

# UNIT 2: INVESTMENT PRACTICE V.17 TESTED FROM 1 DECEMBER 2019

---

## UNIT AIMS

By the end of this unit, learners should be able to demonstrate:

- ▶ an ability to apply statistical and financial mathematics techniques;
- ▶ an understanding of micro-economics;
- ▶ an understanding of the macro-economic environment and its impact on investments;
- ▶ an understanding of accounting principles;
- ▶ an ability to evaluate the characteristics, inherent risks and behaviour of equities, cash and cash equivalents, and fixed income securities;
- ▶ an ability to analyse the characteristics, inherent risks, behaviours and relevant tax considerations of derivatives;
- ▶ an ability to analyse the characteristics, inherent risks and behaviours of alternative investments;
- ▶ an understanding of the merits and limitations of the main investment theories;
- ▶ an ability to analyse the correlation of asset classes;
- ▶ an understanding of the principles of investment management;
- ▶ an ability to analyse the characteristics, inherent risks and behaviours of investment products; and
- ▶ an understanding of the principles of investment performance measurement.

**QUESTION ALLOCATION:**

Question allocation across the syllabus is balanced on the guidance of psychometric and industry specialists. The following question allocation for Version 17 of the IMC is provided as a broad indication of the relative ‘weighting’ of different parts of the syllabus in IMC examinations from 1 December 2019.

Content area	Topic	Topic name	Question allocation
Quantitative methods	7	Quantitative methods	10–20
Economics	8	Micro-economics	5–15
	9	Macro-economics	
Accounting	10	Accounting	10–20
Asset classes	11	Equities	25–30
	12	Fixed income	
	13	Derivatives	
	14	Alternative investments	
Investment theory, management and measurement	15	Portfolio management	25–30
	16	Investment products	
	17	Investment performance measurement	

**OTHER INFORMATION REGARDING THIS UNIT:**

- Exam format:**
- 105 questions.
  - Online testing using standard multiple choice, item sets and gap-fill style questions.
- Time allowed for exam:**
- 2 hours and 20 minutes.
- Grades:**
- Pass or fail.
- Study materials:**
- Official Training Manual v.17 is available from the CFA UK website, including revision questions with fully worked calculations.
  - Mock exam available on the CFA UK website.
- Recommended study hours:**
- 120 hours.
- Availability of exam sessions:**
- Every working day through Pearson VUE testing centres.

# TOPIC 7

## QUANTITATIVE METHODS

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to apply statistical and financial mathematics techniques.

### 7.1 SOURCES OF DATA

- 7.1.1 Identify and distinguish between primary and secondary sources of data
- 7.1.2 Distinguish between a population and a sample
- 7.1.3 Explain the key sampling methods
- 7.1.4 Distinguish between continuous and discrete data
- 7.1.5 Define categorical data and explain how it can be converted to ordinal data
- 7.1.6 Interpret a frequency and relative frequency distribution
- 7.1.7 Explain the use of the following in the presentation of data: pie chart, bar chart, histogram, scatter plots, line graphs

### 7.2 SUMMARY DATA

- 7.2.1 Define, explain and calculate the arithmetic mean, geometric mean, median and mode using raw and interval data, and calculate the geometric mean return using a series of returns
- 7.2.2 Explain the relationship between the mean, median and mode for symmetric and skewed data
- 7.2.3 Define, explain and calculate the following measures of dispersion for both raw data and interval data: standard deviation (population and sample), variance, range, quartiles and percentiles, interquartile range
- 7.2.4 Explain the notion of probability distributions and identify the properties of the normal distribution
- 7.2.5 Explain and apply the concepts of null hypothesis, alternative hypothesis and the role of statistical significance in rejecting/accepting the null/alternative hypotheses in the context of investment decision making

### 7.3 CORRELATION AND BIVARIATE LINEAR REGRESSION

- 7.3.1 Define correlation and identify alternative measures of correlation
- 7.3.2 Explain the least-squares regression technique in deriving a line of best fit and interpret the correlation coefficient  $R$ ,  $R$  squared, adjusted  $R$  squared and measures of unexplained variation (for example the mean squared error)
- 7.3.3 Calculate and interpret a forecast value for the dependent variable given the intercept and slope coefficients of a regression equation taking into account their statistical significance and adjusted  $R$  squared
- 7.3.4 Explain the shortfalls in the application of linear regression to forecasting, including why correlation does not imply causation, and the pitfalls of data-mining
- 7.3.5 Describe the impact of extreme events on alternative measures of correlation

