

# Investment Risk from the Client's Perspective

by Fred Kirby, CFP®

## Executive Summary

- Losses are of greater concern to investors than the promise of long-term returns or even goal attainment; however, they often occupy a low position on the hierarchy of topics discussed between planner and client.
- Measuring portfolio loss in terms of percentage of equity decline and units of time is presented as an alternative to more arcane, less intuitively understood, statistical measurements.
- Drawdown extent and duration often respond differently to similar portfolio bond allocations. Increasing the percentage allocation of bonds in a portfolio reduces the extent of its losses. Surprisingly, the bond allocation has little effect on the length of time it takes to recover from those setbacks. The inclusion of time in the assessment of losses adds another element of risk.
- Unusual drawdown events occur randomly and more frequently than commonly believed. When they are combined with investors' predisposition to short-term trading, the planner is faced with an imposing challenge to maintain client focus on the long term.
- When the periodic evaluation of an overall financial plan turns to a review of its investments, confusion may arise between the plan's annual evaluation period and its investment time horizon. A 20-year plan may inadvertently become a series of 20 one-year investment time horizons, further encouraging both planner and client alike to chase short-term performance.

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*"I discovered—both by talking to planners and by talking to friends and acquaintances about their investing experiences—the fear that one dollar could be ever less than a dollar is very real for many people. If they lose money, they're gone. It's as simple as that."*

—Mary Rowland

[Best Practices for Financial Planners](#)

*"Over a short time increment, one observes the variability of the portfolio, not the returns. In other words, one sees the variance, little else. I always remind myself that what one observes is at best a combination of variance and returns, not just returns (but my emotions do not care about what I tell myself)."*

—Nassim Taleb

[Foiled by Randomness: The Hidden Role of Chance in Life and in the Markets](#)

Two perspectives, one obvious observation: nobody likes to lose money. Losing money affects people and leads to bad investment decisions. When ordinary individuals become investors through a financial plan, they become as susceptible to market vagaries as anyone else. Nothing can be more frustrating than watching a plan abandoned due to disappointing short-term investment performance. It seems that the certainty of attaining long-term objectives just cannot compete with the anxiety produced by short-term random market volatility.

This paper will address losses head on. They are more important than returns in keeping individuals invested and committed to a plan. Once clients become investors, perspectives change from lofty, distant objectives to the near-term fear of simply losing money. It is in the self-interest of both planner and client alike to speak to the issue of losses early in the planning process. From the design considerations of a portfolio to its post-implementation review and monitoring, everyone is then better prepared to anticipate the unexpected.

Using the deceptively simple and often neglected measurement of portfolio drawdown on past market data, we can determine both the historical size of losses and the length of time over which they were incurred. This information quantifies two traits that lead to imprudent investor behavior: fear—the size of the loss—and impatience—the length of time over which the losses occur.

When losses are calculated from fixed points in time that are determined by portfolio peaks, and not arbitrarily chosen calendar dates or rolling periods, we discover that, contrary to our experience with the benefits of adding bonds to a stock portfolio to reduce volatility and dollar loss, their addition has little or no effect on the length of time that it takes to recover those losses.

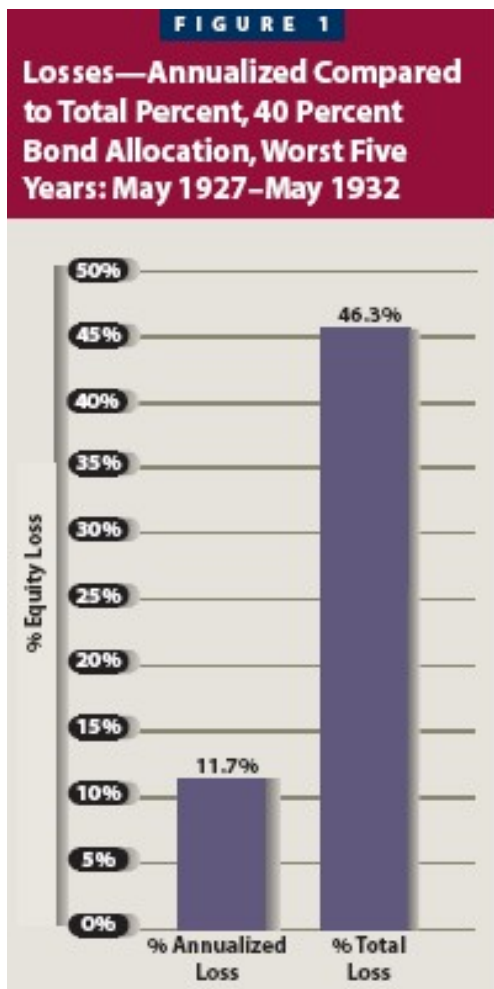
But to effectively examine an issue, we should begin by defining our terms to understand how they may lead to unintentional misrepresentations. Let's begin by investigating the word "loss" and its disappearance from our vocabulary.

