

# STUDY SESSION

# 15

## Fixed Income (2)

**T**his study session examines the fundamental elements underlying bond returns and risks with a specific focus on interest rate and credit risk. Duration, convexity, and other key measures for assessing a bond's sensitivity to interest rate risk are introduced. An explanation of credit risk and the use of credit analysis for risky bonds concludes the session.

### READING ASSIGNMENTS

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| <b>Reading 46</b> | Understanding Fixed-Income Risk and Return<br>by James F. Adams, PhD, CFA, and<br>Donald J. Smith, PhD |
| <b>Reading 47</b> | Fundamentals of Credit Analysis<br>by Christopher L. Gootkind, CFA                                     |

### LEARNING OUTCOMES

#### READING 46. UNDERSTANDING FIXED-INCOME RISK AND RETURN

The candidate should be able to:

- a** calculate and interpret the sources of return from investing in a fixed-rate bond;
- b** define, calculate, and interpret Macaulay, modified, and effective durations;
- c** explain why effective duration is the most appropriate measure of interest rate risk for bonds with embedded options;
- d** define key rate duration and describe the use of key rate durations in measuring the sensitivity of bonds to changes in the shape of the benchmark yield curve;

- e** explain how a bond's maturity, coupon, and yield level affect its interest rate risk;
- f** calculate the duration of a portfolio and explain the limitations of portfolio duration;
- g** calculate and interpret the money duration of a bond and price value of a basis point (PVBP);
- h** calculate and interpret approximate convexity and distinguish between approximate and effective convexity;
- i** estimate the percentage price change of a bond for a specified change in yield, given the bond's approximate duration and convexity;
- j** describe how the term structure of yield volatility affects the interest rate risk of a bond;
- k** describe the relationships among a bond's holding period return, its duration, and the investment horizon;
- l** explain how changes in credit spread and liquidity affect yield-to-maturity of a bond and how duration and convexity can be used to estimate the price effect of the changes.

## READING 47. FUNDAMENTALS OF CREDIT ANALYSIS

The candidate should be able to:

- a** describe credit risk and credit-related risks affecting corporate bonds;
- b** describe default probability and loss severity as components of credit risk;
- c** describe seniority rankings of corporate debt and explain the potential violation of the priority of claims in a bankruptcy proceeding;
- d** distinguish between corporate issuer credit ratings and issue credit ratings and describe the rating agency practice of "notching";
- e** explain risks in relying on ratings from credit rating agencies;
- f** explain the four Cs (Capacity, Collateral, Covenants, and Character) of traditional credit analysis;
- g** calculate and interpret financial ratios used in credit analysis;
- h** evaluate the credit quality of a corporate bond issuer and a bond of that issuer, given key financial ratios of the issuer and the industry;
- i** describe factors that influence the level and volatility of yield spreads;
- j** explain special considerations when evaluating the credit of high yield, sovereign, and non-sovereign government debt issuers and issues.