### 7.4 INDEX NUMBERS

- 7.4.1 Explain the role of financial market indices
- 7.4.2 Explain and calculate a price relative for a share or index and calculate an index level for the current year, given the base year data and the current year data
- 7.4.3 Calculate an index level having re-based the index series
- 7.4.4 Calculate a price weighted index; an equally weighted index; a market value weighted index and a geometrically weighted index
- 7.4.5 Identify and explain the relevance of: free-float and index calculation method (as in 7.4.4 above) for interpreting index performance relative to the performance of an investment

- 7.4.6 Describe the composition and construction of key global bond and equity market indices and identify strengths and weaknesses of their respective construction methods

## **7.5 SIMPLE AND COMPOUND INTEREST**

- 7.5.1 Calculate simple and compound interest earned over multiple periods
- 7.5.2 Calculate the annual compound rate given the simple rate and the frequency of compounding
- 7.5.3 Calculate the annual simple rate of interest given the annual compound rate and the frequency of compounding
- 7.5.4 Calculate the effective annual rate given a nominal annual rate with continuous compounding

## **7.6 THE TIME VALUE OF MONEY—PRESENT AND FUTURE VALUE CALCULATIONS, ANNUITIES, PERPETUITIES AND MORTGAGES**

- 7.6.1 Calculate and interpret future values for: single sums and annuities
- 7.6.2 Calculate and interpret present values for: single sums, annuities, and perpetuities
- 7.6.3 Calculate equal instalments on a repayment mortgage given the present value of the borrowings, the fixed mortgage rate and the term of the borrowing

## **7.7 THE INTERNAL RATE OF RETURN AND NET PRESENT VALUE**

- 7.7.1 Calculate and interpret the net present value (NPV) and internal rate of return (IRR) of a series of investment cash flows
- 7.7.2 Explain how NPVs and IRRs can be used in investment decision making and their limitation

# TOPIC 8

## MICRO-ECONOMICS

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an understanding of micro-economics.

### 8.1 INTRODUCTION

- 8.1.1 Explain the main ways in which economic theory might assist investment professionals
- 8.1.2 Describe the strengths and weaknesses of economic theory as a means of analysing financial market behaviour
- 8.1.3 Describe the main applications of micro-economic theory

### 8.2 ANALYSING DEMAND AND SUPPLY

- 8.2.1 Explain the laws of supply and demand and the concept of equilibrium
- 8.2.2 Distinguish between movements along demand and supply schedules and shifts thereof
- 8.2.3 Identify the factors that cause a demand or supply schedule to shift
- 8.2.4 Describe, calculate and interpret 'own price elasticity of demand', the factors that determine this and its impact on total revenues
- 8.2.5 Explain, calculate and interpret the concept of cross elasticity of demand (as applied to substitute and complementary goods)
- 8.2.6 Explain, calculate and interpret elasticity of supply and its dependence on the flexibility of factors of production

### 8.3 ANALYSING COST AND PROFITABILITY

- 8.3.1 Distinguish between explicit (accounting) costs and opportunity (economic) costs
- 8.3.2 Explain the concept of normal, supernormal and subnormal levels of profit
- 8.3.3 Define fixed costs, variable costs, marginal costs, total costs and average costs
- 8.3.4 Explain the shapes of the short-run marginal cost, average variable cost, average fixed cost and average total cost curves
- 8.3.5 Explain the law of diminishing marginal returns and its impact on the shape of short-run cost curves
- 8.3.6 Explain the relationship between total revenue, average revenue and marginal revenues for a normal demand schedule
- 8.3.7 Explain the relationship between marginal cost and marginal revenue, and how this determines the profit-maximising level of output for a firm
- 8.3.8 Define short run and long run in the context of cost behaviour
- 8.3.9 Explain the notions of economies of scale, a minimum efficient scale and diseconomies of scale and their impact on the shape of the long-run average cost curve
- 8.3.10 Explain the relationship between long-run marginal costs and long-run average costs and explain how this determines the level of output for productive efficiency to arise

### 8.4 ANALYSING THE COMPETITIVE ENVIRONMENT

- 8.4.1 Identify the conditions that characterise a perfectly competitive (price-taker) market
- 8.4.2 Explain the conditions of long-run equilibrium for a price-taker
- 8.4.3 Explain the market mechanics through which only normal levels of profit can be earned by price-takers in the long run
- 8.4.4 Explain the relationship between short-run supply and marginal cost for a price-taker

