



# Certified European Financial Analyst (CEFA) by EFFAS

Examination Syllabus



CERTIFIED EUROPEAN FINANCIAL  
ANALYST (CEFA)  
**EFFAS**



# CEFA by EFFAS

Certified European Financial Analyst

## Examination Syllabus

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# 1. Economics

## 1. Macroeconomics

### 1.1. Measuring National Income and Price

- 1.1.1. National income accounting
- Concept of national income

- 1.1.2. Consumption
- Consumption function
- Investment
- Investment function

### 1.2. Government expenditure

- 1.2.3. Government revenue and expenditure
- Effect of government expenditure and tax on national income
- Government expenditure and crowding-out effect
- 1.2.4. Equilibrium relationship in the good/service market: IS curve

### 1.3. Equilibrium in the Money Market

- 1.3.1. Demand for money
- 1.3.2. Equilibrium relationship in the monetary market: LM curve

### 1.4. Equilibrium in Economy and Aggregate Demand

- 1.4.1. Aggregate demand

### 1.5. Aggregate Supply and Determination of Price of Goods/Services

- 1.5.1. Aggregate supply

## 2. Macro Dynamics

### 2.1. Inflation

- 2.1.1. Unemployment and inflation rate
- Tradeoff between unemployment and inflation
- Natural rate of unemployment hypothesis and expected inflation

### 2.2. Economic Growth

- 2.2.1. Main factor of economic growth
- Saving rate/capital
- Population growth
- 2.2.2. Theory of economic growth
- Capital accumulation and economic growth
- Technological innovation and economic growth
- Human resources and economic growth
- Financial market and economic growth

### 2.3. Business Cycles

- 2.3.1. Theory of exogenous business cycle
- 2.3.2. Theory of endogenous business cycle
- 2.3.3. Fiscal/monetary policy and business cycle



## 3. International Economy and Foreign Exchange Market

### 3.1. Open Macroeconomics

- 3.1.1. International balance of payments and capital flows
  - Balance of payment statement
  - Balance of payment and capital flows
  - Factor affecting international capital movement
  - Government's intervention and money supply
- 3.1.2. Determination of equilibrium national income in the open economy
  - Foreign trade multiplier under floating system
  - Open macro economics model: preliminary
  - Equilibrium model of open economy
  - Effect of fiscal policy
  - Effect of monetary policy

### 3.2. Foreign exchange rate

- 3.2.1. Determinants of exchange rate in the long-run
  - Concept of foreign exchange rate
  - Price and foreign exchange rate
  - Interest rate and foreign exchange rate
- 3.2.2. Determination of foreign exchange rates
  - Monetary approach
  - Asset approach
  - Overshooting model
  - Portfolio balance approach
- 3.2.3. Government intervention and foreign exchange policy
  - Government intervention
  - Foreign exchange rate and foreign exchange policy in local market
- 3.2.4. Foreign exchange risk and risk management
  - Risk hedging with currency derivatives
  - Growth of currency derivatives markets
- 3.2.5. Historical movement and forecasting of foreign exchange rate
  - Historical analysis of foreign exchange rate
  - Forecasting of foreign exchange rate
  - Impact of foreign exchange rate change on security prices

### 3.3. Central bank and monetary policy

- 3.3.1. Monetary policy
  - Target of monetary policy
  - Instruments of monetary policy
- 3.3.2. Transmission effect of monetary policy on real economy
- 3.3.3. Central bank operations in major countries
- 3.3.4. Effect of monetary policy on security markets

## 2. Corporate Finance

### 1. Fundamentals of Corporate Finance

#### 1.1. Goals of Corporate Finance

- 1.1.1. Value maximisation of shareholders
- 1.1.2. Corporate Governance issue
- Agency relationship
- Control of the firm

#### 1.2. The Finance Function and the Firm's Objectives

#### 1.3. Role of Financial Managers

#### 1.4. Principles of Valuation

- 1.4.1. What is value?
- 1.4.2. The valuation process
- 1.4.3. Value creation for shareholders

#### 1.5. Discounted Cash Flows

- 1.5.1. What is cash flow?
- 1.5.2. Basics of cash flow analysis
- 1.5.3. Terminal values

#### 1.6. Capital Budgeting

- 1.6.1. Investment decision criteria
  - Payback rules
  - Discounting payback period method
  - IRR
  - NPV
- 1.6.2. Cost of capital
  - Cost of equity capital
  - Cost of debt capital
  - WACC
  - Corporate taxes, interest subsidy and cost of capital
- 1.6.3. CAPM
  - Measuring beta
  - Certainty equivalents
  - Risk free rate
  - Risk adjusted discount rates
  - CML
  - SML

### 2. Long-Term Finance Decision

#### 2.1. Investment Decision

- 2.1.1. Periodic budgeting
- 2.1.2. Project evaluation



## 2. Corporate Finance

### 2.2. Project Evaluation

- 2.2.1. Method for ranking investment proposals
- 2.2.2. Capital resource rationing
- 2.2.3. Common pitfalls (e.g., Sunk costs, depreciation)

