Behavioral Finance

Framing

Duke UNIVERSITY

Framing Introduction

Bias due to framing may be the single most significant behavioral factor that we address during this class. A decision "frame" is the decision-maker's view of the outcomes and risks associated with a particular choice. Decision frames are largely controlled by the formulation of the problem. It has been shown extensively, in hundreds of studies with thousands of participants, that the way a decision is "framed" can cause respondents to switch their selection between options. Often, small changes in vocabulary, without altering any options available, can cause a decision maker to change her selection among choices, and in predictable ways.

The implications of this bias are significant and far-reaching: doctors can steer their patients towards a particular treatment option; litigators can sway a jury in a particular direction; and financial advisors can direct their clients into or out of particular investments.

In this Section, we will examine multiple circumstances in which framing can influence our decisions in various contexts. Framing effects are ubiquitous; but knowing that you have a tendency to respond differently depending on the way that a question is presented goes a long way towards resolving the bias.

Difficult Business Decisions

A large car manufacturer has recently been hit with a number of economic difficulties, and it appears as if three plants need to be closed and 6,000 employees laid off. The vice-president of production has been exploring alternative ways to avoid this crisis. She has developed two plans:

- *Plan A*: This plan will save one of the three plants and 2,000 jobs.

- *Plan B*: This plan has a 1/3 probability of saving all three plants and all 6,000 jobs, but has a 2/3 probability of saving no plants and no jobs.

Please make a note of whether you prefer Plan A or Plan B before moving on

Highway Safety

Imagine that you are advising a small town about a highway safety program. At present, about 600 people per year are killed in traffic accidents in this town. Two programs designed to reduce this number are under consideration.

Program A is expected to reduce the yearly number of casualties 30; its annual cost is estimated at $12 million.

Program B is expected to reduce the yearly number of casualties by 100; its annual cost is estimated at $55 million.

Which program do you prefer, program A or program B?

Please make a note of which program you prefer before moving on

Mental Accounting: The legend of the man in the green bathrobe

By the third day of their honeymoon in Las Vegas, the newlyweds had lost their $1,000 gambling allowance. That night in bed, the groom noticed a glowing object on the dresser. Upon inspection, he realized it was a $5 chip they had saved as a souvenir. Strangely, the number 17 was flashing on the chip's face. Taking this as an omen, he donned his green bathrobe and rushed down to the roulette tables, where he placed the $5 chip on the square marked 17. Sure enough, the ball hit 17 and the 35-to-1 bet paid $175. He let his winnings ride, and once again the little ball landed on 17, paying $6,125. And so it went, until the lucky groom was about to wager $7.5 million. Unfortunately the floor manager intervened, claiming that the casino didn't have the money to pay should 17 hit again. Undaunted, the groom took a taxi to a better-financed casino downtown. Once again he bet it all on 17 – and once again it hit, paying more than $262 million. Ecstatic, he let his millions ride – only to lose it all when the ball fell on 18. With no money for a taxi, the groom walked the several miles back to his hotel.

"Where were you?" asked his bride as he entered their room.

"Playing roulette."

"How did you do?"

"Not bad. I lost five dollars."

Mental Accounting: The legend of the man in the green bathrobe

By the third day of their honeymoon in Las Vegas, the newlyweds had lost their $1,000 gambling allowance. That night in bed, the groom noticed a glowing object on the dresser. Upon inspection, he realized it was a $5 chip they had saved as a souvenir. Strangely, the number 17 was flashing on the chip's face. Taking this as an omen, he donned his green bathrobe and rushed down to the roulette tables, where he placed the $5 chip on the square marked 17. Sure enough, the ball hit 17 and the 35-to-1 bet paid $175. He let his winnings ride, and once again the little ball landed on 17, paying $6,125. And so it went, until the lucky groom was about to wager $7.5 million. Unfortunately the floor manager intervened, claiming that the casino didn't have the money to pay should 17 hit again. Undaunted, the groom took a taxi to a better-financed casino downtown. Once again he bet it all on 17 – and once again it hit, paying more than $262 million. Ecstatic, he let his millions ride – only to lose it all when the ball fell on 18. With no money for a taxi, the groom walked the several miles back to his hotel.

"Where were you?" asked his bride as he entered their room.

"Playing roulette."

"How did you do?"

"Not bad. I lost five dollars."

- What "error" did the man in the green bathrobe make, when thinking about his winnings (and ultimate loss)?
- Why is the bathrobe green?

Please try to answer these questions before moving on

Mental Accounting: The legend of the man in the green bathrobe

- What "error" did the man in the green bathrobe make, when thinking about his winnings (and ultimate loss)?

  He did not "update his reference point" for wealth with each win. He experienced a bias that we call the "House Money" effect, where he felt that the money he had won was not really his (in some way, it still belonged to the casino – i.e., the "house"), and therefore it meant less to him than if he had "earned" the money. Hence he was more willing to gamble with the winnings. Casinos are well aware of this effect, and do everything they can to reinforce it; for example, by using colored chips that don't look like "real" money (and by keeping the alcohol flowing!)

  In reality, of course, the winnings were just as much his as if he had earned them over decades of hard work, and he should have perceived them as such, rather than viewing them as somehow less valuable.

- Why is the bathrobe green?

  We've discussed previously that stories with more salient detail tend to be more memorable. Thus we give the groom a bathrobe of the same color that we associate with money ("greenbacks").

Mental Accounting and the House Money effect

Consider the following two options (read carefully!):

1. You can either accept a guaranteed $1,500, or play a stylized lottery. The outcome of the stylized lottery is determined by the toss of a fair coin. If heads, you win $1,950. If tails, you win $1,050.

   Would you choose to participate in the lottery, or take the guaranteed $1,500?

2. You can either accept a guaranteed loss of $750, or play a stylized lottery. The outcome of the stylized lottery is determined by the toss of a fair coin. If heads, you lose $525. If tails, you lose $975.

   Would you choose to participate in the lottery, or pay the $750 to avoid the lottery?

Please note whether you will participate in the lottery in Option 1, and similarly in Option 2

Mental Accounting and the House Money effect

Consider the following two options (again, read carefully):

3. Imagine that you have just won $1,500 in one stylized lottery, and have the opportunity to participate in a *second* lottery. In this lottery, you will win $450 if heads comes up, but lose $450 if tails comes up.

   Would you choose to participate in the *second* lottery after having already won $1,500 the first?

4. You have just *lost* $750 in one stylized lottery, and have the opportunity to participate in a *second* lottery, in which you will win $225 if heads comes up, and lose $225 if tails comes up.

   Would you choose to participate in this second lottery after having lost $750 in the first one?

Please note whether or not you will participate in the second lottery in Option 3, and again in Option 4.

Mental Accounting and the House Money effect: Discussion

- Options 1 and 3 are the same. Both result in either a guaranteed $1,500 if you don't play the lottery, or a 50-50 chance of either $1,950 or $1,050 if you do.
- Similarly Options 2 and 4.
- Did you change your preferences? Many respondents choose NOT to participate in Option 1, but DO participate in Option 3. Similarly, they DO participate in Option 2, but do NOT participate in Option 4.

Even if you personally did not flip your preferences, think about why many respondents make the selections described above.