## **Risk and Loss—Synonyms Without the Same Meaning**

Isn't it intriguing the lengths people will go to in order to avoid using the word "loss" to describe losses? It is often veiled under the general category of risk, which sounds, well, so much less risky. Loss becomes a "market risk" and then blends in with a litany of other investment hazards such as foreign exchange, business, and inflation risk. Almost magically, by changing a few words, a much dreaded "loss" becomes a more tolerable "risk."

Depending on the sophistication of its user, the word "risk" can take on a variety of meanings. To an ordinary investor, it is a benign word for the possibility of losing money. After all, everyone accepts risk as an everyday part of life. In our culture, risk-takers are often rewarded, even admired. But notice how the meaning changes when "loss" is substituted for "risk." The supposedly interchangeable words take on an entirely different connotation. A "risk-taker" becomes a "loss-taker," or a loser—not nearly as adventuresome and certainly not as desirable.

Unfortunately, the problem of conveying the real emotional effect of investment losses is not only an issue of semantics, but also presentation. Even as simple a graph as that presented in Figure 1 highlights how a significant loss can be mathematically transformed and then presented to make it appear less daunting. It shows a comparison of what actually occurred to a 40 percent bond/60 percent equity portfolio between May 1927 and May 1932. Notice how a five-year loss of 46.3 percent sounds and looks more acceptable when annualized to 11.7 percent.



The endless number of statistical methods to present quantitative data about returns and losses can be just as evasive. Losses are disguised under different terms such as volatility or standard deviations. Even assuming people really understand the meaning and limitations of these and other cryptic statistical tools, are they able to appreciate the actual dollar losses on their holdings and evaluate their emotional effect? Can anyone really relate to what it feels like to lose a unit of standard deviation?

If ordinary investors and their advisors place different meanings and importance on the word "risk," and the conventional methods of its presentation are not relevant to the client's real decision-making process, what other alternative is there? We have learned that it must be transparent and directly address a major concern—the fear of losing money.

A measurement more commonly used to evaluate the performance of commodity-trading advisors meets these criteria. "Portfolio drawdown" quantifies both the extent and duration of losses. It requires no more than an elementary knowledge of mathematics and is easily understood at both a rational and emotional level.

### **Drawdown: Extent and Duration**

Drawdown is usually associated with the dollar or percentage equity reduction in a portfolio before it assumes a recovery. The maximum extent of a drawdown is the largest difference between a new high in a portfolio's value and its subsequent equity low. This is graphically presented in Figure 2 and depicted by the vertical dotted line.

FIGURE 2

**Drawdown—Extent and Duration (Dollar Amounts in Thousands)**

In this portfolio, point A (\$104,000) represents a previous new high in an account's value and point D (\$88,200) is the lowest point before a new equity high is made at point E (\$106,000). Therefore, the dollar and percentage extent of the drawdown is the difference between points A and D, which is \$15,800, or 15.2 percent.

Another derivation of the drawdown calculation measures the amount of time required for a portfolio's value to make a new high from a previous one. The time element of loss is not addressed by traditional volatility assessments of risk, which usually examine fluctuations in portfolio value, not the length of time over which a loss is experienced. The duration of a loss can be just as significant to an investor's actions as a dollar loss. In Figure 2, the previous all-time high occurred at point A, which corresponds to March 2002 on the horizontal axis. Only at point E in January 2004 did the value of the portfolio surpass that previous high. Therefore, the duration of the drawdown was 22 months, the difference between January 2004 and March 2002.

Measuring a portfolio's historical drawdown extent and duration quantifies the level of loss and amount of patience that investments require of their investors. The results can then be compared with the amount of dollar loss and patience that investors require of their investments—essential considerations in the design of a customized asset allocation portfolio.

