



# *Q1-2022: Backwards Down the Number Line*

The McConachie Team – Quarterly Educational Piece

## Introduction:

In the McConachie Team educational update Q4-2021, we discussed interest rates, different approaches to equity valuation, and central bank policies. These are some of the large parts of what make up a market. These different components, along with many others, affect market sentiment and outcomes. Please see Appendix (1) for additional information on these subjects covered in the last quarterly educational update.

How humans react to these different components, or “changes to” these components, has a large impact on the market as well. In the previous piece, we discussed how the historical record (the past) is used by market participants to better understand the present, to in turn make predictions about the future.

In this quarter’s educational update, we will explore another large part of what makes up a market: human behavior.

## Behavior and Biases:

Human behavior is another big part of the market and in this 1Q-22 McConachie Team educational update, we will discuss cognitive bias in decision making, including three common heuristics: representativeness, availability bias and anchoring, as well as the prospect theory and the four-fold pattern in Appendix (2).

A heuristic is defined as a mental short cut or an efficient thinking strategy that helps us make decisions quickly. An example of a heuristic is a person walking down a sidewalk in a large city. They suddenly encounter a large piece of furniture, hanging from a rope, that is being moved into the 3<sup>rd</sup> story of an apartment building above, and in their direct path.

Most humans will simply walk around the area of which the furniture is hanging without much, or any, analytical rigor in such a decision. We simply don’t have the time to stop, crunch the numbers, measure the risk of the “thing” falling, the potential impact or damage caused to us if the furniture fell, and simply make the decision to exert the extra energy to go around the area. An easy decision when it keeps us “safe”.

In most cases these heuristics are helpful and beneficial, but sometimes they can lead to errors in judgement. Humans are bombarded with information in the modern era. Sorting through this wide set of information enacts humans to rely on cognitive biases (shortcuts) to make thousands of decisions every day.

Daniel Kahneman, Nobel Prize winner in Economics 2002 ([nobelprize.org](http://nobelprize.org)), and author of the book *Thinking, fast and slow* (Kahneman, 2011), was one of the first to combine the social sciences with traditional economic theories. Kahneman, a psychologist by trade, was the first to challenge the neoclassical economic theories that are based on “rational decision” making. Kahneman and Tversky (co-researcher and writer) concluded that humans regularly make miscalculations when managing “risk” and the main cause is efficient thinking strategies or cognitive biases.

**Representativeness** bias is a heuristic where humans use a mental short cut to connect two things that may not be related. Using past observations or experiences, humans are susceptible to errors in judgement when using mental short cuts.

Say Sam is about to meet two people, John and Adam, for the first time. One is a professional artist and the other is an engineer. When Sam first meets them, John is dressed in khakis and a collared shirt, while Adam is wearing torn jeans and a Grateful Dead t-shirt. Sam asks them what they do for a living and is surprised to learn that John is the artist and Adam is the engineer.

Attributing a person's attire to their profession is an example of representativeness. Humans speed up the decision-making process by assuming a relation, that may or may not be true, based on a preconceived notion.

**Availability** bias is another cognitive shortcut us humans use regularly. Availability bias is the tendency for humans to use the most readily available information to make a decision. The media understands the biological responses that humans have towards danger. This is often referred to as "fight or flight" and is deeply ingrained in humans' biological response when faced with danger to ultimately "survive". The "news" channels know this; and therefore, tend to report on information that will solicit the feeling of fear, from acts like violent crimes to increase viewership. When humans are surveyed about the percentage of violent crimes for a given period, they tend to overestimate the percentage greatly. This can be attributed to the "readily available" information they receive from the "news".

In *Thinking, fast and slow* (Kahneman, 2011), *Kahneman* uses an example of a woman traveling to describe the irrationality associated with availability bias. In the book, a woman needs to travel a long distance and chooses to take the train, as opposed to an airplane, because there had been two plane crashes within the last month. She had concluded that flights are no longer safe, although the risk stayed precisely the same.

I have personally seen this irrationality. My uncle happened to be within a mile of America's deadliest airplane crash of a Boeing 767 (American flight 191) in May of 1979. My uncle has not boarded an airplane since witnessing this horrific event. Instead, he has decided to restrict his ability to travel in the safest and most efficient manner, over a personal experience. Witnessing an emotionally adverse event should not alter the decision process of a "rational" agent.

**Anchoring** bias is a cognitive bias that suggests humans tend to consistently refer, or "anchor", to the previous piece of information that we are given. People will filter all subsequent information through the first piece of information to give ourselves context.

For example, say Tom is looking to rent an apartment in downtown Minneapolis. He sets up a tour with Riverview Rental Apartments, and tours 2 (very similar) apartment layouts. The first apartment toured is going for \$1,850/month and the second apartment is going for \$1,600/month. Tom may think "Wow, what a deal! Go for the second apartment". This thought is an example of anchoring bias.

In this example, Tom anchored our expectations to the first estimate he received (the \$1,850/month) and assumed the \$1,600/month was a good price. Little did he know at the time, but the average room rate in that neighborhood was \$1,500/month. Anchoring beliefs too early, or before a substantial amount of information is known, will warp our perspective of the situation.

Anchoring is relevant in today's financial markets. People tend to anchor to prior events in an attempt to predict the future. Humans often "drop the anchor" in places they shouldn't; and therefore, should always be taking new information and ideas into account when looking forward (and not just relying on past events).