### 2.3. Liquidation and Reorganisation

## 3. Short-Term Finance Decision

### 3.1. Short-Term Financing

- 3.1.1. Current asset financing
  - Needs for working capital
  - Components of working capital
- 3.1.2. Short term financing
  - Short-term financing resources
  - Short-term financial planning models

### 3.2. Cash Management

- 3.2.1. Credit management
  - Commercial credit instruments
  - Credit decision
- 3.2.2. Cash management
  - Target cash balance model
  - Cash conversion cycle
  - Investing idle cash balance

### 3.3. Short-Term Lending and Borrowing

- 3.3.1. Short-term lending
  - Money markets
  - Alternatives to money markets
- 3.3.2. Short-term borrowing
  - Credit rationing
  - Secured and unsecured loans

## 4. Capital Structure and Dividend Policy

### 4.1. Leverage and the Value of the Firm

- 4.1.1. Modigliani-Miller Theory
  - 1) Irrelevance Theorem
  - 2) Corporate taxes and capital structure
- 4.1.2. Bankruptcy cost model
- 4.1.3. Agency cost model



## 2. Corporate Finance

### 4.2. Dividend Policy

- 4.2.1. Types of dividend (cash dividend, stock dividend, and splits)
- 4.2.2. Repurchase of stock
- 4.2.3. Irrelevance Theorem
- 4.2.4. Clientele effect
- 4.2.5. Signalling model
- 4.2.6. Dividend policy in local market

### 5. Mergers and Acquisitions

#### 5.1. Valuation Issues

- 5.1.1. Valuation of the target

#### 5.2. Forms of Acquisitions

- 5.2.1. Take-overs
- 5.2.2. Approved acquisitions
- 5.2.3. Creeping take-overs
- 5.2.4. Eliminating minority interests

#### 5.3. Strategies for the Acquirer

- 5.3.1. Aggressive or agreed
- 5.3.2. Conditional or unconditional
- 5.3.3. Timing
- 5.3.4. Board considerations

#### 5.4. Defensive Strategies

- 5.4.1. Pre-emptive versus reactive
- 5.4.2. Pre-emptive (long-term) strategies
- 5.4.3. Pre-emptive (short-term) strategies

### 6. International Corporate Finance

#### 6.1. International Capital Budgeting for Multinational Firm

- 6.1.1. Foreign project appraisal
- 6.1.2. Political risk analysis
- 6.1.3. Managing foreign exchange exposure

#### 6.2. Asset and Project Finance

- 6.2.1. Asset-backed securities
- 6.2.2. Leasing
- 6.2.3. Project evaluation
- 6.2.4. Lender's evaluation of the project
- 6.2.5. Syndication



### 1. Financial Reporting Environment

#### 1.1. Financial Statements

- 1.1.1. Balance sheet
- 1.1.2. Income statement
  - Presentation formats
  - Classification of expenses (by nature or by function)
- 1.1.3. Statement of cash flows
- 1.1.4. Statement of changes in equity
  - The comprehensive income
- 1.1.5. Notes to financial Statements
- 1.1.6. Relation between business activities and financial statements

#### 1.2. Financial Reporting Issues

- 1.2.1. Uses of financial statements
  - Equity investment
  - Credit extension
  - Competition
  - Merger & Acquisition
- 1.2.2. International differences in accounting
  - International differences in accounting
  - Market – oriented accounting systems
  - Bank – oriented accounting systems
  - The IASB and the IFRSs

### 2. Framework for the Preparation and Presentation of Financial Statements

- 2.1. Objective of financial statements
- 2.2. Accounting conventions (going concern, accrual Basis, etc)
- 2.3. Criteria for accounting recognition
- 2.4. Fundamental definitions (asset, liability, equity, revenue, expense)

### 3. The cash flow statement

- 3.1. Rationale for the Statement of Cash Flows
- 3.2. Relation between Income Flows and Cash Flows
- 3.3. Presentation of the cash flow statement
  - 3.3.1. The direct method
  - 3.3.2. The indirect method

### 4. The income statement: Revenue recognition

#### 4.1. Criteria for revenues recognition

- 4.1.1. Sales of goods
- 4.1.2. Rendering of services

#### 4.2. Measurement of revenues



#### **4.3. Construction contracts**

- 4.3.1. Percentage of completion method
- 4.3.2. Completed contract method

#### **4.4. Accounting for stock – options and similar benefits**

- 4.4.1. Classification of share-based payments
- 4.4.2. Equity – settled share-based payments
- 4.4.3. Cash-settled share-based payments

### **5. Assets, Liabilities and Shareholders Equity**

#### **5.1. Assets**

- 5.1.1. Property, plant and equipment
  - Measurement at cost
  - Measurement at fair value
- 5.1.2. Investment property
  - Measurement at cost
  - Measurement at fair value
- 5.1.3. Intangible assets
  - Criteria for recognition
  - Accounting for research and development costs
- 5.1.4. Inventories
  - Measurement
  - Cost formulas(FIFO, LIFO, weighted average Cost)
- 5.1.5. Financial instruments
  - Classification
  - Measurement at fair value
  - Measurement at amortized cost
  - Hedge accounting
- 5.1.6. Impairment of assets
  - Measuring the recoverable amount
  - Impairment tests