## Portfolio Design and Assumptions

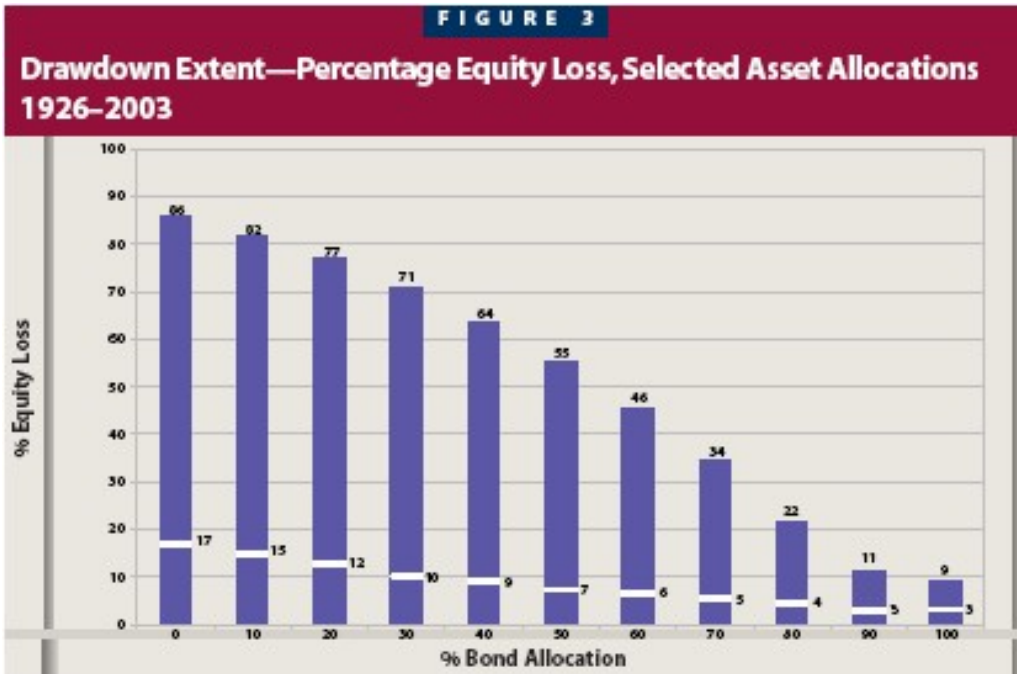
This study uses data from historical (1926–2003) monthly returns on stocks and bonds provided by Ibbotson.<sup>1</sup> The bond component of each portfolio is made up of five-year intermediate-term government bonds. The stock portion is composed of large companies represented by the S&P Composite Index and small companies by a cross section of small-capitalization stocks found on U.S. exchanges. International markets were excluded from the historical analysis because of a lack of equivalent reliable long-term data.

All portfolios in this analysis consist of varying allocations of intermediate bonds to a stock portfolio composed of equal portions of large and small-cap stocks. For example, a 40 percent bond allocation represents a portfolio made up of 40 percent intermediate bonds, 30 percent large and 30 percent small-cap stocks.

The portfolios began in 1926 and were rebalanced back to their original target allocations at the end of each calendar year. This procedure eliminated the possibility that all of the portfolios would eventually become entirely dominated by stocks because of their higher long-term returns. Rebalancing also minimized the effects of style drift and forced a disciplined approach to buying low and selling high.<sup>2</sup>

## Drawdown Extent

The range in the percentage loss in account value for selected portfolios between 1926 and 2003 is presented in Figure 3. Not surprisingly, each increase in the percentage allocation of bonds reduces the extent of losses incurred during each drawdown period. For example, the worst decline in value for a 0 percent bond allocation (which is the same as a 100 percent stock allocation) was 86 percent, while a 100 percent bond allocation lost only 9 percent.



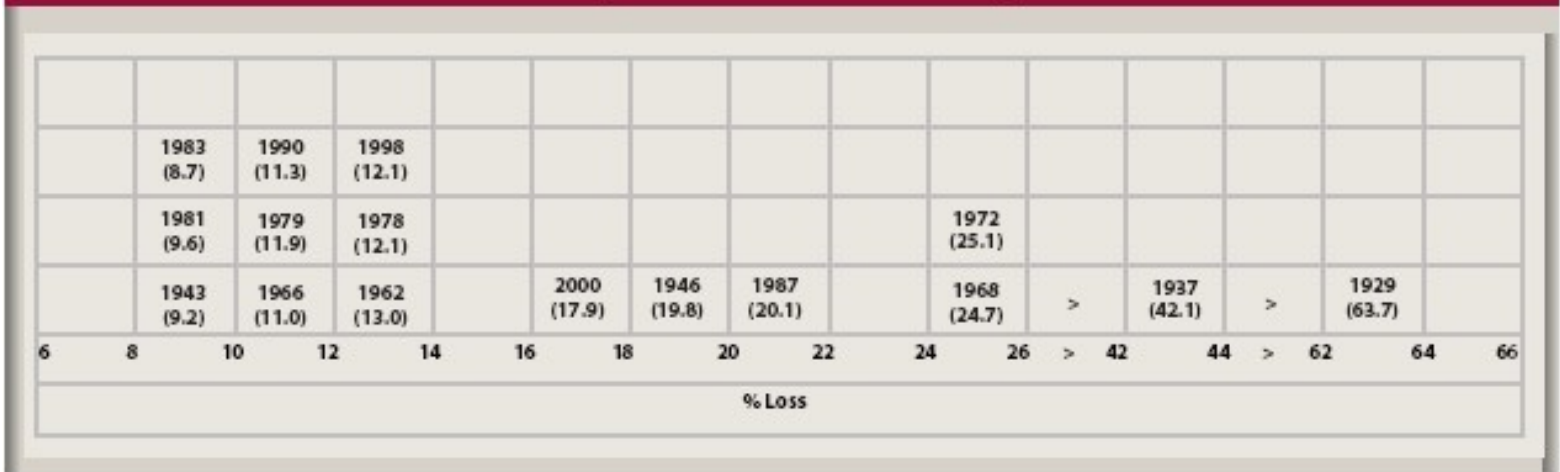
Increasing bond allocations by a certain percentage does not necessarily have the same mitigating effect on losses. Adding to the bond content of a stock-dominated portfolio has far less effect on losses than a similar increase in stocks to a bond-laden one.

