IFT STEP UP AND ACE THE CFA® EXAMS

2018 Level III Fact Sheet

Key Facts & Formulas for the CFA® Exam

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Ethical and Professional Standards

I (A) Knowledge of the law: comply with the strictest law; disassociate from violations.
I (B) Independence and objectivity: do not offer, solicit or accept gifts; but small token gifts are ok.
I (C) Misrepresentation: do not guarantee performance; avoid plagiarism.
I (D) Misconduct: do not behave in a manner that affects your professional reputation or integrity.
II (A) Material nonpublic information: do not act or help others to act on this information; but mosaic theory is not a violation.
II (B) Market manipulation: do not manipulate prices/trading volumes to mislead others; do not spread false rumors.
III (A) Loyalty, prudence, and care: place client's interest before employer's or your interests.
III (B) Fair dealing: treat all client's fairly; disseminate investment recommendations and changes simultaneously.
III (C) Suitability: in advisory relationships, understand client's risk profile, develop and update an IPS periodically; in fund/index management, ensure investments are consistent with stated mandate.
III (D) Performance presentation: do not misstate performance; make detailed information available on request.
III (E) Preservation of confidentiality: maintain confidentiality of clients; unless disclosure is required by law, information concerns illegal activities, client permits the disclosure.
IV (A) Loyalty: do not harm your employer; obtain written consent before starting an independent practice; do not take confidential information when leaving.
IV (B) Additional compensation arrangements: do not accept compensation arrangements that will create a conflict of interest with your employer; but you may accept if written consent is obtained from all parties involved.
IV (C) Responsibilities of supervisors: prevent employees under your supervision from violating laws.
V (A) Diligence and reasonable basis: have a reasonable and adequate basis for any analysis, recommendation or action.
V (B) Communication with clients and prospective clients: distinguish between fact and opinion; make appropriate disclosures.
V (C) Record retention: maintain records to support your analysis.
VI (A) Disclosure of conflicts: disclose conflict of interest in plain language.
VI (B) Priority of transactions: client transactions come before employer transactions which come before personal transactions.
VI (C) Referral fees: disclose referral arrangements to clients and employers.
VII (A) Conduct as participants in CFA Institute programs: don't cheat on the exams; keep exam information confidential.
VII (B) Reference to CFA Institute, the CFA designation, and the CFA program: don't brag, references to partial designation not allowed.

Behavioral Finance

Traditional finance assumes that individuals are perfectly rational, risk-averse and self-interested; have perfect information; markets are efficient; price is right; there is no free lunch.

Behavioral finance assumes investors are not consistently risk averse; markets are not necessarily efficient; anomalies do exist.

Bounded rationality theory.
- Decisions are based on a limited set of important factors and/or heuristics: mental shortcuts; also called "rules of thumb".
- People satisfice (satisfy + suffice).

Traditional and behavioral perspective on portfolio construction
Traditional portfolio theory: Investor uses the MVO framework; considers difference sources of money/wealth to be fungible.
Behavioral portfolio theory: A BPT investor maximizes expected wealth subject to a safety constraint. BBT investor exhibits mental accounting bias and self-control bias.

Behavioral bias categories
<u>Cognitive</u>
Conservatism bias: Maintain prior views by inadequately incorporating new information.
Confirmation bias: Look for and notice what confirms beliefs.
Representativeness bias: Classify new information based on past experiences.
Illusion of control bias: False belief that we can influence or control outcomes.
Hindsight bias: See past events as having been predictable.
Anchoring & adjustment bias: Incorrect use of psychological heuristics.
Mental accounting bias: Treat one sum of money (or source of return) as different from other.
Framing bias: Answer question differently based on how it is asked.
Availability bias: Heuristic approach influenced by how easily outcome comes to mind.
<u>Emotional</u>
Loss-aversion: Prefer avoiding losses over achieving gains.
Overconfidence: Unwarranted faith in ones abilities.
Self-control: Fail to act in pursuit of long term goals.
Endowment: People value asset more when they hold rights to it.
Regret aversion: Avoid pain of regret associated with bad decisions.
Status quo: Do nothing rather than make a change.

Moderate biases versus adapt portfolio to biases
1) Client's level of wealth
   - high wealth → low SLR → adapt to biases
   - low wealth → high SLR → try to moderate biases
2) Type of behavioral biases the client exhibits
   - emotional → adapt to biases
   - cognitive → try to moderate biases

BB&K (Bailard, Biehl and Kieser) model:

Investor type	Personality axis	Methodology axis	Adviser relationship notes
Adventurer	Confident	Impetuous	Reluctant to take advice
Celebrity	Anxious	Impetuous	May be willing to take advice
Individualist	Confident	Careful	Will listen to advice
Guardian	Anxious	Careful	May seek advice
Straight arrow	Mid-point	Mid-point	Rational

Behavioral investor types

Investor type	Active/Passive	Risk tolerance	Biases (primarily)
Passive preserver	Passive	Low	Emotional
Friendly follower	Passive	Low-moderate	Cognitive
Independent individualist	Active	Moderate-high	Cognitive
Active accumulator	Active	High	Emotional

Impact of behavioral factors on portfolio construction

- Status quo bias → Sticking with default portfolio allocation.
- Regret aversion and framing biases →Naïve diversification or 1/n strategy.
- Overconfidence, representativeness & availability, status-quo, framing, endowment biases → Investing in the familiar.
- Regret aversion, overconfidence, and disposition effect (loss aversion) biases →Excessive trading .
- Availability, illusion of control, endowment, familiarity, and status quo biases→ Home bias, investing in one's home country.

