read:
 - “Short” 2-year: $-\text{€}83.24 \text{ MM} \times \{[1/(1 + -0.63\%)^{1.5}] - [1/(1 + -0.65\%)^{1.5}]\}$
 - “Long” 10-year: $\text{€}17.05 \text{ MM} \times \{[1/(1 - 0.20\%)^{9.5}] - [1/(1 + 0.04\%)^{9.5}]\}$
- In the third paragraph after Exhibit 19 (page 29 of print), the second sentence should read, “A duration-based estimate multiplying each position BPV by the respective yield change gives us an approximation of **\$9,088,175**, or (+25 bps \times \$21,934) + -(50 bps \times -**\$121,170**) + (+25 bps \times \$99,253).”
- In the paragraph after Equation 9 (page 33 of print), the first sentence should read, “In Equations 8 and 9, PV_- and PV_+ are the portfolio **values changes** from a decrease and increase in yield-to-maturity, respectively, PV_0 is the original portfolio value, and Δ Curve is the change in the benchmark yield-to-maturity.”
- Exhibit 24 (page 34 of print) should read as follows:

Strategy	Description	Targeted Return	Portfolio Duration Impact
Long bond call option	Purchase right to take forward bond delivery	Max (Bond price at lower yield - Strike price, 0) - Call premium	Increase portfolio duration and convexity (up-front premium)
Long bond put option	Purchase right to deliver bond in the future	Max (Strike price - Bond price at higher yield, 0) - Put premium	Decrease portfolio duration and convexity (up-front premium)
Long payer swaption	Own the right to pay-fixed on an interest rate swap at a strike rate	Max (Strike rate - Swap rate, 0) - Swaption premium	Decrease in portfolio duration and convexity (up-front premium)
Long receiver swaption	Own the right to receive-fixed on an interest rate swap at a strike rate	Max (Swap rate - Strike rate, 0) - Swaption premium	Increase in portfolio duration and convexity (up-front premium)
Long call option on bond future	Own the right to take forward bond delivery at a strike price	Max (Bond futures price at lower yield - Strike price, 0) - Call premium	Increase in portfolio duration and convexity (up-front premium)
Long put option on bond future	Own the right to deliver bond in the future at a strike price	Max (Strike price - Bond futures price at higher yield, 0) - Put premium	Decrease in portfolio duration and convexity (up-front premium)

- In Section 3.3 (page 36 of print), in Equation 10, the negative sign before $\frac{1}{PV}$ should be deleted and the text after Equation 11 should read, “where r_k represents the k th key rate **and PV is the portfolio value**. In contrast to effective duration, key rate durations help identify “shaping risk” for a bond **portfolio**—that is, a **portfolio’s** sensitivity to changes in the *shape* of the benchmark yield curve.”
- In the fourth paragraph of Section 3.3 (page 37 of print), the last sentence should read, “Note that the short 5-year active position has a negative key rate duration of -0.857 , or $4.902 \times (-46/263)$.”
- In the table right before Example 11 (page 37 of print), the number for the row Portfolio and the column Difference should be **3.87** (not -3.87).
- In the third paragraph after Equation 14 (page 40 of print), the last sentence should read, “This stands in contrast to the relationship between USD/EUR spot and 2-year forward rates at the inception of the trade on 31 March 2019, when implied (annualized) EUR appreciation was **2.87%**, $= (1.187/1.1218)^{0.5} - 1$.”
- In Exhibit 28 (page 42 of print), in the middle row, “ \pm basis” should appear after “JPY Floating,” not after “USD Floating”
- **In Example 15 (page 46 of print), the heading “Rolldown Return” after the table should read “Rolling Yield.”**
- In Practice Problem 3 (page 51 of print), Option A should read, “2-year receive-fixed Australian dollar (AUD) swap with the *same modified* duration as the bullet portfolio.” Option B should read, “2-year pay-fixed AUD swap with *twice the modified* duration as the 2-year government bond in the barbell portfolio.” Option C should read, “9-year receive-fixed AUD swap with *twice the modified* duration as the 9-year government bond position in the equally weighted portfolio.”
- In Practice Problem 8 (page 52 of print), Option B should read, “sell the bullet portfolio and **buy** the barbell portfolio.”
- The second sentence in Practice Problem 11 (page 53 of print), “If she has a choice between **a callable bond which is unlikely to be called, a putable bond which is likely to be put, or an option-free bond with otherwise comparable characteristics, the most profitable position would be to...**”
- In Practice Problem 21 (page 55 of print), Option A is “Bear steepening.”
- The Solution to Practice Problem 3 (page 56 of print), the last sentence should read, “In the case of B, the pay-fixed swap with twice the **modified** duration of the barbell will more than offset the existing long position, resulting in net short 2-year and long 9-year bond positions in the overall portfolio and a gain under bear flattening.”
- In the Solution to Practice Problem 14 (page 58 of print), the last sentence should read, “The approximate (first-order) change in portfolio value may be estimated from the first (modified) term of Equation 3, namely $(-\text{EffDur} \times \Delta\text{Yield})$. Solving for this using the -1.22 effective duration difference multiplied by 0.005 equals 0.0061% , or 61 bps.”

