LM05 · PORTFOLIO MANAGEMENT · CFA LEVEL I

The Behavioral Biases of Individuals

Cognitive errors vs. emotional biases, the ten named cognitive biases, the six emotional biases, and the market anomalies (momentum, bubbles/crashes, value vs. growth) they help explain.

What This Reading Covers

Behavioral finance asserts that certain biases are **widespread — and therefore predictable**. This reading compares and contrasts **cognitive errors** with **emotional biases**, discusses each of the named biases and their investing consequences, and describes the market anomalies (momentum, bubbles/crashes, value/growth) that behavioral biases may produce.

Learning Outcome Statements

- **LOS a** Compare and contrast cognitive errors and emotional biases
- **LOS b** Discuss commonly recognized behavioral biases and their implications for financial decision making
- **LOS c** Describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance

Exam Tip: Memorize the taxonomy: *Cognitive = Belief Perseverance (5) + Processing (4). Emotional = 6 biases.* The count is often tested: **10 cognitive, 6 emotional**.

LOS A · COGNITIVE ERRORS VS. EMOTIONAL BIASES

The Two Families of Bias

Cognitive Errors

Biases based on **faulty cognitive reasoning**. May arise from not understanding statistical analysis, information-processing errors, illogical reasoning, or memory errors.

Mitigation: more easily corrected — through *better information, education, and advice*.

Emotional Biases

Reasoning is **influenced by feelings, impulses, or intuition** — not related to conscious thought.

Mitigation: difficult to overcome; best *adapted to* (decisions are made that recognize and adjust for them) rather than corrected.

Mixed Biases

A bias may have elements of both cognition and emotion. When trying to mitigate mixed biases, **success is more likely by focusing on the cognitive aspect**.

The Taxonomy

1. **Cognitive — Belief Perseverance (5):** Conservatism, Confirmation, Representativeness, Illusion of Control, Hindsight.
2. **Cognitive — Information Processing (4):** Anchoring & Adjustment, Mental Accounting, Framing, Availability.
3. **Emotional (6):** Loss Aversion, Overconfidence, Self-Control, Status Quo, Endowment, Regret Aversion.

LOS B · BELIEF PERSEVERANCE I

Belief Perseverance Biases (1 of 2)

Belief perseverance is the tendency to cling to prior beliefs by committing statistical, information-processing, or memory errors. It is related to **cognitive dissonance** — the mental stress caused when new information conflicts with prior beliefs. Investors resolve it by (a) modifying the conflicting information or (b) considering only confirming information.

① Conservatism Bias

Market participants maintain prior views or forecasts by **inadequately incorporating new, conflicting information** — they overweight the prior probability of an event and underweight (underreact to) the new information.

Consequences: slow to update a view/forecast; prefer to maintain a prior belief rather than deal with the mental stress of updating.

Detection/Guidance: properly analyse and weight new information; if info is cognitively costly, seek expert advice.

② Confirmation Bias

People look for and notice what confirms their beliefs and **ignore or undervalue what contradicts** them.

Consequences:

- Consider only positive information about an existing investment; ignore negative.
- Develop screening criteria and ignore information that refutes the criteria.
- Under-diversify portfolios (hold losers, add to losing positions).
- Hold a disproportionate share in the employer's stock.

Detection/Guidance: actively seek information that *challenges* existing beliefs; get corroborating support.

LOS B · BELIEF PERSEVERANCE II

Belief Perseverance Biases (2 of 2)

③ Representativeness Bias

Tendency to **classify new information based on past experiences and classifications** (stereotyping). Two subtypes:

- **Base-rate neglect** — categorising without considering the probability.
- **Sample-size neglect** — assuming small samples are representative of populations.

Consequences: adopt a view based almost exclusively on individual/specific information or a small sample; update via simple classifications.

Detection/Guidance: be aware of statistical mistakes; think about probability before classifying; be sensitive to sample sizes.

④ Illusion of Control Bias

People believe they can **control or influence outcomes when in fact they cannot**.

Consequences: inadequately diversify (concentrated company stock); trade more than is prudent; build overly detailed financial models (belief that forecasts control uncertainty).

Detection/Guidance: understand that investment is probabilistic — you cannot control the market; seek contrary viewpoints.

⑤ Hindsight Bias

Seeing past events as having been **predictable and reasonable to expect** — the "I knew it all along" phenomenon. People remember their own predictions as having been more accurate than they were.

Consequences: overestimate a prediction's accuracy (leads to overconfidence); unfairly assess the performance of others (assessing *what happened* vs. the ex-ante expectation).

