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HANDOUT

ECO605

Financial Economics

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ECO605

Financial Economics

This handout covers the complete course topic by topic in simple, exam-focused language. Each chapter begins with learning objectives and ends with key points and exam pointers. Definitions are boxed in green-friendly format, examples are worked out step by step, and very important exam points are flagged separately. Study the highlighted points carefully before your papers.

Course Information	
Course Code	ECO605
Course Title	Financial Economics
Credit Hours	3
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1. Introduction to Financial Economics

Learning Objectives

- Define financial economics and its scope
- Distinguish it from corporate finance and accounting

Financial economics is defined as the branch of economics that studies how individuals and firms allocate scarce resources over time under uncertainty, focusing on financial markets, asset pricing and risk management.

- Core questions: how are assets priced? how is risk shared and priced? how do firms finance themselves?
- Differs from accounting (records the past) and corporate finance (firm decisions) — financial economics builds the pricing and risk theory underneath both.
- Key ideas: time value of money, risk-return tradeoff, no-arbitrage pricing, diversification.

The financial system

- Money markets (short-term) vs capital markets (long-term: stocks, bonds).
- Primary markets issue new securities; secondary markets (e.g. PSX — Pakistan Stock Exchange) provide liquidity.
- Intermediaries: banks, mutual funds, insurance companies channel savings to investment.

Key Points to Remember

- Financial economics = pricing assets + managing risk over time.
- No-arbitrage is the discipline's central pricing principle.

Exam Pointer

Very important for exams: Define financial economics and state its two central questions.

Finance in everyday Pakistani life

- Prize bonds, committee (ROSCA) systems, and bank deposits allocate savings.
- Inflation silently taxes cash holders — real vs nominal matters.
- Financial literacy is the first investment.

Present value intuition

- A rupee today > a rupee tomorrow: invest it.
- Discount rates reflect risk and impatience.

- All valuation is glorified discounting.

Real vs nominal rates

- Fisher equation: $(1 + \text{nominal}) = (1 + \text{real})(1 + \text{inflation})$.
- Pakistan's high inflation makes real rates crucial.
- Negative real rates punish savers.

Financial inclusion

- Branchless banking (Easypaisa, JazzCash) leads globally.
- Raast enables instant low-cost transfers.
- Inclusion fights poverty directly.

Functions of financial markets

- Allocate capital to productive uses.
- Provide liquidity to investors.
- Discover prices through trading.
- Transfer and share risk.
- Reduce information asymmetry over time.

Real vs nominal rates

- Fisher equation: $\text{nominal} \approx \text{real} + \text{inflation}$.
- Investors care about purchasing power.
- Negative real rates punish savers.
- Index-linked bonds protect against inflation.
- Pakistan's high inflation erodes real returns.

2. Time Value of Money

Learning Objectives

- Compute present and future values
- Value annuities and perpetuities

Money today is worth more than money tomorrow because it can earn a return. All asset pricing is discounted cash flow — valuing future cash by bringing it back to the present.

$$\text{Future value: } FV = PV \times (1 + r)^n$$

$$\text{Present value: } PV = FV / (1 + r)^n$$

$$\text{Annuity PV: } PMT \times [1 - (1+r)^{-n}] / r \mid \text{Perpetuity PV: } PMT / r$$

Example

Rs. 100,000 invested at 12% for 5 years grows to $100,000 \times (1.12)^5 = \text{Rs. } 176,234$. Conversely, Rs. 176,234 received in 5 years is worth Rs. 100,000 today at 12%.

- Compounding frequency matters: effective annual rate = $(1 + r/m)^m - 1$.
- NPV rule: accept projects with $NPV > 0$; IRR is the discount rate making NPV zero.
- Very important for exams: higher discount rates lower present values — the entire bond market moves on this.

Key Points to Remember

- Discounting is the universal valuation tool.
- Annuity vs perpetuity formulas must be memorized.

Exam Pointer

Very important for exams: Numerical: value a 5-year annuity — appears in every paper.

Compounding magic

- Rule of 72: years to double = $72 / \text{interest rate}$.
- Starting early beats investing more later.
- Very important for exams: compounding is why retirement saving starts young.

Annuity vs perpetuity traps

- Annuity: finite; perpetuity: forever.
- Growing perpetuity: $PMT/(r-g)$ — needs $r > g$.
- Check the first payment timing.

NPV vs IRR conflicts

- Mutually exclusive projects: trust NPV.
- Multiple IRRs with unconventional cash flows.
- Reinvestment assumptions differ.

Amortization schedules

- Early payments are mostly interest.
- Extra principal payments save huge interest.
- Understand before signing any loan.

Compounding frequency

- More frequent compounding raises effective yield.
- EAR converts nominal rates to comparable terms.
- Continuous compounding uses e^{rt} .
- Banks quote nominal; compare EAR.
- Small frequency differences compound over decades.