Reading 14

- In Exhibit 3 (page 63), the lines are mislabeled. The line labeled as Investment Grade should be labeled High Yield, and vice versa.
- [updated] In Example 4, the Solution to Question 2 (page 71 of print) should read,

For the yield spread measure, neither the **1.29%** spread nor the 7-year government rate of 1.39% has changed, so an analyst considering only these two factors would expect the bank bond price to remain unchanged.

However, for the G-spread measure, the **20 bp** increase in the 10-year government YTM causes the 8-year interpolated government YTM to change.

1. The 7-year and the 10-year bond weights for the interpolation are the same as for Question 1, $w_7 = 66.7\%$ and $w_{10} = 33.3\%$.
2. The new 8-year government rate is a weighted average of the 7-year bond rate and the 10-year bond rate using the weights in Step 1.

$$\begin{aligned} r_{8yr} &= W_7 \times r_{7yr} + W_{10} \times r_{10yr} \\ &= (66.7\% \times 1.39\%) + (33.3\% \times 1.86\%) = 1.55\% \end{aligned}$$

3. The bank bond YTM has risen by **0.16%** to 2.73% ($=1.55\% + 1.29\%$).
4. The bank bond price change can be estimated by multiplying the yield change by modified duration ($-\text{ModDur} \times \Delta\text{Yield}$) as in earlier lessons. This change can be calculated as **-1.11%** ($=-7.1 \times 0.16\%$).

Note that we can confirm this using the Excel PV function ($=-PV(\text{rate}, \text{nper}, \text{pmt}, \text{FV}, \text{type})$) where “rate” is the interest rate per period (0.0268), “nper” is the number of periods (8), “pmt” is the periodic coupon (2.75), “FV” is future value (100), and “type” corresponds to payments made at the end of each period (0).

Initial bank bond price: 100.50 ($=-PV(0.0268, 8, 2.75, 100, 0)$)

New bank bond price: **99.39** ($=-PV(0.0284, 8, 2.75, 100, 0)$)

Price change: **-1.11%** ($= (99.39 - 100.50)/100.50$)

- Two paragraphs before Exhibit 11 (page 72 of print), the fifth sentence should read, “An issuer might use the **MRR spread** to determine the relative cost of fixed-rate versus floating-rate borrowing alternatives, while an investor can use the **I-spread** to compare pricing more readily across issuers and maturities.
- In the third paragraph after Example 5 (page 73 of print), the third sentence should read, “Negative basis arises if the yield spread is above the CDS spread, and positive basis indicates a yield spread **tighter than the CDS spread.**”
- In Example 7 (page 76 of print), 1C should read, “The government benchmark bond used to calculate the yield spread has a longer maturity than the corporate bond, and the benchmark yield curve is **upward** sloping.”
- In Example 8 (page 78 of print), Solution to 1A should read,

1 Solve for the quarterly interest payment ($=(\text{MRR} + \text{QM}) \times \text{FV}/m$) in the numerator and the discount rate ($=(\text{MRR} + \text{DM})/m$) in the denominator of Equation 3 with $\text{QM} = 1.75\%$, $\text{DM} = 2.25\%$, $\text{MRR} = 0.50\%$, and $m = 4$.