Detection/Guidance: understand why investments did or did not work vs. what was originally thought; *keep a log*.

LOS B · PROCESSING ERRORS I

Information-Processing Biases (1 of 2)

Processing errors arise when information is processed and used illogically or irrationally.

① Anchoring & Adjustment Bias

When required to estimate a value of unknown magnitude, people begin with an **initial default number (the anchor)** and adjust up or down from it as new information arrives. *The adjustment is usually insufficient* — too much weight stays on the anchor.

Consequences: stick too closely to original estimates of value; hold investments too long or sell too early.

Detection/Guidance: awareness.

② Mental Accounting Bias

Mentally dividing money into **accounts that influence decisions** — one sum of money treated differently than another equal-sized sum based on which mental account it is assigned to. Investors construct portfolios in a **layered pyramid**, each layer addressing a specific financial goal ("safe with principal, risk with returns").

Consequences:

- Neglect opportunities to reduce risk by combining assets with low correlations → inefficient risk/return portfolios.
- Neglect total return by focusing on income at the expense of capital gains.
- "Safe with principal, risk with returns" → suboptimal levels of risk.

Detection/Guidance: awareness; take a traditional portfolio approach — asset-allocation decisions across *all* assets, then asset-location decisions after.

LOS B · PROCESSING ERRORS II

Information-Processing Biases (2 of 2)

③ Framing Bias

A person **responds differently based on how a problem is framed**. *Narrow framing* = focusing on one or two specific points at the expense of the whole.

Consequences:

- Misidentify risk tolerances — become *more risk-averse* when presented with a gain frame and *more risk-seeking* when presented with a loss frame.
- Focus on short-term price fluctuations; overweight volatility as a measure of risk.

Detection/Guidance: reframe the problem; focus on future expectations, not current gains/losses.

④ Availability Bias

Estimate probability based on **how easily something comes to mind** — easily recalled outcomes perceived as more likely. Four sources:

SOURCE	DESCRIPTION
Retrievability	Answer/idea that comes to mind more quickly is likely chosen as correct
Categorization	If you can't name an instance, conclude the category is small
Narrow range of experience	Generalise based on personal experience (or lack thereof)
Resonance	Biased by how closely a situation parallels your own personal situation

Consequences: limit the opportunity set (e.g., home bias — only domestic markets); select investments/advisors based on current awareness only; fail to diversify.

Detection/Guidance: develop an appropriate investment policy strategy; research investment options.

KNOWLEDGE CHECK — QUIZ 1

Cognitive Errors: Belief Perseverance & Processing

Q1. The primary distinction between cognitive errors and emotional biases is that:

Q2. An investor ignores negative news about a stock she owns and repeatedly cites positive analyst notes. She is most likely exhibiting:

Q3. An analyst judges a firm's growth prospects on the basis of only three quarters of recent data. This is most consistent with:

Q4. An investor builds several separate "buckets" — one safe, one for income, one speculative — and manages each in isolation. The relevant bias is:

Q5. When forecasts are dominated by the ease with which vivid examples (e.g., recent crashes) come to mind, the bias is:

LOS B · EMOTIONAL BIASES I

Loss-Aversion Bias

Emotional biases may only be recognised and **adapted to** rather than corrected. They generally arise from emotions and feelings rather than conscious thought.

Loss-Aversion Bias

People **strongly prefer avoiding losses** over achieving gains — losses are emotionally more powerful than gains.

Leads to the **disposition effect**: *sell winners too soon, hold losers too long*.

Utility shape: *risk-seeking in losses, risk-averse in gains* (Kahneman–Tversky).

Consequences

1. Hold investments in a loss position longer than justified by fundamentals in hopes they will break even.
2. Sell investments in gain positions out of fear the gains will give back — excessive trading.
3. Resulting portfolio is riskier than intended.

Detection/Guidance

Discipline, rules, and a written **investment policy statement** — pre-commit to decision rules so the emotional impulse at the moment of loss does not override them.

LOS B · EMOTIONAL BIASES II

Overconfidence Bias

People demonstrate **unwarranted faith** in their own abilities, reasoning, and judgment. It is intensified by **self-attribution bias**: take credit for successes (self-enhancing); assign responsibility for failures to others/circumstances (self-protecting).

Prediction Overconfidence

Incorporating **too little variation in predictions** — narrow confidence intervals. Tends to underestimate *downside risk*.

Certainty Overconfidence

Probabilities assigned to outcomes tend to be **too high** — overestimate the chance of being right.

Related: Illusion of Knowledge

Thinking you do a better job of predicting than you actually do.

