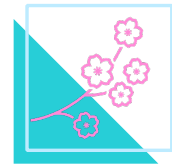


PROSPECT THEORY

EPISODE 3 ●

EE 434 Behavioral Finance, SEM1/2022

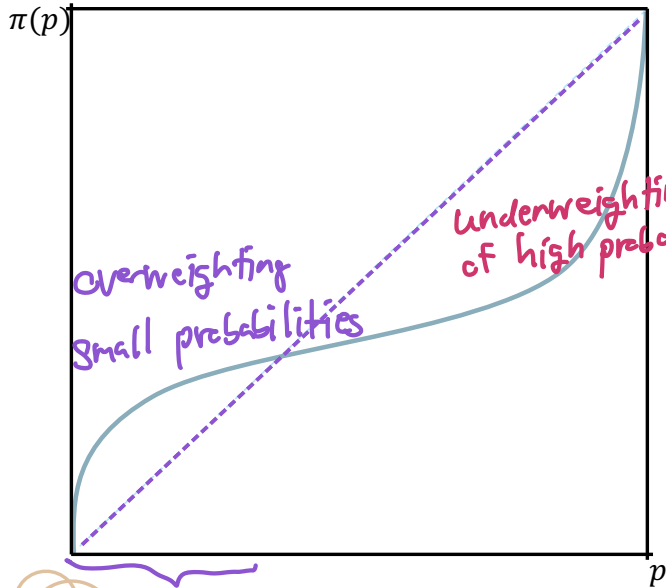
Sunsiree Kosindesha



Fourfold patterns of choices under risk

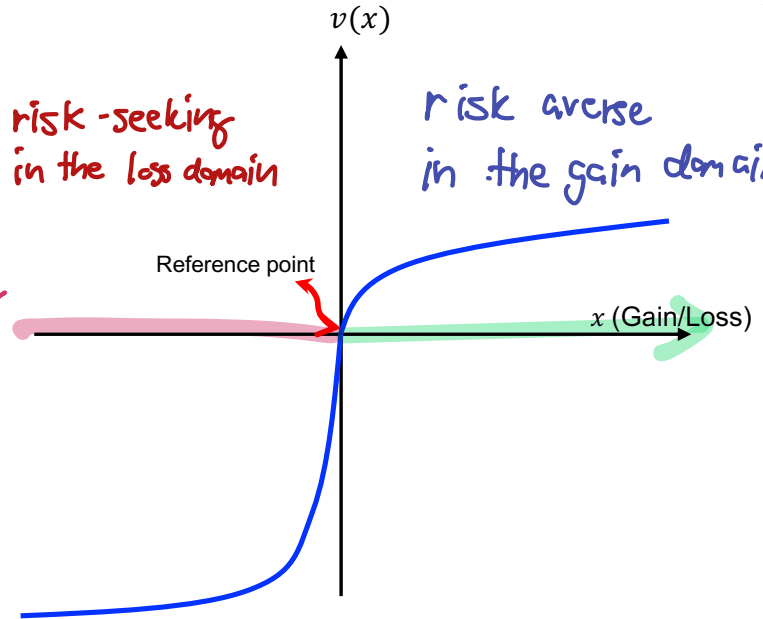


$$V(x, p; y, q) = \pi(p)v(x) + \pi(q)v(y)$$



risk-seeking
in the loss domain

risk averse
in the gain domain



The core achievement of prospect theory, analyzing risks related to pure gain gamble or pure loss gamble

The fourfold pattern of choice under risk:

	GAINS	LOSSES
HIGH PROBABILITY Reinforcing forces	① 95% chance to win \$10,000 Risk averse + Underweighting Fear of disappointment RISK-AVERSE BEHAVIOR Accept unfavorable settlement Ex: refusing low-risk high return business opportunity	③ 95% chance to lose \$10,000 Risk seeking + Underweighting Hope to avoid loss RISK-SEEKING BEHAVIOR Reject favorable settlement Ex: taking desperate gambles for a small hope of avoiding large loss
LOW PROBABILITY Competing forces Influence of PWF wins.	② 5% chance to win \$10,000 Risk averse + Overweighting Hope of large gain RISK-SEEKING BEHAVIOR Reject favorable settlement Ex: buying lottery tickets	④ 5% chance to lose \$10,000 Risk seeking + Overweighting Fear of large loss RISK-AVERSE BEHAVIOR Accept unfavorable settlement Ex: buying insurance policies

Choices are:
risk averse if less-risky option is preferred;
risk seeking if more-risky option is preferred.

