

Behavioral Risk

In 2009, we published a paper titled “Behavioral Risk” that described the universal tendency to make poor investment decisions in times of crisis because individuals typically allow instinct and emotion to override objective analysis of the pertinent data. The ideas in the paper remain as pertinent as ever, and are, we feel, particularly relevant today, albeit in the opposite direction. In short, the environment has shifted from one where investors are irrationally shunning risk due to recent losses, to one where they embrace it, despite clear and present danger to risk asset prices, due mainly to the past six years of gains.

To return investors’ attention to this important topic, we are republishing the paper with comments [in blue](#) that reflect the ideas in light of the current environment.

Savage bear markets inevitably—and understandably—trigger anguished calls for better “risk management.” Risk, however, is like the many-headed Hydra of Greek myth: cut off one head and two quickly sprout in its place.¹ Consequently, the first step in disciplined risk management is to clearly define just what risks one seeks to mitigate, and why, and over what time horizon, and at what potential cost.

Of course long-running bull markets have the opposite effect, with investors increasingly asking questions such as “Why did I diversify?” Thus, investors today—particularly those with outsized equity allocations—should be asking what is the purpose of the investment portfolio, and if the potential additional reward is worth the increased risk.

This paper focuses solely on *behavioral risk*, which is often overlooked although its management is arguably prerequisite to effective implementation of other risk mitigation strategies. Like all decisions that require our peering into the uncertain future, investment decisions are always based on incomplete information. Nevertheless, given such information as we have, those decisions should be made on the basis of logical, objective, knowledgeable analysis of the facts on hand. They aren’t. Instead, we infect them with our personal biases, “gut instincts,” irrelevant assumptions, and a veritable Pandora’s box-load of all-too-human irrational propensities. Short of turning over our portfolios to computers (been there; done that: garbage in, garbage out!), or to Mr. Spock, we can’t hope to eliminate these infections, but we can and should diagnose and contain them.

Our 2000 paper, *Behavioral Finance*, remains a pertinent primer and is recommended as a more thorough discussion of the topic. Here, however, the focus is more specifically on *risk*: that is, what behaviors are most likely to derail effective decision-making during periods of stress? Can we anticipate and counteract these? What steps can we take during periods of relative calm to ensure that we make the best possible decisions when the next storm hits?

Again, this can be flipped on its head: what behaviors are most likely to derail effective decision-making during periods of persistent market gains? While not quite the same as many investors’ panic-driven responses during 2009, issues of performance anxiety (relative to both one’s benchmark and peer group), not to mention the pressure exerted by positive media stories about the market, can lead investors to make decisions based less on rational analysis and more on the comfort bestowed by being part of the crowd (e.g., boosting equity allocations despite high valuations because the Fed “won’t let the market fall”).

And of course this is the period of “relative calm” referenced in the last sentence!

¹ A more contemporary analogy would be the carnival game whack-a-mole. For example, an endowment fund can easily minimize downside price risk by holding a large percentage of assets in cash and government bonds, but the suppression of this risk increases the risk of self-liquidation if the fund hopes to spend more than 1% per annum (i.e., more than its likely real rate of return).

Behavioral Responses to Trauma

What happens when we humans (and, indeed, other animals) are slammed by shock? Unless trained otherwise, our instincts tell us to retreat, conserve, seek the comparative safety of groups, and search for a path out of danger. These are ancient survival instincts, hard-wired. Slammed by *financial* shock, the same instincts result in heightened risk aversion (gimme cash!), a dramatic foreshortening of our normal investment time horizon, an overwhelming impulse to flee with the herd, a tendency to extrapolate current trends all the way to Armageddon, and a deep desire to latch on to anyone who seems able to explain what is going on and what will happen next—that is, to alleviate the misery of our deep uncertainty.

Under such conditions, we often make mistakes that cost us dearly: long-term plans are abandoned, rational investment policies discarded, profitable opportunities missed. So the question is: can we train ourselves in some way to override these natural instincts, thus mitigating the risk of making such mistakes next time around?