Consequences

1. Underestimate risks and overestimate expected returns.
2. Hold poorly diversified portfolios (significant downside risk).
3. Trade excessively → underperform.

Detection/Guidance

Keep a **record of all trades and outcomes**; review past performance and calculate actual portfolio return; conduct *post-investment analysis on both winners and losers*.

LOS B · EMOTIONAL BIASES III

Self-Control & Status-Quo Biases

Self-Control Bias

People fail to act in pursuit of their long-term goals in favour of **short-term satisfaction**. May reflect:

- A lack of self-control (saving vs. spending).
- **Hyperbolic discounting** — preferring small payoffs now over larger payoffs in the future.

Consequences: save insufficiently for the future → accept too much risk in an attempt to generate return; borrow excessively to finance present consumption.

Detection/Guidance: proper investment plan + personal budget (all in writing); maintain an optimized strategic asset allocation.

Status-Quo Bias

People choose to **do nothing instead of making a change**, even when change is warranted. Positions maintained *largely because of inertia* rather than conscious choice — distinguishing it from endowment and regret-aversion biases.

Consequences: unknowingly maintain portfolios with inappropriate risk characteristics; fail to explore other opportunities.

Detection/Guidance: education is essential — quantify the risk-reducing and return-enhancing advantages of proper diversification and asset allocation.

Exam Tip: Contrast: **Status quo** = inertia (unconscious). **Endowment** = conscious value attached to what you own. **Regret aversion** = conscious fear of a bad outcome from action.

LOS B · EMOTIONAL BIASES IV

Endowment & Regret-Aversion Biases

Endowment Bias

People **value an asset more when they own it** than when they do not — ownership endows the asset with added value. May believe they understand the characteristics of investments *owned* better than those not owned.

Consequences: fail to sell assets and replace them; continue to hold asset classes they are familiar with; maintain an inappropriate asset allocation.

Detection/Guidance: reframe the problem — *"Would you buy the current portfolio at your asking price?" "If you had cash instead, would you buy the same assets that were given to you?"*

Regret-Aversion Bias

People avoid making decisions out of **fear the decision will turn out poorly**. Two forms of regret:

- **Error of omission** — regret from an action not taken.
- **Error of commission** — regret from an action taken.

Consequences:

- Too conservative in investment choices as a result of past poor outcomes → long-term underperformance.
- **Herding behavior** — stay with what is popular (choosing less-familiar companies feels riskier; also, "if others are wrong, too, I am not to blame").

Detection/Guidance: quantify the risk-reducing and return-enhancing advantages of diversification and asset allocation; recognise that losses happen to everyone.

WORKED EXAMPLE · CLASSIFYING INVESTOR BEHAVIOURS

Bias Diagnosis in Practice

EXAMPLE

Five Investor Behaviours

GIVEN / OBSERVATIONS

1. Ann refuses to update a stock recommendation despite materially negative earnings news.
2. Ben sells a profitable stock after a 10% gain but refuses to sell a 30%-down position "until it recovers."
3. Chen's portfolio is 70% in large-cap domestic equities; he says international stocks are "too complicated."
4. Dipika inherited her grandmother's bank shares and refuses to diversify — they "have sentimental value."
5. Eric tells clients, "I predicted the crash all along" — although his 2007 memos show a bullish view.

CLASSIFICATION

1. **Conservatism** — inadequately incorporates new, conflicting information.
2. **Loss aversion / disposition effect** — sells winners too soon, holds losers too long.
3. **Availability (home bias)** — limited to what comes easily to mind; narrow range of experience.
4. **Endowment** — values the asset more because she owns it; emotional over-valuation of the current holding.
5. **Hindsight** — remembers predictions as more accurate than they were.

TAKEAWAY

Diagnosing the *bias* drives the *remedy*: cognitive biases respond to information & education (Ann, Chen, Eric — show them data, keep decision logs); emotional biases often require discipline & rules (Ben needs an IPS; Dipika needs reframing).

KNOWLEDGE CHECK — QUIZ 2

Emotional Biases

Q6. The *disposition effect* — selling winners too soon and holding losers too long — is most directly a consequence of:

Q7. An investor assigns 90% confidence to her return forecasts but is right only 60% of the time. This is best described as:

Q8. A client leaves his asset allocation unchanged for a decade despite major life changes, saying, "I've just never gotten around to it." The bias is:

Q9. Hyperbolic discounting — preferring small immediate payoffs over larger future ones — most closely underlies:

Q10. An investor is reluctant to sell shares her father gave her, even though they are unsuitable for her goals. The *best* remedy is to:

LOS C · MARKET ANOMALIES I

Behavioral Biases & Market Anomalies: Momentum

Market Anomalies — Definition

Deviations from market efficiency — persistent abnormal returns that differ from zero and are predictable in direction. Not attributable to (1) the choice of asset-pricing model, (2) statistical issues (small samples, data mining), or (3) temporary disequilibria.