Annuities and perpetuities

- Annuity: fixed payments for a fixed term.
- Perpetuity: payments forever; value = C/r .
- Growing perpetuity values dividend stocks.
- Loan amortisation is annuity math.
- Master the formulas; exams love them.

3. Risk, Return and Portfolio Theory

Learning Objectives

- Measure risk and return
- Explain diversification and the efficient frontier

- Return: expected value of possible outcomes; risk: standard deviation (volatility) of returns.
- Risk premium: extra return investors demand for bearing risk.
- Risk-averse investors prefer a certain outcome to a gamble with the same expected value.

Markowitz portfolio theory

- Portfolio risk depends on covariances, not just individual risks — imperfectly correlated assets diversify.
- Efficient frontier: the set of portfolios giving maximum expected return for each risk level.
- Minimum-variance portfolio; optimal portfolio where the investor's indifference curve touches the frontier.
- Adding a risk-free asset creates the capital market line — everyone holds a mix of the market portfolio and the risk-free asset (two-fund separation).

Portfolio variance (2 assets): $w_1^2 s_1^2 + w_2^2 s_2^2 + 2 w_1 w_2 \text{Cov}(1, 2)$

Example

Two stocks each with 20% volatility but zero correlation: a 50-50 portfolio has volatility of about 14.1% — diversification cut risk by nearly a third with no return sacrificed.

Key Points to Remember

- Diversification works through low correlation, not just many assets.
- Only systematic risk is rewarded; diversifiable risk can be eliminated.

Exam Pointer

Very important for exams: Prove with numbers that diversification reduces portfolio variance.

Measuring portfolio risk

- Variance and standard deviation of returns.
- Value at Risk: maximum expected loss at a confidence level.
- Pakistani mutual funds publish risk metrics in fact sheets.

Diversification limits

- ~20-30 stocks diversify most idiosyncratic risk.
- International diversification adds currency risk.
- During crises correlations spike to 1.

Efficient frontier math

- Quadratic programming finds minimum variance.
- Constraints (no shorting) reshape the frontier.
- Estimation error is the practical enemy.

Sharpe ratio

- Excess return per unit of risk.
- Compare funds on Sharpe, not raw return.
- Negative Sharpe: worse than risk-free.

Systematic vs idiosyncratic risk

- Systematic risk affects all assets — cannot diversify away.
- Idiosyncratic risk is firm-specific and diversifiable.
- Only systematic risk earns a premium.
- Beta measures systematic exposure.
- 2008 showed systematic risk in action.

Efficient frontier

- Best return for each risk level.
- Two-fund separation simplifies advice.
- Risk-free asset creates the capital market line.
- Tangency portfolio is the optimal risky mix.
- Draw it accurately for full marks.

4. CAPM and Factor Models

Learning Objectives

- Derive and apply the CAPM
- Explain APT and multifactor models

CAPM (Capital Asset Pricing Model) is defined as an equilibrium model stating that an asset's expected return equals the risk-free rate plus its beta times the market risk premium.

$$E(R_i) = R_f + \text{Beta}_i \times [E(R_m) - R_f], \text{ where } \text{Beta}_i = \text{Cov}(R_i, R_m) / \text{Var}(R_m)$$

- Beta measures systematic (market) risk; beta = 1 moves with the market, > 1 amplifies it.
- Security market line (SML): plots expected return vs beta; fairly priced assets lie on it.
- Assumptions: single period, rational risk-averse investors, homogeneous expectations, no taxes or transaction costs.

Beyond CAPM

- APT (Arbitrage Pricing Theory): returns driven by multiple systematic factors; no-arbitrage pins down risk premia.
- Fama-French three-factor model: market, size (SMB) and value (HML) factors explain returns better than beta alone.
- Empirical note: CAPM's record is mixed — beta alone leaves much return variation unexplained.

Example

$R_f = 10\%$, market return = 16%, stock beta = 1.5. Required return = $10 + 1.5 \times (16 - 10) = 19\%$. If the stock is expected to return only 17%, it is overpriced — sell.

Key Points to Remember

- CAPM prices only systematic risk via beta.
- SML is the visual test of fair pricing.

Exam Pointer

Very important for exams: CAPM numerical plus listing its assumptions — a guaranteed question.

Beta estimation in practice

- Regress stock returns on market (KSE-100) returns.
- Betas drift — re-estimate periodically.
- Thin trading in small caps distorts betas.

APT in practice

- Macro factors: inflation, GDP, oil prices.
- No-arbitrage pins risk premia, not expected returns fully.
- Harder to test than CAPM.

Fama-French in Pakistan

- Size and value effects appear in PSX data.
- Research is thinner than for US markets.
- A good thesis topic.

Roll's critique

- True market portfolio is unobservable.
- CAPM tests are joint tests of efficiency.
- Philosophy matters in finance.

Fama-French three factors

- Market, size (SMB), value (HML).
- Small and value stocks earned premiums historically.
- Challenges CAPM's single factor.
- Five-factor version adds profitability and investment.
- Factor investing grew from this research.

