2023 CFA Program: Level II Errata
2 August 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.

- The eBook for the 2022 curriculum is formatted for continuous flow, so the text will fit all screen sizes. Therefore, eBook page numbering—which is linked to section heads—does not match page numbering in the print curriculum.
- 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.

Glossary

Volume 1

Quant Learning Module 2
- In Exhibit 1, the coefficient of the intercept (page 28 of print) should be $-2.1876$ (negative, not positive).
- In the lesson “Testing Joint Hypotheses for Coefficients,” the formula for a one-sided coefficient test, right side (page 34 of print), should read, “$H_0: b_j \leq B_j, H_a: b_j > B_j.$”

Quant Learning Module 3
- In Practice Problems 1-6 (pages 74 and 75 of print), the references to the exhibits should be Exhibits 1, 2, and 3, respectively, not Exhibits 15, 16, and 17.

Quant Learning Module 4
- [Updated:] In the Extensions of Multiple Regression section, please disregard the Cook’s $D$ formula as a means to identify data points and the associated content/questions.

Quant Learning Module 5
- In the third paragraph of the lesson “Trend Models and Testing for Correlated Errors” (page 124 of print), the first sentence should read, “In Example 1, estimating a linear trend in the monthly CPI inflation yielded a Durbin–Watson statistic of 1.2145.” The fifth sentence in that same paragraph should read, “Because the value of the Durbin–Watson statistic (1.2145) is below this critical value, we can reject the hypothesis of no positive serial correlation in the errors.”
In Practice Problem 11 (page 173 of print), the callout to the exhibit should read “Exhibit 1.” In Practice Problem 12 (page 174 of print), the callout to the exhibit should read “Exhibit 2” and the exhibit that follows should be labeled “Exhibit 2.”

In Exhibit 1 in the information for Practice Problems 23 and 24 (page 177 of print), the Actual Value of Changes in the Log of Sales \( \Delta \ln(\text{Sales}_t) \) for 3Q 2019 should be 0.0403.

In Practice Problem 6 (page 270 of print), Option C should read, “Statements 1, 2, and 3.”

In the Solution to Practice Problem 10 (page 273 of print), the first two sentences should read, “A is correct. It is the least accurate answer because neural networks with many hidden layers—at least 2, but often more than 20 hidden layers—are known as deep learning nets.”

In Example 9 (page 29 of print), the first sentence should read, “Exhibit 16 (see the Example8 sheet in the downloadable Microsoft Excel workbook) shows revenues, COGS, and year-end working capital account balances for YY Ltd., a fictional company, for years 1–3.”

In Example 10, in the text after Question 2 (page 32 of print), the first sentence in the paragraph above Exhibit 18 should read, “Exhibit 18 shows financial data for YY Ltd. related to its capital structure and profitability.”

In the Information for Practice Questions 23-29 (page 53 of print), the title of Exhibit 2 should be, “Selected Financial Data for Rainer Co., 1 January 2016 (Acquisition Date) ($ millions).” In the first paragraph after Exhibit 2, the first sentence should read, “Thronen notes that, for fiscal year 2016, Rainer reported total revenue of $1,740 million and net income of $360 million, and paid dividends of $220 million.”

In the information for Practice Problems 21-25 (page 109 of print), there should be a note under Exhibit 2 that reads, “All transactions (including plan amendments) are assumed to occur at year-end.” In Practice Problem 22, Option B should be 530.

The last two sentences in the solution to Practice Problem 22 (page 117 of print) should read, “Here, the service costs are 320 (= 200 + 120) and the net interest expense is 210 (= (42,000 – 39,000) \times 7\%). Thus, the amount of periodic pension cost that would be reported in P&L under IFRS is equal to 530.”

The last two sentences in the solution to Practice Problem 23 (pages 117 of print) should read, “Under US GAAP—assuming the company chooses not to immediately recognise the actuarial loss and assuming there is no amortisation of past service costs or actuarial
gains and losses—the components of periodic pension cost that would be reported in P&L include the current service cost of 200, the interest expense on the pension obligation at the beginning of the period of $2,948.4 [= 7.0% × (42,000 + 120)], and the expected return on plan assets, which is a reduction of the cost of 3,120 (= 8.0% × 39,000). Summing these three components gives 28.”