The fourfold pattern of choice under risk:

- ❖ For intermediate/large probabilities, we have risk-averse behavior over gains and risk-loving behavior over losses.
- ❖ For small probabilities, we have risk-loving behavior over gains and risk-averse behavior over losses.

The background features a light blue border. On the left, there is a pink trapezoidal shape and a teal diagonal line. A pattern of horizontal and vertical lines in light blue and teal forms a triangular shape on the left side. In the top right corner, there are two overlapping orange circles and a green triangle. In the bottom right corner, there is a pattern of horizontal and vertical lines in teal and light blue.

Narrow framing vs. Broad framing

Decision (i)

❖ Choose between

~~A.~~ sure gain of \$240

B. 40% chance to gain \$1,000 and 60% chance to gain nothing

Decision (ii)

❖ Choose between

C. sure loss of \$750

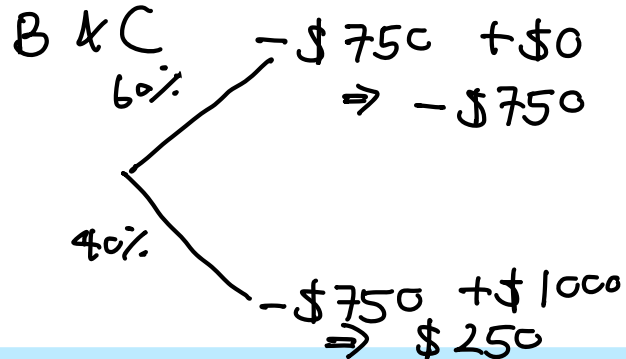
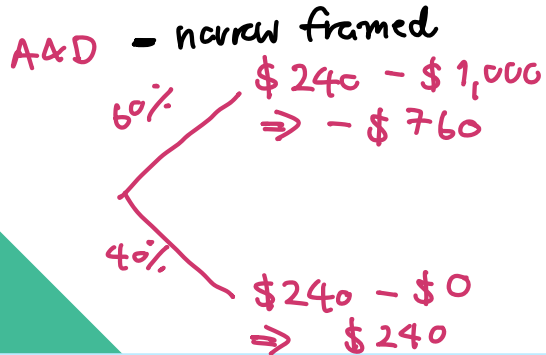
D. 60% chance to lose \$1,000 and 40% chance to lose nothing

Decision (iii)

❖ Choose between

A&D. 40% chance to win \$240 and 60% chance to lose \$760

B&C. 40% chance to win \$250 and 60% chance to lose \$750



Narrow framing is costly.

- ❑ Majority of respondents chose:
 - ❑ A. in decision (i)
 - ❑ D. in decision (ii).
- ❑ AD is dominated by BC.

It is costly to be risk averse for gains and risk seeking for losses.

Narrow framing vs. Broad framing

- Narrow framing: a sequence of two simple decisions, considered separately
 - Think about A vs. B
 - Think about C vs. D
- Broad framing: a single comprehensive decision, with four options
 - Think about A, B, C, D together: AC, AD, BC, BD

Narrow framing vs. Broad framing

- A rational agent will engage in broad framing.
- A rational agent will use mental efforts to enforce consistency.
- Econs will be coherent in their choices.

- Humans are naturally narrow framers.
- We are susceptible to WYSIATI (What You See Is All There Is). That is, we use the information we have as if it is the only information.
- We are averse to using mental effort.

Inducing to use broad framing

- ✓ "To think like a trader" helps with loss aversion and endowment effect
- ✓ "Treat this problem as one of many monetary decisions, which will sum together to produce a portfolio"
- ✓ Broad framing blunt the emotional reaction to losses

The slide features a light blue background with several decorative elements. In the top-left corner, there is a pink triangle and a teal triangle. A large teal banner with the word 'DANKE!' in white capital letters is positioned in the upper-middle section. The bottom-left and bottom-right corners are decorated with a pattern of horizontal and vertical teal lines. In the top-right corner, there are two overlapping orange circles and a green triangle. The overall design is modern and clean.

DANKE!

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