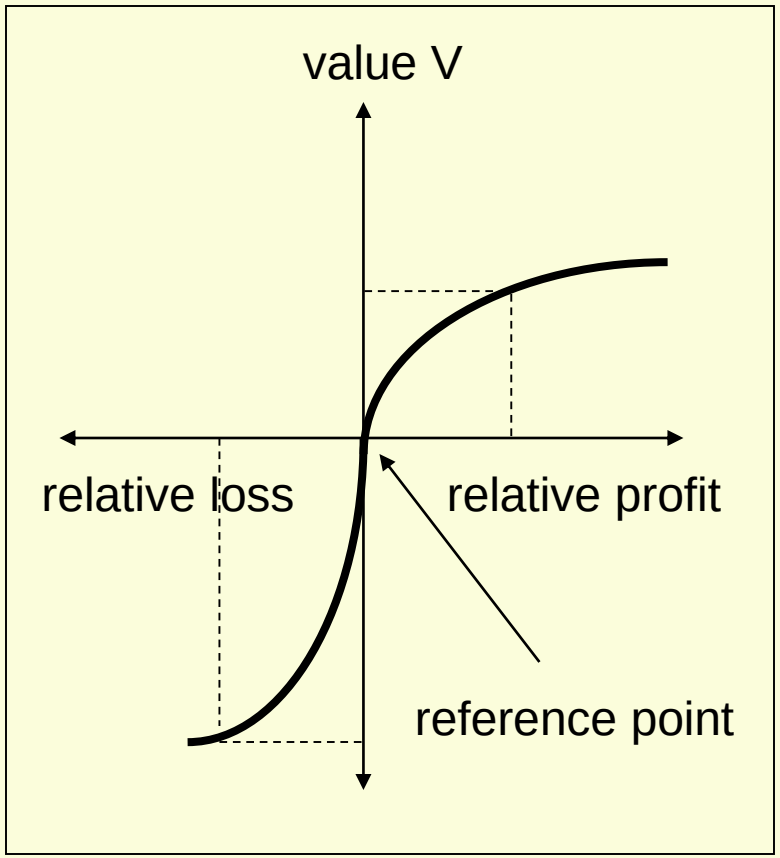
Allais Paradox

- Which do you prefer:
  - A) A sure gain of $3000;
  - B) 80% chance of winning $4000 ?
- Which do you prefer:
  - C) 25% chance of winning $3000;
  - D) 20% chance of winning $4000 ?
- Most people choose (A) and (D)
- violate the substitution axiom of expected utility theory
  - note that (A) and (B) are just 4 times the probabilities of (C) and (D)
- People put more emphasis on "certainty" of outcome

The framing of acts

- People could not process more than one piece of information at a time
- Which do you prefer:
  - A) a sure gain of $2400
  - B) 25% chance to gain $10000, 75% chance to gain 0
- Which do you prefer:
  - C) a sure loss of $7500
  - D) 75% chance to lose $10000, 25% chance to lose 0
- Which do you prefer:
  - E) 25% chance to win $2400, 75% chance to lose $7600
  - F) 25% chance to win $2500, 75% chance to lose $7500
- Most people choose (A), (D) and (F)
- But (E) = (A)+(D), (F) = (B)+(C) !!!

Prospect Theory (2)



- The sensitivity of the value function changes across the reference point
- value increases slower when a relative profit is made, compared to a relative loss (the "reflection effect")

