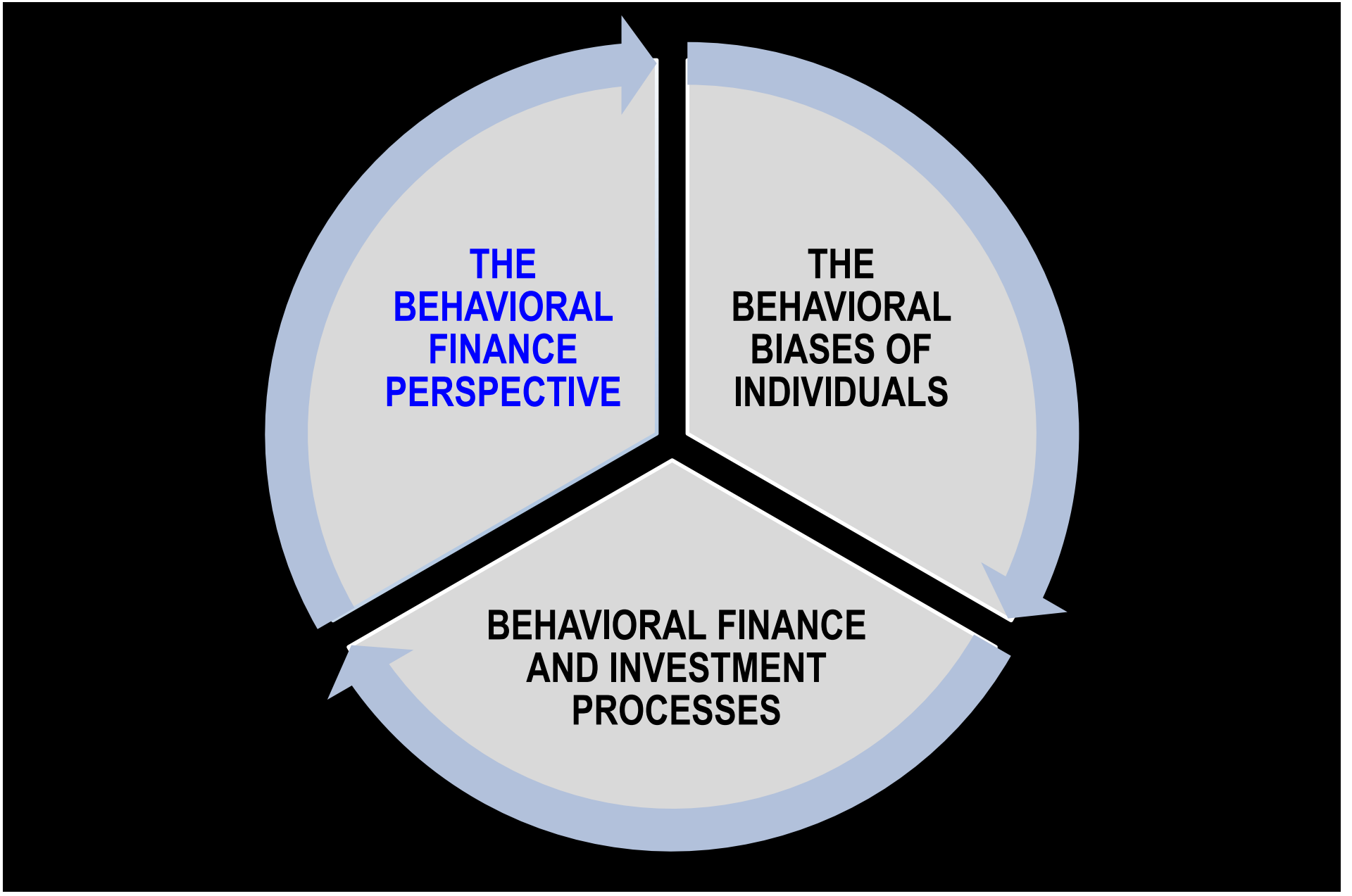
BEHAVIORAL FINANCE



THE BEHAVIORAL FINANCE PERSPECTIVE

1. Traditional vs. Behavioral Finance

3. Bounded Rationality & Satisfying (Behavioral Finance)

2. Utility Theory & Prospective Theory (Traditional Finance)

4. Four Behavioral Finance Models

Exercise Problem

Traditional vs. Behavioral Finance

Traditional Finance: HOW?

1. Risk aversion assumption
2. Rational Economic Man (REM) always selfishly seek the personal utility-maximizing decision, based on all available information.
3. Decision making based on Bayes's Formula:
   $P(A \mid B) \times P(B) = P(B \mid A) \times P(A)$
4. REM makes decisions confirming to the four axioms of utility:

- Completeness : aware of all available choice
- Transitivity : ranking and hierarchy applied consistently
- Independence : If prefer X over Y, adding Z shall not have any impact on preferences
- Continuity : indifference curves are unbroken

5. Holistic strategy – consider all goals simultaneously & using a single portfolio to meet them.

Behavioral Finance: WHY?