- 8.4.5 Describe the shape of the long-run supply curve for a perfectly competitive industry
- 8.4.6 Explain the decision by a price-taker facing economic losses to either continue to operate or shut down
- 8.4.7 Identify the conditions that characterise a pure monopoly
- 8.4.8 Distinguish between the equilibrium price, output levels and productive efficiency of a monopoly compared to a perfectly competitive firm
- 8.4.9 Explain price discrimination and the conditions under which it will prevail
- 8.4.10 Describe the characteristics of monopolistic competition and oligopoly
- 8.4.11 Describe how business cycles may affect relative industry performance
- 8.4.12 Identify Porter's five competitive forces that drive industry competition
- 8.4.13 Describe the product life cycle and the characteristics of each phase (introduction, growth, maturity and decline)
- 8.4.14 Describe the concept of strengths, weaknesses, opportunities and threats (SWOT) analysis and its role in corporate evaluation
- 8.4.15 Describe the four Ps of marketing mix (product, price, promotion and place) in the context of analysing competitive advantage and threats

# TOPIC 9

## MACRO-ECONOMICS

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an understanding of the macro-economic environment and its impact on investments.

### 9.1 INTRODUCTION

- 9.1.1 Describe the main applications of macro-economic theory
- 9.1.2 Identify the key economic characteristics of historical financial crises

### 9.2 ANALYSING THE OUTLOOK FOR GDP GROWTH

- 9.2.1 Identify the main long-term UK and global socio-economic trends
- 9.2.2 Identify key economic indicators and their trends
- 9.2.3 Describe the relationship between and importance of the main world economies
- 9.2.4 Describe economic and financial cycles including their predictability and regional differences
- 9.2.5 Distinguish between gross domestic product (GDP), gross national product (GNP) and national income
- 9.2.6 Identify the difference between real and nominal GDP
- 9.2.7 Identify the components of the circular flow of income, distinguishing between injections into and withdrawals ('leakages') from the circular flow

### 9.3 ANALYSING ECONOMIC POLICY

- 9.3.1 Identify the major components of the Classical, Monetarist, Keynesian and Austrian schools of thought and distinguish between them
- 9.3.2 Identify the nature of the relationship between aggregate saving, consumption and investment as predicted by the Paradox of Thrift
- 9.3.3 Describe fiscal policy and its influence on aggregate demand
- 9.3.4 Identify the role of debt in the business cycle
- 9.3.5 Identify the problems associated with fiscal policy
- 9.3.6 Identify money supply (from 'narrow' through to 'wide')
- 9.3.7 Identify the key features of the fractional reserve banking system
- 9.3.8 Define the money multiplier and identify its determinants
- 9.3.9 Calculate the potential money multiplier given a cash reserve ratio
- 9.3.10 Explain the transmission mechanism whereby monetary policy influences economic aggregates
- 9.3.11 Define inflation (including deflation), explain how it is measured in the UK, and identify the different causes
- 9.3.12 Define unemployment and explain how it is measured in the UK
- 9.3.13 Explain the relationship between inflation and unemployment according to the Phillips curve
- 9.3.14 Explain how inflation targeting operates in the UK
- 9.3.15 Distinguish between the different mandates and approaches of the major central banks
- 9.3.16 Explain the unconventional tools used by central banks to manage the economy
- 9.3.17 Explain the impact of bank capital and liquidity requirements and the move towards macro prudential regulation of the macro-economy

## **9.4 ANALYSING EXCHANGE RATES**

- 9.4.1 Explain how changes in supply and demand for a currency will affect its value on the foreign exchange markets
- 9.4.2 Identify the key components of the balance of payments
- 9.4.3 Explain the relationship between the supply and demand for a currency, and the underlying transactions represented in the balance of payments
- 9.4.4 Distinguish between a fixed, floating and a managed exchange rate ('dirty floating' regime)
- 9.4.5 Explain the economic benefits and costs of a fixed exchange rate mechanism
- 9.4.6 Explain an optimal currency area (OCA) and identify the advantages and disadvantages of implementing a single currency in an OCA
- 9.4.7 Explain the implications of persistent global imbalances of trade and capital
- 9.4.8 Explain the notion of purchasing power parity (PPP) as a forecasting tool for exchange rates
- 9.4.9 Explain the effectiveness of monetary and fiscal policy in fixed and floating exchange rate regimes
- 9.4.10 Describe the nature and basic operations of the spot and forward exchange markets
- 9.4.11 Explain the nature of exchange rate risk and how it can be managed
- 9.4.12 Distinguish between covered and uncovered interest rate parity and calculate forward rates using the appropriate method
- 9.4.13 Apply the concept of purchasing power parity (PPP) to forecast expected future spot exchange rates using the differential inflation rates between two countries

# TOPIC 10

## ACCOUNTING

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an understanding of accounting principles.