Arbitrage pricing theory

- Multiple systematic factors, no arbitrage.
- More flexible than CAPM.
- Factors need not be specified.
- Empirically harder to test.
- Ross 1976 is the citation.

5. Efficient Market Hypothesis

Learning Objectives

- State the three forms of market efficiency
- Evaluate evidence for and against EMH

Efficient market hypothesis is defined as the claim that security prices fully reflect all available information, so consistently beating the market is impossible.

Form	Information reflected	Implication
Weak	Past prices and volumes	Technical analysis cannot earn excess returns
Semi-strong	All public information	Fundamental analysis cannot earn excess returns
Strong	All information incl. private	Even insiders cannot earn excess returns

- Evidence for: most active mutual funds underperform index funds after fees; event studies show fast price adjustment.
- Evidence against: anomalies — January effect, momentum, value premium; bubbles and crashes (2008) challenge full rationality.
- Behavioural finance: overconfidence, herding, loss aversion create mispricing that rational arbitrage cannot always fix.

Key Points to Remember

- Know each form's information set and its trading implication.
- EMH is about information speed, not price correctness.

Exam Pointer

Very important for exams: Classify: "insider trading profits" violates which form? (Strong.)

Market efficiency and mutual funds

- Most active funds underperform index funds after fees.
- Pakistan's fund industry shows similar patterns.
- Implication: low-cost index investing for most savers.

Anomalies to know

- Size, value, momentum effects persist.
- January effect weakened after discovery.
- Anomalies are CAPM's embarrassment.

Event studies

- Measure abnormal returns around announcements.
- Tests semi-strong efficiency directly.
- Budget announcements move PSX fast.

Limits to arbitrage examples

- Dot-com: rational shorts got crushed first.
- Noise trader risk deters arbitrageurs.
- Explains persistent mispricing.

Behavioural biases in markets

- Overconfidence inflates trading volume.
- Loss aversion makes investors hold losers.
- Herding fuels bubbles and crashes.
- Anchoring distorts price targets.
- Recognizing biases is the first defence.

Random walk evidence

- Price changes are largely unpredictable.
- Technical analysis struggles against it.
- Anomalies (momentum) challenge weak-form efficiency.
- Transaction costs erase many anomalies.
- The debate remains open.

6. Fixed Income: Bonds

Learning Objectives

- Price bonds and compute yield to maturity
- Explain interest-rate risk and duration

- Bond price = present value of coupons + present value of face value, discounted at the yield.
- Yield to maturity: the discount rate equating price to cash flows — the bond's promised return if held to maturity.
- Price-yield relationship: when yields rise, prices fall (inverse, convex).

$$P = C \times [1 - (1+y)^{-n}] / y + F / (1+y)^n$$

Interest-rate risk

- Longer maturity and lower coupons mean higher price sensitivity.
- Duration: weighted-average time to cash flows; approximates percentage price change for a 1% yield change.
- Credit risk: default possibility; rated by agencies; Pakistan's sovereign bonds (Eurobonds) carry country risk premia.
- Term structure: yield curve shapes (normal, inverted) embed growth and recession expectations.

Example

A 10-year 12% bond at par (Rs. 1,000) falls in price when market yields rise to 14% — new buyers demand the higher yield, so the fixed-coupon bond must cheapen.

Key Points to Remember

- Yields up -> prices down: the most important bond fact.
- Duration measures interest-rate sensitivity.

Exam Pointer

Very important for exams: Bond pricing numerical and the price-yield inverse relationship.

Bond ratings

- AAA to D scale; below BBB- is "junk".
- Pakistan's sovereign rating drives corporate borrowing costs.
- Downgrades raise yields immediately.

Duration in practice

- Macaulay vs modified duration.
- Immunize portfolios by matching durations.
- Convexity refines the approximation.

Yield curve theories

- Expectations, liquidity preference, segmentation.
- Inverted curves predict recessions.
- Pakistan's curve reflects IMF-program expectations.

Credit ratings agencies

- Paid by issuers — conflict of interest.
- Failed spectacularly in 2008.
- Reform remains incomplete.

Yield curve shapes

- Normal: upward sloping, healthy expectations.
- Inverted: predicts recessions famously.
- Flat: transition between regimes.
- Humped: mixed medium-term signals.
- Pakistan's PIB curve reflects fiscal stress.

Duration and convexity

- Duration measures interest-rate sensitivity.
- Modified duration gives price change directly.
- Convexity corrects for large moves.
- Longer maturity means higher duration.
- Immunization matches asset-liability durations.

7. Derivatives: Forwards, Futures and Options

Learning Objectives

- Define each derivative and its payoff
 - Explain hedging vs speculation
-
- Forward: private agreement to buy/sell later at a set price; counterparty risk exists.

- Future: standardized, exchange-traded forward with daily marking-to-market; used on PSX for hedging.
- Option: the right, not the obligation — call (buy), put (sell); buyer pays a premium, losses limited to it.