A Quarterly interest payment: £562,500 ($= (0.50\% + 1.75\%) \times £100,000,000/4$)

- In Equation 4 (page 79), $Z - DM$ should be replaced with $Z - DM$ in three places.

- In Example 17, under Question 1 (page 91 of print), after the 15-year interpolated bond should read, “2.125% = (2.00% × 0.5) + (2.25% × 0.5)”
- Equation 13 (page 100 of print) should read,

$$\text{Trade size} \times \begin{cases} \text{Trade price} - (\text{Bid} + \text{Ask}) / 2 \text{ for buy orders} \\ (\text{Bid} + \text{Ask}) / 2 - \text{Trade price} \text{ for sell orders} \end{cases}$$

- ~~Equation 14 (page 105 of print) should read,~~

$$\text{CDS Price} \approx 1 + ((\text{Fixed Coupon} - \text{CDS Spread}) \times \text{EffSpreadDur}_{\text{CDS}})$$

- [Updated:] In Example 20, the Solution (page 101 of print) should read,

First, we solve for the expected change in YTM based on a 99% confidence interval for the bond and a 1.75% yield volatility over 21 trading days, which equals **65.9 bps = (6.174 bps × 2.33 standard deviations × √21)**. We can quantify the bond’s market value change using either a duration approximation or the actual price change as follows. We can use the Excel MDURATION function to solve for the bond’s duration as 12.025. We can therefore approximate the change in bond value using the familiar (–ModDur × ΔYield) expression as **\$3,605,636 = (\$50 million × 0.91 × (–12.025 × .00659))**. We can also use the Excel PRICE function to directly calculate the new price of **84.113** and multiply the price change of **6.887** by the face value to get **\$3,443,500**.

- Equation 15 (page 106-107 of print) should read,

$$\Delta(\text{CDS Price}) \approx -(\Delta(\text{CDS Spread}) \times \text{EffSpreadDur}_{\text{CDS}})$$

- In Exhibit 27 (page 107 of print), the Targeted Return for Payer Option on CDS Index and the Targeted Return for the Receiver Option on CDS Index should be switched.
- In Example 24 (page 108), the Solution, the short and long risk equations should read,

Short risk (French issuer): €46,970 (= –€10,000,000 × (–0.10% × 4.697))

Long risk (German issuer): €116,725 (=€10,000,000 × (–(–0.25%) × 4.669))

- The first sentence of the Solution for Example 26 (page 113 of print) should read, “To estimate credit curve **rolling yield** returns, we must solve for the first two return components from Equation 1 (Coupon income +/- Roll-down return) and separate the impact of benchmark yield versus credit spread changes.”
- In the Solution to 2 in Example 26 (page 114 of print), the second calculation should read,

“Price appreciation: **\$90,500** (= (101.118 – 100.937)/100.000 × \$50 million)

And the sentence that follows should read, “Because the yield spread curve is flat at 0.50%, the full **\$90,500** price change in the 10-year is benchmark yield curve roll down.”

The last calculation should read,

$$\text{“Price appreciation: } \mathbf{\$434,500} \text{ (= (101.517 – 100.648)/100.000 × \$50 million)}$$

And the sentence that follows should read, “Because the 0.07% decline in YTM is estimated to be equally attributable to benchmark yield and yield spread changes, each is assumed equal to **\$217,250**.”