#### **5.2. Liabilities**

- 5.2.1. Bonds
  - Accounting for bond discounts/premiums
- 5.2.2. Hybrid securities
  - Convertible debt securities
  - Debt issues with detachable warrants
- 5.2.3. Leases
  - Operating leases
  - Finance leases
- 5.2.4. Borrowing costs
  - Conditions for capitalization
  - Costs that may be capitalized
- 5.2.5. Retirement benefits
  - Pensions
  - Post-retirement benefits other than pensions

- 5.2.6. Income Taxes
  - Temporary differences
  - Deferred taxes
- 5.2.7. Provisions
  - Conditions for the recognition of provisions
  - Contingent liabilities
- 5.3. Shareholders' Equities**
  - 5.3.1. Issuance of capital stock
  - 5.3.2. Acquisition and reissue of treasury stocks
  - 5.3.3. Cash, property and stock dividends
  - 5.3.4. Accounting
  - 5.4.5. Other changes in retained earnings

## 6. Business Combination

- 6.1. Mergers and Acquisitions**
  - 6.1.1. Acquisitions
    - Asset valuation in acquisitions
    - Accounting for goodwill
  - 6.1.2. Mergers
    - Pooling of interest method
    - Purchase method
- 6.2. Consolidated Financial Statements**
  - 6.2.1. The scope of consolidation
  - 6.2.2. Consolidation methods
  - 6.2.3. The difference arising from consolidation
  - 6.2.4. Uses of each method
  - 6.2.5. The consolidation procedure
  - 6.2.6. Analysis of the difference arising from initial consolidation
  - 6.2.7. Impairment of goodwill

## 7. Foreign Currency Transactions

- 7.1. Foreign Currency Transaction**
  - 7.1.1. Initial recognition
  - 7.1.2. Reporting at subsequent B/S daily
  - 7.1.3. Recognition of exchange differences
- 7.2. Financial Statements of Foreign Operations**
  - 7.2.1. Classification of foreign operations
  - 7.2.2. Translation to the presentation currency

## 8. Financial Reporting and Financial Statement Analysis

### 8.1. Income Flow vs Cash Flow

- 8.1.1. Relation between net income and cash flows from operating activities
- 8.1.2. Net income and cash flows in various stages of life cycle

### 8.2. Quality of Earning, Earnings Management

- 8.2.1. Data issues in analyzing financial statements
  - Non-recurring income items
  - Income, gains and losses from discontinued operations
- 8.2.2. Accounting changes
  - Changes in accounting estimates
  - Changes in accounting policies
  - Adjustments to prior financial statements

### 8.3. Earnings per Share

- 8.3.1. Basic earnings per share
- 8.3.2. Diluted earnings per share
- 8.3.3. Using EPS to value firms
- 8.3.4. Criticisms of EPS

### 8.4. Segment Reporting

- 8.4.1. Definition
  - Industry segments
  - Geographical segments
- 8.4.2. Disclosure requirements
- 8.4.3. Using segment information

### 8.5. Interim Financial Statements

## 9. Analytical Tools for Gaining Financial Statement Insights

### 9.1. Balance Sheet

- 9.1.1. Common size analysis
- 9.1.2. Time series analysis

### 9.2. Income Statement

- 9.2.1. Common size analysis
- 9.2.2. Time series analysis

## 10. Analytical Tools for Assessing Profitability and Risk

### 10.1. Profitability Analysis

- 10.1.1. ROA  
Breakdown of ROA  
Interpreting ROA
- 10.1.2. ROCE  
Relating ROA to ROCE  
Breakdown of ROCE

### 10.2. Risk Analysis

- 10.2.1. Short term liquidity risk  
Current ratio  
Quick ratio  
Operating cash flow to current liabilities  
Working capital activity ratio  
Operating cash flow to cash interest cost
- 10.2.2. Long term solvency risk  
Debt ratio  
Interest coverage ratio  
Operating cash flow to total liabilities  
Operating cash flow to capital expenditure
- 10.2.3. Financial distress risk  
Univariate analysis  
Multiple discriminant analysis

### 10.3. Break-even Analysis

### 10.4. Pro Forma Financial Statements

- 10.4.1. Steps in preparing pro forma financial statements
- 10.4.2. Conditions when common size percentage, growth rates, and turnover provide the best projections of financial statements amounts

## 4. Equity Valuation and Analysis

### 1. Equity Markets and Structures

#### 1.1. Types of equity securities

- Common stock
- Preferred stock
- Equity mutual fund shares

#### 1.2. Indices

### 2. Understanding the Industry Life Cycle

### 3. Analysing the Industry Sector and its Constituent Companies

- 3.1. The industry sector
- 3.2. Characteristic of the industry
- 3.3. Macro factor
- 3.4. Forecasting for companies in the sector
- 3.5. Balance sheet factors
- 3.6. Corporate strategy
- 3.7. Valuations