Figure 3 presents a further breakdown of the drawdown extent by designating the 85<sup>th</sup> percentile of drawdown losses as inner values represented by white horizontal lines across each column. While the general pattern is not surprising and similar to the previously described worst-case losses, you may notice that the 85<sup>th</sup> percentile of setbacks is a small fraction of each portfolio's worst losses. For example, at the 40 percent bond allocation, 85 percent of the dollar losses are less than 9 percent, but the worst case was a 64 percent loss. This type of asymmetrical distribution of observations concentrated on the lower portion of each column is just what we would expect from observing market behavior. Many periods of tolerable and expected losses combined with a few disquieting outliers. How often are investors lulled into a false sense of security and overconfidence, only to be abruptly jolted into panic and fear?

But let's take this analysis one step further and examine more closely the distribution of the worst 15 percent of losses, or "events," for a 40 percent bond/60 percent stock allocation portfolio. The horizontal axis of the histogram in Figure 4 shows the extent of the percentage losses in equity during each of the worst 15 percent of observations, while the vertical axis indicates the year in which the drawdown began with the worst actual percentage loss in equity presented in brackets.

FIGURE 4

### Drawdown Extent—Worst 15th Percentile, 40 Percent Bond Allocation, 1926–2003



For example, the class interval containing 8 to 10 percent of losses reveals that 1983 was the most recent year that such a loss was incurred. The bracketed amount of 8.7 was the actual percentage loss. This figure should correspond to the 85<sup>th</sup> percentile of losses for a 40 percent bond portfolio previously presented in Figure 3 rounded to 9 percent. Similarly, the last interval shows losses of 63.7 percent occurring in 1929. This agrees with the worst equity loss of 64 percent in Figure 3.

Most of us share a direct interest in these results because we are likely to have some of our investments affected by this bond allocation, which is favored by many balanced mutual funds, pension plans, institutions, and foundations.

The overall pattern of the worst 15<sup>th</sup> percentile of losses for this portfolio again displays similar characteristics to the entire range of observations from Figure 3. The actual values are concentrated between the 8 to 14 percent intervals, producing a positively skewed distribution. Even at this lower end of the distribution of worst losses, there is almost a 50 percent difference in loss expectation. Although clients may initially feel comforted knowing that 85 percent of their losses should be under 8.7 percent, it is less reassuring to realize that setbacks could just as easily reach 13 percent—almost 50 percent more. Referring back to Figure 3, we see that a 13 percent loss closely matches what we would expect at the 85<sup>th</sup> percentile level of a 20 percent bond allocation. Suddenly, a traditional asset allocation of 40 percent bonds and 60 percent stocks thought to be "balanced" and conservative could easily take on the characteristics of a much more aggressive portfolio dominated by stocks.

While the losses are concentrated, the years in which they occur are not. Almost every decade appears at least once in this histogram, and apart from the extreme outliers of 1937 and 1929, unusual losses are not confined to any specific era and occur randomly.

