CFA LEVEL I STUDY SHEET · TOPIC 10

Portfolio Construction

Chartered Financial Analyst (CFA®) Program Level I exam

8–12% of the exam · 6 learning modules · 2027 curriculum

This topic covers how investors combine assets into portfolios: digital assets as a new asset class, the mathematics of risk, return and diversification, the CAPM and risk-adjusted performance measures, the investors and products of the asset management industry, the investment policy statement and the behavioural biases that shape decisions. Level I questions mix short calculations (portfolio standard deviation, CAPM, Sharpe and Treynor ratios) with recall and application of definitions.

You should be able to: After this guide you should be able to compute portfolio risk, CAPM returns and the four performance ratios, place an investor and an IPS component correctly, and classify a behavioural bias.

Every learning module: the key point and the trap

PC.1 Diversification, utility and efficient frontiers

Over long periods, small-company stocks have had the highest average returns and risk, then large-company stocks, then bonds, then Treasury bills; higher return has come with higher risk.

Trap: Forgetting to square the weights and standard deviations, or using the weighted average of standard deviations, which is correct only when the correlation is +1.

PC.2 CAPM, beta and risk-adjusted ratios

Combining a risk-free asset with a risky portfolio gives a straight capital allocation line: E(Rp) = Rf + [(E(Ri) - Rf) / sigma_i] x sigma_p; when the risky portfolio is the market, the line is the capital market line.

Trap: Using total risk (standard deviation) where beta belongs, as in the CAPM, or forgetting to subtract the risk-free rate.

PC.3 Investor types, pensions and pooled funds

The portfolio approach judges each investment by its effect on the whole portfolio's risk and return; diversification lowers risk without necessarily lowering expected return, though it may fail in severe crises when correlations rise.

Trap: Mixing up open-end and closed-end funds: only closed-end fund shares trade at prices that can sit well away from NAV for long periods.

PC.4 Writing an IPS and allocating assets

An investment policy statement (IPS) is a written agreement that sets out the client's objectives and constraints and the rules for managing the portfolio; it gives discipline and continuity if the adviser changes.

Trap: Assuming a client who says they love risk can take it: ability to take risk can be low (short horizon, large spending needs) even when willingness is high.

PC.5 Cognitive errors and emotional biases

Cognitive errors come from faulty reasoning or information processing and can often be corrected with better information and education; emotional biases come from feelings and intuition and are harder to correct, so advisers often adapt to them.

Trap: Classifying overconfidence or loss aversion as cognitive errors, or confusing anchoring (sticking to an initial number) with conservatism (slow updating of beliefs).

PC.6 Risk frameworks, governance and budgets

Risk management is the process of setting the level of risk an organisation is willing to take, measuring the risk it actually takes and adjusting the two to match; the aim is the right risk, not the least risk.

Trap: Confusing transferring risk (paying an insurer to bear the loss) with shifting risk (changing the payoff profile with a derivative), or treating risk management as risk minimisation.

Key terms

Consensus mechanism: The rule a distributed ledger uses to agree which transactions are valid.

Stablecoin: A digital asset designed to keep a stable value, usually against a fiat currency.

Risk-aversion coefficient (A): The parameter in the utility function that measures how much an investor dislikes variance.

Global minimum-variance portfolio: The portfolio of risky assets with the lowest possible variance.

Capital market line: The capital allocation line that uses the market portfolio as the risky portfolio.

Beta: Covariance of an asset with the market divided by the market's variance; a measure of systematic risk.

Security market line: The CAPM plotted as expected return against beta.

Investment policy statement: The written document setting a client's objectives, constraints and portfolio rules.

Loss aversion: Feeling the pain of a loss more strongly than the pleasure of an equal gain.

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