September 2015

The Psychology of Losing Money

Prior to the market pull-back in August, investors were riding the third longest and one of the most profitable bull-markets in history. The S&P 500 enjoyed six years without entering correction territory (defined as a -10% or more fall from its recent high) and during that time it surged more than 200%. Quantitative easing, healthy corporate profits, and a rebounding economy contributed to six years of relatively unabated growth accompanied by low volatility.

The party came to a roaring halt when Monday, August 24th turned into one of the worst trading days in recent memory. The Dow opened with an unprecedented 1,000 point decline, oil prices tumbled to lows not seen since 2009, and the VIX (commonly referred to as the fear index) surged 40%. TV screens flashed red with apocalyptic headlines turning normally disinterested investors into absorbed fanatics.

The frenzied panic accompanied with the market pull-back in August was a complete 180 to the more muted reaction in the previous years when the markets were climbing upward. While people are obviously happy when the markets go up, their reaction is often more subdued than the dramatic scenes we see during sell-offs. So we raise the question, why do people seem more concerned about losing money than making money?

Seeing Double: An Introduction to Loss Aversion

Investing is not an emotionless experience, which is why behavioral economics has become a widely studied topic over the past few decades. If an investor was perfectly rational, he would have an equally strong reaction to a 1% gain and a 1% loss in his portfolio. However, this is usually not the case as research has shown that people tend to put more weight on losses than gains. This behavior is called loss aversion.

Loss aversion was first thoroughly examined by Daniel Kahneman and Amos Tversky in 1979 and their groundbreaking work earned them the 2002 Nobel Prize for Economics. The basis behind loss aversion is that people dislike losing more than they like winning. In fact, studies have shown that people on average display a loss aversion ratio between 1.5 and 2.5, which means when comparing an identical monetary gain and loss, the loss will be valued up to 2.5 times more than the gain. For example, a person with a loss aversion ratio of 2, would have an equally weighted reaction to winning $20 as they would to losing $10.

Kahneman and Tversky extracted this behavioral phenomenon in an experiment involving a coin flip. They offered a bet to their students where the students would win $150 if the coin landed on heads, but if the coin landed on tails, they would lose $100. Even though the expected payout of accepting the bet was higher than declining the bet, more of the students declined the bet than accepted. The majority of the students didn’t accept the bet until the payout from winning was raised to $200.

Payouts of Accepting or Declining the Bet				
	Outcomes	**Probability**	**Payout**	**Expected Return**
Accept	($100)	50%	50% x ($100) = ($50)	$25
	$150	50%	50% x $150 = $75	
Decline	$0	100%	100% x $0 = $0	$0

The table outlines the payout of Kahneman and Tversky’s bet. If the bet was accepted the participants had a 50% chance of losing $100 and a 50% chance of winning $150, but if they declined they would receive $0.

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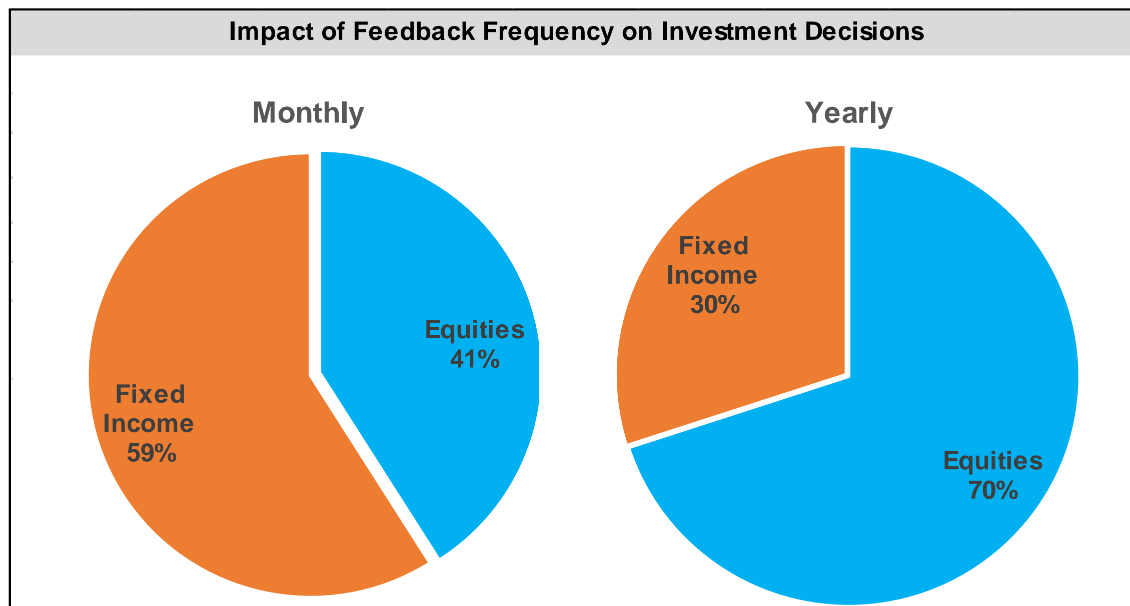
Loss aversion not only makes people hesitant to take risks, but it can also work the other way and lead people to take unjustified risks in an attempt to ward off potential losses. This effect is probably familiar with anyone who has been to Las Vegas. Research has shown that if someone places a $50 bet and loses on their first try, they are much more likely to place a second bet even though their probability of winning the bet has not changed. The reason they are more likely to place a second bet is because the first bet is an attempt to make a gain, and the second is to recuperate a loss. This study demonstrates that people are inherently wired to avoid losses more than they are to achieve gains.