1. Investors use some combination of traditional finance and psychological biases for decision making.
2. Attempt to explain why investors make such decisions.
3. Micro behavioral finance → describes the decision making process of individuals. Explain why individuals deviate from traditional financial theory.
4. Macro behavioral finance → seeks to explain how and why markets deviate from what we would term efficient in traditional finance.

Utility Theory & Prospective Theory

Utility Theory: → CML/SML

assume individuals base decisions on all available information, investor want to maximize expected utility given level of risk, effective frontier graph

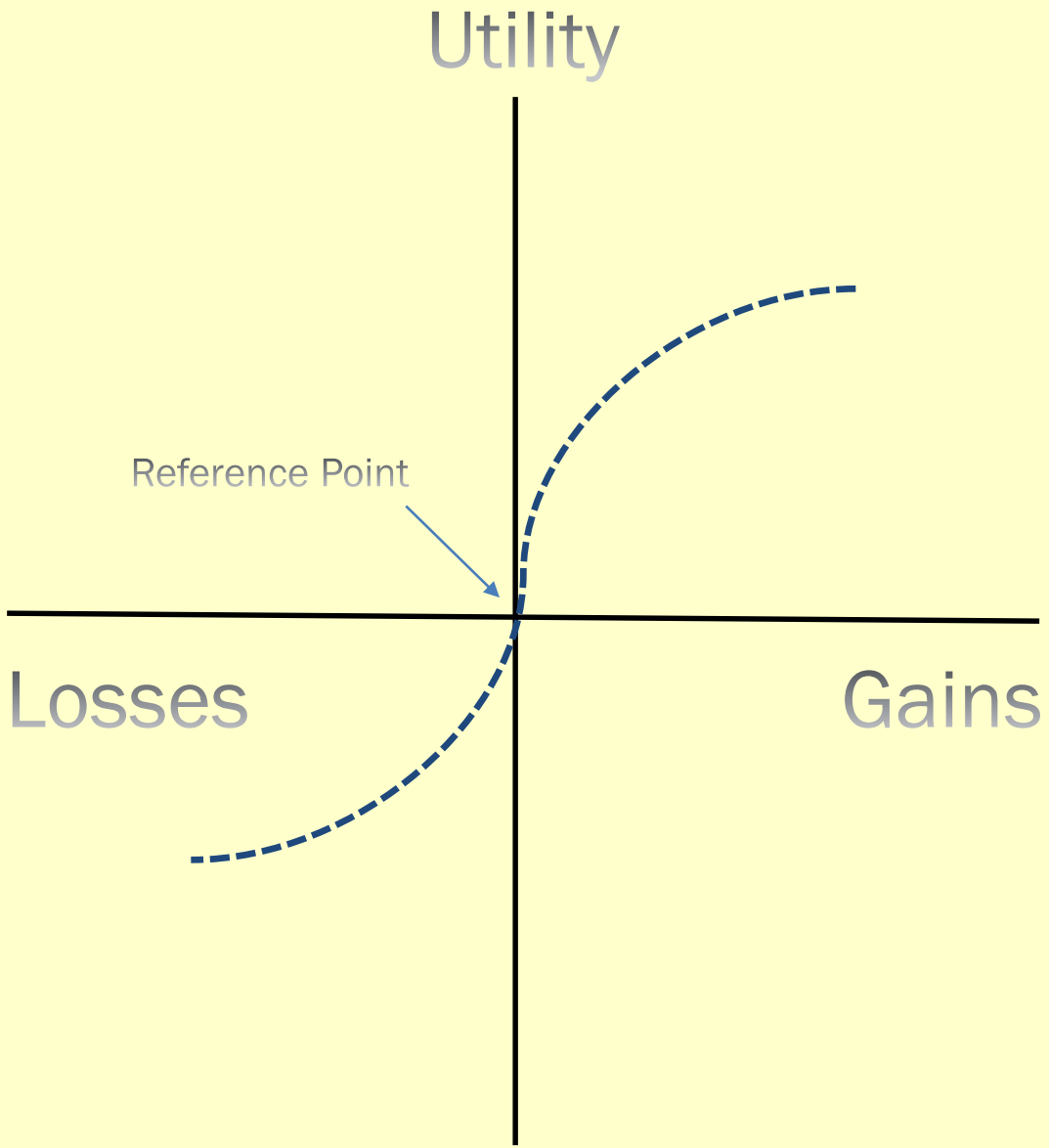
1. Risk Averse – diminishing marginal utility, concave, wealth increase, utility increase at decreasing rate
2. Risk seeking – increasing marginal utility, convex, wealth increase, utility increase
3. Risk neutral – linear, unaware of risk

