

## **Back to School Computer Shopping**

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“Any number that you are asked to consider as a possible solution to an estimation problem will induce an anchoring effect.” - Daniel Kahneman<sup>1</sup>

Back to school shopping can be a pleasure for some and a horror for others. This year has been especially challenging because my oldest is moving on to middle school, and as in life the older you get the more “things” you need. In my daughter’s case, not only did we need #2 sharpened pencils and glue sticks, but also a computer. To be fair we could rent it from the school, but I thought it would be better to just purchase the computer and hope it lasts more than three years. For me, buying a computer isn’t as simple as going to the store and buying what’s on the shelf. I need to make sure I’m getting good value for the price, and just as important, something that my daughter will agree with.

Our first stop was my favorite warehouse club. I needed to establish a base price to comparison shop, because I have no idea what a 13-inch, 256 GB SSD computer should cost. We settled on a computer that was on sale for \$799. Now that we had the specs and a benchmark price, we started looking at other options. We found other computers similar in specs but more expensive, and ones that were less expensive but low on specs. After a week it became clear that the original computer was the “one.”

When we went back to the warehouse, the computer was repriced to \$999, the sale had ended. I thought is this computer really worth \$999, especially now that I know I could have bought it for \$799? Since the price went up is there something else I should look at now? So many thoughts went through my head, but in the end, I was anchored to the \$799 price and discouraged to purchase the laptop.

Whenever we decide to buy or sell something, we want to make sure we are getting a good deal. One of the ways we can do this is by benchmarking. Benchmarking is the process by which we compare or assess things against a point of reference. In the case of the computer, we compared the prices of similarly outfitted computers to the warehouse laptop to determine the best value. Unfortunately, this cannot be said for individual investments. Rarely, if ever, are you able to evaluate investments with similar characteristics, such as components of a computer. For example, stocks are fundamentally valued by discounting future cash flows on a risk adjusted basis. These factors are different for each investment and not easily calculated. Our brain is then left to its own devices to compute a fair value. When tasked with estimating a value or quantity, in which we don’t have all the relevant data or processing power, we often seek the solace of an anchor.

Anchoring is a cognitive bias where we determine the value of something by deviating or adjusting from a specified reference (anchor) point. Often times, anchoring plays a role in our decisions to buy or sell securities. When we purchase a security, we have decided that we are receiving a good deal for the investment (in most cases<sup>2</sup>), with the purchase price becoming our initial anchor. If the price declines, we may delay selling in hopes of a recovery, because we perceive the value to be higher. If the price appreciates and then declines, we may move our anchor to the high-water mark, if for no other reason

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<sup>1</sup> *Thinking, Fast and Slow* – Daniel Kahneman

<sup>2</sup> Sometimes investors are not necessarily looking for a good deal, as may be the case with momentum or trend following, <https://alphaarchitect.com/2018/09/18/momentum-investing-like-value-investing-is-simple-but-not-easy/>

than it being a more profitable trade. In either case, we have delayed selling the security because of an anchor price that is not rooted in fundamental or technical analysis.

Buyside decisions can also be affected by the anchoring bias. If you actively read financial media, you will inevitably run across the article; had you invested in stock “Y” 20 years ago it would be worth 100X today. For the stock to have gone up 100X it most likely would have done so by establishing higher highs and higher lows along the way. Since we are not particularly good at analyzing the components to determine intrinsic value, our minds will anchor on previous low prices as a buying opportunity. “A month ago it was selling for \$100, today it’s at \$120, I’ll buy when it gets back down to \$100.” Here the anchor is based on an arbitrary past value, and not based on the fundamental prospects of the investment going forward. If the stock is in an uptrend making higher lows, the \$100 anchor may never be reached again, leading to a missed opportunity.

Many will believe that they are not susceptible to the anchoring bias. However, Tversky and Khaneman ran an experiment which showed that anchoring can also be subconscious<sup>3</sup>. They rigged a wheel of fortune to land on 10 or 65, before asking participants to guess the percentage of African countries in the United Nations. Even though the number spun on the wheel had nothing to do with the actual estimate being asked for, those that had the wheel land on 10 guessed on average 25%, while those whose wheel had landed on 65 guessed 45%. Clearly the number displayed on the wheel influenced the calculation they were making.

My anchoring bias came into play once I decided that I wanted the \$799 computer which was now priced at \$999. Anchoring, as opposed to benchmarking, is establishing a value based on outdated, irrelevant, or incorrect data. I felt anguish in paying \$999 because I was valuing the computer on an outdated price which was no longer relevant. This method of value determination can also infiltrate investing, consciously or even subconsciously. Our anchor maybe our purchase price if a stock declines or a historical low price if we seek to purchase. The anchor may also move over time, but in any case, it clouds our judgement. When we anchor, we are no longer evaluating fundamental changes in future cash flows or discount rates, but simply clinging to a preconceived notion of value.

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<sup>3</sup> <http://matt.colorado.edu/teaching/highcog/fall11/readings/tk74.pdf>