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## **Investor Psychology**

I've always been a bit disinterested in western psychology. When reading it, I often feel the complexities of the inner world are being oversimplified. Regardless, I'd like to share a few observations I've made over the years about investor psychology even though it requires me to commit the same transgression. I promise to keep my sweeping generalizations concise, so at least it's clear they're meant to point at something larger. This exercise is worth your attention because unlike psychology more broadly, there is actually a panacea for the troubles facing investors.

There are three types of investors in the world—those who expect to win the game more often than is possible, those who don't expect to win the game enough, and those who have an experiential understanding of what is realistically possible over the long haul.

The best way for people to arrive in the realistic camp is to start early and accumulate a range of experiences, both positive and negative, while investing amounts that aren't emotionally meaningful. This "safe sandbox" affords the person a chance to train their analysis and intuition to recognize opportunities, and it gives them direct knowledge of roughly how often their analysis and intuition will deceive them.

Outside this ideal, most of us have at least one foot in the other two camps. Those who expect to win the game less often typically had difficult experiences with more meaningful amounts of money, or at least money they worked very hard to accumulate. The common thread tends to be losses resulting from weak tips, or investing too much in poorly researched and overhyped ideas. Because these investors may not be well informed about the actual drivers of investment returns, they tend to crack under the pressure of temporary losses and liquidate at the worst possible moments. The monetary losses are frustrating, but the lasting physiological damage is often worse.

Other investors, blessed by luck, start their investing careers riding high. They have some big successes picking stocks in the midst of a wider bull market and start to believe they will never be deceived by their analysis and intuition. This ultimately leads to the discovery of borrowed money and leverage. If investing is so easy why in the world wouldn't you invest all the money you can get your hands on? Of course, this sense of infallibility pyramids ever higher until a single idea only needs to go moderately wrong to wipe them out, courtesy of borrowed money. This is a serious problem because the adrenalin of the experience often becomes addictive. They may spend the rest of their lives reliving boom-bust cycles and never take advantage of the real manna of finance, compounding returns. They internalize the idea that money is made quickly and easily by taking big risks, which is fallacy.

My clients include investors in all different places on this spectrum. Increasingly they also include the next generation of investors—those who haven't yet fallen into either camp. In many ways these young people are the most interesting people I get to work with because they haven't formed too many biases yet. Due to their long potential investing careers they are also extraordinarily valuable. If I can help guide them to a place of realistic confidence and resilience, they will most certainly be our highest return investments—hands down.

As I hinted at earlier, there is actually a decent panacea for the various psychological woes that plague both new and old investors. This panacea is called *position sizing*. Correctly sizing your investments is the best defense against blowing up your mental game as an investor. The particular methodology offered below is one of my own creation, imperfect, yet also highly efficacious.

It functions as follows:

$$\text{Risk Confidence} \times \text{Fallibility Factor} \times \text{Max Tolerable Loss} = \text{Position Size}$$

### Risk Confidence

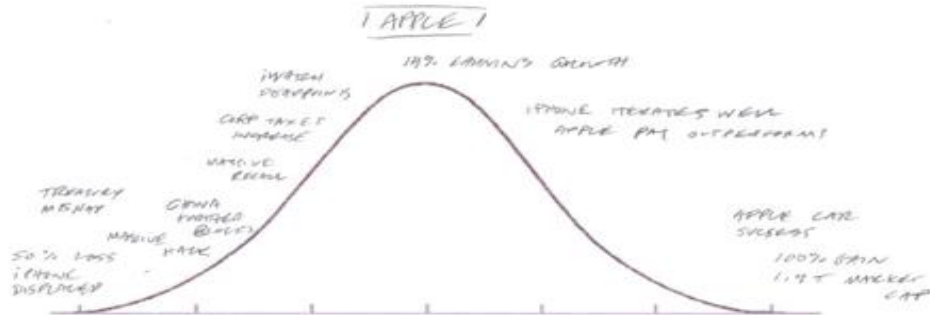
While risk is inherently hard to quantify because it exists in the future, here is a visual tool that seems to do a decent job of quantifying it. Start by drawing a bell curve:



Next take your pencil and make a note of all the possible upsides and downsides you observe according to where your analysis and intuition sees their likelihood. Unlikely *negative* outcomes are placed at the very far left, and unlikely *positive* outcomes are placed at the very far right. Consensus outcomes are placed near the center of the curve, like this:



Next, let this drawing sit on your desk for a while so you're not limited by your particular mental state when you first draw it. Once you have sat with it for a while you will eventually arrive at something like this:



The curve above is my risk analysis of Apple. At the peak I've placed consensus analyst estimates for 5 year earnings growth of 14%, roughly where the market thinks the company is headed. I then arrayed my own views about Apple's projects that may succeed and move the needle, as well as those I think are potential failures or distractions. Perhaps the most powerful observation is the low likelihood I place on Apple doubling in price, reaching 1.4 trillion USD in market capitalization. Apple will need to execute perfectly in some of the world's largest non-consumer electronics markets to achieve that outcome, a big departure from their core competency. I know many other companies that could double in value with far less heavy lifting. All in all, my risk assessment has more weight on the left side, and I'm thinking the likelihood of 14% growth over 5 years is a bit too optimistic from here. If we imagine a curve with all the notes on the left as zero, and a curve with all notes on the right as 10, this one comes in roughly at 3.5. We can say I have roughly 35% confidence in Apple shares versus the consensus based on my analysis and intuition.

### Fallibility Factor

We then have to go a step further and adjust for human fallibility. As a starting place, we know from accepted knowledge that even the world's greatest investors struggle to be right more than 75% of the time and many do very well in the 65% realm provided they have the discipline to let winners ride and to cut losses when their analysis is proved wrong. Let's humor ourselves and assume we are above average and our analysis and intuition will allow us to be right 65% of the time over any long observation period. (These numbers can actually be gleaned directly from a statistical analysis of years of personal trading results.)

We then take our 35% risk confidence and multiply by this 65% fallibility factor. This comes out to 23%.

## Max Tolerable Loss

We then need to assess what the worst monetary outcome we are willing to accept is based on our life commitments, needs, goals, etc. Let's say that tolerance is a 20% portfolio wide loss. Take your 23% and multiply by the final variable, the 20% max tolerable loss. You will arrive at 4.6%. This is the maximum percentage of a portfolio that makes sense as the position size for this particular single stock idea.

Below is a table of extremes in the range of position sizes:

Risk Confidence	Fallibility Factor	Max Tolerable Loss	Position Size
0%	65%	10%	<b>0.0%</b>
50%	65%	10%	<b>3.3%</b>
100%	65%	10%	<b>6.5%</b>
0%	65%	20%	<b>0.0%</b>
50%	65%	20%	<b>6.5%</b>
100%	65%	20%	<b>13.0%</b>
0%	65%	30%	<b>0.0%</b>
50%	65%	30%	<b>9.8%</b>
100%	65%	30%	<b>19.5%</b>

In each instance where you have zero confidence, you make no investment, as is expected. If you really feel you have the idea nailed and can't lose, you have position sizes of 6.5%, 13%, or 19.5% respectively depending on your tolerance for actual monetary losses. Clearly this is a quick and imperfect system, but what it does effectively (provided you have been honest with yourself) is protect your psychology. It sets you up to return to the plate for every future at-bat with a winning attitude, emotional balance, and a batter's box routine that shows the pitcher you mean business.

Of course, the real hard work of ongoing portfolio management is trying to find a lot of ideas where you have high confidence and avoiding ideas with low confidence. Once you have a stack of good ideas, you constantly seek to replace the worst of them with ones where you have better confidence given changing conditions. As your analytical skills improve, perhaps your fallibility factor will also change. This sets you up to have a more concentrated portfolio with

the potential to meaningfully outperform. Lastly, once you have some of your long-term needs covered, your max tolerable loss will likely rise as well. This is the optimal scenario, earned by shrewd and experienced investors, that allows them to make more significant investments.

This returns me to the younger generation. We each have our own path to travel to becoming accomplished investors, but being shown a wide range of tools early on will help expedite the process. An individual investing career may span more than 7 decades, and is often shared among families on a longer continuum. Setbacks are a fact of life, but resilience and patience can relegate them to minor footnotes in history. These qualities can only be cultivated with a balanced mental state. While that may be quite a bit harder in other areas of life with more “all or nothing” consequences, our investment portfolios stand out as an easy place to use simple methodologies that protect both our minds and our accumulated savings.

I’d like to close on a personal note by saying it is great privilege to serve as both a decision maker and a coach in these areas, and an equal honor to receive your insights and feedback which also helps further my own growth. Investing simply doesn’t need to be an existential solo adventure, and I’m delighted to be on this endless trail with you.

Best,



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