Prospective Theory:

place greater value on loss than same amount of gain, 2 phases:

1. Editing phase : *codification* (code outcome as gain or lose), *combination* (combine identical outcomes), *segregation* (separate the certain and uncertain components to get better insight about risk), *cancellation* – also called *isolation effect* (eliminating similar choices, for example 5% with payoff 1000 and 50% with payoff 100 has same value but some people focus higher payoff some people focus higher chances), *simplification* (odds of 45 % and 55% become 50% 50%), detection of *dominance* (much better odds will eliminate lousier one)
2. Evaluation Phase : calculated expected return by times payoff over odds, tend to overreact to low probability event,

Prospective Theory: Risk-Averse vs. Loss-Averse



Bounded Rationality and Satisfying

- individuals act as rationally as possible while recognizing they are constrained by lack of knowledge, lack of processing power, then they will make satisfactory choice (rather than optimization) assuming bounded rationality applies.

- Gathering what they consider to be an *adequate* amount of information and apply heuristics to analyze and shape the information into an *acceptable* decision.

- Investor take steps to achieve *intermediate* goals, as long as they advance the investor toward the *desired goals*. Investor does not necessarily make the theoretically optimal decision from a traditional finance perspective.

Four Behavioral Finance Models

Consumption and Saving :
→ framing (affect by the way question asked), self control (bias when individual spend more now rather than save more), mental accounting (different pocket for different type of expense), classifying wealth (current income, currently owned asset, present value of future income)
→ How individual classify in wealth?

Behavioral Portfolio Theory :
→ rather than hold well-diversified portfolios, investors layer their portfolio according to goals such as require return, utility, access to information, loss aversion etc.

Behavioral Asset Pricing:
→ require return + fundamental risk premium + sentiment premium (more widely dispersed analyst' opinion, greater sentiment premium, higher discount rate applied to asset's cash flow and lower asset's prices)

Adaptive Markets Hypothesis (AMH):
→ success in the market is an evolutionary process such that investor make decision to help them survive and satisfice. NOT utility maximization.
→ Risk premium will vary depending on aversion risk. Invalid Asset Pricing Models.

CFA Level III Template for Question: Circle and Explain

Year	Session	Question
2012	Morning	4, 5, 6, 7
2011	Morning	1, 3, 4, 9
2010	Morning	2, 3, 8
2009	Morning	2, 5, 8, 10
2008	Morning	2, 5, 9
2007	Morning	1, 6, 7
2006	Morning	3, 8, 9
2005	Morning	11

CFA Level III Sample Question (2012): Select (Circle) & Explain

Template for Question 4-A
Note: Each diagnostic question is designed to reveal a different bias.

Diagnostic Question	**Identify the behavioral bias that *each* diagnostic question in Exhibit 1 is *most likely* to reveal. (circle one)**
1. Would a prior investment decision that resulted in a loss stop you from making a similar decision, even if the new investment appears to be the best alternative?	anchoring hindsight regret aversion representativeness status quo

Exercise Problems

Statement 1	Characteristic (circle one)
I have always followed a budget and have been a disciplined saver for decades. Even in hard times when I had to reduce my usual discretionary spending, I always managed to save.	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 2	Characteristic (circle one)
While I try to make decisions analytically, I do believe the markets can be driven by the emotions of others. So I have frequently used buy/sell signals when investing. Also, my 20 years of experience with managers who actively trade on such information makes me think they are worth the fees they charge.	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 3	Characteristic (circle one)
Overall, I have always been willing to take a small chance of losing up to 8 percent of the portfolio annually. I can accept any asset classes to meet my financial goals if this constraint is considered. In other words, an accepted return -1.645×Expected standard deviation ≥ -8%	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 4	Characteristic (circle one)
Most of my clients need a well-informed advisor to analyze investment choices and to educate them on their opportunities. They prefer to be presented with three to six viable strategies to achieve their goals. They like to be able to match their goals with specific investment allocations or layers of their portfolio:	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 5	Characteristic (circle one)
I follow a disciplined approach to investing. When a stock has appreciated by 15 percent, I sell it. Also, I sell a stock when its price has declined by 25 percent from my initial purchase price.	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 6	Characteristic (circle one)
When new information on a company becomes available, I adjust my expectations for that company's stock based on past experiences with similar information.	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory

Exercise Problems

Statement 7	Characteristic (circle one)
When considering investments, I have always liked using long option positions. I like their risk/return tradeoffs. My personal estimates of the probability of gains seem to be higher than that implied by the market prices. I am not sure how to explain that, but to me long options provide tremendous upside potential with little risk, given the low probability of limited losses.	Behavioral Asset Pricing Behavioral Portfolio Theory Traditional Portfolio Efficiency Expected Utility Theory Mental Accounting Bias Heuristic and Framing Bias Prospective Theory