Similarly, long periods of prosperity tend to dull our risk senses, as everyone seems to be making money—with the best performers often those who have embraced the most risk (see: biotech)—and those that have warned of problems are “proved wrong” time and again. Interestingly, during these periods many investors become converts to the “long-term” mantra, but in a counterproductive way. In short, purchases of equities or other risk assets despite high valuations is “justified” by the belief that one will be a “long-term” holder, and can ride out any (what are sure to be temporary) downturns.

Of course such beliefs are soon forgotten in a crisis, as investors question the logic of such investments and often conclude the purchase was misguided, leading to asset sales, as discussed in this paper, at fire-sale prices. Thus, the best way to avoid making such sales is to apply a more rigorous process to purchases, particularly during “good” periods when investors consider themselves invulnerable. It cannot be said enough times that investor risk tolerance is not static, but instead shifts with asset prices. If history is a guide, many of those embracing “long-term” investment strategies today will quickly jettison such an approach during the next crisis.

Countering Behavioral Risks

In times of crisis, when risk aversion spikes, panicked investors tend to stampede for the exits. The temptation to join them is well-nigh irresistible because the whole financial edifice seems to be collapsing. Carefully wrought models are rendered irrelevant overnight, as correlations converge on 1.0, and “fat tail” risk wags the dog. Although no two crises evolve in the same way, the *behavioral response* to crises is relatively uniform, which means we should be able to identify these, recognize which are counterproductive, and figure out how to contain them.

Capital Markets Knowledge

Knowledge is a necessary (if insufficient) foundation for wisdom. But too many trustees of long-term investment funds lack sufficient knowledge of capital market history to make wise decisions. As a result, they tend to overrate the importance of recent information, extrapolate short-term trends, and struggle to distinguish the relevant from the irrelevant in the daily barrage of noise that blankets the investment world. In a crisis, when the level of that noise becomes overwhelming, these tendencies often lead to bad decisions.

When markets are falling, we instinctively feel that risk is rising, and when markets are rising, that risk is ebbing. In the short term, this instinct may be right since markets often run on momentum in the short run. But for long-term investors it is dead wrong. Those responsible for long-term funds therefore need some basic grounding in how and why it is wrong. The most practical way to accomplish this is for quarterly investment committee materials to include a consistent set of long-term charts and graphs that set current conditions in a historical context so that committee members have a framework for understanding the force, depth, and duration of market declines, and thus a first line of defense against uninformed panic.² Significant asset allocation decisions should never be made without extensive reference to such data so that those panicked by recent events are forced to justify why the historical record should be regarded as irrelevant (i.e., why “it’s different this time”). This practice should also counteract the common behavioral traits of overweighting the most recent data, and of focusing only on evidence that supports preexisting beliefs, while ignoring or downplaying evidence that refutes those beliefs.

Time Horizon

During any crisis, investors’ time horizons shrink—from decades to days—and their instinctive reaction is to increase liquidity by reducing exposure to long-duration assets and cutting back on commitments to illiquid investments. This is eminently logical—even a vital necessity—for those vulnerable to a liquidity drought (e.g.,

² Our annual report, *Decades of Data*, provides a plethora of charts showing global markets in context over about a century or more.

leveraged investors or those with heavy cash flow needs), but detrimental to unleveraged long-term investors that have no pressing need for cash. As James Montier pointed out in a speech at the CFA Institute’s European Investment Conference in Amsterdam in December 2008:

The more often investors check their portfolios, the more likely they are to see a loss because volatility will become more obvious. These losses trigger the fear system, so the longer investors find themselves in these conditions, the poorer their decision making actually becomes. . . .