Mental Accounting:
Personal Expenditures

Question 1

Imagine you have decided to see a play where admission is $60 per ticket. As you enter the theater you discover that you have lost $60 (although you still have enough money in your wallet to purchase the ticket). Would you still pay $60 for a ticket to the play?

Question 2

Imagine you have decided to see a play and paid the admission price of $60 per ticket. As you enter the theater you discover that you have lost the ticket. Would you pay $60 for another ticket?

Please make a note of your answer to both questions before moving on

Mental Accounting:

Personal Expenditures

Question 1

Imagine you have decided to see a play where admission is $60 per ticket. As you enter the theater you discover that you have lost $60 (although you still have enough money in your wallet to purchase the ticket). Would you still pay $60 for a ticket to the play?

Question 2

Imagine you have decided to see a play and paid the admission price of $60 per ticket. As you enter the theater you discover that you have lost the ticket. Would you pay $60 for another ticket?

Did you choose to pay for the ticket in Question 1, but not in Question 2? On the face of it, both scenarios involve the discovery that you are $60 poorer than you thought you were. So why do many people choose differently in the two settings?

Here's why: we are inclined to set up "mental budgets" for different types of discretionary expenditure (food, clothing, entertainment, etc.) In the first scenario, even though you realize you have lost some money, it wasn't from your "entertainment" budget so you are willing to buy the ticket anyway. But when it's the ticket itself that has gone missing, you are much more inclined to feel as though you would be paying $120 for the show if you buy another ticket – and this feels like too much for this month's "entertainment budget."

Mental Accounting and Bundling Expenditures:
Discussion

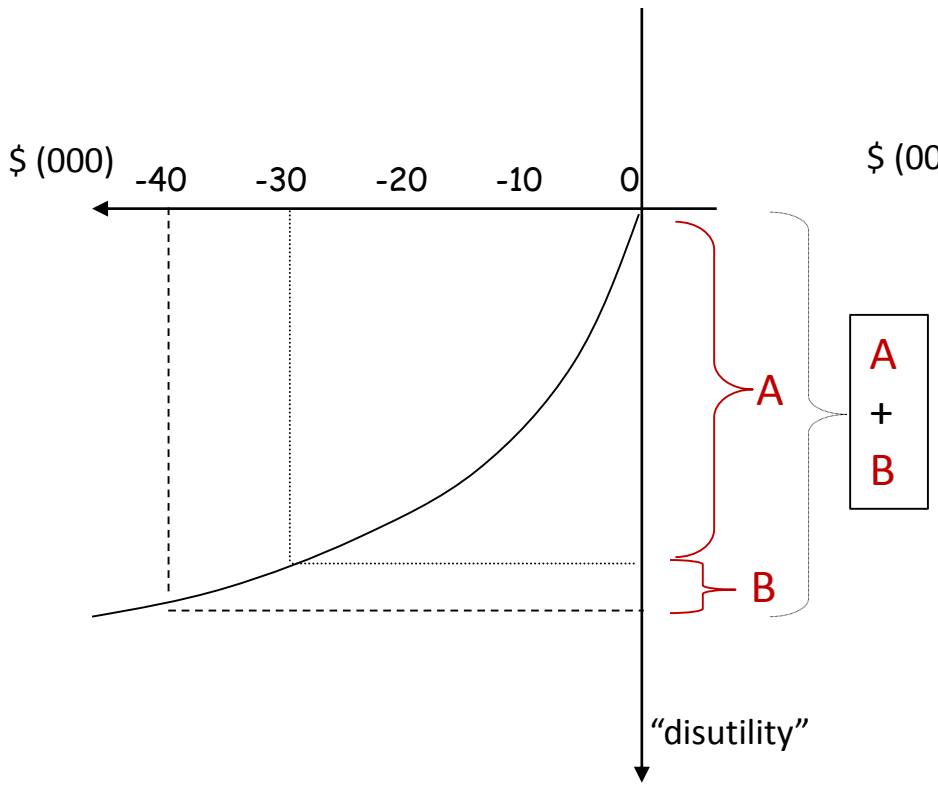
See the Lecture: Mental Accounting & Expenditures

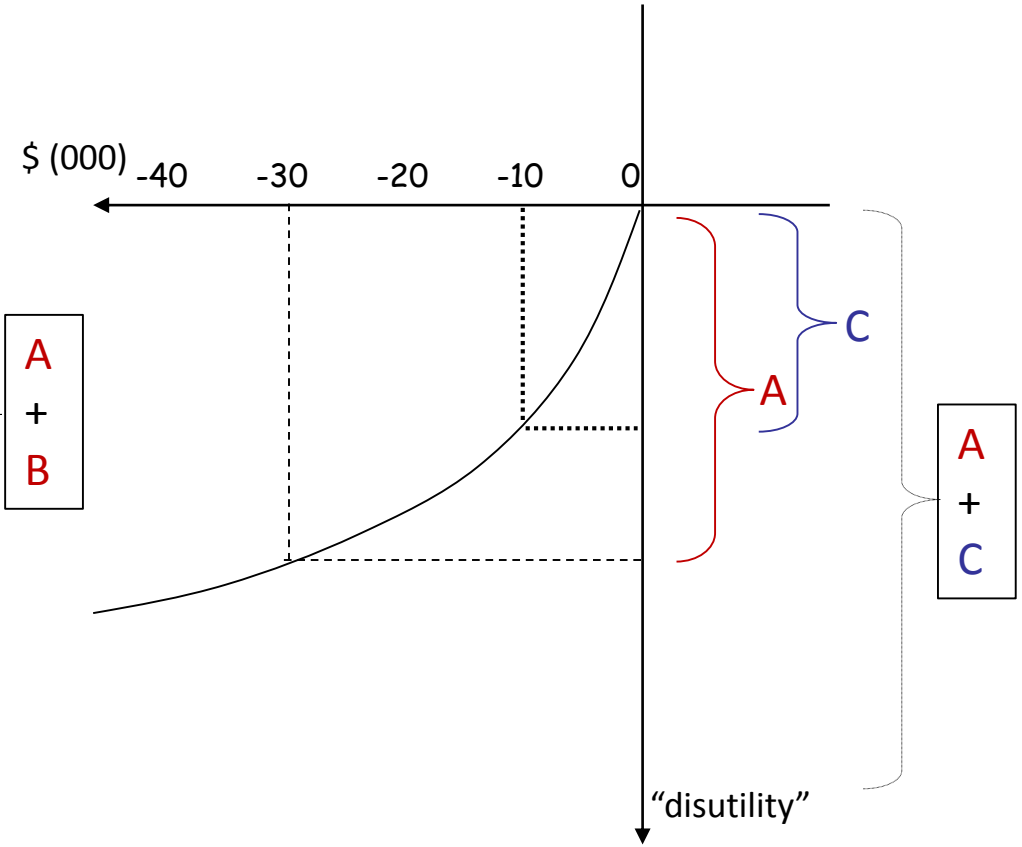
- When we make large expenditures, such as on a house or a car, we will more readily add on expensive optional items that we would never normally purchase on their own

- Car salesmen understand this very well, and will tack on all sorts of additional items – various insurance policies, extra gizmos – because $500 or so seems small relative to the cost of the $35,000 car