Option payoffs at expiry

- Call payoff = $\max(S - K, 0)$; put payoff = $\max(K - S, 0)$, where S = spot price, K = strike.
- Put-call parity links European call, put, stock and bond prices — the no-arbitrage backbone of option pricing.
- Binomial and Black-Scholes models price options from volatility, time, rates and moneyness.

Uses

- Hedging: exporters buy put options on foreign currency; farmers lock prices with futures.
- Speculation: leverage amplifies gains and losses — very important for exams: derivatives transfer risk, they do not eliminate it.
- Arbitrage: riskless profit from price differences keeps markets aligned.

Key Points to Remember

- Forwards/futures obligate; options give rights.
- Hedge = reduce risk; speculate = take risk.

Exam Pointer

Very important for exams: Draw and explain call and put payoff diagrams.

Hedging with forwards in Pakistan

- Exporters lock dollar rates to protect margins.
- Banks offer forward cover against SBP regulations.
- Unhedged exposure sank many firms in 2022-23.

Option Greeks

- Delta: price sensitivity; gamma: delta's change.
- Theta: time decay; vega: volatility sensitivity.
- Hedgers neutralize Greeks.

Binomial option pricing

- Up/down moves; risk-neutral probabilities.

- Converges to Black-Scholes as steps grow.
- Handles American options naturally.

Put-call parity uses

- Detect mispricing; synthesize positions.
- American options complicate parity.
- Arbitrageurs enforce it.

Option payoffs

- Call: $\max(S-K, 0)$; put: $\max(K-S, 0)$.
- Buyer's loss is limited to the premium.
- Writer's risk can be unlimited.
- Draw payoff diagrams for exams.
- Moneyness decides intrinsic value.

Put-call parity

- $C + Ke^{-rt} = P + S$ for European options.
- Violations create arbitrage profits.
- Links calls, puts, stock and bonds.
- A favourite exam derivation.
- Only holds for European exercise.

8. Corporate Financing Decisions

Learning Objectives

- Explain capital structure theories
- Describe dividend policy debates

Capital structure

- Modigliani-Miller (no taxes): firm value is independent of debt-equity mix — financing does not create value by itself.
- With taxes: debt tax shields favour borrowing; trade-off theory balances tax benefits against bankruptcy costs.
- Pecking order: firms prefer internal funds, then debt, then equity (adverse selection makes new equity expensive).

Dividends

- MM dividend irrelevance: in perfect markets, payout policy does not affect value.
- In reality: signalling (dividend hikes signal confidence), taxes, and clientele effects matter.
- Pakistani firms often pay generous dividends; investors watch payout ratios closely.

Key Points to Remember

- MM is the benchmark; taxes, distress and information create the real-world deviations.
- Pecking order explains why profitable firms borrow less.

Exam Pointer

Very important for exams: State MM propositions with and without taxes, plus one real-world friction each.

Leverage effects

- Debt magnifies ROE when returns exceed interest.
- But distress costs rise nonlinearly.
- Pakistani firms use moderate leverage on average.

Pecking order evidence

- Profitable firms use less debt — supports pecking order.
- Trade-off struggles with this fact.
- Pakistani SMEs strongly prefer internal funds.

Dividend clientele in PSX

- Retirees love dividend aristocrats.
- Tax treatment shapes preferences.
- Bonus issues are popular locally.

Agency problems

- Managers vs shareholders: perks, empire building.
- Debt disciplines; boards monitor.
- Family firms dominate Pakistan — different agency issues.

MM propositions

- Without taxes, capital structure is irrelevant.
- With taxes, debt adds a tax shield.

- Trade-off theory balances shield against distress.
- Pecking order: internal funds first.
- The bedrock of corporate finance theory.

Agency problems

- Managers may serve themselves, not owners.
- Free cash flow tempts empire-building.
- Debt disciplines via fixed obligations.
- Boards and takeovers provide oversight.
- Explains much of corporate finance.

9. Behavioural Finance and Market Crises

Learning Objectives

- List key behavioural biases
- Explain the anatomy of financial crises

- Overconfidence: excessive trading, underestimation of risk.
- Loss aversion: losses hurt about twice as much as gains please (prospect theory) — causes the disposition effect.
- Herding: following the crowd fuels bubbles; anchoring and confirmation bias distort analysis.
- Limits to arbitrage: even rational traders cannot always correct mispricing (noise-trader risk, funding constraints).

Financial crises

- Pattern: credit boom -> asset bubble -> trigger -> panic, fire sales, credit freeze.
- 2008 global crisis: US subprime mortgages, securitization, leverage — froze world credit.
- Pakistan's recurring IMF programs reflect external-debt and currency crises; rupee depreciation raises import costs and inflation.
- Policy tools: lender of last resort, interest-rate cuts, capital controls, macroprudential regulation.

Key Points to Remember

- Biases are systematic, so they move markets — not just individuals.
- Crises follow leverage and liquidity, whatever the decade.

Exam Pointer

Very important for exams: Name four biases with a market example of each.

