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CFA®

Exam Prep

SchweserNotes™

Portfolio Management and Ethical and Professional Standards

Level II Book 5

KAPLAN SCHWESER

Book 5: Portfolio Management and Ethical and Professional Standards

SchweserNotes™ 2026

Level II CFA®

SCHWESERNOTES™ 2026 LEVEL II CFA® BOOK 5: PORTFOLIO MANAGEMENT AND ETHICAL AND PROFESSIONAL STANDARDS

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CONTENTS

Learning Outcome Statements (LOS)

PORTFOLIO MANAGEMENT

READING 34
Economics and Investment Markets

Exam Focus
Module 34.1: Valuation and Interest Rates
Module 34.2: The Business Cycle
Key Concepts
Answer Key for Module Quizzes

READING 35
Analysis of Active Portfolio Management

Exam Focus
Module 35.1: Value Added by Active Management
Module 35.2: The Information Ratio vs. the Sharpe Ratio
Module 35.3: The Fundamental Law
Module 35.4: Active Management
Key Concepts
Answer Key for Module Quizzes

READING 36
Exchange-Traded Funds: Mechanics and Applications

Exam Focus
Module 36.1: ETF Mechanics and Tracking Error
Module 36.2: Spreads, Pricing Relative to NAV, and Costs
Module 36.3: ETF Risks and Portfolio Applications
Key Concepts
Answer Key for Module Quizzes

READING 37
Using Multifactor Models

Exam Focus
Module 37.1: Multifactor Models
Module 37.2: Macroeconomic Factor Models, Fundamental Factor Models, and Statistical Factor Models
Module 37.3: Multifactor Model Risk and Return
Key Concepts
Answer Key for Module Quizzes

READING 38
Measuring and Managing Market Risk

Exam Focus
Module 38.1: Value at Risk (VaR)
Module 38.2: Using VaR
Module 38.3: Sensitivity and Scenario Risk Measures
Module 38.4: Applications of Risk Measures
Module 38.5: Constraints and Capital Allocation Decisions
Key Concepts
Answer Key for Module Quizzes

READING 39
Backtesting and Simulation

Exam Focus
Module 39.1: Introduction to Backtesting
Module 39.2: Backtesting an Investment Strategy
Module 39.3: Metrics, Visuals, and Problems in Backtesting
Module 39.4: Scenario Analysis and Sensitivity Analysis
Key Concepts
Answer Key for Module Quizzes

Topic Quiz: Portfolio Management

ETHICAL AND PROFESSIONAL STANDARDS

READINGS 40 & 41
Code of Ethics and Standards of Professional Conduct and Guidance for Standards I–VII

Exam Focus
Module 40.1: Introduction to the Code and Standards
Module 41.1: Standards I(A) and I(B)
Module 41.2: Standards I(C), I(D), and I(E)
Module 41.3: Standards II(A) and II(B)
Module 41.4: Standard III(A)
Module 41.5: Standards III(B) and III(C)
Module 41.6: Standards III(D) and III(E)
Module 41.7: Standards IV(A), IV(B), and IV(C)
Module 41.8: Standard V
Module 41.9: Standard VI
Module 41.10: Standard VII
Key Concepts
Answer Key for Module Quizzes

READING 42
Application of the Code and Standards: Level II

Exam Focus
Module 42.1: Ethics Case Studies

Topic Quiz: Ethical and Professional Standards

Formulas
Index

Learning Outcome Statements (LOS)

34. Economics and Investment Markets

The candidate should be able to:

a. explain the notion that to affect market values, economic factors must affect one or more of the following: 1) default-free interest rates across maturities, 2) the timing and/or magnitude of expected cash flows, and 3) risk premiums.
b. explain the role of expectations and changes in expectations in market valuation.
c. explain the relationship between the long-term growth rate of the economy, the volatility of the growth rate, and the average level of real short-term interest rates.
d. explain how the phase of the business cycle affects policy and short-term interest rates, the slope of the term structure of interest rates, and the relative performance of bonds of differing maturities.
e. describe the factors that affect yield spreads between non-inflation-adjusted and inflation-indexed bonds.
f. explain how the phase of the business cycle affects credit spreads and the performance of credit-sensitive fixed-income instruments.
g. explain how the characteristics of the markets for a company's products affect the company's credit quality.
h. explain the relationship between the consumption-hedging properties of equity and the equity risk premium.
i. explain how the phase of the business cycle affects short-term and long-term earnings growth expectations.
j. describe cyclical effects on valuation multiples.
k. describe the economic factors affecting investment in commercial real estate.