- On the other hand, this bias can work in your favor. When purchasing a new home, the "sticker shock" of all the furniture you now need will be much lower if you go to the furniture store very soon after the house is purchased. Next to a $300,000 home, a few thousand dollars on furniture feels minimal…

Mental Accounting and Bundling Expenditures: A Prospect Theory Explanation





Following a $30,000 purchase, an incremental $10,000, if spent right away, feels small when it's lumped in with the original $30,000: a total "disutility" of **A** + **B**

But if you "unbundle" the two purchases, so that the $30,000 and $10,000 are experienced at separate times, the **combined** disutility of **A** + **C** has much greater impact

Mental Accounting and Insurance

- Next time you purchase an **electronics** item, notice how the store always offers you product insurance

  - They want you to "bundle" the cost of the insurance along with the item
  - Electronics stores make some of their biggest margins on product insurance, rather than on the products themselves
  - As an insurance provider, they know better than you do how likely it is that the item will break – and of course they charge you more than the insurance is worth (assuming that you are not an excessively clumsy individual)
  - If you *never* buy product insurance, you'll save more than enough money over your lifetime to cover the cost of replacing the occasional broken item

- So when *should* you buy insurance?
  - When the item is sufficiently valuable/expensive that having to pay for the insured item/service on your own would cause you excessive hardship (your house; car; medical bills)

- When you *do* need to purchase insurance, there are often options with different "deductibles". Which deductible should you select for your policy?

What about insurance "deductibles". Should you pick the highest or lowest deductible?

Mental Accounting and Portfolio Diversification

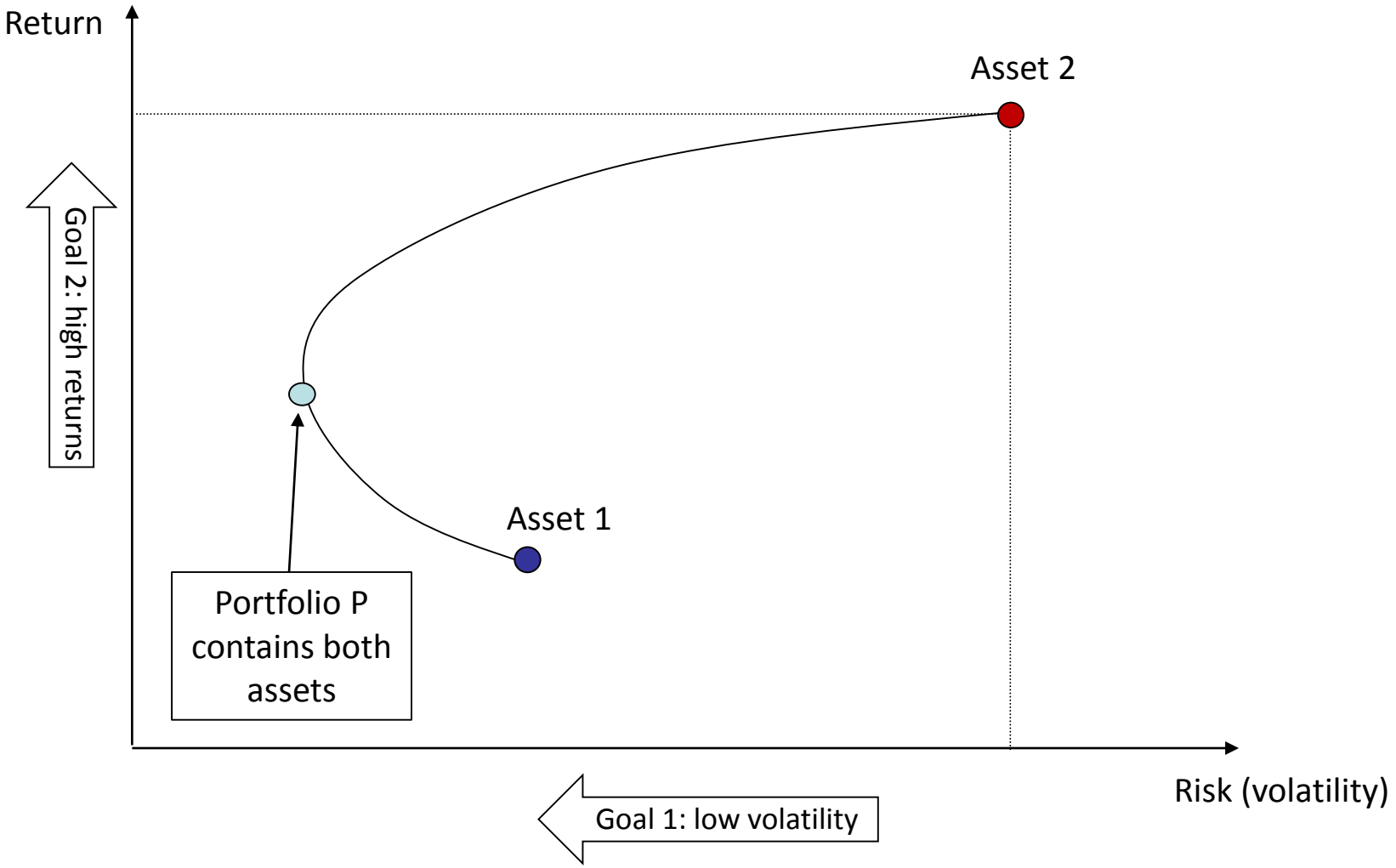
- One of the most important rules of investing is diversification: purchasing a broad range of financial assets that are not strongly correlated has the benefit of making our overall portfolio less volatile. “Don’t put all your eggs into one basket”

- The following graph provides an example of how, with the combination of just *two* different assets, an investor may be able to achieve a portfolio with a better risk-return profile than investing in either asset by itself.

- The graph on the next slide shows the expected return of assets 1 & 2 on the vertical axis, and their expected volatility (i.e., risk) on the horizontal axis.
    - Investors would like returns to be as high as possible, and volatility to be as low as possible – they would like to follow the direction of the two arrows
    - If Assets 1 & 2 are not strongly correlated, investors will be able to create portfolios with risk-return profiles that lie along the curve between the two assets by putting some of their money in each Asset
    - Portfolio P, for example, has a lower volatility than either Asset 1 or Asset 2 on their own. It also has a higher expected return than Asset 1

- As an example, an investor may hold in her portfolio a combination of both equities and bonds, on the basis that these two assets are not highly correlated, and may sometimes counterbalance one another.