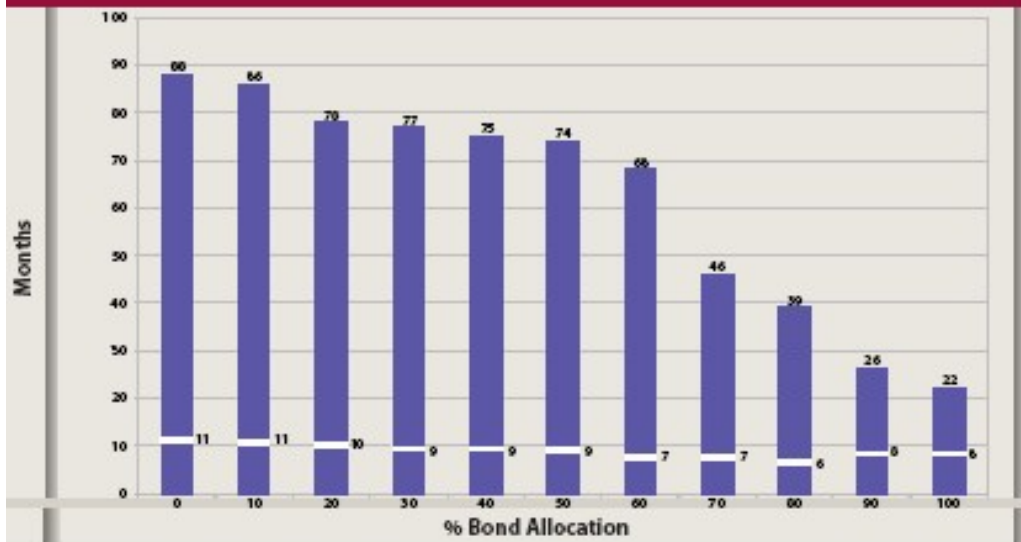
Having examined drawdown from its more familiar use as a measure of the extent of a percentage loss in a portfolio's value, the groundwork is set for expanding this analysis to include the length of time over which a portfolio can be expected to recover from its losses. In the emotion-laden world of investing, poor decisions can just as easily result from losing patience as from losing money.

## Drawdown Duration

Figure 5 summarizes the duration of a drawdown, which measures the time a portfolio requires to recover all of its losses between an old and new high value.

FIGURE 5

### Drawdown Duration—Months to Recover Losses, Selected Asset Allocations 1926–2003



Upon first glance at the overall pattern of the graph, we notice that it differs markedly from Figure 3. Moving across the horizontal axis showing the percentage bond allocations, the decline in months to recover losses stays within a narrow range. Even when the bond content is increased to 50 percent, the reduction of months to recover from setbacks only declines from 88 to 74. Unlike the extent of losses, there is little advantage to increasing the bond allocation of a stock-dominated portfolio until bonds reach at least 60 percent of the portfolio. The time to recover losses is not nearly as sensitive to the proportion of bonds in the portfolio as are the dollar losses.

A similar pattern of little variation emerges when viewing the 85<sup>th</sup> percentile of observations delineated by the white horizontal lines across each column. Eighty-five percent of the losses incurred by an all-stock portfolio required 11 months to recover, while an all-bond portfolio took 8 months. This contrasts with the results obtained from Figure 3 where the percentage equity losses declined incrementally from 17 to 3.

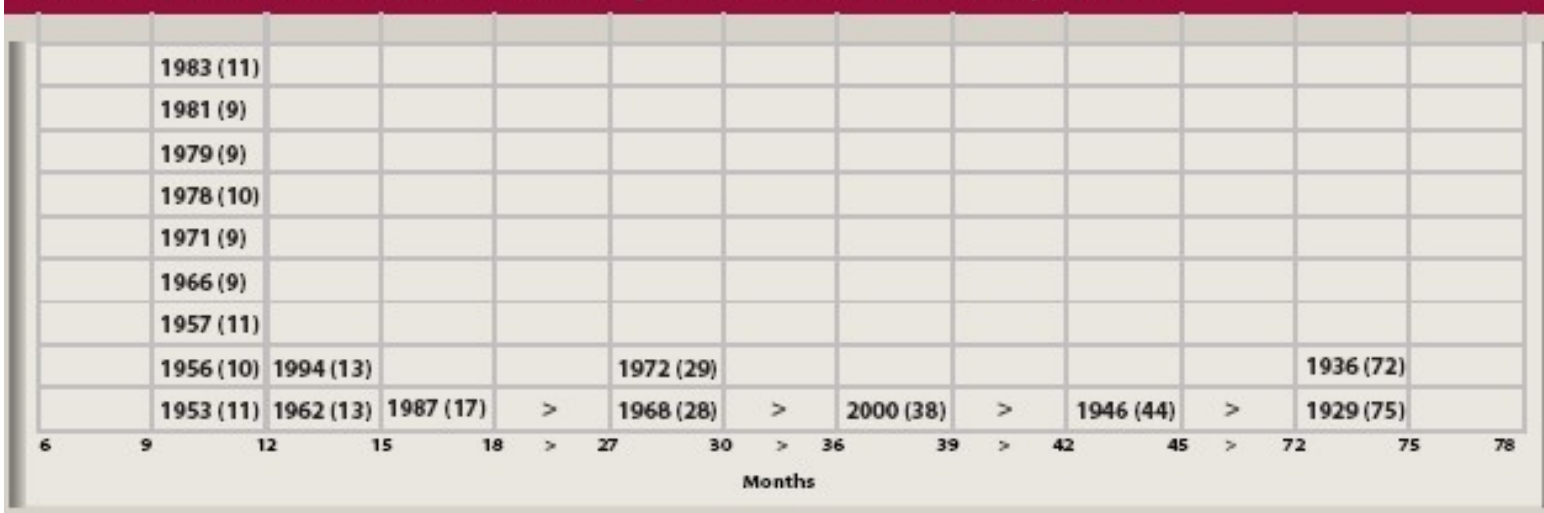
It is rather surprising that the lowest 85<sup>th</sup> percentile drawdown duration of six months occurred not with a 100 percent, but an 80 percent bond allocation. This finding implies that if clients can tolerate a maximum of 39 months drawdown duration, they should consider at least a 20 percent exposure to stocks in their portfolio. Coincidentally, a similar allocation was also suggested by Benjamin Graham in his book *The Intelligent Investor*, where he recommended a minimum 25 percent exposure to stocks for defensive investors.<sup>3</sup>