Practical Applications of Loss Aversion

Loss aversion not only applies to controlled experiments, but it can profoundly affect an investor's portfolio management as well. A study by Fidelity showed that loss aversion actually altered the portfolio weighting of different investors depending on how often they saw a loss in their portfolio.

The study focused on two types of investors. The first group checked their portfolio on a monthly basis, while the second group of investors checked their portfolio annually.

The study revealed that the first group who checked their portfolio monthly moved to more conservative portfolios, whereas the annual reviewers had more aggressive portfolios. The reason for the allocation adjustment was that the people who checked their portfolio more often were more likely to see a loss and because of loss aversion overreact to the loss. They would eventually taper down to a portfolio with a lower risk/return profile just in order to avoid seeing losses in their portfolio.



The two pie charts displays the equity to fixed income allocation of investors who checked their portfolios once a month and those who checked it once a year. Investors who checked their portfolio more often moved to more conservative portfolios reducing their annual return by 2%-2.5%.

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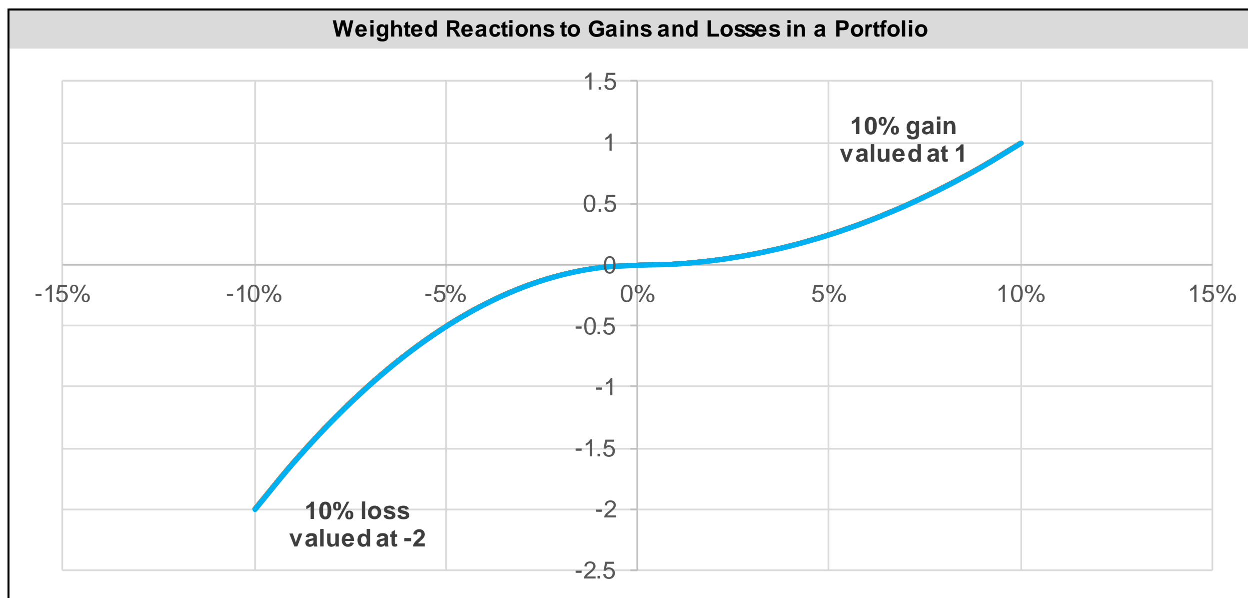
Reading into the Red: Loss Aversion in the Markets