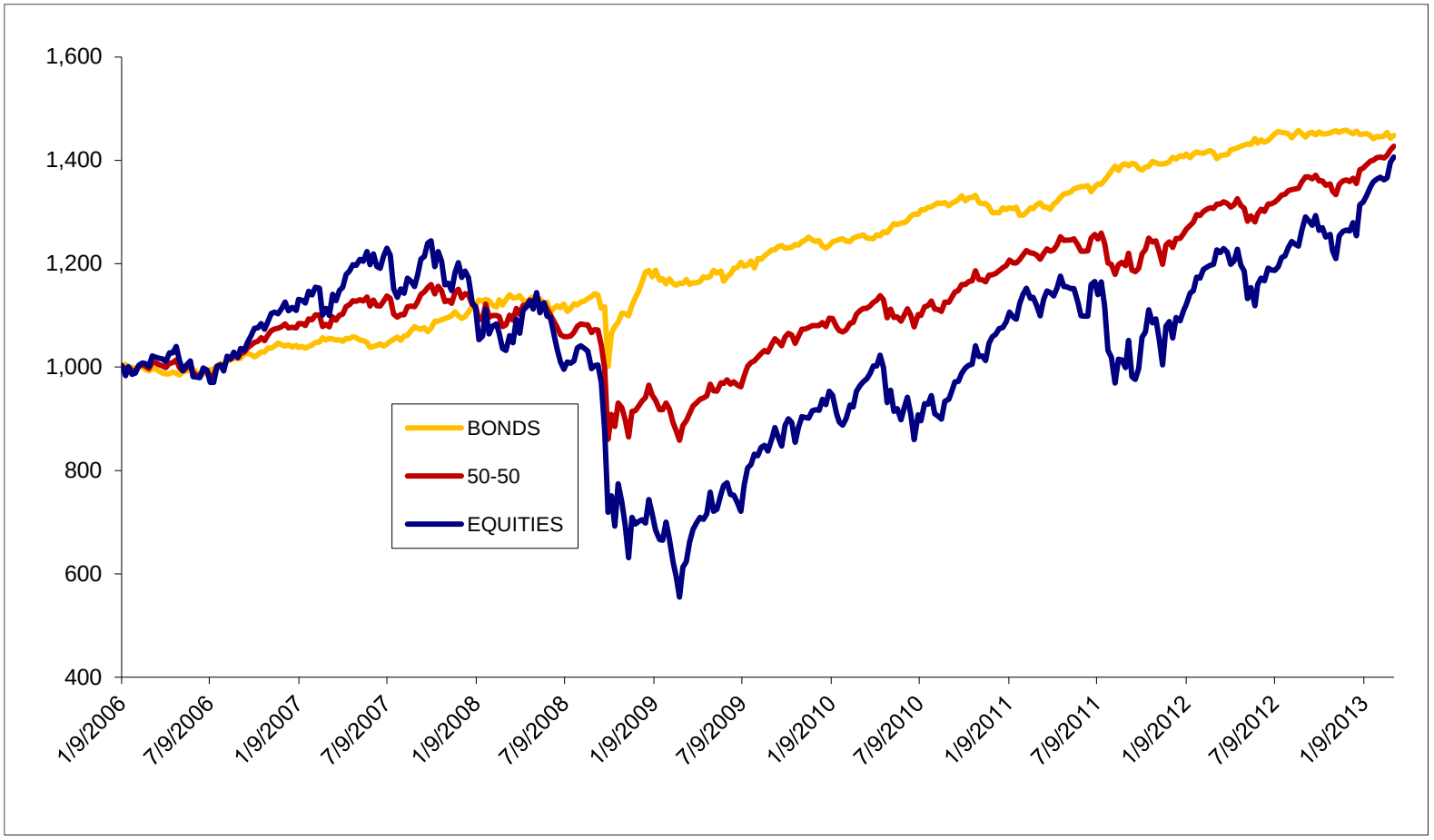
Mental Accounting and Portfolio Diversification



Mental Accounting & Portfolio Diversification

An example with US Equities & Government bonds

This graph shows the actual returns that an investor would have earned by investing $1,000 in either US Equities, US Government Bonds, or an equally-weighted combination of the two, from January 2006 – January 2013.



Mental Accounting & Portfolio Diversification

An example with US Equities & Government bonds

- Suppose you had invested $1,000 in equities, and $1,000 in bonds, in 2006.
- If you watched the two portfolios separately, you would have seen the value of your equity portfolio drop to about $550 by March 2009 (see the blue line on the graph) – a time when many investors could take no more losses and gave up on their equity portfolios, selling everything.
- Meanwhile, however, your *bond* portfolio was up to about $1,180; by no means covering the equity losses, but at least providing some cushion. Your *combined* portfolio is down far less (see the "50-50" line on the graph).
- By watching the two investments as a single portfolio, and not falling prey to "mental accounting" (the tendency to treat the bonds and equities as two separate investments), you are taking advantage of diversification, and you don't end up selling your equities after they have already fallen dramatically.
- As you can see from the graph, if you hold both portfolios through 2013, the value of the combined portfolio shows much lower gyrations, and leaves you with about the same amount of money as you would ultimately have earned from either asset by itself.
- An investor who looks at each investment separately, and decides to exit the equity markets in 2009, is missing the very point of why the equities are in his portfolio; he also misses out on the huge equity rally from March 2009 onwards…

Loss Aversion and the Endowment Effect

See the Lecture: Loss Aversion

Endowment Effect

- Once we own an item, we tend to view it as more valuable
- We have a preference for holding on what belongs to us
- We infer that the item has a greater value when it is ours

The Endowment Effect is related to:

- Status Quo bias: we like things the way they are (so what we own stays in our possession)
- Loss aversion: we assign greater negative weight to losses than positive weight to equivalent-sized gains

Loss Aversion and the Disposition Effect

- When we hold assets that are currently priced below where we purchased them, we don't want to *realize* the loss.
- For as long as they are just a loss "on paper", it's somehow not "official"
- Remember that in many cases it can be beneficial to sell losses, either because they are poor investments, or for the tax protection the sale provides (remember the Golden Rules of Investing from Section 2)

Loss Aversion and the Endowment Effect

Why are retailers often willing to let you purchase an item "on trial", or return it for a full refund?

(1) The Endowment effect: once you've taken it home, it becomes "yours" and therefore you assign it higher value (e.g., a rug, a painting)

(2) The Status Quo bias and Inertia: the effort of taking it back to the store can kick in too

The Status Quo bias has evolutionary roots:

- Our ancestors on the savannah knew that the red berries were safe to eat, but they were becoming boring
- They come across some blue berries, which look appetizing but could be poisonous
- Status quo bias suggests that we are more likely to be descended from the individuals who let someone else try the blue berries first!

Anchoring:
Estimation of Accounting Fraud

The following text was given to a number of auditors from the Big Four accounting firms, who were then asked to respond to the questions.

It is well known that many cases of management fraud go undetected even when competent annual audits are performed. The reason, of course, is that Generally Accepted Accounting Standards are not designed specifically to detect executive-level management fraud. We are interested in obtaining an estimate from practicing auditors of the prevalence of executive-level management fraud as a first step in ascertaining the scope of the problem.

1. Based on your audit experience, is the incidence of significant executive-level management fraud more than 200 in each 1,000 firms (that is, 20%) audited by Big Four accounting firms?
2. What is your estimate of the number of Big Four clients per 1,000 that have significant executive-level management fraud? _____

Anchoring:
Estimation of Accounting Fraud

Meanwhile, the same text was given to another group of Big Four auditors, but with one of the questions slightly altered.

It is well known that many cases of management fraud go undetected even when competent annual audits are performed. The reason, of course, is that Generally Accepted Accounting Standards are not designed specifically to detect executive-level management fraud. We are interested in obtaining an estimate from practicing auditors of the prevalence of executive-level management fraud as a first step in ascertaining the scope of the problem.

1. Based on your audit experience, is the incidence of significant executive-level management fraud more than 10 in each 1,000 firms (that is, 1%) audited by Big Four accounting firms?
2. What is your estimate of the number of Big Four clients per 1,000 that have significant executive-level management fraud? _____

Did you spot the difference in Question 1?