FSA Learning Module 3
- In the solution to Practice Problem 11 (page 204 of print), the first sentence should read, “C is correct.” The last sentence should read, “Thus, the translation adjustment for liabilities is positive.”

FSA Learning Module 5
- In the Information for Practice Problems 1-7 (page 363 of print), the last two statements (the statements Pereira makes to Matei, should be Statement 4 and Statement 5.

Volume 3

Corporate Issuers Learning Module 3
- In Example 8 (page 261 of print), the calculations in the Solution to 1 should read,

\[
ERP = \{2.2 + 0 + [1.6 + 3.0 - (-0.7)]\} - 2.5 = 5\%
\]

and

\[
ERP = \{2.0 + 1.0 + [3.0 + 2.0 - 0.0]\} - 3.0 = 5.0%.
\]

Corporate Issuers Learning Module 5
- In Example 12, Practice Question 3 (page 333 of print), C should read, “Tulor earns 50 bps in annualized interest income on its cash and pays an interest rate of 600 bps on its debt, and”

- The Solution to Practice Question 7 (page 355 of print) should read,

C is correct. Materiality can be defined along two dimensions: size and fit. Although the acquisition does not signal a change in strategy or focus for Stratton, the transaction is considered large and material because it exceeds 10% of Stratton’s enterprise value prior to the transaction. The total consideration is USD40 billion, based on share prices just prior to the announcement; thus, it represents 23.5% of Stratton’s enterprise value just prior to the announcement of USD170 billion. A is incorrect because materiality can be defined along two dimensions: size and fit. Although the acquisition does not signal a change in strategy or focus for Stratton, the transaction is considered large and material because it exceeds 10% of Stratton’s enterprise value prior to the transaction. B is incorrect because the transaction is considered large and material because it exceeds 10% of Stratton’s enterprise value prior to the transaction.
Equity Learning Module 1
- In Example 4, the text introducing Case 2 is missing. Before "State the effect of Livent’s accounting for preproduction costs on its reported earnings per share" (page 377 of print), the following text should appear:

“CASE B.

Livent, Inc., was a publicly traded theatrical production company that staged a number of smash hits, such as Tony-award winning productions of Showboat and Fosse. Livent capitalized preproduction costs, including expenses for pre-opening advertising, publicity and promotion, set construction, props, costumes, and salaries and fees paid to the cast, crew, and musicians during rehearsals. The company then amortized these capitalized costs over the expected life of the theatrical production based on anticipated revenues.”

Equity Learning Module 2
- In the lesson “The H-Model and Three-Stage Dividend Discount Models,” in the text right before Example 16 (page 440 of print), the computation should read,

\[
V_0 = \frac{D_0(1+g_s) + D_0H(g_s - g_l)}{r - g_l}
\]

\[
= \frac{0.55(1.05) + 0.55(5)(0.09 - 0.05)}{0.0588 - 0.05}
\]

\[= 78.13\]

Volume 4

Equity Learning Module 2
- [UPDATED:] The Solutions to Example 30 (page 156 of print) should read:

Solution to 1:
Calculate intrinsic value as \((1.032 \times 2.66)/(0.074 - 0.032) = \$65.36\).

Solution to 2:
Calculate a justified P/CF based on forecasted fundamentals as \$65.36/\$3.26 = 20.05\).

Solution to 3:
The justified P/FCFE is \$65.36/\$2.66 = 24.57.

- The Solution to Example 34 (pages 164 of print) should read as follows:

Solution:
For EV, we first calculate the total value of CL’s equity: 863 million shares outstanding times \$66.48 price per share equals \$57,372 million market capitalization.
CL has only one class of common stock, no preferred shares, but has minority interest. For companies that have multiple classes of common stock, market capitalization includes the total value of all classes of common stock. Similarly, for companies that have preferred stock and/or minority interest, the market value of preferred stock and the amount of minority interest are added to market capitalization.

EV also includes the value of long-term debt obligations. Per CL’s balance sheet, this is the sum of long-term debt ($6,354 million), the current portion of long-term debt ($0 million), and other non-current liabilities ($2,269 million), or $8,623 million. Typically, the book value of long-term debt is used in EV. If, however, the market value of the debt is readily available and materially different from the book value, the market value should be used.