The McConachie Team Educational Update is a new quarterly piece that will be published on our website at [www.mcconachieam.com](http://www.mcconachieam.com) with intent to be timely and relevant. We excitedly look forward to providing valuable educational content to our community of clients.

Thank you.

*This piece was written by Michael McConachie and Lucas Ciabattoni*

## Appendix 1:

### **Interest Rates:**

- Nominal vs real yield – nominal yield is the current level of interest rates, while real yield is the interest rate an investor receives adjusted for inflation (or nominal rate minus inflation rate)
- Negative real yields – is a consequence of inflation or cost of goods (CPI) outpacing interest rates or risk-free rates (treasuries).
- Historical negative real rate environments - we have experienced 80 months with negative real interest rates since 2010, when taking annualized inflation minus the 5-year treasury rate (Citation 1)
- Interest Rate Risk (duration) - measurement of bond price sensitivity in relationship to interest rate changes

### **Equity Valuations:**

- Price-to-Earnings (P/E) Ratio – stock price per share divided by the earnings per share. High is indicative that the “market” believes large potential future earnings growth or could be relatively overvalued.
- Liquidation (or Book) Value – this is the residual value of capital left to stockholders after all other debts are paid in the event of company failure or liquidation.
- Discounted Cash Flow (DCF) – value of the company calculated by taking future cash flows, discounting them back to a present intrinsic value.
- The Historical Record – A history of what has happened in the past for analysis in the present, about what may happen in the future.

### **Central Bank Policies:**

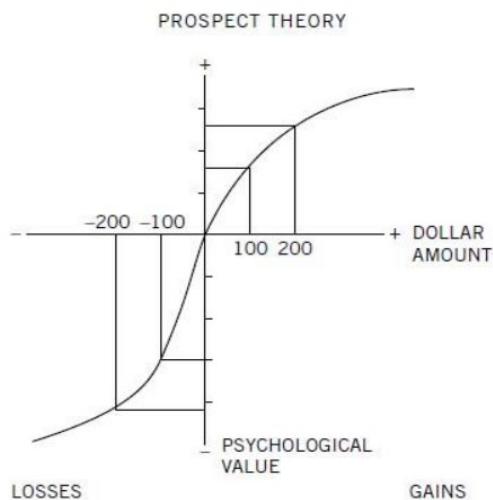
- Dual mandate of Federal Reserve – the two main goals of the Fed is to achieve full employment and control inflation.
- Open Market Operations – refers to the central bank buying or selling large amounts of securities in the open market to inject capital into the economy and influence supply and demand activity.
- Reserve Requirement – the amount of funds a bank must hold in its reserve, primarily to meet withdrawals or obligations. The Fed sets the reserve requirement. A lower rate is dovish (increases money movement or availability in economy) and a higher rate is hawkish (decreases money movement or availability in economy)
- Discount Rate – the interest rate that Federal Reserve Banks charge banks for overnight loans. Banks must meet the reserve requirement at the end of the day. If the bank cannot meet the reserve requirement, then they must take out an overnight loan to increase their reserves. Banks can take loans from the Fed or from each other. The overnight rate banks charge each other is known as the Fed Funds rate.
- Fed Language – is the testimony and communication the Fed’s representatives put out to telegraph their current outlook and expected future activity to the market

Appendix 2:

**Prospect Theory (Loss Aversion):**

Prospect Theory concludes that when money is involved, humans tend to experience the negativity of losses at a rate two times that associated with the positivity of gains.

This preference imbalance can have a strong effect on investor behavior. Investors will call on past experiences of loss, remember the additional pain they experienced from that loss relative to the prospect of gain, and emotionally switch their monies time horizon from long-term to short-term. This is often referred to as myopic loss aversion.



Source: Behavioraleconomics.com (Citation 2)

**The Four-Fold Pattern:**

Finally, the *Fourfold Pattern* is another interesting paradox Kahneman and Tversky discovered in their research. Simply put, investors tend to have risk profile reversals based on probability of gain vs. Loss. These reversals are directly tied to the probability of an outcome on a relative basis to potential gains and losses. This leads investors to quickly switch from risk seeking, to risk averse, based on the probability of an outcome and level of risk in the moment.

	Quadrant 1 Gains	Quadrant 2 Losses
High Probability (Certainty Effect)	95% chance to win \$10,000 Fear of disappointment  Risk Averse Accept unfavorable settlement	95% chance to lose \$10,000 Hope to avoid loss  Risk Seeking Reject favorable settlement
	Quadrant 3 Gains	Quadrant 4 Losses
Low Probability (Possibility Effect)	5% chance to win \$10,000 Hope of large gain  Risk Seeking Reject favorable settlement	5% chance to lose \$10,000 Fear of large loss  Risk Averse Accept unfavorable settlement

Source: "Thinking, fast and slow (Citation 3)

## Citations

1. Multpl. (n.d.). *5-Year Real Interest Rate by Month*. 5 year real interest rate by month. Retrieved December 23, 2021, from <https://www.multpl.com/5-year-real-interest-rate/table/by-month>
2. BehavioralEconomics.com | The BE Hub. (2021, December 14). Retrieved December 23, 2021, from <https://www.behavioraleconomics.com/>
3. *Thinking, fast and slow Notes - Claudio Perfetti*. Claudio Perfetti. (2021, May 5). Retrieved December 17, 2021, from <https://www.claudioperfetti.com/all/thinking-fast-and-slow/>
4. Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux

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