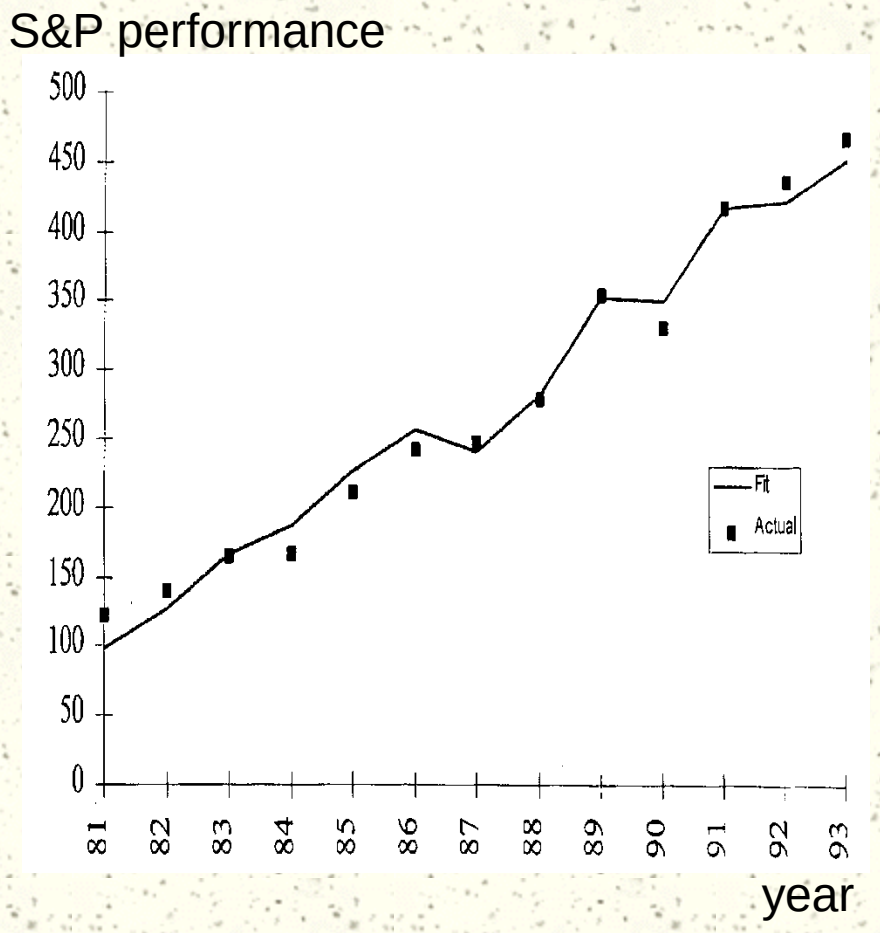
Reference points

- The point of reference plays a major role in deciding the sensitivity, but sometimes it is difficult to decide what is the reference point
- You bought some shares at $50 last year. At year end, the price of the stock had risen to $100. You considered selling the stock but did not do so. Now the price is at $80, and you decide to sell. Would you consider that you have:
  - made a profit of $30; or
  - lost $20?
- Many people look at the historical 52-week high as the reference (of course it is impossible to know when the high is reached without hindsight)

Loss aversion

- Which do you prefer:
  - A) A sure gain of $3000?
  - B) 80% chance of winning $4000, 20% chance of winning $0
- Which do you prefer:
  - C) 80% chance of losing $4000, 20% chance of losing $0
  - D) A sure loss of $3000?
- Most people choose (A) and (C)
- People are often risk averse when facing gains, but become risk takers when facing loss

How could the anomalies be explained?



- (i) Bangladesh butter production;
- (ii) cheese production of Bangladesh + US;
- (iii) world sheep population
- these 3 factors together explained 99% of the movement of the annual closing prices of S&P between 1981 - 1993
  - Leinweber (1997)

Some memorable quotes

- *There is nothing so disturbing to one's well-being and judgment as to see a friend get rich*
  - Charles Kindleberger, "Manias, Panics and Crashes: A history of financial crises", 4th edition, Wiley,2000
- Definition of "wealthy" - *someone who earns $100 a year more than his wife's sister's husband*
  - H.L. Mencken
- *I can calculate the motions of heavenly bodies, but not the madness of people*
  - Sir Isaac Newton
- *Successful investing is a profoundly solitary activity*
  - William Bernstein