### 10.1 FUNDAMENTAL PRECEPTS

- 10.1.1 Explain the legal requirement to prepare financial statements
- 10.1.2 Explain the concept of a company being a separate legal entity, and the purpose of the preparation of the accounts
- 10.1.3 Define 'small companies' for the purpose of financial statement preparation and explain the relevance of this definition to financial reporting requirements
- 10.1.4 Explain when accounts may be required to be prepared under International Financial Reporting Standards (IFRS) rather than Generally Accepted Accounting Principles in the UK (UK GAAP)
- 10.1.5 Explain the role of the auditor and identify, in outline, the reasons for auditors issuing a qualified report

### 10.2 THE BALANCE SHEET

- 10.2.1 Explain the purpose of a balance sheet or statement of financial position
- 10.2.2 Identify and explain the key balance sheet categories and content
- 10.2.3 Distinguish between capitalising costs and expensing costs
- 10.2.4 Explain the valuation of non-current assets
- 10.2.5 Calculate depreciation under the straight-line and reducing balance methods
- 10.2.6 Calculate the profit or loss on disposal of a non-current asset
- 10.2.7 Explain the principles behind the valuation of inventories
- 10.2.8 Explain the effects of first-in-first-out and last-in-first-out valuations on inventory values and profits
- 10.2.9 Identify the types of current and non-current liabilities that typically appear in financial statements
- 10.2.10 Explain the concept of a provision and its treatment within the financial statements
- 10.2.11 Explain the concept of a contingent liability and its treatment within financial statements
- 10.2.12 Describe the treatment of pension costs in financial statements
- 10.2.13 Explain what is meant by a post-balance sheet event
- 10.2.14 Distinguish among authorised, issued, paid-up and called-up share capital
- 10.2.15 Explain the effect of the following on a balance sheet: rights issue, bonus/scrip issue, stock split, share repurchases
- 10.2.16 Identify and explain the main types of reserve found in the balance sheet

### 10.3 THE ACCOUNTING TREATMENT OF FINANCIAL INSTRUMENTS

- 10.3.1 Identify the various classifications of financial instrument and describe the accounting treatment of each

### 10.4 THE INCOME STATEMENT AND STATEMENT OF CHANGES IN EQUITY

- 10.4.1 Identify and explain the classification of expenses based on nature or function
- 10.4.2 Explain the principle of revenue recognition
- 10.4.3 Identify the following different levels of profit and which classes of expenses are considered in arriving at each level: gross profit, operating profit and net profit
- 10.4.4 Explain the objective of, and identify the information to be reported in, a statement of changes in equity

## **10.5 THE CASH FLOW STATEMENT**

- 10.5.1 Explain the purpose of a cash flow statement
- 10.5.2 Identify the classification of cash flow activities
- 10.5.3 Calculate net cash flow from operations given operating profit (or vice versa) and the relevant balance sheet movements

## **10.6 GROUP ACCOUNTS**

- 10.6.1 Define and distinguish between corporate investments, associated companies and subsidiaries
- 10.6.2 Explain the purpose of group accounts
- 10.6.3 Define a minority interest and explain how it is represented in the financial statements
- 10.6.4 Explain how goodwill arises in acquisition accounting
- 10.6.5 Explain the treatment of goodwill and intangible assets in the group accounts, including: amortisation, useful lives and the requirement for impairment reviews

## **10.7 MAJOR ACCOUNTING RATIOS**

- 10.7.1 Distinguish between profitability, liquidity and gearing ratios
- 10.7.2 Define and calculate return on capital employed and return on equity ratios
- 10.7.3 Explain how return on capital employed can be broken down into profit margin and asset turnover
- 10.7.4 Define, calculate and interpret: operational gearing, financial gearing, the current ratio, the quick ratio (acid test)
- 10.7.5 Explain the effect of the following on the major accounting ratios: rights issue, bonus/scrip issue, stock split, share repurchases

# TOPIC 11

## EQUITY

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to evaluate the characteristics, inherent risks and behaviour of equities.