35. Analysis of Active Portfolio Management

The candidate should be able to:

a. describe how value added by active management is measured.
b. calculate and interpret the information ratio (ex post and ex ante) and contrast it to the Sharpe ratio.
c. describe and interpret the fundamental law of active portfolio management, including its component terms—transfer coefficient, information coefficient, breadth, and active risk (aggressiveness).
d. explain how the information ratio may be useful in investment manager selection and choosing the level of active portfolio risk.
e. compare active management strategies, including market timing and security selection, and evaluate strategy changes in terms of the fundamental law of active management.
f. describe the practical strengths and limitations of the fundamental law of active management.

36. Exchange-Trade Funds: Mechanics and Applications

The candidate should be able to:

a. explain the creation/redemption process of ETFs and the function of authorized participants.
b. describe how ETFs are traded in secondary markets.
c. describe sources of tracking error for ETFs.
d. describe factors affecting ETF bid–ask spreads.
e. describe sources of ETF premiums and discounts to NAV.
f. describe costs of owning an ETF.
g. describe types of ETF risk.
h. identify and describe portfolio uses of ETFs.

37. Using Multifactor Models

The candidate should be able to:

a. describe arbitrage pricing theory (APT), including its underlying assumptions and its relation to multifactor models.

b. define arbitrage opportunity and determine whether an arbitrage opportunity exists.
c. calculate the expected return on an asset given an asset's factor sensitivities and the factor risk premiums.
d. describe and compare macroeconomic factor models, fundamental factor models, and statistical factor models.
e. describe uses of multifactor models and interpret the output of analyses based on multifactor models.
f. describe the potential benefits for investors in considering multiple risk dimensions when modeling asset returns.
g. explain sources of active risk and interpret tracking risk and the information ratio.

38. Measuring and Managing Market Risk

The candidate should be able to:

a. explain the use of value at risk (VaR) in measuring portfolio risk.
b. compare the parametric (variance–covariance), historical simulation, and Monte Carlo simulation methods for estimating VaR.
c. estimate and interpret VaR under the parametric, historical simulation, and Monte Carlo simulation methods.
d. describe advantages and limitations of VaR.
e. describe extensions of VaR.
f. describe sensitivity risk measures and scenario risk measures and compare these measures to VaR.
g. demonstrate how equity, fixed-income, and options exposure measures may be used in measuring and managing market risk and volatility risk.
h. describe the use of sensitivity risk measures and scenario risk measures.
i. describe advantages and limitations of sensitivity risk measures and scenario risk measures.
j. explain constraints used in managing market risks, including risk budgeting, position limits, scenario limits, and stop-loss limits.
k. explain how risk measures may be used in capital allocation decisions.
l. describe risk measures used by banks, asset managers, pension funds, and insurers.

39. Backtesting and Simulation

The candidate should be able to:

a. describe objectives in backtesting an investment strategy.
b. describe and contrast steps and procedures in backtesting an investment strategy.
c. interpret metrics and visuals reported in a backtest of an investment strategy.
d. identify problems in a backtest of an investment strategy.
e. evaluate and interpret a historical scenario analysis.
f. contrast Monte Carlo and historical simulation approaches.
g. explain inputs and decisions in simulation and interpret a simulation.
h. demonstrate the use of sensitivity analysis.

40. Code of Ethics and Standards of Professional Conduct

The candidate should be able to:

a. describe the six components of the Code of Ethics and the seven Standards of professional Conduct.
b. explain the ethical responsibilities required of CFA Institute members and candidates in the CFA Program by the Code and Standards.

41. Guidance for Standards I–VII

The candidate should be able to:

a. demonstrate a thorough knowledge of the CFA Institute Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to specific situations.
b. recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

42. Application of the Code and Standards: Level II

The candidate should be able to:

a. evaluate practices, policies, and conduct relative to the CFA Institute Code of Ethics and Standards of Professional Conduct.

b. explain how the practices, policies, and conduct do or do not violate the CFA Institute Code of Ethics and Standards of Professional Conduct.

READING 34

ECONOMICS AND INVESTMENT MARKETS

EXAM FOCUS

This topic review links real rate of return to investors' inter-temporal rate of substitution. It further uses utility theory to derive risk premium for consumption hedging properties of assets. Be able to identify appropriate risk premiums for different asset classes.