As a fundamental investor, my ability to understand improves as my time horizon extends. For example, consider contributions to total return. With a one-year time horizon, about 28 percent of total return comes from dividend yield and about 12 percent comes from growth in real dividends. Thus, about 60 percent is generated by changes in valuation, which are, in essence, random changes in prices that few, if any, investors can predict. When I extend my time horizon to five years, however, the factors I can understand have a greater impact on total return. Dividend yield and the growth in real dividends account for about 80 percent of total return over five years, and those relatively unpredictable changes in valuations account for only 20 percent of total return. Thus, as investors extend their time horizon, their ability to understand improves.³

Consequently, those responsible for overseeing portfolios with long-term investment horizons should resist the instinct to focus on shorter periods in times of crisis. In fact, such circumstances often afford an opportunity to *lengthen* the investment perspective to take advantage of bargain-basement markdowns on less liquid assets.

Of course, most long-term investors have spending needs that oblige them to mediate among competing time horizons; these might be expressed as, for example, 25 years and five years—the former as a yardstick for measuring whether purchasing power is being maintained over the long term, and the latter as a measure of fund performance relative to policy benchmarks. Constant reference to these measures should help counteract the tendency to overemphasize much shorter-term results, especially when volatility spikes and markets plunge.

This is no less true when markets are rising and investors are even more interested in viewing their results and congratulating themselves on “beating the market” (or, alternatively, bemoaning that their diversified portfolio hasn’t “kept up”).

Portfolio Risk Exposures

A key objective of any investment planning or investment policy review should be determination of a fund’s investment risk profile. This should be informed by the financial circumstances of the institution or investor (e.g., financial flexibility, indebtedness, spending and liquidity needs, budgetary dependence on endowment distributions), and more subjective measures of risk tolerance (e.g., effect of losses on trustees, donors). Risk metrics can be more or less complicated (we would recom-

³ James Montier, “Applied Behavioral Finance: White Swans, Revulsion, and Value,” *Conference Proceedings Quarterly*, (CFA Institute, March 2009), pp. 46–47.

ment less rather than more) and designed for quite different purposes—for example, educating the board, or keeping the investment committee informed, or as portfolio management tools used by professional investment staff.

The key long-term policy risk metric is shortfall risk, which attempts to answer the question: what is the probability that such-and-such an asset allocation will enable us to maintain the real value of our fund, net of spending, over the long term? This kind of risk should be recalibrated whenever policy allocations are reviewed.

Such analyses seem almost *passé* today (Shortfall? What shortfall?), but are a critical tool for assessing “true” risk tolerance. In other words, while it is easy today to claim to be a “long-term” investor, it is far more important to ask uncomfortable questions such as “what if markets hadn’t come back in 2009?” The “lesson” some investors have learned from the global financial crisis seems to be to always ramp up risk asset exposure in response to a downturn. While often a sound decision (particularly for US and UK equities), it is not always so, and investors can be rather blasé about the (possibly large) degree of risk. Perhaps the most significant topical example is Japan, where the Nikkei declined from its peak of nearly 38,916 on the last trading day of 1989 to 7,055 on March 10, 2009. In other words, investors that “bought the dips” in Japanese equities over a near 20-year period (and much longer, of course, if one bought the dips during the run-up to the 1989 peak) ended up losing money.

Shorter term, however, an investment committee should also see one or two risk metrics designed to counteract the tendency to become more risk-seeking as risk rises and more risk-averse as risk declines. For example, as risk premia across all risky assets all but disappeared from 2005 to 2007 as a result of the universal availability of cheap credit, most investors responded by taking on more risk rather than less.⁴ This pro-cyclical tendency could perhaps be countered by reference to analyses that would reveal, for example, whether the portfolio’s exposure to equity and credit risks had become greater than that prescribed by investment policy.

We are seeing similar behavior today, as some investors have ramped up exposure to private equity vehicles, thus increasing equity exposure while decreasing liquidity. This is all the more surprising given that “lack of liquidity” was widely cited as one of the key lessons learned from the global financial crisis, with many investors specifically targeting this area as one in which they would not make the same mistake again.