### 4. Understanding the Company

- 4.1. Historical financial performance
- 4.2. Segmental information
- 4.3. Inventory, debtors and creditors
- 4.4. Depreciation and amortisation
- 4.5. Completing the forecasts

### 5. Valuation Model of Common Stock

#### 5.1. Dividend discount model

- 5.1.1. Zero-growth model
- 5.1.2. Constant growth model
- 5.1.3. Multiple growth model

#### 5.2. Free cash flow model

#### 5.3. EVA, MVA, CFROI, Abnormal earnings discount model

#### 5.4. Measures of relative value

- 5.4.1. Price/earning ratio
- 5.4.2. Price/book value ratio
- 5.4.3. Price/cash flow ratio
- 5.4.4. Price/sales ratio



### 1. Financial Markets and Instruments

#### 1.1. Derivatives Markets

- 1.1.1. Fixed income derivatives
  - Interest rate options
  - Interest rate futures
  - Delivery options
  - Conversion factors
  - Cheapest-to-deliver bonds
  - Custom interest rate agreements (interest swap, IRA, cap, floor and swaptions)
- 1.1.2. Equity derivatives
  - Options on individual stocks
  - Stock index futures and options

#### 1.2. Futures Markets

- Basic characteristics of futures contract
- Mechanics of trading in futures markets

#### 1.3. Related Markets

- 1.3.1. Swaps
  - Characteristics of swaps
  - Related products (IRA, cap, floor, swaptions)

#### 1.4. Credit derivatives: Market, instruments and general characteristics

- 1.4.1. Market of credit derivatives
- 1.4.2. Definition of credit default swaps (CDS)
- 1.4.3. Structural diagram of credit default swaps
- 1.4.4. Credit events
  - Physical settlement
  - Cash settlement
  - Trigger events
- 1.4.5. CDS products
  - Credit default swaps and credit linked notes
  - Index products
  - Other credit default swap products
- 1.4.6. The role of credit derivatives
  - Isolating credit risk
  - Efficient mechanism to short a credit
  - Market for pure credit risks
  - Liquidity provision in times of turbulence
  - Tailor credit investments and hedges
  - Confidential transactions
- 1.4.7. Market participants
  - Bank and loan portfolio managers
  - Market makers
  - Hedge funds
  - Asset managers
  - Insurance companies
  - Corporations

## 5. Derivative Valuation and Analysis

- 1.4.8. Institutional framework
- Marking to market
- Standardised documentation
- Counterparty consideration
- 1.4.9. Spread volatility of credit default swaps
- 1.4.10. Credit derivatives: valuation of credit default swaps
- Creating synthetic CDS
- Valuation of credit default swaps by a non-arbitrage approach

## 2. Analysis of derivatives and other products

### 2.1. Futures

- 2.1.1. Factors determining contract price
- 2.1.2. Theoretical price of futures
- 2.1.3. Basis and factors causing change
- 2.1.4. Arbitrage problems
- 2.1.5. Hedging strategies
- The hedge ratio
- The perfect hedge
- Minimum variance hedge ratio
- Hedging with several futures contracts

### 2.2. Options

- 2.2.1. Determinants of option price
- 2.2.2. Options pricing models
- B&S option pricing formula and variants
- European options on stocks paying known dividends
- European options on stocks paying unknown dividends
- American options on stocks paying known dividends
- Options on stock indices
- Options on futures
- Options on currencies
- Warrants
- Binomial option pricing model
- 2.2.3. Sensitivity analysis of options
- Premiums
- The strike price
- Price of underlying assets, and delta and gamma
- The time to maturity and theta
- Interest rate and rho
- Volatility of the stock returns and vega
- 2.2.4. Volatility and related topics
- Estimating volatility from historical data
- Implied volatility and volatility smile
- 2.2.5. Exotic options



- 2.2.6. Options strategies
  - Protective put
  - Spreads
  - Straddles
  - Strangles
- 2.3. Asset-backed Securities**
  - 2.3.1. Types of underlying assets
    - Instalment contract
    - Revolving lines of credit
    - Other assets
  - 2.3.2. Cash flow characteristics
  - 2.3.3. Credit enhancement
  - 2.3.4. Valuation methodologies





## 6. Fixed Income Valuation and Analysis

### 1. Financial Markets and Instruments

#### 1.2. Fixed Income: Corporate and Government

- 1.2.1. Types of fixed income securities
  - Money market instruments
  - Government bonds
  - Corporate securities
- 1.2.2. Indices

### 2. Time Value of Money

#### 2.1. Time value of money

- 2.1.1. Simple versus compound interest
- 2.1.2. Present and future value
- 2.1.3. Annuities
- 2.1.4. Continuous discounting and compounding