MODULE 34.1: VALUATION AND INTEREST RATES

LOS 34.a: Explain the notion that to affect market values, economic factors must affect one or more of the following: 1) default-free interest rates across maturities, 2) the timing and/or magnitude of expected cash flows, and 3) risk premiums.

The value of any asset can be computed as the present value of its expected future cash flows discounted at an appropriate risk-adjusted **discount rate**. The more uncertain the cash flows, the higher the discount rate.

Components of the discount rate are:

1. The real risk-free rate (R).
2. Expected inflation (π).
3. A risk premium reflecting uncertainty about the cash flow (RP).

The value of an asset will change if either the cash flow forecasts change or any of the components of the discount rate changes. Risk premiums not only vary across assets (and asset classes), but also vary with changes in investors' perception of risk. We will examine the decomposition of risk premiums for several asset classes in the remainder of this topic review.

LOS 34.b: Explain the role of expectations and changes in expectations in market valuation.

The value of an asset depends on (1) its expected future cash flows and (2) the discount rate used to value those cash flows. As market participants receive new information, the timing and amounts of expected future cash flows are revised and valuations change as a result. The impact of new information will depend on its effect on current expectations so that an earnings report of 53% growth in earnings may have a positive

or negative effect on the firm's value, depending on whether expectations were for slower or more rapid growth.

LOS 34.c: Explain the relationship between the long-term growth rate of the economy, the volatility of the growth rate, and the average level of real short-term interest rates.

Even in a world of no inflation, a default-free bond has to compensate an investor for forgoing their current consumption. The investor evaluates the disutility of forgoing current consumption relative to the utility of obtaining future consumption.

The real risk-free rate of interest derives from the **inter-temporal rate of substitution**, which represents an investor's trade-off between real consumption now and real consumption in the future. Based on utility theory, we can represent this trade-off as:

$$\text{inter-temporal rate of substitution} = m_t = \frac{\text{marginal utility of consuming 1 unit in the future at time } t}{\text{marginal utility of current consumption of 1 unit}} = \frac{u_t}{u_0}$$

For a given quantity of consumption, investors always prefer current consumption over future consumption ($u_0 > u_t$) and $m_t<1$ as a result.

The current price (P_0) of a zero-coupon, inflation-indexed, risk-free bond that will pay \$1 at time 1 can be expressed as:

$$P_0 = E(m_1)$$

in which case, the real risk-free rate of return is:

$$R = \frac{1 - P_0}{P_0} = \left[\frac{1}{E(m_1)}\right] - 1$$

PROFESSOR'S NOTE

We have been considering an inflation-indexed bond in this example because we do not want to consider the effects of inflation in our analysis yet.

Some key points to keep in mind:

- The higher the utility investors attach for current consumption relative to future consumption, the higher the real rate.
- Diminishing marginal utility of wealth means that an investor's marginal utility of consumption declines as wealth increases. This suggests that marginal utility of consumption is higher during periods of scarcity, such as during economic contractions.
- If investors expect higher incomes in the future, their expected marginal utility of future consumption is decreased relative to current consumption. When investor expectations about the economy change to better economic times ahead, the

expectation of higher incomes in the future will lead to an increase in current consumption and a reduction in savings. Investors will derive greater utility from current consumption relative to future consumption and would, therefore, save less. Conversely, investors expecting worse times ahead would prefer to increase future consumption by reducing current consumption and saving more.

- Investors increase their savings rate when expected returns are high or when uncertainty about their future income increases.

Risky Cash Flows and Risk Premiums

The risk aversion of investors can be explained by the covariance of an investor's inter-temporal marginal rate of substitution and expected returns on savings. Our discussion so far was limited to risk-free investments. However, if the underlying cash flows are uncertain, investors demand a risk premium for bearing the risk that comes with such uncertainty. The investor's expected marginal utility of a payoff is inversely related to the level of uncertainty of the payoff. Investors experience a larger loss of utility for a loss in wealth as compared to a gain in utility for an equivalent gain in wealth. This property is called **risk aversion**.

An investor's absolute risk aversion declines with their wealth; wealthier investors are less risk-averse and more willing to take risk relative to their poorer counterparts. However, the marginal utility of holding risky assets declines as an investor holds more risky assets in her portfolio. When the markets are in equilibrium, wealthy and poorer investors would have the same willingness to hold risky assets.