### 11.1 EQUITY CAPITAL – CHARACTERISTICS

- 11.1.1 Identify the characteristics, and the risks to the investor, of the various classes of equity capital
- 11.1.2 Identify the reasons for the primary and secondary issuance of shares and the implications to the investor
- 11.1.3 Identify the reasons for issuance of preference shares and the implications to the investor
- 11.1.4 Identify the characteristics of global and American Depository Receipts

### 11.2 EQUITY – ISSUANCE

- 11.2.1 Distinguish between primary and secondary share issuance
- 11.2.2 Describe the key features of an equity issuance
- 11.2.3 Define and explain the purpose of a rights issue, a bonus/scrip issue and a stock split
- 11.2.4 Calculate the theoretical ex-rights price and the value of the right (nil-paid) given the cum-rights price, the issuance ratio and the subscription price
- 11.2.5 Calculate the theoretical ex-scrip price given the scrip ratio and the cum-scrip price
- 11.2.6 Evaluate the options open to an investor in response to a rights offer and explain the effect on the investor's wealth
- 11.2.7 Identify and explain the motivations behind a company buying back its own shares

### 11.3 EQUITY-VALUATION

- 11.3.1 Calculate a holding period return for an ordinary share, comprising capital gain and dividend income
- 11.3.2 Identify the reasons for a company's chosen dividend policy
- 11.3.3 Explain the practical constraints on companies paying dividends
- 11.3.4 Explain the importance of the dividend yield and dividend cover in stock analysis
- 11.3.5 Calculate dividend yield and dividend cover
- 11.3.6 Calculate an estimated growth rate for dividends using historic data, or using return on equity, and a retained earnings ratio
- 11.3.7 Distinguish between and evaluate the merits of relative valuation models and absolute valuation models, and between historic and prospective measures of value
- 11.3.8 Identify the components, assumptions and limitations of the dividend discount model (Gordon growth model)
- 11.3.9 Calculate the present value of a share using the dividend discount model
- 11.3.10 Explain what is meant by earnings per share, and diluted earnings per share
- 11.3.11 Calculate a basic earnings per share
- 11.3.12 Explain the possible shortfalls of using price multiples in corporate valuation
- 11.3.13 Explain the basics of free cash-flow based valuation methods (FCFF, FCFE) and residual income valuation methods
- 11.3.14 Calculate price to earnings (both historic and prospective), price to book, price to sales, price to cash flow, and enterprise value to earnings before interest, tax, depreciation and amortisation (EBITDA) ratios for a company
- 11.3.15 Define financial gearing and evaluate the effect on required equity returns and thus valuations

# TOPIC 12

## FIXED INCOME

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to analyse the characteristics, inherent risks, and behaviour of cash and cash equivalents, and fixed income securities.

### 12.1 CASH AND CASH EQUIVALENTS

- 12.1.1 Explain the main characteristics and risks associated with cash deposits and money market instruments (including Treasury Bills, CDs, CP, FRNs)
- 12.1.2 Calculate the discount and quoted yield on a UK Treasury Bill

### 12.2 FIXED INCOME SECURITIES – CHARACTERISTICS

- 12.2.1 Explain the structure and characteristics of the various types of fixed income instruments issued in the UK, including government bonds, index-linked bonds, corporate bonds and Eurobonds
- 12.2.2 Identify the rationale for and risks to the issuer and holder of a convertible, callable or puttable bond
- 12.2.3 Explain clean (quoted) and dirty pricing
- 12.2.4 Calculate the price of a fixed income security given its maturity, coupon and yield

### 12.3 FIXED INCOME SECURITIES – RISK AND RETURN

- 12.3.1 Identify the components of return of the present value calculation
- 12.3.2 Identify the main risks faced by bond holders and how these risks can be addressed
- 12.3.3 Identify the two components of interest rate risk (price and reinvestment risk)
- 12.3.4 Identify the nature of the relationship between yield and price
- 12.3.5 Analyse the factors that affect the sensitivity of a bond's price to a change in required yield
- 12.3.6 Define and calculate the (Macaulay) duration of a bond
- 12.3.7 Define and calculate the modified duration of a bond
- 12.3.8 Calculate, given the duration of a bond, the change in price given a change in required yield
- 12.3.9 Explain the convexity error that arises from using duration to estimate a change in bond price using duration
- 12.3.10 Define credit risk as it affects bonds
- 12.3.11 Identify the role and drawbacks of the major credit rating agencies
- 12.3.12 Interpret the key classes of rating on the scales published by the major rating agencies
- 12.3.13 Explain the concept of debt seniority
- 12.3.14 Identify key features and financial ratios considered by credit rating agencies in conducting a corporate rating

### 12.4 FIXED INCOME SECURITIES – YIELDS AND THE YIELD CURVE

- 12.4.1 Define and calculate: flat yield, gross redemption yield (GRY), net redemption yield (NRY), grossed-up NRY
- 12.4.2 Explain when each of these measures may be appropriate to use
- 12.4.3 Define the yield curves
- 12.4.4 Explain the theories that contribute to explaining the shape of the yield curve
- 12.4.5 Define and calculate forward and spot interest rates
- 12.4.6 Explain the relationship between forward rates, spot rates and the GRY

# TOPIC 13

## DERIVATIVES

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to analyse the characteristics, inherent risks and behaviours of derivatives.