#### 2.2. Bond Yield Measures

- 2.2.1. Yield vs discount
- 2.2.2. Current yield
- 2.2.3. Yield to maturity
- 2.2.4. Yield to call
- 2.2.5. Other basic concepts
  - Spot rates
  - Discount function
  - Forward rates
  - Relations between spot rate, forward rate and the slope of the term structure
- 2.2.6. Yield curves
  - Market Curves (Observed)
    - Yield
    - Swaps
    - Credit
  - Theoretical Curves (Imputed)
  - Term Structures
  - Parametric modelling

#### 2.3. Term Structure of Interest Rates

- 2.3.1. Yield curves and shapes
- 2.3.2. Theories of term structure
  - Expectations hypothesis
  - Liquidity preferences
  - Market segmentation and preferred habitat theories
- 2.3.3. Term structures
  - Risk Management
  - Asset Management/Liability Management/ALM
  - Financial Engineering
  - Structured Products
  - Regulatory
  - Portfolio Valuation



## 6. Fixed Income Valuation and Analysis

### 2.4. Bond Price Analysis

- 2.4.1. Basic price/yield relationship
- 2.4.2. Yield spread analysis
  - Types of spreads
  - Determinants of yield spreads
- 2.4.3. Valuation of coupon bonds using zero-coupon prices
  - Static arbitrage and valuation of coupon bonds
  - Strips markets

### 2.5. Risk Measurement

- 2.5.1. Risk measurement tools
- 2.5.2. Duration and modified duration
- 2.5.3. Convexity
- 2.5.4. Hedging

### 2.6. Usage Bond Yield Curves

- 2.6.1. Zero (Spot), Coupon and Par curves
- 2.6.2. Bond Curves in Market Usage
  - Structure and Smoothness
  - Trade Horizon: Yield, Duration & Convexity
  - Reversion to Mean
- 2.6.3. Curve Shapes and Future Rates
  - Constraints: Absolute & Relative (Slope)
  - Negative Discount Function
- 2.6.4. Curves and Economic Activity
- 2.6.5. Curves and Monetary Policy
- 2.6.6. Other Curves
  - Swap Curves
  - Credit Curves
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### 2.7. Credit Risk

- 2.7.1. Industry consideration
- 2.7.2. Ratio analysis
- 2.7.3. Credit rating and rating agencies
- 2.7.4. Curves and credit
  - The Additional Dimensions of Credit
  - Default risk
  - Recovery Rates
  - Annualised Expected Loss Rates
  - Bankruptcy processes
  - Term Structure of Credit
  - Credit Default Swaps (CDS)
  - Curve Shapes and Credit Quality
  - Historical Behaviour: Curves Under Shock



## 6. Fixed Income Valuation and Analysis

### 3. Bonds with Warrants

- 3.1. Investment Characteristics
- 3.2. Value of Warrants

### 4. Convertible Bonds

- 4.1. Investment Characteristics
- 4.2. Value of Conversion Benefits

### 5. Callable Bonds

- 5.1. Investment Characteristics**
  - 5.1.1. Price-yield relationship for a callable bond
  - 5.1.2. Negative convexity
- 5.2. Valuation and Duration**
  - 5.2.1. Determining the call option value
  - 5.2.2. Option-adjusted spread
  - 5.2.3. Effective duration and convexity

### 6. Floating Rate Notes

- 6.1. Investment Characteristics and Types
- 6.2. Valuation Method

### 7. Mortgage-Backed Securities

- 7.1. Types of Mortgages**
  - 7.1.1. Level-payment fixed-rate
  - 7.1.2. Adjustable-rate (ARM)
- 7.2. Types of Securities**
  - 7.2.1. Pass-through securities
  - 7.2.2. Collateralised mortgage obligations
- 7.3. Factors Affecting Market Price**
  - 7.3.1. Underlying collateral
  - 7.3.2. Structure and seasoning
  - 7.3.3. Prepayment rate
  - 7.3.4. Level of interest rate
  - 7.3.5. Liquidity
  - 7.3.6. Credit risk
- 7.4. Valuation Methodologies**
  - 7.4.1. Static cash flow yield methodology
  - 7.4.2. Prepayment model



### 8. Fixed Income Portfolio Management Strategies

#### 8.1. Active Management

- 8.1.1. Interest rate anticipation strategies
- 8.1.2. Yield spread analysis
- 8.1.3. Maturity spacing strategies

#### 8.2. Passive Management

- 8.2.1. Buy and hold
- 8.2.2. Indexation
- 8.2.3. Immunisation
- 8.2.4. Cash flow matching

#### 8.3. Portfolio Construction based on a Factor Model

- 8.3.1. Model specification
- 8.3.2. Suitable factors such as interest rates, spreads
- 8.3.3. Managing factor sensitivities

#### 8.4. Computing the Hedge Ratio: the Modified Duration Method

### 1. Modern Portfolio Theory

#### 1.1. The Risk/Return Framework

- 1.1.1. Return
  - Measures of return
- 1.1.2. Risk
  - Components of total risk
- 1.1.3. Measures of risk
  - Measures
  - Value at risk