Consider a risk-free, inflation-indexed, zero-coupon bond that an investor will sell prior to maturity. The uncertainty about the sale price gives rise to a risk premium. The price of the bond will be lower than the expected sale price discounted at the real risk free rate. We can model this risk premium as:

$$P_0 = \frac{E(P_1)}{(1+R)} + \text{cov}(P_1, m_1)$$

where:
R = the real risk-free rate

The covariance between the expected future price of the bond and the investor's inter-temporal rate of substitution can be viewed as a risk premium. Now imagine this relationship in the context of a risky asset (e.g., stocks). For risk-averse investors, the covariance is negative; when the expected future price of the asset is high, the marginal utility of future consumption relative to current consumption is low. This is because during good economic times, both investors' labor incomes and most risky asset values are high. However, with higher future labor incomes, the marginal utility of future consumption is lower. The resulting negative covariance between the marginal utility of consumption and asset prices reduces the value of the asset for a given expected sale price, P_1. Everything else constant, the lower current price (P_0) increases expected return. This higher expected return is due to a positive risk premium.

For a single-period risk-free bond, the covariance is zero as there is no uncertainty about the terminal value; there is no risk premium.

GDP Growth Rates

If GDP growth is forecasted to be high, the utility of consumption in the future (when incomes will be high) will be low and the inter-temporal rate of substitution will fall; investors will save less, increasing real interest rates. Therefore, real interest rates will be positively correlated with real GDP growth rates. This is consistent with the existence of high real rates in rapidly growing developing economies such as those of India and China. Interest rates are also positively correlated with the expected volatility in GDP growth due to higher risk premium.

LOS 34.d: Explain how the phase of the business cycle affects policy and short-term interest rates, the slope of the term structure of interest rates, and the relative performance of bonds of differing maturities.

So far we have not considered the implications of inflation in our analysis of the correlation between interest rates and GDP growth. Nominal risk-free interest rates include a premium for expected inflation (π). However, actual inflation is uncertain. This additional risk gives rise to an additional risk premium for the uncertainty about actual inflation (θ). This risk premium is higher for longer maturity bonds.

For short-term risk-free securities (e.g., T-bills), the uncertainty about inflation is negligible and, therefore, the nominal interest rate (r) would be comprised of real risk-free rate (R) and expected inflation (π):

$$r(\text{short-term}) = R + \pi$$

For longer term bonds, we add the risk premium for uncertainty about inflation, θ:

$$r(\text{long-term}) = R + \pi + \theta$$

Taylor Rule

Central banks are usually charged with setting policy rates so as to (1) maintain price stability and (2) achieve the maximum sustainable level of employment. The Taylor rule links the central bank's policy rate to economic conditions (employment level and inflation):

$$r = R_n + \pi + 0.5(\pi - \pi^*) + 0.5(y - y^*)$$

where:

r = central bank policy rate implied by the Taylor rule
R_n = neutral real policy interest rate
π = current inflation rate
π^* = central bank's target inflation rate
y = log of current level of output
y^* = log of central bank's target (sustainable) output

Central banks can moderate the business cycle by making appropriate changes to the policy rate or can magnify the cycle by not responding appropriately to changing economic conditions (e.g., committing policy errors such as keeping rates too low).

Business Cycle and Slope of the Yield Curve

When the economy is in recession, policy rates tend to be low. Investors' improving expectations about future GDP growth and increasing inflation as the economy comes out of recession leads to higher longer-term rates. This results in a positively sloped yield curve. Conversely, expectations of a decline in GDP growth results in a negatively sloped (inverted) yield curve. For this reason, an inverted yield curve is often considered a predictor of future recessions. Later stages of an economic expansion often are characterized by high inflation and high short-term interest rates, while longer term rates tend to be low, reflecting investor's expectation of decreasing inflation and GDP growth.

A **term spread** is the difference between the yield on a longer-term bond yield and the yield on a short-term bond. Evidence suggests that normal term spread is positive so the yield curve is upward sloping. Recall that the risk premium for uncertainty in inflation (θ) is higher for longer maturity bonds. Positive term spreads can be attributed to increasing θ for longer periods.

LOS 34.e: Describe the factors that affect yield spreads between non-inflation-adjusted and inflation-indexed bonds.

