



## CEFA Syllabus 2021

As of November 2021, this new CEFA syllabus approved by the EMC 29.04.2021 and ratified by the AGM 04.06.2021 will enter into force.

### Part 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
  - 1.2.3. 1.2.3 Government expenditure
    - 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. 3.2.3 Government intervention and foreign exchange policy
      - Government intervention
      - Foreign exchange rate and foreign exchange policy in local market
    - 3.2.4. 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



# EFFAS THE EUROPEAN FEDERATION OF FINANCIAL ANALYSTS SOCIETIES

- 3.3.3. Central bank operations in major countries
- 3.3.4. Effect of monetary policy on security markets



## Part 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
  - 2.2. Project Evaluation
    - 2.2.1. Method for ranking investment proposals
    - 2.2.2. Capital resource rationing
    - 2.2.3. Common pitfalls (eg. 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
- 4.2. Dividend Policy
  - Types of dividend (cash dividend, stock dividend, and splits)
  - 4.2.1.
  - 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



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- 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



## **Part 3 Financial Accounting and Financial Statement Analysis**

- 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 sharebased payments
  - 4.4.2. Equity – settled sharebased payments
  - 4.4.3. Cash-settled sharebased 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 interests 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
    - Relation between net income and cash flows from operating activities
  - 8.1.1. 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



## **Part 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. 1.2. Indices

### **2. Understanding the Industry Life Cycle**

#### **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



## Part 5 Derivative Valuation and Analysis

### 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
- 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
  - Estimating default probabilities
  
- 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. 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



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- 2.2.5. Exotic options
- 2.2.6. Options strategies
  - Covered call
  - 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



## Part 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
  - Mark-to-Mark with Unobserved Prices
- 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
- 2.6. 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
    - Spread Curves
- 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)



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## Curve Shapes and Credit Quality Historical Behaviour: Curves Under Shock

- 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



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- 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



## **Part 7 Portfolio Management**

### **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

#### 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. Defintions
    - 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 selection
      - Growth/value style
      - Specialisation/themes
      - Anomalies
      - Top-down/bottom-up
      - Adjusting the beta of an equity portfolio
    - 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
  - 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
- 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
  - 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





## Part 8: European Regulation

### Chapter I: European Legal Framework for Financial Services

- 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
  - 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



## Part 9: Ethics

- 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.  
ACIIA Principles of Ethical Conduct
    - 2.4.3. (overview)
  
- Annex** EFFAS Principles of Ethical Conduct in full text



## Part 10: ESG

- 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



## Part 11: Mandatory National Components

- 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  
Commodities Exchange (if applicable)
    - 4.1.3.
  - 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



**Part 12: Recommended National Components**

1. **National accounting rules (if applicable)**
  
2. **National Codes of Ethics (if applicable)**