#### 1.2. Efficient Market Hypothesis

- 1.2.1. Definition & assumptions
- 1.2.2. Alternative hypothesis
- 1.2.3. Types of market efficiency
- 1.2.4. Market anomalies

#### 1.3. Portfolio Theory

- 1.3.1. Diversification and portfolio risk
- 1.3.2. Markowitz model and efficient frontier

#### 1.4. Capital Asset Pricing Model (CAPM) - building on fundamentals in Part 2 module 1.6.3

- 1.4.1. Major assumptions
- 1.4.2. Capital market line (CML)
- 1.4.3. Security market line (SML)
- 1.4.4. International CAPM

#### 1.5. Arbitrage Pricing Theory

- 1.5.1. Assumptions
- 1.5.2. One factor models
- 1.5.3. Multi-factor models
- 1.5.4. Arbitrage pricing theory

### 2. Investment Policy

#### 2.1. Investment Objectives

- 2.1.1. Setting investment objectives for individuals
- 2.1.2. Deciding portfolio structure
- 2.1.3. Setting objectives for institutions

### 3. Asset Allocation

#### 3.1. Asset Allocation Overview

- 3.1.1. What is asset allocation?
- 3.1.2. Who does asset allocation?
- 3.1.3. Implementing and managing the asset allocation process
- 3.1.4. Evolution of asset allocation
- 3.1.5. Capital Market Expectations

## 7. Portfolio Management

### 3.2. Type of Asset Allocation

- 3.2.1. Integrated asset allocation
- 3.2.2. Strategic asset allocation
- 3.2.3. Tactical asset allocation
- 3.2.4. Dynamic asset allocation

## 4. Asset Liability-Analysis and Management

### 4.1. Introduction

- 4.1.1. Background of ALM
- 4.1.2. ALM with pension funds
- 4.1.3. Types of ALM models

### 4.2. Modelling Liabilities

- 4.2.1. Types of liabilities
- 4.2.2. Valuation of pension liabilities
- 4.2.3. Annuity factors and discount rates

### 4.3. Modelling Assets

- 4.3.1. Types of asset classes
- 4.3.2. Risk and return characteristics

### 4.4. Funding Ratios

- 4.4.1. Definitions
- 4.4.2. Surplus risk management

### 4.5. Integrated Optimisation

- 4.5.1. Stochastic simulation
- 4.5.2. Target functions and trade offs
- 4.5.3. Scenario analysis and stress testing

### 4.6. Implementation of strategies

- 4.6.1. Active versus passive ALM strategies
- 4.6.2. Dynamics adjustment of assets and liabilities

### 4.7. Dynamics and Implementation

- 4.7.1. Dynamic adjustment of liabilities
- 4.7.2. Dynamic asset allocation and rebalancing
- 4.7.3. Liability driven investing

## 5. Practical Portfolio Management

### 5.1. Managing an Equity Portfolio

- 5.1.1. Active management
  - Technical analysis/market timing
  - Stock selection/industry selection
  - Growth/value style
  - Specialisation/themes
  - Anomalies
  - Top-down/bottom-up
  - Adjusting the beta of an equity portfolio



## 7. Portfolio Management

- 5.1.2. Passive management
  - Buy and hold
  - Stock index funds
  - Customised funds
  - Completeness funds
  - Factor/style funds
  - Indexing technology
  - Benchmark choice
  - Choice of the tracking error
- 5.1.3. Combined strategies
- Active/passive combinations
- 5.1.4. Portfolio construction based on a factor model

### 5.2. Derivatives in Portfolio Management

- 5.2.1. Combining options and traditional assets
- 5.2.2. Portfolio insurance
  - Static portfolio insurance
  - Dynamic portfolio insurance
  - Constant Proportion Portfolio Insurance
- 5.2.3. Hedging with stock index futures
- 5.2.4. Hedging with foreign exchange futures
- 5.2.5. Hedging with interest rate futures
- 5.2.6. Use of swaps in portfolio management
- 5.2.7. Asset allocation with futures

### 5.3. Managing a Property Portfolio

- 5.3.1. The role of property in a diversified portfolio
- 5.3.2. The property investment decision
- 5.3.3. Micro economic influences on property returns
- 5.3.4. Macro economic influences on property returns
- 5.3.5. Difference property investments

### 5.4. Alternative Assets/Private Capital

- 5.4.1. Unlisted (non-property) securities
- 5.4.2. Terms, conditions and characteristics
- 5.4.3. Role in a traditional portfolio
- 5.4.4. Managing unlisted security vehicles
- 5.4.5. Monitoring and reporting

### 5.5. International Investments

- 5.5.1. International diversification
  - Cross-correlations
  - Country risk
  - Emerging markets