Anchoring:
Estimation of Accounting Fraud

1. Based on your audit experience, is the incidence of significant executive-level management fraud more than 200 in each 1,000 firms (that is, 20%) audited by Big Four accounting firms?

2. What is your estimate of the number of Big Four clients per 1,000 that have significant executive-level management fraud?

Q2: Average Response: 43 per 1,0000

1. Based on your audit experience, is the incidence of significant executive-level management fraud more than 10 in each 1,000 firms (that is, 1%) audited by Big Four accounting firms?

2. What is your estimate of the number of Big Four clients per 1,000 that have significant executive-level management fraud?

Q2: Average Response: 16 per 1,0000

Despite their audit experience, the auditors fell prey to "anchoring." The number given in the first question (200 in one case, but only 10 in the other) subconsciously influenced their estimate for the second question.

Neither the 20% nor the 1% were based on any meaningful statistics. Nonetheless, the auditors' responses were affected by the numbers.

Anchoring & House Prices

- "Anchoring", the inclination to rely heavily on the first data point that we receive when making decisions, is another consistent framing bias.

- Another classic scenario is with regard to house prices.
  - Regardless of any recent movements in house prices in their area, many home owners refuse to set a selling price on their home that is lower than where they bought it
  - Surprisingly, the market does not always fully correct this error: sellers facing a possible loss do in fact transact at statistically higher prices than other sellers (although lower than the seller's initial offer price)
  - Anchoring can affect the buyer as well, who may anchor on the initial (high) offer price
  - This type of "sticky" price behavior is more common in markets where pricing is opaque and there are relatively few comparison transactions.

Anchoring & Automobile Purchases

When consumers "anchor" on a particular make of car, and always purchase the same make, they tend to pay a lot more, on average, than automobile buyers who are willing to switch brands.

- Most products come with a non-negotiable price. Car buying, however, is a game best played by talented negotiators who are willing to barter with the salesman.

- If you know you are going to buy a Honda, say, you are a much easier "mark" for the skilled salesman: his only job is to get you to buy as many expensive accessories as possible (by preying on your propensity to fall for mental accounting and "bundling").

Anchoring & Brand Loyalty

Why do companies spend billions to advertise their products?

- The Availability heuristic: the more you hear about it, the more familiar it becomes

- Anchoring: The company wants to "anchor" its product in your mind

- Status quo bias: once you have developed a bias for a particular brand, you are less inclined to "comparison shop"; you simply go with the brand you know

    - Individuals who prefer a certain make of cars will tend to pay more for their car than someone switching from another brand
    - This effect tends to be stronger for automobile purchases than for other expensive, branded products – why?

Try to answer this question before moving on

Framing & Tax Policy
Case A

US income tax laws permit families to take a tax deduction per dependent (e.g., a child), regardless of the family's total income.

The question has been raised as to whether it would be better to allow wealthy families to take larger tax deductions per child. Wealthy families, after all, spend more on their children than do poor families, and the amount of money that it costs for wealthy families to have children is much higher than the amount it costs poor families.

Based on this analysis, would you vote in favor of higher child tax deductions for wealthier families?

Please make a note of whether you answered YES or NO to this question before moving on

Framing & Tax Policy
Case B

US income tax laws permit families to take a tax deduction per dependent (e.g., a child), regardless of the family's total income.

The question has been raised as to whether it would be better to reformulate tax laws so that, instead of *deducting* the cost of children from a tax schedule based on childless families, a "childless premium" were *added* to a tax schedule that assumed the typical family had two or three children.

In other words, suppose childless families were charged "extra" taxes (instead of giving families with children a tax break). Should a poor family without children pay just as high a premium as a wealthy family without children?

Please make a note of whether you answered YES or NO to this question before moving on

Framing & Tax Policy
Discussion

In the first example, did you vote NO for higher child tax deductions for wealthy families?

- If so, then you have voted in favor of *all* families continuing with a fixed deduction per child.

In the second example, did you vote NO for just as high a "childless premium" for poor families as for wealthy families?

- If so, you have voted in favor of *poor* families paying a *smaller* increase for being childless than rich families must pay.
- This is equivalent to permitting *wealthy* families with children to take a *greater deduction* per child than poor families…
- But you voted NO in the first situation, indicating that you were NOT in favor of wealthy families taking a higher deduction than poor ones!

Framing & Tax Policy
Discussion

Did you vote "NO" in both cases? Confused? Let's work through a numerical example. We'll make the following assumptions about the deductions and premiums:

In Case A, let's say all families get a $4,000 deduction per child, regardless of income level.

In Case B, let's assume that wealthy families must pay a $4,000 premium if they are childless, while poor families need only pay a $2,000 premium if they are childless.

Thus, in Case B, wealthy families with a child pay $4,000 less tax than wealthy families without a child. But meanwhile, poor families with a child pay only $2,000 less tax than poor families that are childless.

So wealthy families are getting a bigger child tax *deduction* than poor families. But you voted *against* this in Case A…

This is classic framing – the way in which a decision is presented to us can dramatically influence our response. Can you think of some examples from your own experience, where a change in "frame" is likely to cause respondents to "flip their preferences" in this way?

Money Illusion

Consider two individuals, Ann and Barbara, who graduated from the same college a year apart. Upon graduation, both took similar jobs with publishing firms. Ann started with a yearly salary of $50,000. During her first year on the job, there was no inflation, and in her second year, Ann received a 2% ($1,000) raise in salary. Barbara also started with a yearly salary of $50,000. During her first year on the job, there was 4% inflation, and in her second year, Barbara received a 5% ($2,500) increase in salary.

a. As they entered their second year on the job, who was doing better in economic terms, Ann or Barbara?

b. As they entered their second year on the job, who do you think was happier, Ann or Barbara?

Please make a note of your answers to these questions

Money Illusion

Consider two individuals, Ann and Barbara, who graduated from the same college a year apart. Upon graduation, both took similar jobs with publishing firms. Ann started with a yearly salary of $50,000. During her first year on the job, there was no inflation, and in her second year, Ann received a 2% ($1,000) raise in salary. Barbara also started with a yearly salary of $50,000. During her first year on the job, there was 4% inflation, and in her second year, Barbara received a 5% ($2,500) increase in salary.

a. As they entered their second year on the job, who was doing better in economic terms, Ann or Barbara?

Clearly Ann is doing better: her 2% raise is a genuine 2% increase in spending power. Barbara's 5% raise, in a 4% inflation environment, is only a 1% "real" increase.