- The Solution to 3 in Example 26 (page 114 of print) should read, “Incremental income due to price appreciation is therefore **\$344,000** (**=\$434,500 – \$90,500**), of which **\$217,250** is attributable to credit spread changes.

In total, the incremental roll-down strategy generates **\$506,500** (**=\$344,000 + 162,500**), of which **\$292,250** (**= \$217,250 + \$75,000**) is estimated to be due to credit spread curve roll down.”

- Example 29 (page 117 of print) has several issues and has been revised:

Example 29

Synthetic Credit Strategies: Economic Slowdown Scenario

As in the prior example, an active fixed-income manager anticipates an economic slowdown in the next year with a greater adverse impact on lower-rated issuers. The manager chooses a tactical CDX (credit default swap index) strategy combining positions in investment-grade and high-yield CDX contracts to capitalize on this view. The current market information for investment-grade and high-yield CDX contracts is as follows:

CDX Contract	Tenor	CDS Spread	EffSpreadDur_{CDS}
CDX IG Index	5 years	120 bps	4.67
CDX HY Index	5 years	300 bps	4.65

Assume that both CDX contracts have a \$10,000,000 notional with premiums paid annually, and that the EffSpreadDur_{CDS} for the CDX IG and CDX HY contracts in one year are 3.78 and 3.76, respectively. **We ignore the time value of money for purposes of this example.**

1. Describe the appropriate tactical CDX strategy and calculate the one-year return assuming no change in credit spread levels.
2. Calculate the one-year return on the tactical CDX strategy under an economic downturn scenario in which investment-grade credit spreads rise by 50% and high-yield credit spreads double.

Recall from Equation 14 that the price of a CDS contract may be approximated as follows:

$$\text{CDS Price} \approx 1 + ((\text{Fixed Coupon} - \text{CDS Spread}) \times \text{EffSpreadDurCDS})$$

Solution to 1:

The investor should initially *buy* protection on the CDX **HY** Index and *sell* protection on the CDX **IG** Index. Current CDS prices are estimated by multiplying $\text{EffSpreadDur}_{\text{CDS}}$ by the spread difference from the standard rates of 1% and 5%, respectively:

CDX HY: 109.3 per \$100 face value, or 1.093 (= 1 + (5.00% - 3.00%) × 4.65)

CDX IG: 99.066 per \$100 face value, or 0.99066 (= 1 + (1.00% - 1.20%) × 4.67)

Since the investor is both buying HY protection at a *premium* to par (that is, agreeing to pay the 5% standard coupon while the underlying CDS spread is 3.00%) and selling IG protection at a *discount* from par (or agreeing to receive the standard 1.00% while the underlying index spread is 1.20%), the investor will receive an upfront payment for entering both positions as follows:

$$\$1,023,400 = [\$10,000,000 \times (1.093 - 1)] + [\$10,000,000 \times (1 - 0.99066)]$$

In one year, the return is measured **by combining the net CDX coupon income or expense** with the price appreciation assuming no spread change. As the investor is long CDX HY **protection (i.e., pays the 5.00% standard HY coupon)** and short CDX IG **protection (or receives the standard 1.00% IG coupon)**, the net annual premium **paid** by the investor at year end is \$400,000 ($=\$10,000,000 \times (5.00\% - 1.00\%)$). The respective CDS prices in one year are as follows:

CDX HY: 107.52 per \$100 face value, or 1.0752 (=1 + (2.00% × 3.76))

CDX IG: 99.244 per \$100 face value, or 0.99244 (=1 + (-0.20% × 3.78))

To offset the existing CDX positions in one year, the investor would sell HY protection and buy IG protection. The investor is able to sell HY protection at a premium of 7.52, resulting in a \$178,000 gain from the long CDX HY position over one year (1.093 – 1.0752) × \$10,000,000. Since the investor must buy IG protection in one year at a *lower* discount to par of (1 – 0.99244), it has a \$17,800 gain from the CDX IG position (= (0.99244 – 0.99066) × \$10,000,000). Subtracting the \$400,000 net coupon payment made by the investor results in a one-year *loss* from the strategy of \$204,200 (= \$178,000 + \$17,800 – \$400,000) with constant spreads.