Loss aversion not only affects portfolio management, but it can also cause irrational decisions during times of heightened volatility. One of the most universal mantras of investing is “buy low, sell high”. If obeyed, this rule of investing would suggest that investors would have the tendency to buy equities during market downturns. However, mutual fund data flows show that investors tend to reduce their investments in equities during market downturns, and reinvest more capital into equities once markets recover. This discrepancy demonstrates the power of loss aversion and explains the frantic atmosphere of market corrections.



This graph shows the power of loss aversion in your portfolio. The steeper slope to the left of the axis demonstrates how people weight their losses more than gains. In this example, the formula accounts for a person with a loss aversion ratio of 2 so that a 10% loss in their portfolio is weighted twice as much as a 10% gain.

When people see losses in their portfolio they have a tendency to overreact and sell. This overreaction to loss aversion can cause significant damages to an investor’s returns over time. A study by Hulbert Financial Digest found that investor’s poor timing exiting the markets during the 2008 crisis caused investors to lose $42 billion over a 12 month period.

Dealing with the Pain: How to Manage Your Loss Aversion

While loss aversion is a natural human reaction, there are preemptive steps you can take to minimize the effect:

Diversify Your Portfolio

A diversified portfolio is the best way to protect your portfolio during periods of volatility. If you are invested across different asset and sub-asset classes, your portfolio will hold up better during downswings. This is because uncorrelated asset classes behave differently to exogenous market conditions. Take for example bonds and equities. Historical returns show that when bonds go up, equities tend to go down and vice versa. As one asset class underperforms, the other outperforms, covering your portfolio from downside volatility.

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Historical Correlations between Asset Classes										
Jan 1988 - Aug 2015	US LC Eq	US MC Eq	US SC Eq	Int'l Equity	Emg Mkts Eq	US Fix Income	REITs	Real Assets	Inflation Protected	Cash
US LC Eq	1.00									
US MC Eq	0.93	1.00								
US SC Eq	0.80	0.93	1.00							
Int'l Eq	0.72	0.71	0.63	1.00						
Emg Mkts Eq	0.66	0.69	0.67	0.69	1.00					
US Fix Income	0.06	0.03	-0.02	0.04	-0.06	1.00				
REITs	0.54	0.64	0.63	0.47	0.43	0.09	1.00			
Real Assets	0.25	0.32	0.28	0.34	0.38	-0.14	0.22	1.00		
Inflation Protected	0.06	0.08	0.00	0.09	0.11	0.18	0.22	0.23	1.00	
Cash	0.01	-0.04	-0.06	-0.05	-0.02	-0.02	-0.07	0.01	0.10	1.00

The table above shows the historical correlation of returns between asset classes from 1988 to 2015. Correlation values can run from 1 to -1 with 1 meaning perfect positive correlation, -1 signaling perfect negative correlation, and 0 representing no correlation. For example, US large cap equities have almost no correlation with US fixed income because they often don't move in a synchronized manner.

Studies have shown that properly diversifying can reduce your portfolio's standard deviation by over 60%. Having a diversified portfolio will limit your losses on the downside and nip loss aversion in the bud.

Maintain a Long-Term Perspective

During market pull-backs, losses can feel acute and make you question your investment thesis. Yet, it is important to maintain a long-term view during these times as market corrections happen regularly (about once a year) and are necessary for the markets to digest profits and reallocate capital. Selling during market corrections can significantly damage your long-term returns, while staying put will allow you to reap the profits of the rebound.

Yet most investors allow their long-term thesis to get disrupted by short spurts of volatility and in the end, they lose a lot of money because of their near-sightedness. A study by the University of Nebraska reported that between 1991 and 2004, investor's poor timing in and out of the market reduced their average returns by 1.6% per year.

The Bottom Line

Emotions get the best of us in a lot of instances, but don't let them take control when it comes to investing. The next time the markets sell-off, don't hit the panic button. Remember that loss aversion can create short-term irrational decisions, which can lower your annual returns by more than 2%! Instead, reach out to your financial advisor and confirm that your investment allocation is suitable for meeting your short-term obligations and reaching your long-term goals.

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