When our analysis moves from the overall pattern to the detailed distribution of each asset allocation, our attention is again drawn to the asymmetry of observations. Generally they are more extreme than those presented in Figure 3 for drawdown extent. While up to the 85<sup>th</sup> percentile of the drawdown durations are contained within a narrow and emotionally tolerable range of less than one year, the other 15 percent vary widely, with the worst case often eight times greater than the 85<sup>th</sup> percentile.

Figure 6 further breaks down the worst 15<sup>th</sup> percentile of drawdown duration observations for a 40 percent bond and 60 percent stock asset allocation. The horizontal axis shows the drawdown duration in 3-month intervals from 6 to 78 months. The vertical axis displays the year that the drawdown duration began; the months that it lasted are in parentheses.

FIGURE 6

### Drawdown Duration—Worst 15th Percentile, 40 Percent Bond Allocation, 1926–2003



The overall pattern of the histogram is concentrated to the left, producing an increasingly skewed distribution of the worst 15<sup>th</sup> percentile of observations. Half of the worst drawdown durations are contained within 9 to 12 months. But of more concern are the remaining extreme values that go up to 75 months. The similarity in overall appearance of this histogram to Figure 4 should not be surprising. They are both measuring losses, and we would expect a direct relationship between the extent of a percentage dollar loss and the time required to recover them. Yet a more detailed comparison shows that this is not always true.

Examining the years on the two histograms, we notice that the order of their appearance is not necessarily the same. Sometimes the extent of a drawdown is independent of its duration and they become two separate "events." If the extent of a drawdown does not follow the same order as its duration, investors end up being tested twice by the same bad situation. For example, one might have to endure an unusual equity loss and then have to wait an even longer period of time than expected to recover from it. A more insidious variation occurs when the extent of the loss falls within an acceptable level, but the length of time required to recover it does not. In this case, just the duration event alone may lead to a regrettable investment decision.

Together, the two histograms reveal that measuring the number of times an unusual dollar loss occurs without considering the length of time a portfolio takes to recover losses underestimates the frequency of worst-case events that an investor must contend with. Figures 4 and 6 contain a total of 34 observations representing 21 different years when the worst 15<sup>th</sup> percentile of drawdown extent and duration began. Five of those 21 years are solely the result of adding drawdown duration into the analysis. Its inclusion has increased the incidence of an unusual occurrence by over 30 percent. On average, investors are confronted with one of these random and unusual events every 44 months and are assured of experiencing them numerous times throughout an investment lifetime. Furthermore, these events cannot be dismissed as aberrations occurring in the distant past, as they are not clustered about any particular era.

But just what is the actual investment time horizon of individuals? Next we will review a number of studies that reveal the real investment holding periods of ordinary investors as witnessed by their own actions.

## Investor Holding Periods

Unfortunately for planners, clients often have two different investment time horizons: stated one and an actual one. During the development stage of an investment policy statement, when losses are still abstractions, it is easy to take a long-term view about investment performance. But once the plan is implemented and actual losses are incurred, a commitment to long-term objectives can easily give way to an overpowering concern about near-term portfolio performance.

It does not matter what type of investment vehicle is analyzed or the decade studied; investor holding periods are brief and not consistent with a long-term planning horizon. A 1990 study of the redemption rates for equity mutual funds conducted over a 15-year period revealed that almost 35 percent of fund units were redeemed within the first three years and 50 percent in five.<sup>4</sup> More recently, in the November 2001 issue of this journal, Gavin Quill found that the average holding period of mutual fund investors had declined from 5.5 years in 1996 to 2.9 years in 2000.<sup>5</sup> Even allowing for advances over the past 30 years that facilitate fund transactions, and for any variations in the research methodologies used, none of these holding periods are anywhere near the time horizon required of a long-term investor.