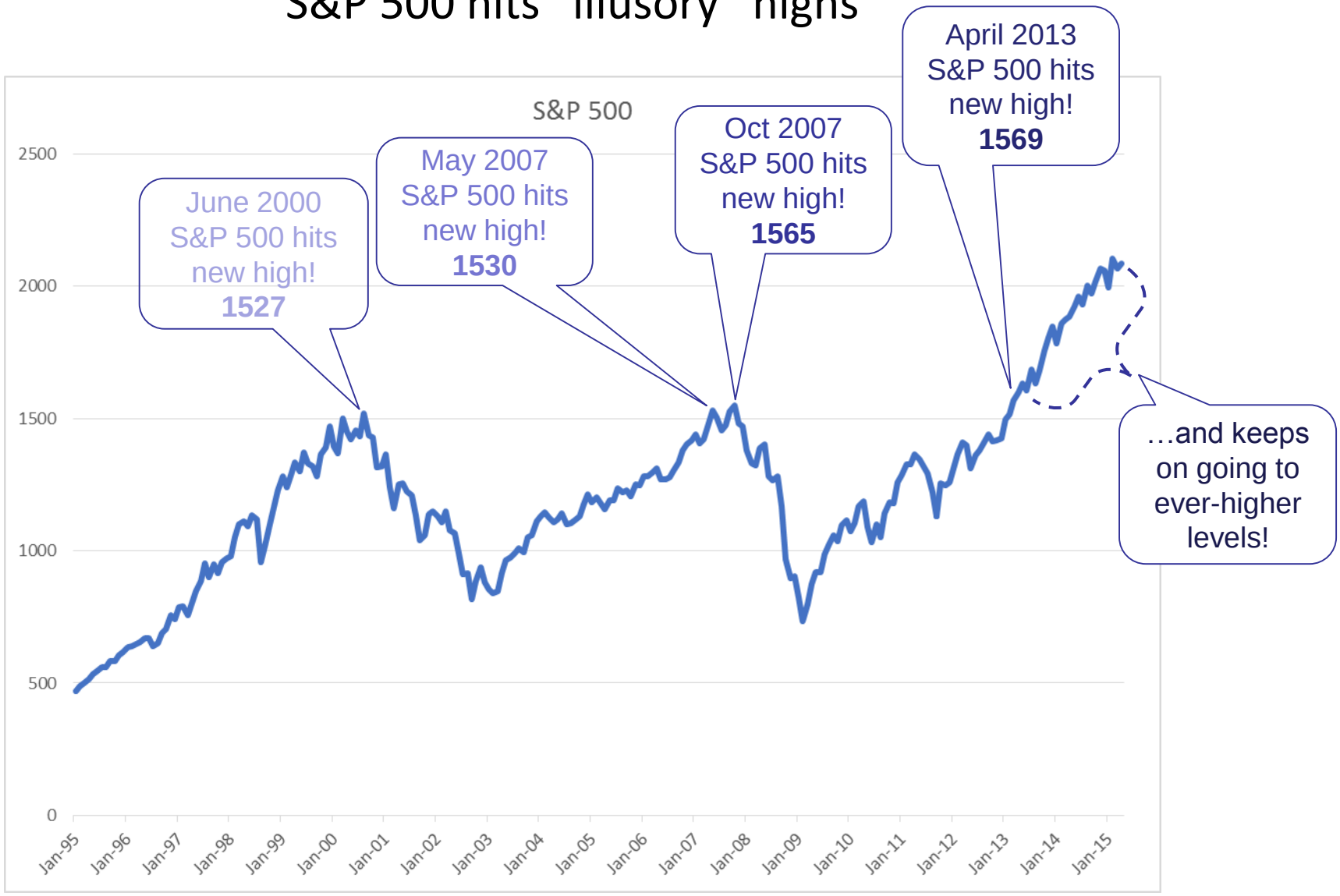
b. As they entered their second year on the job, who do you think was happier, Ann or Barbara?

Most of us assume that Barbara is happier, because she doesn't take inflation into account when evaluating her raise.

As a general rule, many of us fail to adjust for inflation, including when we watch the financial news…