EV excludes cash, cash equivalents, and short-term investments. Per CL’s balance sheet, the total of cash and cash equivalents is $726 million.

So, CL’s EV is $57,372 million + $8,623 million + $299 million − $720 million = $65,568 million.

For EBITDA, we use the trailing 12-month (TTM) data, which are shown in the table above for the year ending 31 December 2018. The EBITDA calculation is

\[ EBITDA = \text{Net income} + \text{Interest} + \text{Income taxes} + \text{Depreciation and amortization}. \]

\[ EBITDA = 2,400 + 143 + 906 + 511 = 3,960 \text{ million}. \]

CL does not have preferred equity. Companies that do have preferred equity typically present in their financial statement net income available to common shareholders. In those cases, the EBITDA calculation uses net income available to both preferred and common equity holders.

For CL, we conclude that EV/EBITDA = ($65,568 million)/($3,960 million) = 16.6.

- In the solution to Problem 6 (page 199 of print) should read, “Because investing looks to the future, analysts often favor forward P/E when earnings forecasts are available, as they are here. A specific reason to use forward P/Es is the fact given that RUF had some unusual items affecting EPS for 2020. The data to make appropriate adjustments to RUF’s 2020 EPS are not given. In summary, Stewart should use forward P/Es.”

Equity Learning Module 3
- In Example 11 (page 233 of print), a bullet point should be added after the first bullet that reads, “Cost of equity equals 7.95%.”
- In the solution to Practice Question 37 (page 276 of print), both instances of 4.37 should be corrected to 5.37.

Fixed Income Learning Module 1
- In Example 1, Questions 3 and 4 (page 344 of print) should read:
3. Calculate the forward price of a two-year bond to be issued in one year: \( F_{A,B-A} = F_{1,2} \).

Solution:

Using Equation 2,

\[
0.7722 = 0.9346 \times F_{1,2}.
\]

\[
F_{1,2} = \frac{0.7722}{0.9346} = 0.8262.
\]

4. Interpret your answer to Problem 3.

Solution:

The forward contract price of \( F_{1,2} = 0.8262 \) is the price agreed on today...

• In the lesson “Active Bond Portfolio Management,” the third and fourth paragraphs after Exhibit 4 (page 359 of print) should read:

The 6% five-year purchased for 100 returns 117.67 in two years \([(6 \times 1.02) + 6 + 105.55]\), which consists of the first year’s coupon reinvested at the one-year rate, the second annual coupon, and the capital gain on the sale of the 6% bond with three years to maturity at an unchanged three-year yield of 4% \([105.55 = 6/1.04 + 6/(1.04)^2 + 106/(1.04)^3]\). The annualized rate of return is 8.476% [solve for \( r \), where \((117.67/100) = (1 + r)^2\)]. The 7% six-year bond purchased at par returns 121.23 in two years \([(7 \times 1.02) + 7 + 107.09]\] with an annualized return of 1 bond 0.104%. The excess return of nearly 2% results from both higher coupon income than the five-year matched maturity bond as well as a larger capital gain on the sale of the 7% bond with four years to maturity at an unchanged four-year yield of 5% \([107.09 = 7/1.05 + 7/(1.05)^2 + 7/(1.05)^3 + 107/(1.05)^4]\).

• In the paragraph before Equation 13 (page 363 of print), the second sentence should read, “Because the value of a swap at origination is set to zero, the swap rates must satisfy Equation 12.”

• The fifth paragraph in the lesson “Developing Interest Rate Views Using Macroeconomic Variables” (page 381 of print) should read:

Research shows that although inflation, GDP, and monetary policy explain most of the variance of bond yields, short- and intermediate-term bond yields are driven mostly by monetary policy, whereas other factors such as inflation are key drivers of long-term yields. Monetary policy explains about two-thirds of short- and intermediate-term bond yield variation, with the remaining third roughly equally attributable to economic growth and factors including inflation. In contrast, inflation explains nearly two-thirds of long-term yield variation, and the remaining third is largely attributable to monetary policy.

Fixed Income Learning Module 2

• Under Arbitrage-Free Models, the Kalotay – Williams – Fabozzi model (page 437 of print), the first sentence should read, “The Kalotay–Williams–Fabozzi (KWF) model is
analogous to the Ho–Lee model in that it assumes constant drift, no mean reversion, and constant volatility.