Stock market investors did not fare any better. In a study of over 65,000 households at a large discount brokerage firm from 1991 to 1996, Brad Barber and Terrance Odean found that the average household turned over 75 percent of its portfolio annually. Even more incredibly, the annual turnover of all stocks on the New York Stock Exchange was about 50 percent.<sup>6</sup> It seems that market participants ranging from the most sophisticated fund managers to ordinary investors suffer equally from the same affliction of myopic investing.

And as if it were not enough that individuals are predisposed to trade frequently and markets encourage that behavior by playing on the anxiety of investors, there is yet another factor that may contribute to this unwitting conspiracy—the financial planning process.

## **Financial Planning Process: Evaluation Periods and Investment Planning Horizons**

Our own profession can inadvertently play a role in encouraging a short-term investment perspective. The Financial Planning Practice Standards require that CFP professionals perform at least a yearly review of clients' financial plans and assess the progress made toward achieving their goals and objectives.

Unfortunately, these evaluation sessions can easily become confused with an investment planning horizon. If an investment plan has a 20-year time horizon but its performance is evaluated annually, the planning horizon effectively becomes one year. Frequent performance evaluations of the investment plan are unnecessary and counterproductive, especially when it results in short-term performance chasing.

The idea that markets, individuals, and even the planning process unintentionally collude to bring about the worst type of short-term investment behavior is useful in many contexts. It has implications for planners in guiding clients to stay with a recommended long-term financial plan that is dependent on an equally long-term investment horizon.

## **Implications**

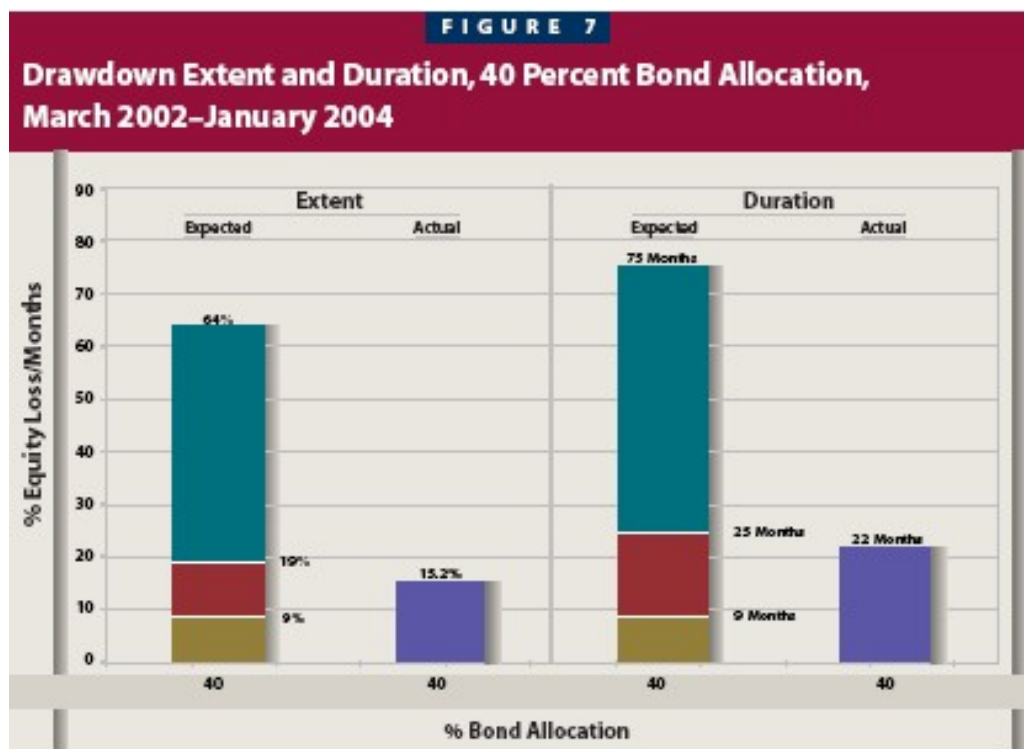
This analysis has demonstrated that markets spend most of their time behaving in a predictable manner, lulling participants into a false sense of security and confidence, only to randomly and severely punish that overconfidence with more frequency than commonly believed through abnormal price reactions or long recovery waiting periods.

Investors often overreact to losses and allow immediate emotions to prevail over reason. This usually results in regrettable investment decisions. While planners know that these decisions are not that significant when compared with other more insidious risks or when placed in the context of a long-term plan, we must still acknowledge that losses are important to our clients and take them seriously. Too often financial advisors seem to work as hard at evading the use of the word "loss" as their clients do in avoiding losses.

Experience suggests that clients will stay with an investment plan and planner only when losses are tolerable and fall within an expected range. Confronting losses before they occur and matching them to client tolerance levels when developing the investment policy statement can only strengthen the client-advisor relationship, not threaten

it. Once the appropriate portfolio is chosen and the inevitable drawdown occurs, both planner and client can then foresee the most likely and worst possible outcomes, thereby reducing the likelihood of an undesirable response to what previously would have been considered an unanticipated event.