Prospect theory essentials

- Losses loom larger than gains; reference points matter.
- Explains the disposition effect in PSX trading.
- Framing changes decisions without changing facts.

Bubble anatomy

- Displacement -> boom -> euphoria -> panic.
- PSX has seen several boom-bust cycles.
- Leverage turns corrections into crises.

Currency crises

- Fixed pegs invite speculative attack.
- Pakistan's managed float wobbles under pressure.
- Reserves buy time, not immunity.

Herding in PSX

- Tip-based trading is herding formalized.
- Social media amplifies it now.
- Contrarians profit from the crowd's mood.

Financial crises anatomy

- Leverage builds quietly in good times.
- A trigger sparks asset fire-sales.
- Liquidity evaporates; solvency is questioned.
- Contagion spreads through interlinkages.
- Lender of last resort stops panics.

Prospect theory

- Kahneman and Tversky, 1979.
- Losses hurt about twice as much as gains please.
- Reference points frame every choice.
- Explains the disposition effect.
- Nobel Prize 2002.

10. Islamic Financial Economics Perspective

Learning Objectives

- State the prohibitions shaping Islamic finance
- Describe major Shariah-compliant contracts
- Riba (interest/usury): prohibited — money cannot earn a guaranteed return without risk-sharing.
- Gharar (excessive uncertainty) and maysir (gambling/speculation): conventional derivatives are largely impermissible.
- Investments must avoid haram sectors (alcohol, conventional banking, weapons).

Contract	Structure	Use
Murabaha	Cost-plus sale with disclosed markup	Trade and asset financing
Ijara	Leasing of an asset	Equipment, property finance
Mudaraba	Profit-sharing: capital vs effort	Investment partnerships
Musharaka	Joint venture, shared profit/loss	Project finance
Sukuk	Asset-backed certificates	Islamic bonds

Pakistan has a dual banking system with a growing Islamic banking share and a State Bank target for full conversion; understanding both conventional pricing theory and Shariah constraints is very important for exams in this course's Pakistani context.

Key Points to Remember

- Risk-sharing replaces risk-transfer in Islamic finance.
- Map each contract to its economic function.

Exam Pointer

Very important for exams: Contrast murabaha and ijara; explain why conventional options conflict with gharar rules.

Sukuk market growth

- Pakistan issues sovereign sukuk regularly.
- Structures: ijara sukuk dominate locally.
- Global sukuk market exceeds \$800 billion.

Takaful (Islamic insurance)

- Mutual guarantee, not risk transfer.
- Wakala and mudaraba models.
- Growing fast in Pakistan.

Zakat and finance

- 2.5% on idle wealth — discourages hoarding.
- Institutional zakat collection in Pakistan.
- Integrates worship with economics.

Exam revision checklist

- TVM formulas, CAPM numerical, bond pricing.
- EMH forms, option payoffs, MM propositions.
- One Islamic finance comparison table.

Sukuk structures

- Ijara sukuk: lease-based returns.
- Mudaraba/Musharaka: profit-sharing.
- Asset-backing distinguishes sukuk from bonds.
- Pakistan issues both domestic and international sukuk.
- Shariah boards certify compliance.

Islamic equity screening

- Exclude haram sectors: alcohol, gambling, riba.
- Financial ratios cap debt and interest income.
- Purification cleanses tainted dividends.
- KMI index tracks compliant Pakistani stocks.
- Screening is ongoing, not one-off.

Glossary of Key Terms

Learning Objectives

- Revise all key terms quickly before exams

Term	Meaning
Financial economics	the branch of economics that studies how individuals and firms allocate scarce resources over time under uncertainty, focusing on financial markets, asset prici...
CAPM (Capital Asset Pricing Model)	an equilibrium model stating that an asset's expected return equals the risk-free rate plus its beta times the market risk premium.
Efficient market hypothesis	the claim that security prices fully reflect all available information, so consistently beating the market is impossible.

Exam Pointer

Very important for exams: Revise this glossary the night before the paper.

Practice Questions for Exams

Learning Objectives

- Test your preparation with these exam-style questions

Short questions with model answers

Example

Q: Explain: define financial economics and its scope Model answer: Financial economics = pricing assets + managing risk over time. No-arbitrage is the discipline's central pricing principle.

Example

Q: Explain: distinguish it from corporate finance and accounting Model answer: Financial economics = pricing assets + managing risk over time. No-arbitrage is the discipline's central pricing principle.

Example

Q: Explain: compute present and future values Model answer: Discounting is the universal valuation tool. Annuity vs perpetuity formulas must be memorized.

Example

Q: Explain: value annuities and perpetuities Model answer: Discounting is the universal valuation tool. Annuity vs perpetuity formulas must be memorized.

Example

Q: Explain: measure risk and return Model answer: Diversification works through low correlation, not just many assets. Only systematic risk is rewarded; diversifiable risk can be eliminated.

Example

Q: Explain: explain diversification and the efficient frontier Model answer: Diversification works through low correlation, not just many assets. Only systematic risk is rewarded; diversifiable risk can be eliminated.