Solution to 2:

Initial CDS prices are derived exactly as in Question 1:

CDX HY: 109.3 per \$100 face value, or 1.093 (= 1 + (2.00% × 4.65))

CDX IG: 99.066 per \$100 face value, or 0.99066 (= 1 + (-0.2% × 4.67))

In one year, the return is measured by combining the coupon income with the price appreciation given the **rise** in the CDX IG spread to 1.80% (increased by 60 bps) and the CDX HY spread to 6.00% (increased by 300 bps). In this case, the investor takes the **same** position to that of Question 1—namely, long CDX HY **protection (short risk)** and short CDX IG **protection (long risk)**, so the net annual premium **paid remains** \$400,000 (= \$10,000,000 × (5.00% – 1.00%)). Respective CDS prices in one year are as follows:

CDX HY: 96.24 per \$100 face value, or 0.9624 (=1 + (-1.00% × 3.76))

CDX IG: 96.976 per \$100 face value, or 0.96976 (=1 + (-0.80% × 3.78))

When offsetting the transaction in one year, the investor suffers a \$209,000 loss from the short CDX IG position ((0.99066 – 0.96976) ×

-\$10,000,000) and benefits from a \$1,306,000 gain from offsetting the CDX HY position $(1.093 - 0.9624) \times \$10,000,000$. Subtracting the \$400,000 net premium paid results in a one-year gain from the strategy of \$697,000 $(= \$1,306,000 - \$209,000 - \$400,000)$ under the second scenario.

- In Example 30, the second table (page 118 of print) should read as follows:

Rating category	E(OAS)	E(Expected Loss)	E(Excess Spread)
A	0.933%	0.07%	3.898%
Baa	1.333%	0.20%	5.80%
Ba	2.50%	0.67%	8.705%
B	3.667%	3.00%	9.832%

Underneath the table, the passive portfolio return should be **7.059%** $(=(3.898\%+5.80\%+8.705\%+9.832\%)/4)$.

The tactical portfolio return should be **7.795%** $(=3.898\%/6+5.80\%/6+8.705\%/3 + 9.832\%/3)$.

- In Example 31 (page 119 of print), the Solution to 2, the CDX HY 5-year should read, “\$1,514,780 = $(-(-1.75\%) \times 4.637) \times \$18,667,000$ ” and the CDX HY 10-year should read, “\$216,400 = $(-(-0.25\%) \times 8.656) \times (-\$10,000,000)$.”
- [updated] In Example 32, second paragraph (page 121 of print), second sentence should read, “In particular, European high-yield credit spreads are expected to narrow by 25% in the near term, the euro is expected to appreciate 1% against the US dollar, and all US credit spreads **and expected loss rates** are expected to decline just 10% over the same period.” In the table in the solution, the E(Excess Spread) column should read, top to bottom: **2.08%, 2.93%, 4.54%, 3.65%**. The sentence after the table should read, “Return on the equally weighted portfolio is equal to **3.30%** $(=(2.08\%+2.93\%+4.54\%+3.65\%)/4)$.” The final sentence in the example should read, “Given that iTraxx-Xover carries a weight equal to one-half of the US corporate bond portfolio, the strategy returns **6.04%** (or **3.30% + 5.483%/2**).”
- Practice Problem 12 (page 134 of print) should read, “What is the expected excess spread of the BBB rated bond for ~~an instantaneous~~ a 50 bp decline in **yield over a one-year period** if the bond’s LGD is 40% and the POD is 0.75%?”
- **Option C for Practice Problem 12 (page 134 of print) should read, “5.45%.”**
- Option C for Practice Problem 16 (page 135 of print) should read, “50% A rated bonds, 50% **BB** rated bonds.”
- In Practice Problem 21 (page 136 of print), 1.50% should be 1.50 **bps**. In the Solution (page 141), two instances of 1.50% should be 1.50 **bps**.