## 7. Portfolio Management

- 5.5.2.
  - Hedging foreign exchange risk
  - Effective management of currency risk
  - Behaviour of currency returns
  - Is it a separate asset class / zero sum game?
  - Treatment of currency within a portfolio
  - Black's paper on universal currency hedge
  - Use of overlay strategies
  - Key sensitivities
  - Currency-related example of performance attribution
- 5.5.3.
  - International equities
  - Reasons for holding international equity assets
  - Performance objectives
- 5.5.4.
  - International fixed income
  - Reasons for holding international fixed interest assets
  - Performance objectives
- 5.5.5.
  - Managing a portfolio of international assets
  - International investing
  - Global asset allocation
  - Portfolio management styles
  - Portfolio construction
  - Portfolio management strategy
  - Appraisal ratio

## 6. Performance Measurement

### 6.1. Performance Measurement and Evaluations

- 6.1.1.
  - Risk-return measurement
  - Market and book value evaluation
  - Time horizon and performance measurement
  - Inflow/outflow of cash and performance measurement
  - Time-weighted and dollarweighted rate of return
- 6.1.2.
  - Risk-adjusted performance measures
  - Sharpe's measure
  - Treynor's measure
  - Jensen's alpha
  - Appraisal ratio
- 6.1.3.
  - Relative investment performance
  - Manager-universe comparison
  - Indices and benchmarks
  - Index definition and calculation
  - Choosing and constructing a benchmark
  - Domestic vs. International benchmarks
  - Cash benchmark and currencies
  - Multi-currency investments and interest rate differentials
  - Currency overlay and performance measurement
  - Balanced benchmarks
  - Random and normal portfolios
  - Index vs. universe median
  - Style-bogey comparisons





## 7. Portfolio Management

- 6.1.4. Performance attribution analysis
  - Asset allocation effect
  - Industry selection effect
  - Security selection effect
  - Investment timing effect
  - Attribution analysis of fixed income portfolio
- 6.1.5. Special issues
  - Performance evaluation of international investments
  - A single currency attribution model by Brinson & al.
  - Multi-currency attribution and interest rate differentials
  - Performance evaluation of international investments/derivative investments
  - Effects of costs

## 7. Management of Investment Institutions

### 7.1. Assessing and Choosing Managers

- 7.1.1. Style analysis
  - Means of style analysis
  - Style analysis
  - Risks, controls and prudential issues: organisational issues
  - Risks, controls and prudential issues: fee structures

## 8. Behavioural Finance

### 8.1. Definition and scope of Behavioural Finance

### 8.2. Rationality (homo oeconomicus) versus Bounded Rationality (according to Herbert Simon)

### 8.3. Anomalies in human behaviour

- 8.3.1. Anomalies regarding perception of information
- 8.3.2. Anomalies regarding information processing
- 8.3.3. Anomalies regarding decision making

### 8.4. Heuristics

- 8.4.1. Simplification heuristic
- 8.4.2. Mental accounting
- 8.4.3. Availability heuristic
- 8.4.4. Anchoring
- 8.4.5. Representativity

### 8.5. Prospect Theory

- 8.5.1. Value function
- 8.5.2. Asymmetry effect
- 8.5.3. Disposition effect
- 8.5.4. Reference points
- 8.6. Loss aversion
- 8.7. Regret aversion
- 8.8. Framing
- 8.9. Overconfidence
- 8.10. Home bias



## 8. European Regulation

### 0. Why regulation?

#### 1. European Legislation

##### 1.1. A brief history of European Union

##### 1.2. Enlargement

##### 1.3. Decision-Making Bodies

1.3.1. The European Parliament

1.3.2. The Council of the European Union

1.3.3. The EU Commission

##### 1.4. Legislative Acts

1.4.1. Directives

1.4.2. Regulations

1.4.3. Decisions

1.4.4. National Implementing Measures

##### 1.5. Legislative Procedure

1.5.1. Co-Decision Procedure

1.5.2. Comitology Procedure (Lamfalussy Process)

#### 2. The Single Market for financial services

##### 2.1. The four principles of General Freedom in the EU

2.1.1. Free Movement of People

2.1.2. Free Movement of Goods

2.1.3. Free Movement of Services

2.1.4. Free Movement of Capital

##### 2.2. Harmonisation of Legislation

2.2.1. Minimum harmonisation

2.2.2. Maximum harmonisation

2.2.3. Harmonisation via regulations

##### 2.3. FSAP Financial Services Action Plan

##### 2.4. Single Market Act

#### 3. Regulation of Capital Markets

##### 3.1. Market in Financial Instruments Directive (MiFID II / MiFIR)

3.1.1. Guiding Principles

3.1.2. Rules of Conduct



## 8. European Regulation

- 3.2. Market Abuse Directive (MAD II / MAR)**
  - 3.2.1. Insider Transactions
  - 3.2.2. Market Manipulation
    - 3.2.2.1. Manipulative deals and orders
    - 3.2.2.2. Deals and orders with accompanying manipulative actions
    - 3.2.2.3. Manipulative information
- 3.3. Directive on Takeover Bids**
- 3.4. Prospectus Directive**
- 3.5. Transparency Directive**
- 3.6. EMIR European Market Infrastructure Regulation**
- 3.7. Regulation on Investment Funds (UCITS)**
- 3.8. Alternative Investment Fund Managers Directive (AIFMD)**
- 3.9. Regulation on Credit Rating Agencies**
- 3.10. Investor compensation schemes**
- 3.11. Anti Money Laundering Directive**
- 3.12. Regulation on PRIIPS**
- 3.13. New Investment vehicles**