The difference between the yield of a non-inflation-indexed risk-free bond and the yield of an inflation-indexed risk-free bond of the same maturity is the **break-even inflation rate (BEI)**.

BEI = yield on non-inflation-indexed bond – yield on inflation-indexed bond

Recall that for longer maturity bonds, the nominal rate is composed of the real rate, expected inflation, and a risk premium for inflation uncertainty. Therefore, BEI is composed of two elements: expected inflation (π) and a risk premium for uncertainty about actual inflation (θ).

$$BEI = \pi + \theta$$

LOS 34.f: Explain how the phase of the business cycle affects credit spreads and the performance of credit-sensitive fixed-income instruments.

The required rate of return for bonds with credit risk includes an additional risk premium. This credit risk premium (credit spread) is the difference in yield between a credit risky bond and a default-free bond of the same maturity.

$$\text{required rate of return for credit risky bonds} = R + \pi + \theta + \gamma$$

where:
γ = additional risk premium for credit risk = credit spread

Credit spreads tend to rise during times of economic downturns and fall during expansions. Research has shown that defaults increase, and recovery rates decrease, during periods of economic weakness. Both effects result in greater credit losses during economic downturns.

When credit spreads narrows, credit risky bonds will outperform default-free bonds. Overall, lower rated bonds tend to benefit more than higher rated bonds from a narrowing of credit spreads (their yields fall more). Conversely, when credit spreads widen, higher rated bonds will outperform lower rated bonds on a relative basis (because their yields will rise less).

MODULE QUIZ 34.1

1. Carrier, Inc.'s stock price fell last week, which was contrary to the movement in the industry index. Which of the following is *most likely* a valid reason for that to occur?
   A. An increase in the real risk-free rate.
   B. Inflation is expected to be higher.
   C. Investors are demanding a higher risk premium on Carrier.

2. Sonic, Inc., reported 12% earnings growth year-over-year, but its stock price fell. Which of the following is the *most likely* explanation?
   A. Sonic's stock price included an event risk premium prior to the earnings announcement.
   B. The market's expectation was for Sonic to report an earnings growth of more than 12%.
   C. Market sentiment is often subjective and biased.

3. Which of the following statements is *most accurate*? Higher expected GDP growth would:
   A. lower the utility of future consumption and reduce the inter-temporal rate of substitution.
   B. increase the utility of future consumption and reduce the inter-temporal rate of substitution.
   C. lower the utility of future consumption and increase the inter-temporal rate of substitution.

4. Break-even inflation rate is comprised of the:
   A. real rate and unexpected inflation.
   B. expected inflation and risk premium for inflation uncertainty.
   C. inter-temporal rate of substitution and expected inflation.

5. An economy just getting out of recession would *most likely* have:
   A. high short-term rates and an inverted yield curve.
   B. low short-term rates and an inverted yield curve.
   C. low short-term rates and an upward sloping yield curve.

6. Zeon Corp's 10-year bonds are currently yielding 7.50%. The real rate is 3% and expected inflation is 2%. Which of the following is *most accurate*? Credit spread on Zeon bonds is:
   A. equal to 2.50%.
   B. less than 2.50%.

C. greater than 2.50%.

MODULE 34.2: THE BUSINESS CYCLE

LOS 34.g: Explain how the characteristics of the markets for a company's products affect the company's credit quality.

Analysis of credit spreads by industrial sectors reveals that spreads differ among sectors and over time. Differences in credit spreads are primarily due to differences in industry products and services and the financial leverage of the firms in the industry. Spreads for issuers in the consumer cyclical sector increase significantly during economic downturns compared to spreads for issuers in the consumer non-cyclical sector.

LOS 34.h: Explain the relationship between the consumption-hedging properties of equity and the equity risk premium.

The discount rate used to value equity securities includes an additional risk premium, the equity risk premium. This risk premium is in addition to the risk premium on credit risky bonds because equity is more risky than debt.

discount rate for equity = $R + \pi + \theta + \gamma + \kappa$

where:
κ = additional risk premium relative to risky debt for an investment in equities
Therefore the equity risk premium is:
λ = equity risk premium = $\gamma + \kappa$

Assets that provide a higher payoff during economic downturns are more highly valued because of the *consumption hedging property* of the asset. This property reduces the risk premium on an asset. Equity prices are generally cyclical, with higher values during economic expansions when the marginal utility of consumption is lower. Equity investments, therefore, are not the most effective hedge against bad consumption outcomes. Because of this poor consumption hedging ability, equity risk premium is positive.