- Practice Problem 32 (page 139 of print) should read, “What is the approximate unhedged excess return to the United States–based credit manager for an international credit portfolio index equally weighted across the four portfolio choices, assuming no change to spread duration and no **changes to the expected loss** occur?”
- In the Solution to Practice Problem 6 (page 140 of print), the last sentence should read, “The 12-year swap rate is 2.15% (or $(80\% \times 2.05\%) + (20\% \times 2.55\%)$), and the difference between the corporate bond YTM and the 12-year interpolated government rate is **0.65%**.”
- **The Solution to Practice Problem 12 (page 141 of print) should read, “C is correct. Using Equation 10 ($\text{Spread}_0 - (\text{EffSpreadDur} \times \Delta\text{Spread}) - (\text{POD} \times \text{LGD})$), the expected excess return on the bond is approximately 5.45% ($=2.75\% - (6 \times -0.50\%) - (0.75\% \times 40\%)$).**

Reading 17

- In Example 5, the Exhibit 17 (page 255 of print) y-axis is mislabeled. It should be (bottom to top) **0, 2, 4, 6, 8, 10, 12, 14**.

Reading 18

- The Solution to Practice Problem 15 should read, “C is correct. Chen prefers an approach that emphasizes security-specific factors, engages in factor timing, and typically leads to portfolios that are generally more concentrated than those built using a systematic approach. These characteristics reflect a discretionary bottom-up portfolio management approach.”

Volume 4

Reading 19

- The Solution to Practice Problem 4 (page 84 of print) should read, “Gunnar Patel is an event-driven hedge fund manager for Senson Fund, which focuses on merger arbitrage strategies. Patel has been monitoring the potential acquisition of Meura Inc. by Sellshom, Inc. Sellshom has offered to buy Meura in a stock-for-stock deal. Sellshom was trading at \$60 per share just prior to the announcement of the acquisition, and Meura was trading at \$18 per share.”

Reading 20

- In Example 8 (page 168 of print), the last sentence in the Solution to 1 should read, “The NAV at year-end 2022 is therefore **(€30 million \times 1.12) \times (1 – 0.20) \times 1.12% = €30,105,600.**”
- In the Solution to 20 (page 199 of print), the second half should read, “Therefore, the expected NAV of the fund at the end of the current year is

Expected NAV = **Prior-year NAV \times (1 + Growth rate) + Capital contributions – Distributions.**

Expected NAV = **(€25,000,000 \times 1.11) + 0 – €4,995,000 = €22,755,000.**

Reading 23

- In Exhibit 9, the x-axis label should be “Probability of Having Enough Money over One’s Lifetime.”
- In Section 11.2.2, in the shaded box Life Insurance Needs for Jacques and Marion, the first paragraph after the bullets (page 422 of print), the second to last sentence should read, “The adjusted rate i can be calculated as follows, ~~as long as the discount rate is larger than the growth rate~~:³ $[(1 + \text{Discount rate})/(1 + \text{Growth rate})] - 1$, or $(1.05/1.03) - 1 = 1.94\%$.”

Volume 5

Reading 24

- In the second paragraph of 17.1 (page 71 of print), the third sentence should read, “The largest remaining portion of assets consists of currency, deposits with central banks (e.g., **Bank of Japan or Bank of England**), receivables, and bullion.”

Reading 26

- Charles Mitchell Conover, CFA, CIPM, is one of the authors of this reading.
- In Example 8, in the table in the Solution (page 221 of print), the numbers for Year 1 Selection should be as follows: 0.10%, 0.01%, 0.12%. The numbers for Year 2 Selection should be as follows: 0.08%, -0.04%, 0.04%.

Reading 29

- In Exhibit 9 (page 396 of print), the Total Assets should read “2,785,000.”

Volume 6