PROSPECT THEORY

THE FINAL EPISODE

EE 434 Behavioral Finance, SEM1/2021

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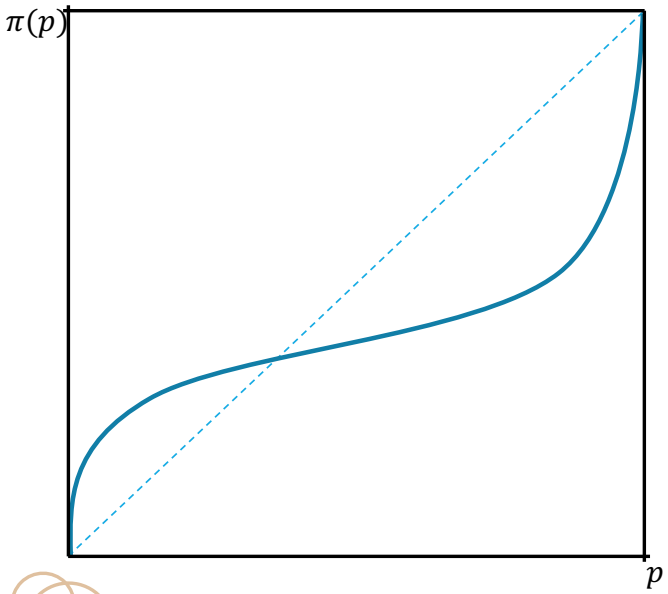
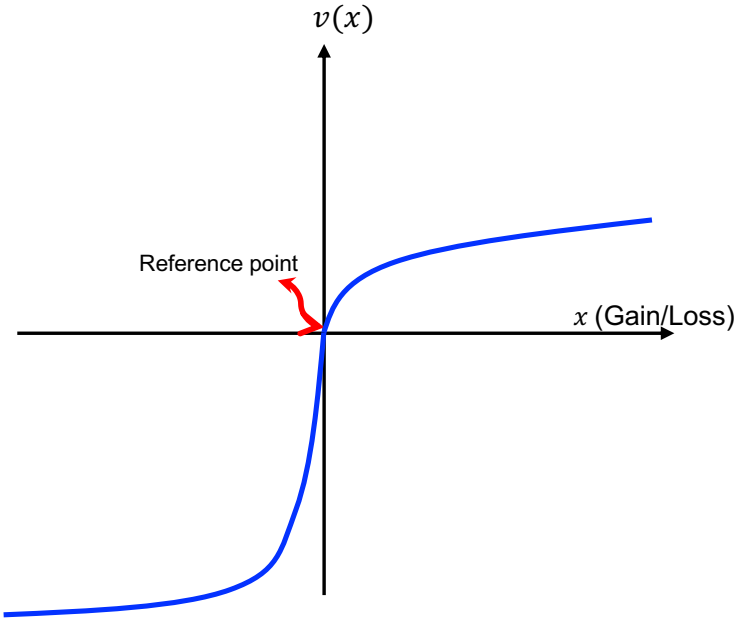
Fourfold patterns of choices under risk

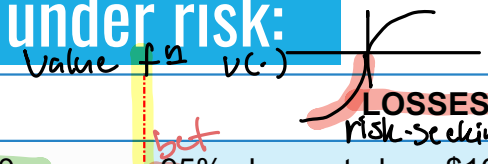
$$V(x,p;y,q) = \pi(p)v(x) + \pi(q)v(y)$$





The core achievement of prospect theory

The fourfold pattern of choice under risk:



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

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

($5000, 0.001) ≻ ($5, 1)

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.

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

DANKE!

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