Fixed Income Learning Module 3
- In Exhibit 2 (page 529 of print), the numbers in the figure should read as follows:

**Interest Rates Shift Down by 30 bps**

Year 1: 3.8395%
Year 2: 5.3363%
**4.3943%**
Year 3: 7.1432%
**5.8737%**
**4.8342%**

**Interest Rates Shift Up by 30 bps**

Year 1: 4.4395%
Year 2: 6.000%
**4.9377%**
Year 3: 7.8827%
**6.4791%**
**5.3299%**

Fixed Income Learning Module 4
- The eighth paragraph under Exhibit 2 (page 543 of print) should read,

Column 7 gives the expected loss for each date. This is the LGD times the POD. For example, if default occurs on Date 3, the expected loss is 0.6894 per 100 of par value. The exposure is 94.2596. At 40% recovery, the LGD is 56.5558. Assuming no prior default, the POD for that date is 1.2189%. The expected loss of 0.6894 is calculated as 56.5558 times 1.2189%.

- In the Solution to Practice Question 17 (page 609 of print), the first sentence of the second paragraph should read, “Valuation of a four-year, 6% coupon bond under no default is computed in the solution to **Question 16** as 1,144.63.”

Volume 5
Derivatives Learning Module 1

- In the Solution to Practice Problem 2 (page 72 of print), the AI calculation should read,
  \[ AI = \frac{60}{180} \times \frac{1.5}{2} = 0.25 \]

- In the Solution to Practice Problem 3 (page 73 of print), the AI calculation should read,
  \[ AI_T = \frac{120}{180} \times \frac{2}{2} = 0.67 \]

Derivatives Learning Module 2

- The Solution to Practice Problem 6 (page 154 of print) should read,

  "B is correct. Using the expectations approach, the risk-neutral probability of an up move is
  \[ \pi = \frac{FV(1) - d}{u - d} = \frac{1.03 - 0.800}{1.300 - 0.800} = 0.46 \]

  An American-style put can be exercised early. At Time Step 1, for the up move, \( p^+ \) is
  0.2517 and the put is out of the money and should not be exercised early (\( X < S, 40 < 49.4 \)). However, at Time Step 1, \( p^- \) is 8.4350 and the put is in the money by 9.60 (\( X - S = 40 - 30.40 \)). So, the put is exercised early, and the value of early exercise (9.60) replaces the value of not exercising early (8.4350) in the binomial tree. The value of the put at Time Step 0 is now

  \[ p = PV[\pi p^+ + (1 - \pi)p^-] = \frac{1}{1.03} \times [0.46(0.2517) + 0.54(9.60)] = 5.145 \]

  Following is a supplementary note regarding Exhibit 1. Please note these computations refer to European-style options, not American style."
Alternatives Learning Module 4

- In the text after Example 1, under “Corporate Governance Terms” (page 280 of print), in the Distribution waterfall bullet, the following sentence needs two parenthetical notes added, as shown: “In the first alternative, the GP receives carried interest only after the fund has returned the entire committed capital to LPs (entire committed capital regardless of whether it has been called or not yet); in the second alternative, the GP receives carried interest on any distribution as long as the value of the investment portfolio exceeds a certain threshold above invested capital (invested capital here refers to paid-in capital only), usually 20%.”

- At the end of the last lesson, in the table “Europa Venture Partners (EVP)” (page 286 of print) the Hurdle Rate (%) column should be deleted.

- Practice Question 5 (page 293 of print) should read, “For the projects described in Exhibit 1, under a deal-by-deal method with a clawback provision and true-up every three years, the cumulative dollar amount the GP receives by the end of the three years is equal to:”

Alternatives Learning Module 5

- In Example 20 (page 335 of print), Option B should read, “typically can have an important contribution to total return in any single period but is relatively modest over multiple periods.” The second sentence of the Solution should read, “Historically, the roll return has been relatively modest compared with price return but can be meaningful in any single period.”

Portfolio Management Learning Module 1

- Option B in Practice Problem 3 (page 398 of print) should read, “by transacting shareholders.”

Volume 6

Portfolio Management Learning Module 2

- In the calculations under Exhibit 6 (page 113 of print), the second line of the equation should read, “\text{COV} (\Delta w_i, R_N) N.”