Example

Q: Explain: derive and apply the CAPM Model answer: CAPM prices only systematic risk via beta. SML is the visual test of fair pricing.

Example

Q: Explain: explain APT and multifactor models Model answer: CAPM prices only systematic risk via beta. SML is the visual test of fair pricing.

Example

Q: Explain: state the three forms of market efficiency Model answer: Know each form's information set and its trading implication. EMH is about information speed, not price correctness.

Example

Q: Explain: evaluate evidence for and against EMH Model answer: Know each form's information set and its trading implication. EMH is about information speed, not price correctness.

Example

Q: Explain: price bonds and compute yield to maturity Model answer: Yields up -> prices down: the most important bond fact. Duration measures interest-rate sensitivity.

Example

Q: Explain: explain interest-rate risk and duration Model answer: Yields up -> prices down: the most important bond fact. Duration measures interest-rate sensitivity.

Example

Q: Explain: define each derivative and its payoff Model answer: Forwards/futures obligate; options give rights. Hedge = reduce risk; speculate = take risk.

Example

Q: Explain: explain hedging vs speculation Model answer: Forwards/futures obligate; options give rights. Hedge = reduce risk; speculate = take risk.

Example

Q: Explain: explain capital structure theories Model answer: MM is the benchmark; taxes, distress and information create the real-world deviations. Pecking order explains why profitable firms borrow less.

Example

Q: Explain: describe dividend policy debates Model answer: MM is the benchmark; taxes, distress and information create the real-world deviations. Pecking order explains why profitable firms borrow less.

Example

Q: Explain: list key behavioural biases Model answer: Biases are systematic, so they move markets — not just individuals. Crises follow leverage and liquidity, whatever the decade.

Example

Q: Explain: explain the anatomy of financial crises Model answer: Biases are systematic, so they move markets — not just individuals. Crises follow leverage and liquidity, whatever the decade.

Example

Q: Explain: state the prohibitions shaping Islamic finance Model answer: Risk-sharing replaces risk-transfer in Islamic finance. Map each contract to its economic function.

Example

Q: Explain: describe major Shariah-compliant contracts Model answer: Risk-sharing replaces risk-transfer in Islamic finance. Map each contract to its economic function.

Long questions

- Write a detailed note on Introduction to Financial Economics.
- Write a detailed note on Time Value of Money.
- Write a detailed note on Risk, Return and Portfolio Theory.
- Write a detailed note on CAPM and Factor Models.
- Write a detailed note on Efficient Market Hypothesis.
- Write a detailed note on Fixed Income: Bonds.
- Write a detailed note on Derivatives: Forwards, Futures and Options.
- Write a detailed note on Corporate Financing Decisions.
- Write a detailed note on Behavioural Finance and Market Crises.
- Write a detailed note on Islamic Financial Economics Perspective.

Long questions with model answer outlines

Example

Q: Write a detailed note on Introduction to Financial Economics. Answer outline: • Core questions: how are assets priced? how is risk shared and priced? how do firms finance themselves? • Differs from accounting (records the past) and corporate finance (firm decisions) — financial economics builds the pricing and risk theory underneath both. • Key ideas: time value of money, risk-return tradeoff, no-arbitrage pricing, diversification. • Money markets (short-term) vs capital markets (long-term: stocks, bonds). • Primary markets issue new securities; secondary markets (e.g. PSX — Pakistan Stock Exchange) provide liquidity.

Example

Q: Write a detailed note on Time Value of Money. Answer outline: • Compounding frequency matters: effective annual rate = $(1 + r/m)^m - 1$. • NPV rule: accept projects with $NPV > 0$; IRR is the discount rate making NPV zero. • Very important for exams: higher discount rates lower present values — the entire bond market moves on this. • Rule of 72: years to double = $72 / \text{interest rate}$. • Starting early beats investing more later.

Example

Q: Write a detailed note on Risk, Return and Portfolio Theory. Answer outline: • Return: expected value of possible outcomes; risk: standard deviation (volatility) of returns. • Risk premium: extra return investors demand for bearing risk. • Risk-averse investors prefer a certain outcome to a gamble with the same expected value. • Portfolio risk depends on covariances, not just individual risks — imperfectly correlated assets diversify. • Efficient frontier: the set of portfolios giving maximum expected return for each risk level.

Example

Q: Write a detailed note on CAPM and Factor Models. Answer outline: • Beta measures systematic (market) risk; $\beta = 1$ moves with the market, $\beta > 1$ amplifies it. • Security market line (SML): plots expected return vs beta; fairly priced assets lie on it. • Assumptions: single period, rational risk-averse investors, homogeneous expectations, no taxes or transaction costs. • APT (Arbitrage Pricing Theory): returns driven by multiple systematic factors; no-arbitrage pins down risk premia. • Fama-French three-factor model: market, size (SMB) and value (HML) factors explain returns better than beta alone.