Investor behavior and markets

Momentum or trending effect

- Herding behavior
- Availability bias: more recent events easily recalled and given relatively high weight (recency effect)
- Hindsight bias → regret → trend-chasing effect

Bubbles: Overconfidence bias (illusion of knowledge and self-attribution)

Crashes: Disposition effect in the context of loss aversion bias.

Value stocks outperform growth stocks in the long-run.

Private Wealth Management

Managing individual investor portfolios

Return objective

- After-tax real required return% = $\frac{\text{Projected needs in Year n}}{\text{Net Investable Assets}}$
- After-tax nominal required return% (actual) = (1 + after tax real required return%) × (1 + current annual inflation rate %) – 1
- Pre-tax nominal required return = (pre-tax income needed / total investable assets) + inflation rate%

Portfolio constraints

- Liquidity
- Time horizon
- Taxes
- Legal and regulatory environment
- Unique circumstances

Taxes and Private Wealth Management

- Returns-based taxes: accrual taxes on interest and dividends: FVIFi = [1 + r (1 – ti)]n
- Returns-based taxes: deferred capital gains: FVIFcgb = (1 + r)n(1 – tcg) + tcgB
- Wealth-based taxes: FVIFw = $[(1 + r)(1 – tw)]^n$

When investment returns are subject to accrued taxes on annual basis:

- Tax drag > nominal tax rate
- All else equal, as investment horizon increases → tax drag increases.
- All else equal, as investment return increases → tax drag increases.
- Given investment returns, the longer the time horizon, the greater the tax drag.
- Given investment time horizon, the higher the investment returns, the greater the tax drag.

Estate Planning in a Global Context

Two principal forms of wealth transfer:

1. Gifts: lifetime gratuitous transfers or inter vivos transfers
2. Bequests: testamentary gratuitous transfers

Core capital =

$$\sum_{j=1}^{N} \frac{\mathbf{p\ (Survival) \times Spending_j}}{\mathbf{(1+r)^j}}$$

If tax is paid by recipient:

$$\text{RVTaxFreeGift} = \frac{\text{FVGift}}{\text{FVBequest}} = \frac{[1+r_g(1-t_{ig})]^n}{[1+r_e(1-t_{ie}]^n(1-T_e)}$$

If the tax is paid by the donor:

$$\text{RVTaxableGift} = \frac{\text{FVGift}}{\text{FVBequest}} = \frac{[1+r_g(1-t_{ig})]^n(1-T_{g+}T_gT_e)}{[1+r_e(1-t_{ie}]^n(1-T_e)}$$

Relative value of generation skipping =

$$\frac{1}{(1 - \text{tax rate of capital transferred from 1st to 2nd generation})}$$

Double Taxation: Three forms of tax conflicts in double taxation:

- Residence-residence conflict
- Source-source conflict
- Residence-source

Methods used to provide double taxation relief

- Credit method: Tax liability = Max [TResidence, TSource]
- Exemption method: Tax liability = TSource
- Deduction method: Tax liability = $T_{Residence} + T_{Source} - (T_{Residence} \times T_{Source})$

Concentrated Single Asset Holdings

A holding is generally considered "**concentrated**" if it represents of ≥25% of an investor's wealth.

Investment risks of concentrated positions:

- systematic risk
- company-specific risk
- property-specific risk

Objectives in managing concentrated positions:

- to reduce concentration risk.
- to generate liquidity to satisfy spending needs.
- to achieve objectives 1 & 2 in a tax-efficient manner.

Strategies for managing concentrated positions in publicly traded common shares

Equity monetization: Hedge risk and borrow against equity position. Loan proceeds can be reinvested. Use when there are selling restrictions and/or when investor wants to retain control.

Equity monetization tools:

1. Short sale against the box: creates risk-less position → high LTV ratio. It is the least expensive method.
2. Total return equity swap: due to dealer spread, money market return < short sale against the box.
3. Forward conversion with options: long put + short call. Riskless asset is created → investor can earn money market return and can have high LTV ratio.
4. Equity forward sale contract: Riskless asset is created → investor can earn money market return and have high LTV ratio but limited upside potential.

Hedging tools:

1. Protective put
2. Cashless (zero-premium) collar
3. Prepaid variable forwards: combination of hedge and margin loan

Other tools for managing concentrated positions in publicly traded common:

A. Index-tracking strategy with active tax management.
B. Completeness portfolio.
C. Cross/indirect hedge.
D. Exchange fund.