That said, high levels of illiquidity are not necessarily a bad thing during times of stress; indeed, investors that held such positions through the 2008–09 period (i.e.,

⁴ Howard Marks of Oaktree Capital nails this point in his June 2009 client memo, “So Much That’s False and Nutty”: “The truth is, risk tolerance is antithetical to successful investing. When people aren’t afraid of risk, they’ll accept risk without being compensated for doing so . . . and risk compensation will disappear.”

were not forced to sell them) ended up being richly rewarded, in most cases, as the prices for such assets subsequently soared. In other words, assuming one is willing and able to hold such positions, private investments could actually aid investors during a crisis by being harder to sell. Thus, while we encourage investors not to forget the importance of liquidity and to match their portfolio allocations to their liquidity needs, private investments may well help, rather than hinder, thoughtful and well-capitalized investors during the next crisis.

Equity Exposure

Among these risks, by far the most important is the portfolio's equity exposure. It is axiomatic among seasoned investors that equity markets regress to their mean. But this is wrong: markets regress from high to low, passing through the mean en route; then they reverse, moving from low to high—the mean is just a milepost along the way. Although nobody rings a bell at the top or a gong at the bottom, capital markets history does at least tell us when we have reached, or perhaps passed, relatively extreme points in the likely distribution of returns and valuations, and if our risk profile is predicated on the level of risk implicit in asset classes at mean prices and valuations, we should be able to recognize these extremes and rebalance our risk exposure accordingly.

But crises exacerbate behavioral risks. As equity markets plummet, investors' risk aversion rises even as the fundamental risk is in fact declining.⁵ When markets soar, investors' sense of risk recedes as they worry more about missing the boom than protecting against the bust to come. The solution is simple in theory, but difficult in practice: determine how much equity exposure is appropriate for the fund over the long term, *relative to equities at fair value* (e.g., at mean prices and valuations), and as markets rise and fall adjust that exposure to maintain a constant equity risk profile. The practical difficulty is a classic agency/principal problem: the time horizon of the agents (e.g., an investment committee, professional investment staff) is far shorter than that of the institution. Thus, for example, this approach would have resulted in an accelerating reduction in equity exposure during the late 1990s, as markets soared, and a sharp increase in equity exposure after the dot-com boom had bust. And over, say, the ten years from 1995 to 2004, this would have worked very well.⁶ However, over the five years from 1995 to 1999 it would have resulted in a steady erosion of performance relative to peers—which might well prove unacceptable to the agents involved.

⁵ This assumes long-term oriented investors that are not highly leveraged (because the greater the leverage, the shorter the investment horizon) and are not in danger of triggering debt covenants or forced to sell to meet pressing liquidity needs.

⁶ In fact, as equity risk spiked toward the end of the 1990s, the major endowments effectively followed this process, rebalancing their risk exposure aggressively—but they only did so when market valuations reached unprecedented extremes.

Many investors that were all but ready to swear off equity investing in the dark days of 2009 are now willing to ignore at the very least some flashing yellow lights advising caution. No doubt the inexorable gains of the past six years have largely driven this mindset, with investors that either stayed defensive after the crisis or that have grown more defensive as prices have risen underperforming peers that embraced more risk.

We sometimes find it a useful exercise to consider what decisions one might have made were current conditions knowable in advance. In other words, if told in March 2009 that US equity prices would more than triple over the next six and a half years (posting an annualized return of more than 20%), we imagine many (most?) investors would have not only maxed out exposures, but happily agreed to book these gains and scale back equity exposure in 2015. And yet.

One obvious rejoinder to this thesis is that investors that made this decision in prior years (e.g., scaling back exposure in, say, 2012 or even staying defensive for the entire period) have not only suffered underperformance relative to both the market and peers, but have also been made to feel somewhat silly. After all, don't they know central banks won't "allow" equity markets to fall? Who even remembers the October 2014 mini-crash . . . or the 2012 existential crisis in Europe?

It should go without saying (but we'll say it anyway) that regret for not having more equity exposure over the past several years is not a particularly good reason for adding it today.

Measurement and Evaluation

Two behavioral tendencies highlighted in all behavioral finance literature are: (1) a propensity to overestimate our own knowledge, ability, and expertise—which may be especially true of groups like investment committees, whose members have generally achieved considerable success in their careers; and (2) a habit of selectively editing our memories of past decisions and results.