Figure 7 is an example of just such a client presentation. It is based on data that we have already seen in Figure 2 that illustrated the definitions of drawdown extent and duration. This portfolio is based on a 40 percent bond allocation. It is diversified across nine asset classes that include different investment styles and geographic regions, with the attendant foreign exchange exposure. Both the actual extent and duration of the drawdown are presented and compared with the historical profiles introduced in Figures 3 and 5. Notice that both the extent and duration of this drawdown qualify as "events" because they both exceed the lower white horizontal lines representing the 85<sup>th</sup> percentile of observations. In fact, they are both closer to the 95<sup>th</sup> percentile depicted by the upper white lines. While the 15.2 percent dollar loss and 22 months it took to recover that loss were the worst in the past decade, they were not unanticipated. This type of presentation is especially useful in allaying client fears and impatience when it is updated regularly during periods of unusual drawdown "events."



The implications of these findings in the development of a strategic investment plan cannot be overemphasized. When a dominant consideration in designing a portfolio is based on the dollar amount of loss tolerance, it assumes that clients are indifferent to the waiting period required to recover those losses. But from the investors' perspective, they may just as well take on a 100 percent stock portfolio because the time to recover any losses is about the same as a 50 percent one and the expected long-term returns are greater. In reality, it is more probable that clients will run out of patience waiting for their investments to recover. When loss is measured in units of time, the incremental benefits of increasing a bond allocation to reduce portfolio risk are lost.

The evidence of the studies on investor holding periods suggests that investors are predisposed to frequent trading and maintain a very short investment time horizon. Anything longer than a five-year holding period is considered extraordinary. This type of behavior is a prescription for failure. It takes between 10 to 15 years for the random variability of portfolio returns to narrow into a more stable and predictable range. Shorter time frames allow luck to be the dominant force behind investment success or failure.

Those planners who believe that outperforming the market in the long term is a zero-sum game before costs, and whose clients are invested in indexed-based asset allocation portfolios, may consider confining their clients' annual portfolio activity to rebalancing asset classes back to target asset allocations or readjusting them for

changes in clients' circumstances. Time formerly spent on annually evaluating investment performance can be redirected to monitoring and reviewing actual drawdowns as they occur. Presentations similar to Figure 7 place losses in perspective and help clients anticipate and get through the next inevitable loss.

## Conclusion

The sad truth is that investment losses bring out the worst in people. Planners know that the least predictable investment decisions are those focused on the short term. Often in the eyes of clients, even the best-thought-out and comprehensive financial plan is only as good as its investment component. Unlike investment performance, which is immediately quantifiable, many of the benefits of an overall financial plan are not observable until the distant future. The plan itself often becomes subordinated to its own investment performance, which is subject to the temporary stress of a particular market crisis.

Just because losses are immediately observable and quantifiable doesn't mean they cannot be used to promote positive rather than negative investment behavior. Financial planners armed with easily understood historical loss profiles of various asset allocations can match their clients' individual loss tolerance levels to an appropriate portfolio before any investments are made and continue to monitor them afterward. What was once considered uncontrollable and fear-inducing becomes manageable and anticipated. Losses suddenly lose their powerful emotional hold. They lose their importance.

You may recall from Figure 1 the 46 percent loss in equity from May 1927 to May 1932. Five years later, in May 1937, that loss became a total ten-year gain of 97 percent for a 7 percent annualized return. The past century of market history has repeatedly demonstrated that over the decades, losses eventually give way to gains.

In planner-client relationships, what is important is what the client thinks is important. If losing money is the greatest concern, let's bring the issue to the forefront and call a loss a loss. Let's give losses the recognition they deserve, exposing them for what they really are—temporary distractions on a lifelong journey toward achieving one's financial goals.

## Endnotes

1. Ibbotson, [\*Stocks, Bonds, Bills, and Inflation: 2004 Yearbook\*](#) (Chicago, 2004).
2. William Bernstein, [\*The Intelligent Asset Allocator\*](#) (New York, 2001): 33.
3. Benjamin Graham, [\*The Intelligent Investor\*](#). (New York, 1973): 41.
4. Investment Company Institute, "Trends in Ownership Cost of Equity Mutual Funds," *Perspective*, November 1998: 7.
5. Gavin Quill, "Investors Behaving Badly: An Analysis of Investor Trading Patterns in Mutual Funds," *Journal of Financial Planning*, [November 2001](#): 83.
6. Brad M. Barber and Terrance Odean, "Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors," *The Journal of Finance*, April 2000: 800.