LOS 34.i: Explain how the phase of the business cycle affects short-term and long-term earnings growth expectations.

Corporate earnings may be related to the business cycle. Cyclical industries (e.g., durable goods manufacturers and consumer discretionary) tend to be relatively more sensitive to the phase of the business cycle. Companies in these industries have revenues and earnings that rise and fall with the rate of economic growth. Defensive or non-cyclical industries (e.g., consumer non-discretionary) tend to be relatively immune to fluctuations in economic activity; their earnings tend to be relatively stable throughout the business cycle.

LOS 34.j: Describe cyclical effects on valuation multiples.

Price multiples such as P/E and P/B are often used in determining the relative values of companies, of sectors, or of the overall market from a historical perspective. However, it is inappropriate to judge the multiple in a historical context only. If the P/E ratio for S&P 500 is above historical standards, it could be that the index is overvalued, but it also could be that the index level is justified by current conditions.

Price multiples are positively correlated with expected earnings growth rates and negatively correlated to required returns. Therefore, price multiples rise with increases in expected future earnings growth and with a decrease in any of the components of the required rate of return (the real rate, expected inflation, the risk premium for inflation uncertainty, or the equity risk premium). As a result, the equity risk premium declines during economic expansions and rises during recessions.

Shiller's CAPE (real cyclically adjusted P/E) ratio reduces the volatility of unadjusted P/E ratios by using real (i.e., inflation-adjusted) prices in the numerator and a 10-year moving average of real earnings in the denominator.

LOS 34.k: Describe the economic factors affecting investment in commercial real estate.

Commercial real estate investments have:

- Bond-like characteristics. The steady rental income stream is similar to cash flows from a portfolio of bonds. Furthermore, just as the credit quality of issuers affects the value of a bond portfolio, the credit quality of tenants affects the value of commercial real estate.
- Equity-like characteristics. The value of commercial real estate is influenced by many factors, including the state of the economy, the demand for rental properties, and property location. Uncertainty about the value of the property at the end of the lease term gives commercial properties an equity-like character.
- Illiquidity. Real estate as an asset class is characterized by illiquidity; it could take years to exit a real estate investment at its fair value.

Valuation

When estimating the value of real estate investment, the discount rate includes an additional risk premium for the lack of liquidity:

$$\text{discount rate for commercial real estate} = R + \pi + \theta + \gamma + \kappa + \varphi$$

where:
κ = risk premium for uncertainty about terminal value of property (similar to the equity risk premium)
φ = risk premium for illiquidity

While rental income from commercial properties seems to be more or less steady across business cycles, commercial property values tend to be very cyclical. Because of this, the correlation of commercial property values with those of other asset classes

(e.g., equities) tends to be positive. Similar to equities, real estate provides a poor hedge against bad consumption outcomes. Therefore, the risk premium required by investors for investment in commercial properties will be relatively high and often close to the risk premium required for equity investments.

MODULE QUIZ 34.2

1. Compared to the credit spreads of issuers classified as consumer non-cyclical, during economic downturns credit spreads on issuers classified as consumer cyclical are *most likely* to widen:
   A. more.
   B. less.
   C. approximately the same amount.

2. Earnings of companies in the consumer staples industry are *most likely* to:
   A. fluctuate with the business cycle.
   B. remain stable over the business cycle.
   C. fluctuate more than companies in consumer discretionary industries.

3. Which of the following statements is *most accurate*? Equity as an asset class provides:
   A. good consumption hedging properties and, therefore, commands a positive risk premium.
   B. poor consumption hedging properties and, therefore, commands a positive risk premium.
   C. good consumption hedging properties and, therefore, commands a negative risk premium.

4. Analysis of price multiples is *most likely* to indicate that the equity risk premium:
   A. declines during economic downturns.
   B. is stable over the business cycle.
   C. declines over economic expansions.

5. Relative to other asset classes, investors in commercial real estate are *least likely* to require a risk premium for:
   A. uncertainty in inflation.
   B. illiquidity.
   C. uncertainty in terminal value.

KEY CONCEPTS

LOS 34.a

The value of any asset can be computed as present value of its expected future cash flows discounted at an appropriate risk-adjusted discount rate. Risky cash flows require the discount rate to be higher due to inclusion of a risk premium.