As noted in our paper, *Behavioral Finance*: “Investors and investment committees . . . can attempt to counteract the mistakes that are likely to ensue by monitoring how they make decisions, by documenting the rationale for each decision, and by measuring results.” This is particularly important during good times, when success seems to confirm our expertise and justify our confidence. We suffer from what James Montier characterizes as “the illusion of control: the belief that if things go wrong, we will be able to sort them out.” When that illusion is shattered during a selling panic, we don't know where to turn or what to think. The antidote is to

cultivate the humility that comes from continuously evaluating one's decisions; we will learn that we are more subject to market forces than in control of them, and this perspective might enable us to see both good times and bad in their proper context.

Alas! We see very little evidence that most investment committees have taken this advice. By and large, they tend to exhibit persistent overconfidence and make very little effort to determine whether their decisions have in fact added or detracted value, although such objective evaluation is absolutely fundamental to effective investing.

Herding

What others are doing should inform, *but not dictate*, what you do. We have repeatedly warned against the tendency to follow herd leaders (especially evident among endowment funds), regardless of whether their course is best for a particular institution, given its resources, financial needs, and so on. Ben Inker of the investment management firm GMO commented on this problem in response to a question following a speech he gave at the CFA Institute's European Investment Conference in Amsterdam in December 2008: "Investors may have learned the wrong lesson from what the big endowments were doing. The big endowments . . . made the allocations they did because they said to themselves, 'Our comparative advantage is finding alpha . . . and we want to focus on areas where there is the most alpha potential out there.' . . . If you weren't really good at finding alpha, you were going to be disappointed with the returns"⁷ if you had simply copied the big endowments' asset allocation. This hits on two important points: first, the idea that investors should exploit their comparative advantage, whatever that is; second, that copying what others are doing will fail if you lack their comparative advantage.

Which takes us back to "Measurement and Evaluation": if you don't measure and evaluate the consequences of your decisions, you can never determine what comparative advantages you possess or lack.

⁷ Ben Inker, "Valuation Levels, Market Risk, and Asset Allocation," *Conference Proceedings Quarterly*, (CFA Institute, June 2009), p. 18.

Conclusion

In a crisis, uncertainty explodes, and our sense of control evaporates. The outlook, always foggy at best, becomes impenetrable, heightening our anxiety and often leading us to grasp for the guidance of plausible gurus, even as we know at heart they too are groping in the dark. But if we anticipate our likely reactions to such crises, learning from the research of behavioral psychologists, we can arm ourselves against the mistakes such responses might engender.

The most potent armor is knowledge: if we have a grasp of capital markets history and a sound understanding of where markets stand today relative to their historical trends, we are more likely to buy in than to bail out at the bottom. Similarly, if we have some historical perspective on equity valuations, we have some hope of recognizing when equities are relatively cheap or expensive. Knowing that our time horizon is likely to contract in response to crisis conditions, prodding us into poor decisions, we can train ourselves to focus on more appropriate, longer-term periods by routinely including these in our regular meeting materials.

None of this will be much use, however, unless we have a clear grasp of the major risks we are incurring and some means of calibrating whether these are greater or less than we can tolerate, given our financial circumstances and investment objectives. Routine analyses of portfolio risks should also enable us to recognize and control our own propensity to feel increasingly complacent as those risks become more acute and most panicked when a freefall in the markets has in fact washed a good deal of risk away.

Finally, we can perhaps forestall our instinctive propensity to retreat and conserve in the face of danger by keeping tabs on the efficacy of our decision making over time. Even the most experienced investors regularly make mistakes of commission and/or omission, and nothing is more salutary as a counterweight to overconfidence than an objective record of decisions where such mistakes stare back at us.

We know the future no better than anyone else. However, we believe investors today would be well served to evaluate their risk exposures not only in light of current valuations and risks (China, geopolitical worries, commodity prices, etc.) but also with an eye to remembering how things felt in 2009. Much as it felt “crazy” to load up on equities then, so it feels to lighten up on them today. Perhaps there is a lesson there. ■

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