### Chapter II: European Supervision of Capital Markets

#### 4. European Regulatory Bodies

- 4.1. Old Supervisory Architecture**
  - 4.1.1. National Supervisory Authorities
  - 4.1.2. EU Committees
    - 4.1.2.1. Committee of Banking Supervisors (CEBS)
    - 4.1.2.2. Committee of Insurance and Occupational Pension Supervisors (CEIOPS)
    - 4.1.2.3. Committee of Securities Regulators (CESR)
    - 4.1.2.4. Colleges of Supervisors
- 4.2. New Supervisory Architecture**
  - 4.2.1. European Systemic Risk Board (ESRB)
  - 4.2.2. European System of Financial Supervisors
    - 4.2.2.1. European Banking Authority (EBA)
    - 4.2.2.2. European Insurance and Occupational Pensions Authority (EIOPA)
    - 4.2.2.3. European Securities and Markets Authority (ESMA)
- 4.3. Banking Union**
- 4.4. Capital Markets Union**



### 1. Ethical Conduct

- 1.1 Why ethical behaviour in financial markets?
- 1.2. The 'client first' principle
- 1.3. Conflicts of interest
- 1.4. Market Abuse (insider trading, market manipulation)

### 2. Self Regulation and Ethical Conduct

- 2.1. IOSCO
- 2.2. Basel Committee for Banking Supervision
- 2.3. Corporate Governance & Compliance
  - 2.3.1. Corporate Governance Codes
  - 2.3.2. Standard Compliance Codes
- 2.4. Code of Ethics for Financial Analysts
  - 2.4.1. EFFAS Principles of Ethical Conduct
  - 2.4.2. Practical case studies on 1.2 to 1.4.
  - 2.4.3. ACIIA Principles of Ethical Conduct (overview)

- Annex EFFAS Principles of Ethical Conduct in full text

## **10. ESG – Environmental Social and Governance**

### **1. ESG - an introduction**

- 1.1. ESG Investment - where do we stand?**
- 1.2. Definitions and developments**
- 1.3. ESG strategies**
- 1.4. Empirical evidence about ESG and financial performance**
- 1.5. Barriers to ESG**

### **2. Recent Developments of ESG integration**

- 2.1. Market drivers**
- 2.2. Regulatory Framework (Investor demands and initiatives)**
- 2.3. ESG Reporting Frameworks for companies and investors**

### **3. Investment Process Chain**

- 3.1. Introduction**
- 3.2. Macro research and asset allocation**
- 3.3. Company analysis**
- 3.4. Portfolio construction**
- 3.5. Trading**
- 3.6. Portfolio and risk analytics**
- 3.7. Compliance and reporting**
- 3.8. Engagement and voting**

### **4. Responsible investing across asset classes**

- 4.1. Introduction**
- 4.2. Brief reflections on individual asset classes**

### **5. ESG Integration in Valuation**

- 5.1. Disclosure and Data Source**
- 5.2. Identification of ESG value drivers**
- 5.3. Analysis of governance, controversies**
- 5.4. Analysis of Environmental and Social: sector specific**
- 5.5. ESG integration in valuation models**



## **11. National Component (complimentary)**

### **1. National Regulation of Financial Services**

- 1.1. National Competent Authorities**
- 1.2. Licence Regime for Financial Services Providers**
- 1.3. Organisational Requirements for Financial Services Providers**
- 1.4. National Implementation of EU Law on Financial Services**

### **2. Liability for Advice**

- 2.1. Contractual obligations**
- 2.2. Obligations imposed by capital markets law**
- 2.3. Court rulings**
- 2.4. Self regulation (if applicable)**

### **3. Regulation of Financial Research**

- 3.1. National regulations of Financial Research**  
National Code of Conduct for Financial Research (if applicable)

### **4. Micro-market Structure**

- 4.1. Structure of Capital Markets**
  - 4.1.1. Stock Exchange**
  - 4.1.2. Derivatives Exchange**
  - 4.1.3. Commodities Exchange (if applicable)**
- 4.2. Size of Markets**
  - 4.2.1. Listed Companies**
  - OTC Market**
  - Private Equity (if applicable)**
- 4.3. Trading Rules for Securities**
- 4.4. Settlement of Securities Trades**

### **5. Taxation of Investments / Investors**

- 5.1. Taxation of private / institutional investors**
  - 5.1.1. Taxable Income**
  - 5.1.2. Types of Income**
  - 5.1.3. Investment Income**
- 5.2. Taxation of investments with private/institutional investors**
- 5.3. Double Tax Treaties**
- 5.4. Automated Information Exchange**
- 5.5. FATCA**