LOS 34.b

Market prices reflect current expectations. Only changes in expectations cause a change in market price.

LOS 34.c

Interest rates are positively related to GDP growth rate and to the expected volatility in GDP growth due to a higher risk premium.

LOS 34.d

When the economy is in recession, short-term policy rates tend to be low. Investor expectations about higher future GDP growth and inflation as the economy comes out of recession lead to higher longer-term rates. This leads to positive slope of the yield curve. Conversely, an inversely sloping yield curve is often considered a predictor of future recessions.

LOS 34.e

Break-even inflation rate (BEI)

= yield on non-inflation indexed bonds − yield on inflation indexed bonds

BEI is comprised of two elements: expected inflation (π) and risk premium for uncertainty in inflation (θ).

LOS 34.f

Credit spreads tend to rise during times of economic downturns and shrink during expansions. When spreads narrow, lower-rated bonds tend to outperform higher-rated bonds.

LOS 34.g

Spreads for issuers in consumer cyclical sector widen considerably during economic downturns compared to spreads for issuers in the consumer non-cyclical sector.

LOS 34.h

Equities are generally cyclical; they have higher values during good times and have poor consumption hedging properties. Therefore, the risk premium on equities should be positive.

LOS 34.i

Cyclical industries (e.g., durable goods manufacturers and consumer discretionary) tend to be extremely sensitive to the business cycle; their earnings rise during economic expansions and fall during contractions. Non-cyclical or defensive industries tend to have relatively stable earnings.

LOS 34.j

Price multiples tend to follow the business cycle: multiples rise during economic expansions (as analysts revise growth estimates upward) and fall during contractions (as growth estimates are revised downward).

LOS 34.k

Commercial real estate has equity-like and bond-like characteristics. The valuation depends on the rental income stream, the quality of tenants, and the terminal value at the end of the lease term. The discount rate for commercial real estate includes a risk premium for uncertainty in terminal value and also for illiquidity.

ANSWER KEY FOR MODULE QUIZZES

Module Quiz 34.1

1. **C** If the real risk-free rate had increased or expected inflation had been higher, the discount rate would have been higher and would have lowered both Carrier's stock price and industry index. Given the divergence between Carrier's stock price and the industry index, a higher risk premium for Carrier's stock is the only valid reason from the choices provided. (LOS 34.a)

2. **B** Market prices embed current expectations. If the market reaction to earnings growth of 12% was negative, it would mean that the market prices were based on a higher earnings growth rate expectation. (LOS 34.b)

3. **A** A higher GDP growth rate would mean higher incomes in the future. Due to the principle of diminishing marginal utility, the utility of future consumption would, therefore, be lower. Lower future utility relative to the utility of current consumption lowers the inter-temporal rate of substitution. (LOS 34.c)

4. **B** BEI = expected inflation + risk premium for uncertainty in inflation. (LOS 34.e)

5. **C** An economy just getting out of recession is more likely to have low short-term rates, as the central bank policy rate would be low. Higher future GDP growth prospects would mean higher real rates and higher expected inflation over the longer term, so long-term rates would be high, leading to an upward sloping yield curve. (LOS 34.d)

6. **B** Yield on risky corporate debt = real risk-free rate + expected inflation + risk premium for inflation uncertainty + credit spread. 2.50% = risk premium for inflation uncertainty + credit spread. Given that the bond is long term, the risk premium for inflation uncertainty must be positive and credit spread must be less than 2.50%. (LOS 34.f)

Module Quiz 34.2

1. **A** Credit spreads on consumer cyclical issuers widen during economic downturns and narrow during economic expansions. (LOS 34.g)

2. **B** Earnings of consumer staples companies tend to be relatively stable over the entire business cycle. (LOS 34.i)

3. **B** Stocks in general tend to perform well during economic expansions and, therefore, pay off during good economic times. The property of performing poorly during bad economic times implies that equities are a poor consumption hedge. Because they are a poor consumption hedge, investors demand a positive risk premium for investing in equities. (LOS 34.h)

4. **C** Price multiples tend to expand during economic expansions, suggesting that the equity risk premium declines during expansions. This is because investors become less risk averse during economic expansions and demand a lower premium for taking risk. (LOS 34.j)

5. **A** Two risk premiums that are unique to real estate as an asset class are the risk premium for illiquidity and the risk premium for uncertainty in terminal value