### 13.1 DERIVATIVES

- 13.1.1 Distinguish between forwards, futures and options
- 13.1.2 Explain the nature, trading and settlement of exchange traded derivatives
- 13.1.3 Identify the motive for using a futures contract rather than a trade in the underlying asset
- 13.1.4 Explain the nature of, and reasoning behind, a contango and backwardation market
- 13.1.5 Define the 'basis' of a futures contract
- 13.1.6 Describe the main features of the following ICE Futures Europe contracts: short-term interest rate futures, long gilt futures, FTSE 100 futures
- 13.1.7 Explain the possible uses of the above contracts in an investment management context
- 13.1.8 Define the concept of index arbitrage
- 13.1.9 Distinguish between American-style and European-style options
- 13.1.10 Differentiate the time value and intrinsic value components of an option premium
- 13.1.11 Determine when an option is in-the-money, out-of-the-money or at-the money
- 13.1.12 Calculate the time value of an option, given the premium, strike price and current market price
- 13.1.13 Identify and explain the factors that determine the premium of an option
- 13.1.14 Determine the maximum profit, maximum loss and the motivation behind the following option strategies: short and long call, put, straddle, covered call and protective put
- 13.1.15 Explain the use of futures and options in hedging an equity portfolio
- 13.1.16 Calculate the number of futures or options contracts required to hedge a portfolio with a specified beta value

### 13.2 SELLING SHORT, STOCK LENDING AND CONTRACT FOR DIFFERENCES (SWAPS)

- 13.2.1 Explain the mechanics and uses of short selling
- 13.2.2 Explain the role of stock lending in the markets and the benefits to the participants
- 13.2.3 Explain the nature of contracts for differences
- 13.2.4 Explain the nature of, and motivations behind: interest rate swaps, currency swaps, equity swaps and inflation swaps

### 13.3 CONVERTIBLES AND WARRANTS

- 13.3.1 Explain the nature of convertible bonds and convertible preference shares
- 13.3.2 Calculate a conversion price, conversion value and conversion premium
- 13.3.3 Explain the component parts of the valuation of a convertible bond (namely straight bond value, call option value, dilution effect and conversion ratio)
- 13.3.4 Distinguish between a warrant and a call option
- 13.3.5 Explain the key features of covered warrants

### 13.4 CREDIT DERIVATIVES

- 13.4.1 Identify the main purposes, mechanics and implications of a credit default swap (CDS)
- 13.4.2 Identify the main risks to the financial system resulting from credit derivatives

# TOPIC 14

## ALTERNATIVE INVESTMENTS

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to analyse the characteristics, inherent risks and behaviours of alternative investments.

### 14.1 COMMODITIES

- 14.1.1 Describe the main features of commodity markets
- 14.1.2 Identify the main ways investors can access the commodity markets
- 14.1.3 Explain the characteristics of the main commodity derivatives, including: energy, softs/ biofuels, metals, emissions and weather
- 14.1.4 Identify the main commodity derivative indices
- 14.1.5 Explain how commodity exposure can be viewed as a hedge against inflation and 'event' risk
- 14.1.6 Explain the characteristics and risks of investing in precious metals

### 14.2 PROPERTY

- 14.2.1 Distinguish between the commercial and residential property markets
- 14.2.2 Explain the rationale for investing in property and contrast the investment characteristics of property with the other major asset classes
- 14.2.3 Identify the main investors in the commercial property market and the characteristics of the principal commercial property sectors
- 14.2.4 Explain how the direct commercial property market works with regard to: ownership and lease structures; buying and selling; costs, the valuation of property and investment performance measurement
- 14.2.5 Describe the main valuation techniques applied to property investment
- 14.2.6 Explain the routes to indirect property investment
- 14.2.7 Identify the role of Sustainability and ESG characteristics in property valuation and investment
- 14.2.8 Describe the role of the Investment Property Databank indices in the market

# TOPIC 15

## PORTFOLIO MANAGEMENT

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an understanding of the merits and limitations of the main investment theories.
- ▶ Demonstrate an ability to analyse the correlation of asset classes.
- ▶ Demonstrate an understanding of the principles of investment management.