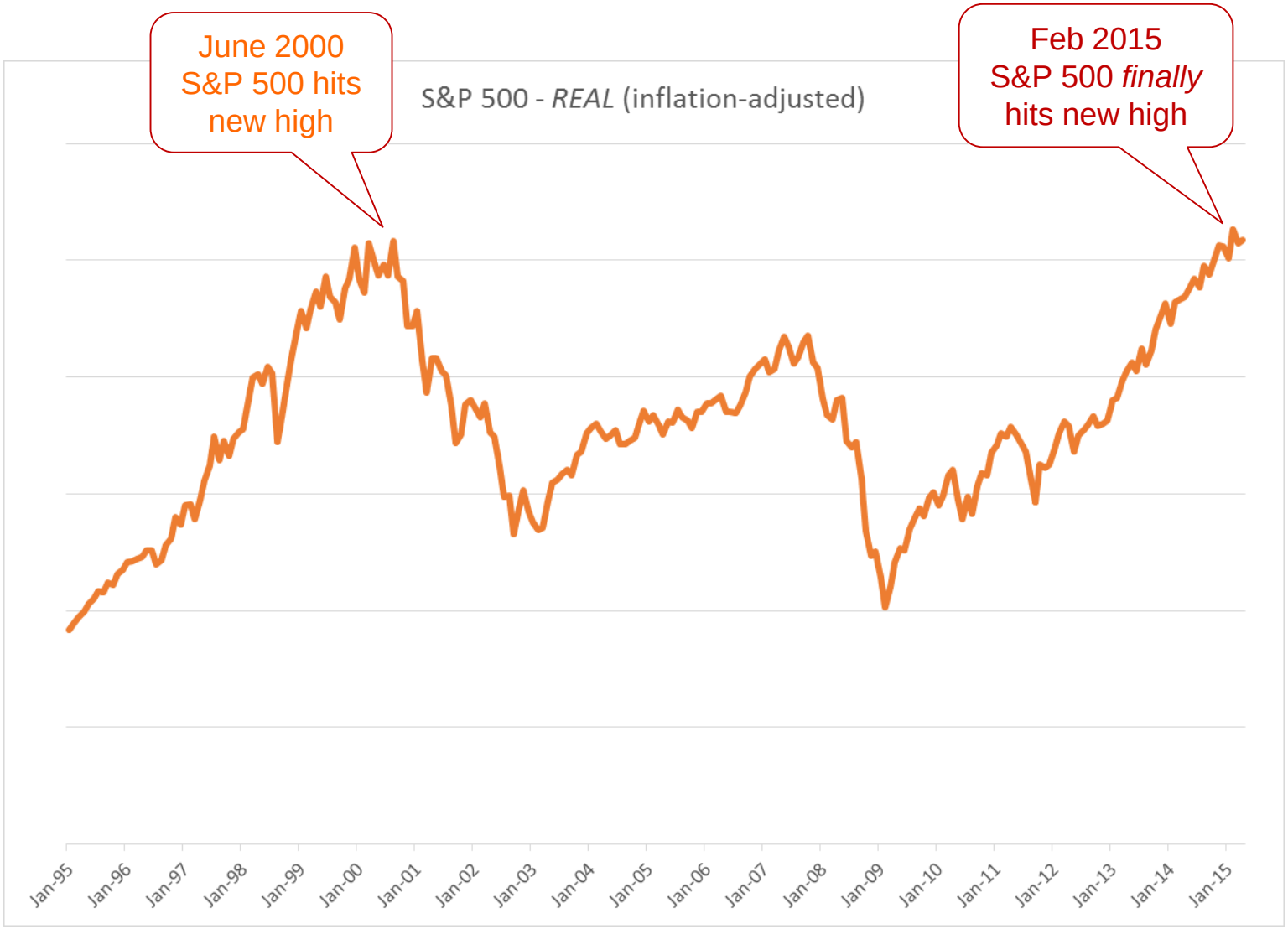
Money Illusion

S&P 500 hits "illusory" highs



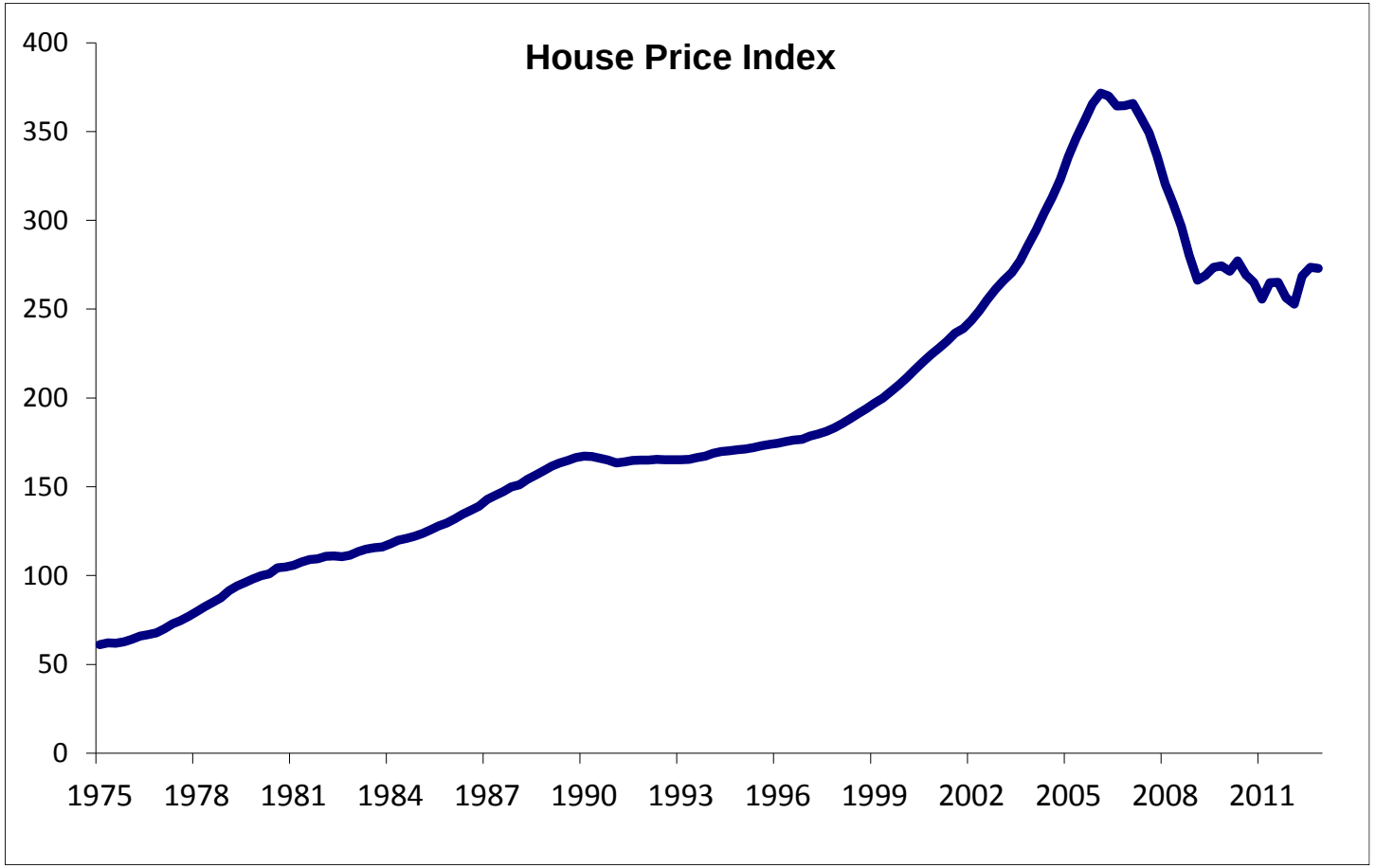
Money Illusion

S&P in "Real" (inflation-adjusted) terms



Money Illusion

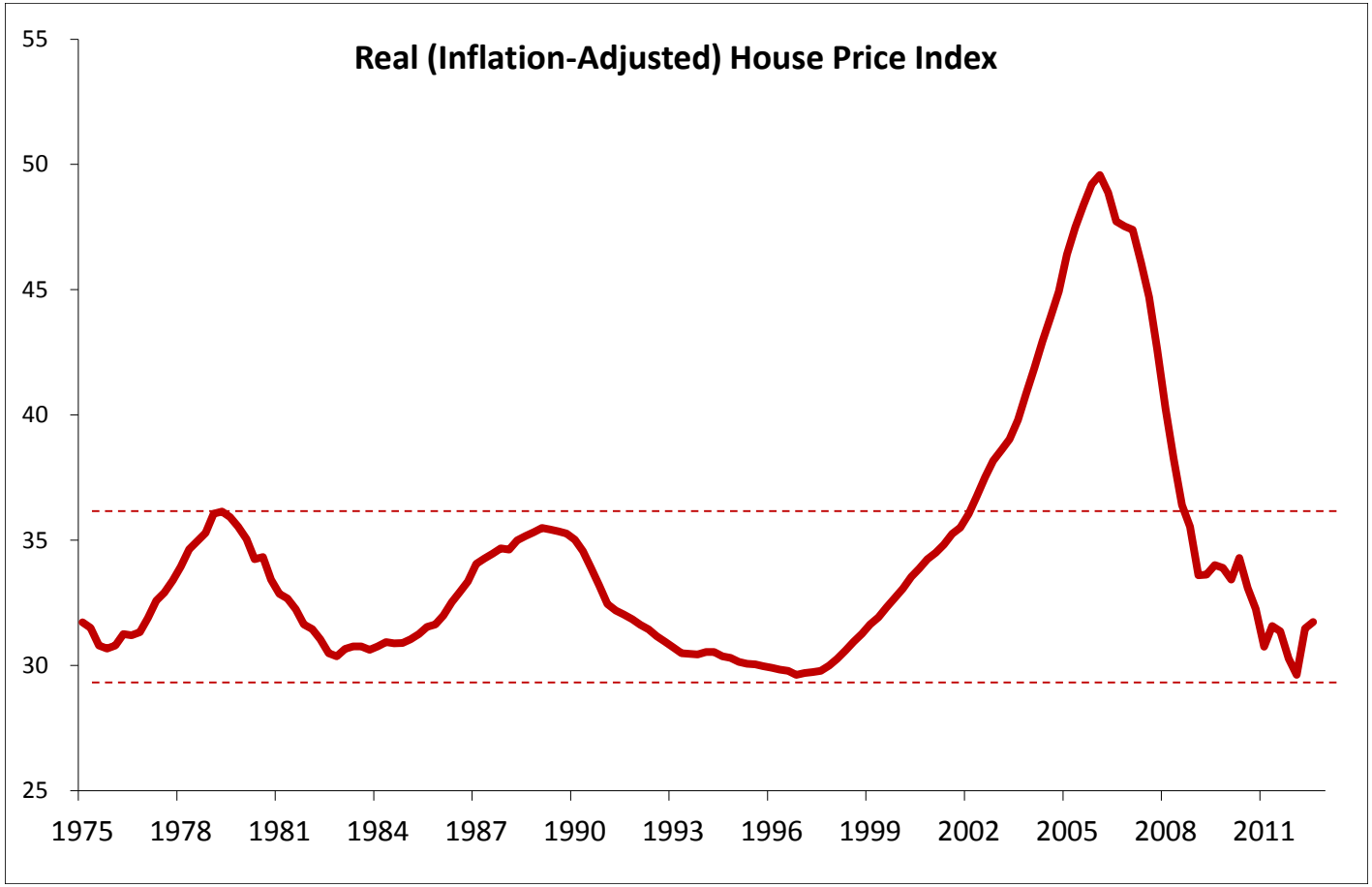
US House Prices



Remember our earlier discussion about US house prices? Prior to the credit crisis, people believed that we would never see the entire US housing market sell off, because no one had seen it before…

Money Illusion

US House Prices in "Real" terms



…but if we adjust for inflation, we observe that house prices appear rather more cyclical than everyone believed – until the housing market broke out of the cycle in 2002. When we look at the chart in real terms, there is a much clearer sense of a price "bubble".