① Momentum (Trending Effects)

Future price behavior **correlates with that of the recent past** — typically lasts up to *about 2 years before showing a reversal*.

Behavioral drivers:

- **Availability / recency effect** — reasoning based on recent experience; if prices have been rising, expectations of future increases arise.
- **Hindsight bias** — reduce regret of missing out by buying past winners.
- **Herding** (a form of regret aversion) — going with the consensus.

Exam Tip: Momentum is explained by *availability* + *hindsight* + *herding*. Expect a question that asks which biases "most likely" drive trend-following behavior.

LOS C · MARKET ANOMALIES II

Bubbles/Crashes & the Value vs. Growth Anomaly

② Bubbles & Crashes

Persistent mispricing driven by compounding biases:

- **Overconfidence** — overtrading, underestimation of risk, failure to diversify, rejection of contradictory information.
- **Confirmation & self-attribution bias** — selling winners confirms the strategy's success; continued wins fuel overconfidence.
- **Regret aversion** — fear of missing out (FOMO) keeps skeptical investors in the market.
- **Anchoring** — early in a crash, pullbacks are still seen as buying opportunities; investors eventually *capitulate* when losses become too large.

③ Value vs. Growth (Value Outperforms)

Value tends to outperform growth (low P/E, high B/P, low P/CF). Explained by the **halo effect** — a form of representativeness that extends a favourable evaluation of one characteristic to another (e.g., *good growth record = good investment*), potentially leading growth stocks to be **overvalued**.

Related: Home Bias

Market participants invest heavily in firms in their domestic country or region. Reflects a belief in *better information access* or simply an emotional desire to invest "closer to home."

KNOWLEDGE CHECK — QUIZ 3

Market Anomalies & Integration

Q11. The persistent tendency of past winners to continue to outperform over intervals of several months to around two years is known as the *momentum* anomaly. Which set of biases is most commonly cited to explain it?

Q12. During the early stages of a market crash, investors who keep buying on pullbacks because recent highs "must be about right" are exhibiting:

Q13. The outperformance of value over growth stocks is most commonly attributed to the *halo effect*, which is a form of:

Q14. An investor who holds only domestic equities because international markets "are hard to understand" is demonstrating:

Q15. Compared with cognitive errors, emotional biases are:

MODULE COMPLETE

Your Scorecard

0 / 15

LM05 Key Takeaways

The Taxonomy

1. **Cognitive errors** = faulty reasoning → correct with information/education.
2. **Emotional biases** = feelings/intuition → adapt to rather than correct. Focus on cognitive aspect when mixed.

Cognitive — Belief Perseverance (5)

3. **Conservatism** (underreact to new info), **Confirmation** (seek supportive info), **Representativeness** (base-rate / sample-size neglect), **Illusion of Control**, **Hindsight**.

Cognitive — Information Processing (4)

4. **Anchoring & Adjustment** (insufficient adjustment from anchor), **Mental Accounting** (buckets), **Framing**, **Availability** (retrievability, categorization, narrow range, resonance — source of *home bias*).

Emotional (6)

5. **Loss aversion** → disposition effect.
6. **Overconfidence** (prediction & certainty) + self-attribution + illusion of knowledge.

7. **Self-control** (hyperbolic discounting), **Status quo** (inertia), **Endowment** (ownership premium), **Regret aversion** (errors of omission/commission; herding).

Market Anomalies

8. **Momentum** — availability (recency) + hindsight + herding; lasts up to ~2 years.
9. **Bubbles & crashes** — overconfidence + confirmation / self-attribution + regret aversion (FOMO) + anchoring (late-stage denial).
10. **Value vs. growth** — halo effect (representativeness) overvalues growth stocks.
11. **Home bias** — availability/familiarity.

Last-Minute Exam Checklist

Cognitive vs emotional: correct vs. accommodate

5 belief perseverance: conservatism, confirmation, representativeness, illusion of control, hindsight

4 processing: anchoring, mental accounting, framing, availability

6 emotional: loss aversion, overconfidence, self-control, status quo, endowment, regret aversion

Disposition effect = loss aversion

Halo effect = representativeness → growth overvalued

Home bias = availability

Momentum = availability + hindsight + herding

Step 1 of 17