### 15.1 RISK AND RETURN AND THE IMPORTANCE OF DIVERSIFICATION

- 15.1.1 Explain the 'normal' trade-off between risk and return, and the concept of 'dominance' between investment strategies
- 15.1.2 Explain the implications of assuming that returns are normally distributed
- 15.1.3 Explain the importance of risk measurement in the analysis of investments, and why ex-ante and ex-post measures of risk may be very different
- 15.1.4 Identify the commonly used measures of risk in investment analysis and fund management
- 15.1.5 Explain the advantages and disadvantages of standard deviation as a measure of risk
- 15.1.6 Explain tracking error and identify its advantages and disadvantages as a measure of risk
- 15.1.7 Explain the meaning of drawdown and its advantages and disadvantages as a measure of risk
- 15.1.8 Explain the meaning of relative weights and the concept of active share and their respective advantages and disadvantages as measures of risk
- 15.1.9 Explain the impact of changing levels of price volatility over time and how this impacts measures of risk
- 15.1.10 Explain the importance of correlation in constructing efficient portfolios, and the difficulties, limitations and meaning of correlation coefficients
- 15.1.11 Calculate correlation coefficients from standard deviation/covariance of two investments
- 15.1.12 Explain diversification and its role in constructing efficient portfolios, and its limitations during extreme market conditions
- 15.1.13 Explain the meaning of value at risk (VaR) and its advantages and disadvantages for risk management
- 15.1.14 Analyse and explain other types of investment risk, including inflation, currency, interest rate, fraud and counterparty risk

### 15.2 CORRELATION BETWEEN ASSET CLASSES

- 15.2.1 Identify the correlation between the various asset classes (equity, fixed income, property, cash and alternative investments) and explain its relevance to asset allocation
- 15.2.2 Explain the limitations of correlation analysis in extreme market conditions

### 15.3 MODELS OF RETURN AND RISK

- 15.3.1 Identify the assumptions behind the single-factor capital asset pricing model (CAPM) and identify other factors in common use
- 15.3.2 Explain the limitations of the CAPM model
- 15.3.3 Define the segmentation of risk into systematic (factor) risk and unsystematic ('investment specific') risk
- 15.3.4 Calculate the total risk given systematic and unsystematic components
- 15.3.5 Calculate the expected return on a security by applying the CAPM through interpreting the beta of a security
- 15.3.6 Explain how the historic beta may be estimated using a scatter chart of historic returns
- 15.3.7 Calculate the beta of an investment given the systematic risk of the investment and the risk of the market
- 15.3.8 Calculate the beta of an investment given the variance of the market return, and the covariance of the investment return with the market return

- 15.3.9 Calculate the beta of a portfolio given the component betas and the investment weighting
- 15.3.10 Explain the concept of investments being exposed to a number of common factors which partially explain their return and risk profile ('arbitrage pricing theory')
- 15.3.11 Explain the concepts of factor investing and smart beta

## **15.4 THE EFFICIENT MARKETS HYPOTHESIS**

- 15.4.1 Identify and explain the key concepts of the efficient markets hypothesis (EMH), and explain the limitations of the EMH
- 15.4.2 Evaluate the evidence on market anomalies in relation to EMH
- 15.4.3 Explain the basic concepts of the behavioural finance school of thought
- 15.4.4 Evaluate the evidence on market anomalies in relation to behavioural finance
- 15.4.5 Explain the notion of 'bubbles' and 'financial amnesia' in markets

## **15.5 PRICING, LIQUIDITY AND FAIR VALUE**

- 15.5.1 Explain the relationship between pricing, liquidity and fair value for the asset classes of equity, fixed income, derivatives and alternative investments
- 15.5.2 Explain the relationship between liquidity and the capacity of investment strategies

## **15.6 APPROACHES TO FUND MANAGEMENT**

- 15.6.1 Distinguish between a 'top-down' and 'bottom-up' approach to fund management
- 15.6.2 Distinguish between active and passive fund management, and explain the costs and benefits to the investor
- 15.6.3 Explain how active and passive approaches can be blended in portfolio construction
- 15.6.4 Distinguish between strategic and tactical asset allocation
- 15.6.5 Explain the major investment styles prevalent in the fund management industry