Difficult Business Decisions

A large car manufacturer has recently been hit with a number of economic difficulties, and it appears as if three plants need to be closed and 6,000 employees laid off. The vice-president of production has been exploring alternative ways to avoid this crisis. She has developed two plans:

- *Plan C*: This plan will result in the loss of two of the three plants and 4,000 jobs.
- *Plan D*: This plan has a 2/3 probability of resulting in the loss of all three plants and all 6,000 jobs, but has a 1/3 probability of losing no plants and no jobs.

Please make a note of whether you prefer Plan C or Plan D before moving on

Difficult Business Decisions

A large car manufacturer has recently been hit with a number of economic difficulties, and it appears as if three plants need to be closed and 6,000 employees laid off. The vice-president of production has been exploring alternative ways to avoid this crisis.

Did you notice that you've seen this Business Decision twice during this section? The two potential solutions were the same in both cases, but they were presented slightly differently:

- *Plan A*: This plan will save one of the three plants and 2,000 jobs.
- *Plan B*: This plan has a 1/3 probability of saving all three plants and all 6,000 jobs, but has a 2/3 probability of saving no plants and no jobs.

- *Plan C*: This plan will result in the loss of two of the three plants and 4,000 jobs.
- *Plan D*: This plan has a 2/3 probability of resulting in the loss of all three plants and all 6,000 jobs, but has a 1/3 probability of losing no plants and no jobs.

Difficult Business Decisions
Debrief

- *Plan A*: This plan will save one of the three plants and 2,000 jobs.
- *Plan B*: This plan has a 1/3 probability of saving all three plants and all 6,000 jobs, but has a 2/3 probability of saving no plants and no jobs.

- *Plan C*: This plan will result in the loss of two of the three plants and 4,000 jobs.
- *Plan D*: This plan has a 2/3 probability of resulting in the loss of all three plants and all 6,000 jobs, but has a 1/3 probability of losing no plants and no jobs.

Many people select Plan A in the first case, and Plan D in the second. Did you? If so, your preferences "switched":

- Plans A and C are identical, but are "framed" differently
  - Program A is given in terms of jobs *saved*
  - Program C is given in terms of jobs *lost*

- The same applies to programs B and D

Options framed in terms of gains versus losses are treated differently, and can cause people to "flip" their preferences. People are typically prepared to gamble to avoid losses, but become risk-averse in the context of gains.

Highway Safety

Imagine that you are advising a small town about a highway safety program. At present, about 600 people per year are killed in traffic accidents in this town. Two programs designed to reduce this number are under consideration.

Program A is expected to reduce the yearly number of casualties by 30, at a cost of $12 million.

Program C is expected to reduce the yearly number of casualties by 100.

At what cost for program C would you be indifferent between the two programs? Please indicate the cost (to the nearest $1 million).

Please make a note of your answer before moving on

Highway Safety

Imagine that you are advising a small town about a highway safety program. At present, about 600 people per year are killed in traffic accidents in this town. Two programs designed to reduce this number are under consideration.

You've also seen this situation twice – but your second option has been a little different in the two cases

Program A is expected to reduce the yearly number of casualties 30; its annual cost is estimated at $12 million.

Program B is expected to reduce the yearly number of casualties by 100; its annual cost is estimated at $55 million.

Program A is expected to reduce the yearly number of casualties by 30, at a cost of $12 million.

Program C is expected to reduce the yearly number of casualties by 100. At what cost for program C would you be indifferent between the two programs?

Preference Reversals

Highway Safety Debrief

Program A is expected to reduce the yearly number of casualties 30; its annual cost is estimated at $12 million.

Program B is expected to reduce the yearly number of casualties by 100; its annual cost is estimated at $55 million.

Program A is expected to reduce the yearly number of casualties by 30, at a cost of $12 million.

Program C is expected to reduce the yearly number of casualties by 100. At what cost for program C would you be indifferent between the two programs?

Between A & B, many people select Program B because it projects to save more lives, even though the cost per life is somewhat greater.

However, when asked at what price for Program C they would be indifferent between the two programs, most respondents suggest an amount considerably lower than $55 million, suggesting that they prefer Program A.

Why? Because *choosing* and *pricing* are different psychological processes.

- When we are simply *choosing* between options, the choice is not dollar-based. There is no implicit scaling between the two: it's simply A vs B
- When we are asked to put a dollar equivalent on a bet, however, the payoffs (which are also expressed in dollars) will be weighed more heavily.

How framing “tricks” increased cabbie tips!

Have you taken a cab in Manhattan in the last few years, and paid with a credit card? As you clicked hurriedly through the payment screens, did you notice the available options for the size of your tip? What do you think of as a “reasonable” tip for your cab driver? 10% of the total fare? Maybe 15%?

By the time we’re paying at the end of a cab ride, most of us are rushing to finish the process and exit the cab – especially in Manhattan, where we are well aware (from all the honking) that we’re holding up traffic behind us.

So, the last time you paid by credit card in Manhattan, did you notice that the *suggested* tips on the computer screen are 25%, 30%, and 35% of the cab fare? Of course, you have the option to *replace* these with your own (probably smaller) amount – but it’s much quicker just to click one of these available options. And if you’re paying by credit card, there’s a good chance that it’s on your company’s dime anyway, so you probably aren’t especially sensitive to the size of the tip. Chances are you just selected the middle option by default, thus paying 30% where, left to your own devices, you might only have paid 15%.

The taxi and limousine company of Manhattan is taking advantage of both *framing* and *impatience* to subtly realign your view of “normal” tip sizes.

Section Summary

In this section, we have learned:

- How ubiquitous “framing” effects are, and the many areas (including regulation and finance) in which they have an impact on our decision-making
- Why the combination of framing, the “Endowment Effect,” Loss Aversion and the “Status Quo bias” all affect the value that we assign to different items, depending on whether or not we already own them
- The implications of Mental Accounting, and the need to fight our natural inclination to treat certain categories of money as having different “values” than others (i.e., we are inclined to ignore the fact that all money is completely fungible)
- How mental accounting can affect your decisions about matters as significant as whether or not to buy insurance, and even how you allocate your pension portfolio
- The impact of Anchoring, especially for products with opaque or negotiable prices, and why the initial offer to buy or sell strongly influences the ultimate trade price.