Example

Q: Write a detailed note on Efficient Market Hypothesis. Answer outline: • Evidence for: most active mutual funds underperform index funds after fees; event studies show fast price adjustment. • Evidence against: anomalies — January effect, momentum, value premium; bubbles and crashes (2008) challenge full rationality. • Behavioural finance: overconfidence, herding, loss aversion create mispricing that rational arbitrage cannot always fix. • Most active funds underperform index funds after fees. • Pakistan's fund industry shows similar patterns.

Example

Q: Write a detailed note on Fixed Income: Bonds. Answer outline: • Bond price = present value of coupons + present value of face value, discounted at the yield. • Yield to maturity: the discount rate equating price to cash flows — the bond's promised return if held to maturity. • Price-yield relationship: when yields rise, prices fall (inverse, convex). • Longer maturity and lower coupons mean higher price sensitivity. • Duration: weighted-average time to cash flows; approximates percentage price change for a 1% yield change.

Example

Q: Write a detailed note on Derivatives: Forwards, Futures and Options. Answer outline: • Forward: private agreement to buy/sell later at a set price; counterparty risk exists. • Future: standardized, exchange-traded forward with daily marking-to-market; used on PSX for hedging. • Option: the right, not the obligation — call (buy), put (sell); buyer pays a premium, losses limited to it. • Call payoff = $\max(S - K, 0)$; put payoff = $\max(K - S, 0)$, where S = spot price, K = strike. • Put-call parity links European call, put, stock and bond prices — the no-arbitrage backbone of option pricing.

Example

Q: Write a detailed note on Corporate Financing Decisions. Answer outline: • Modigliani-Miller (no taxes): firm value is independent of debt-equity mix — financing does not create value by itself. • With taxes: debt tax shields favour borrowing; trade-off theory balances tax benefits against bankruptcy costs. • Pecking order: firms prefer internal funds, then debt, then equity (adverse selection makes new equity expensive). • MM dividend irrelevance: in perfect markets, payout policy does not affect value. • In reality: signalling (dividend hikes signal confidence), taxes, and clientele effects matter.

Example

Q: Write a detailed note on Behavioural Finance and Market Crises. Answer outline: • Overconfidence: excessive trading, underestimation of risk. • Loss aversion: losses hurt about twice as much as gains please (prospect theory) — causes the disposition effect. • Herding: following the crowd fuels bubbles; anchoring and confirmation bias distort analysis. • Limits to arbitrage: even rational traders cannot always correct mispricing (noise-trader risk, funding constraints). • Pattern: credit boom -> asset bubble -> trigger -> panic, fire sales, credit freeze.

Example

Q: Write a detailed note on Islamic Financial Economics Perspective. Answer outline: • Riba (interest/usury): prohibited — money cannot earn a guaranteed return without risk-sharing. • Gharar (excessive uncertainty) and maysir (gambling/speculation): conventional derivatives are largely impermissible. • Investments must avoid haram sectors (alcohol, conventional banking, weapons). • Pakistan issues sovereign sukuk regularly. • Structures: ijara sukuk dominate locally.

Exam Pointer

Very important for exams: Practice writing answers within the exam time limit.

MCQ Practice Test

Learning Objectives

- Test your recall of the key points from every chapter

Q1. Which of the following was listed as a key point of 'Introduction to Financial Economics' in this handout?

- A. Discounting is the universal valuation tool.
- B. Annuity vs perpetuity formulas must be memorized.
- C. Financial economics = pricing assets + managing risk over time.
- D. Diversification works through low correlation, not just many assets.

Q2. Which of the following was listed as a key point of 'Introduction to Financial Economics' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Discounting is the universal valuation tool.
- C. Diversification works through low correlation, not just many assets.
- D. Annuity vs perpetuity formulas must be memorized.

Q3. Which of the following was listed as a key point of 'Time Value of Money' in this handout?

- A. Financial economics = pricing assets + managing risk over time.
- B. Diversification works through low correlation, not just many assets.
- C. Discounting is the universal valuation tool.
- D. No-arbitrage is the discipline's central pricing principle.

Q4. Which of the following was listed as a key point of 'Time Value of Money' in this handout?

- A. Annuity vs perpetuity formulas must be memorized.
- B. Financial economics = pricing assets + managing risk over time.
- C. Diversification works through low correlation, not just many assets.
- D. No-arbitrage is the discipline's central pricing principle.

Q5. Which of the following was listed as a key point of 'Risk, Return and Portfolio Theory' in this handout?

- A. Diversification works through low correlation, not just many assets.
- B. Financial economics = pricing assets + managing risk over time.
- C. Discounting is the universal valuation tool.
- D. No-arbitrage is the discipline's central pricing principle.

Q6. Which of the following was listed as a key point of 'Risk, Return and Portfolio Theory' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Only systematic risk is rewarded; diversifiable risk can be eliminated.
- C. Financial economics = pricing assets + managing risk over time.
- D. Discounting is the universal valuation tool.