## **15.7 INVESTMENT MANAGEMENT PRINCIPLES – FIXED INCOME**

- 15.7.1 Explain the following bond portfolio management techniques: cash matching/dedication, immunisation, credit risk management, riding the yield curve
- 15.7.2 Calculate the theoretical gain from riding the yield curve
- 15.7.3 Calculate duration for a bond portfolio
- 15.7.4 Explain the benefits and risks of bond portfolio management strategies such as the barbell
- 15.7.5 Explain the characteristics and risks of a liability driven investment (LDI) strategy
- 15.7.6 Explain the process of an LDI strategy
- 15.7.7 Evaluate some of the techniques and basic measures of risk used in LDI

## **15.8 SOCIALLY RESPONSIBLE INVESTING AND ENVIRONMENTAL SOCIAL GOVERNANCE INVESTING**

- 15.8.1 Explain what is meant by Environmental, Social and Governance (ESG) characteristics, Socially Responsible Investment (SRI) and how they differ
- 15.8.2 Describe the history of ESG investing and explain the factors that have led to its development
- 15.8.3 Describe the evidence on whether ESG investing leads to superior portfolio returns
- 15.8.4 Explain the main methods of incorporating ESG characteristics into investment decisions
- 15.8.5 Describe the main challenges of incorporating ESG characteristics into investment decisions
- 15.8.6 Identify why investors might (or might not) include ESG issues in their investment decisions
- 15.8.7 Explain what is meant by Impact Investing and contrast Impact Investing with traditional investment and ESG strategies

# TOPIC 16

## INVESTMENT PRODUCTS

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an ability to analyse the characteristics, inherent risks and behaviours of investment products.

### 16.1 INVESTMENT PRODUCTS

- 16.1.1 Compare and contrast investing through direct investments in securities and assets, and investing through indirect investments
- 16.1.2 Distinguish the features, risks and benefits of unit trusts, investment trusts and open-ended investment companies
- 16.1.3 Identify the key features and objectives of exchange-traded funds (ETFs) and exchange-traded commodities (ETCs)
- 16.1.4 Identify the advantages and disadvantages of investing in ETFs
- 16.1.5 Explain the features and objectives of: private client funds, structured products, wraps and other platforms
- 16.1.6 Identify the characteristics and advantages of life assurance-based investments
- 16.1.7 Identify the characteristics and advantages and disadvantages of defined contribution (DC) versus defined benefit (DB) pension arrangements from the perspective of both sponsors and beneficiaries

### 16.2 HEDGE FUNDS AND PRIVATE EQUITY

- 16.2.1 Explain the features and objectives of hedge funds and funds of hedge funds
- 16.2.2 Describe the various hedge fund strategies
- 16.2.3 Describe the various approaches to private equity investing
- 16.2.4 Identify the potential benefits and limitations of hedge funds
- 16.2.5 Identify the potential benefits and limitations of private equity investing
- 16.2.6 Describe the management fee structure for hedge funds and private equity investing

# TOPIC 17

## INVESTMENT PERFORMANCE MEASUREMENT

---

By the end of this topic, learners should be able to:

- ▶ Demonstrate an understanding of the principles of investment performance measurement.

### 17.1 TOTAL RETURN AND ITS COMPONENTS

- 17.1.1 Identify the components of total return for a fixed income or equity portfolio
- 17.1.2 Calculate the income, capital and total return over a single period for an equity or fixed income portfolio
- 17.1.3 Calculate the reinvestment return on income over a specified investment horizon
- 17.1.4 Explain how returns are decomposed and attributed within equities (sector/stock/interaction effect) and fixed income (shift/twist/spread return)

### 17.2 MONEY-WEIGHTED AND TIME-WEIGHTED RETURNS

- 17.2.1 Distinguish between money-weighted return and time-weighted return
- 17.2.2 Calculate and interpret the money-weighted return or time-weighted return from data provided

### 17.3 CHOOSING A BENCHMARK, COMPARISONS WITH INVESTMENT OBJECTIVES, BASE PORTFOLIO AND INDICES

- 17.3.1 Identify the desirable properties and characteristics of an appropriate benchmark
- 17.3.2 Identify the key types of benchmark used in the investment management industry
- 17.3.3 Explain how to construct a benchmark equity portfolio

### 17.4 PERFORMANCE MEASUREMENT INCLUDING RISK ADJUSTED RETURNS

- 17.4.1 Explain the importance of risk analysis in performance evaluation
- 17.4.2 Calculate and interpret the following risk-adjusted measures of return: The Sharpe measure, the Treynor measure, the information ratio and Jensen's alpha
- 17.4.3 Explain how total return can be decomposed into the following: risk-free return, return due to choice of benchmark, return due to market timing, return due to diversifiable risk and pure selectivity