Q7. Which of the following was listed as a key point of 'CAPM and Factor Models' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Financial economics = pricing assets + managing risk over time.
- C. Discounting is the universal valuation tool.
- D. CAPM prices only systematic risk via beta.

Q8. Which of the following was listed as a key point of 'CAPM and Factor Models' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Financial economics = pricing assets + managing risk over time.
- C. SML is the visual test of fair pricing.

D. Discounting is the universal valuation tool.

Q9. Which of the following was listed as a key point of 'Efficient Market Hypothesis' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Know each firm's information set and its trading implication.
- C. Financial economics = pricing assets + managing risk over time.
- D. Discounting is the universal valuation tool.

Q10. Which of the following was listed as a key point of 'Efficient Market Hypothesis' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. EMH is about information speed, not price correctness.
- C. Financial economics = pricing assets + managing risk over time.
- D. Discounting is the universal valuation tool.

Q11. Which of the following was listed as a key point of 'Fixed Income: Bonds' in this handout?

- A. Discounting is the universal valuation tool.
- B. Financial economics = pricing assets + managing risk over time.
- C. Yields up -> prices down: the most important bond fact.
- D. No-arbitrage is the discipline's central pricing principle.

Q12. Which of the following was listed as a key point of 'Fixed Income: Bonds' in this handout?

- A. Financial economics = pricing assets + managing risk over time.
- B. No-arbitrage is the discipline's central pricing principle.
- C. Duration measures interest-rate sensitivity.
- D. Discounting is the universal valuation tool.

Q13. Which of the following was listed as a key point of 'Derivatives: Forwards, Futures and Options' in this handout?

- A. Discounting is the universal valuation tool.
- B. Financial economics = pricing assets + managing risk over time.
- C. No-arbitrage is the discipline's central pricing principle.
- D. Forwards/futures obligate; options give rights.

Q14. Which of the following was listed as a key point of 'Derivatives: Forwards, Futures and Options' in this handout?

- A. Hedge = reduce risk; speculate = take risk.
- B. Financial economics = pricing assets + managing risk over time.

- C. No-arbitrage is the discipline's central pricing principle.
- D. Discounting is the universal valuation tool.

Q15. Which of the following was listed as a key point of 'Corporate Financing Decisions' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Financial economics = pricing assets + managing risk over time.
- C. Discounting is the universal valuation tool.
- D. MM is the benchmark; taxes, distress and information create the real-world deviations.

Q16. Which of the following was listed as a key point of 'Corporate Financing Decisions' in this handout?

- A. Financial economics = pricing assets + managing risk over time.
- B. No-arbitrage is the discipline's central pricing principle.
- C. Discounting is the universal valuation tool.
- D. Pecking order explains why profitable firms borrow less.

Q17. Which of the following was listed as a key point of 'Behavioural Finance and Market Crises' in this handout?

- A. Biases are systematic, so they move markets — not just individuals.
- B. Discounting is the universal valuation tool.
- C. Financial economics = pricing assets + managing risk over time.
- D. No-arbitrage is the discipline's central pricing principle.

Q18. Which of the following was listed as a key point of 'Behavioural Finance and Market Crises' in this handout?

- A. Financial economics = pricing assets + managing risk over time.
- B. No-arbitrage is the discipline's central pricing principle.
- C. Discounting is the universal valuation tool.
- D. Crises follow leverage and liquidity, whatever the decade.

Q19. Which of the following was listed as a key point of 'Islamic Financial Economics Perspective' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Financial economics = pricing assets + managing risk over time.
- C. Risk-sharing replaces risk-transfer in Islamic finance.
- D. Discounting is the universal valuation tool.

Q20. Which of the following was listed as a key point of 'Islamic Financial Economics Perspective' in this handout?

- A. No-arbitrage is the discipline's central pricing principle.
- B. Map each contract to its economic function.
- C. Financial economics = pricing assets + managing risk over time.
- D. Discounting is the universal valuation tool.

Answer Key

1. C 2. A 3. C 4. A 5. A 6. B 7. D 8. C 9. B 10. B 11. C 12. C 13. D 14. A 15. D 16. D 17. A 18. D 19. C 20. B

Exam Pointer

Very important for exams: Attempt all MCQs without looking back, then check the answer key.

Exam Strategy Guide

Learning Objectives

- Attempt papers with a winning strategy

Before the exam

- Revise the Key Points boxes and glossary first — they carry the highest marks per minute.
- Practice one past paper under timed conditions; examiners repeat question styles.
- Sleep well the night before — an exhausted brain recalls far less.

Attempting the paper

- Read the whole paper first; start with your strongest question to build momentum.
- Allocate time by marks: a 10-mark question deserves roughly double a 5-mark one.
- Structure long answers: definition, explanation, example/diagram, conclusion.

Presentation matters

- Use headings, underline key terms, and draw labelled diagrams where possible.
- Attempt all questions — partial credit beats a blank page.
- Review your paper in the last 10 minutes for missed parts.

Exam Pointer

Very important for exams: Very important for exams: neat, structured answers consistently score higher than longer messy ones.