

# Worried About the Market?

*It Might Be Time  
for this Strategy*

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## *Worried About the Market? It Might Be Time for this Strategy*

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When the tech bubble collapsed back in 2000, the Nasdaq fell from 5,132 to just 1,470 a few months later. Many popular stocks found their market prices gutted. For example, Cisco lost 86% of its market cap, while Amazon fell over 90% from \$107 to \$7. Losses such as these decimated investor portfolios.

In 2008, it happened again. The average diversified U.S. stock fund fell a whopping 38%. The S&P 500 lost 50% by March 2009, and investors with more than \$200K lost more than a quarter of their savings on average.

Why bring up these bad memories?

Because as we get closer to the end of this bull market, whenever that be, we see many investors are wondering two things: 1) will “whatever’s next” be as bad as 2000 and 2008; and 2) if so, is there a way to avoid it?

No one knows exactly when this bull finally will run out of steam, or how far it will fall; yet, there are signs we’re approaching an inflection point.

Therefore, in this white paper, we’ll cover four signs of an aging bull, briefly revisit traditional strategies to help protect your portfolio, then highlight a strategy that has the potential to actually profit during a bear market. In our Appendices, we’ll wrap up by detailing an extension to this strategy that many investors might find interesting, and we’ll offer a pointed word to advisors.

Let’s jump in by highlighting four signs of a potential turn in the market.

### *1. An Aging Bull*

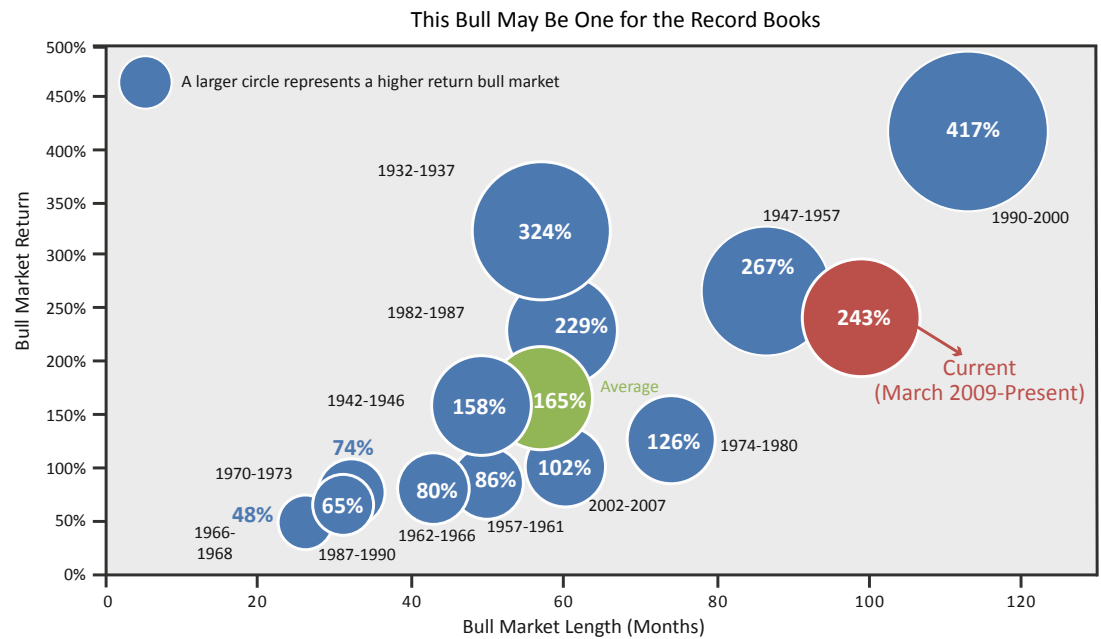
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Our current bull market began on March 9, 2009.

It turned eight years old this past March, which makes it the second longest bull market on record. In fact, as of March, this bull was 78% longer than average bull market length of 54 months.

And now we have a bull market being described as possibly “one for the record books.”

FIGURE 1 Various Bull Market Returns and Lengths (1932 - 06/30/2017)



Source: Bloomberg, Wells Fargo Investment Institute. 6/30/2017. Market represented by the S&P 500 Price Index. **Past Performance is no guarantee of future results.** An index is unmanaged and not available for direct investment.

Source: Bloomberg, Wells Fargo Investment Institute

So, though obvious, the first caution-sign is simply this bull’s venerable, old age.

We don’t need to belabor this point, but throwing new capital into a bull market that’s already the first or second-longest in history would seem unwise. It feels a bit like being on mile 21 of a marathon... and suddenly agreeing to start and complete a new, second marathon as soon as you finish the one you’re currently running.

## 2. Elevated Valuations

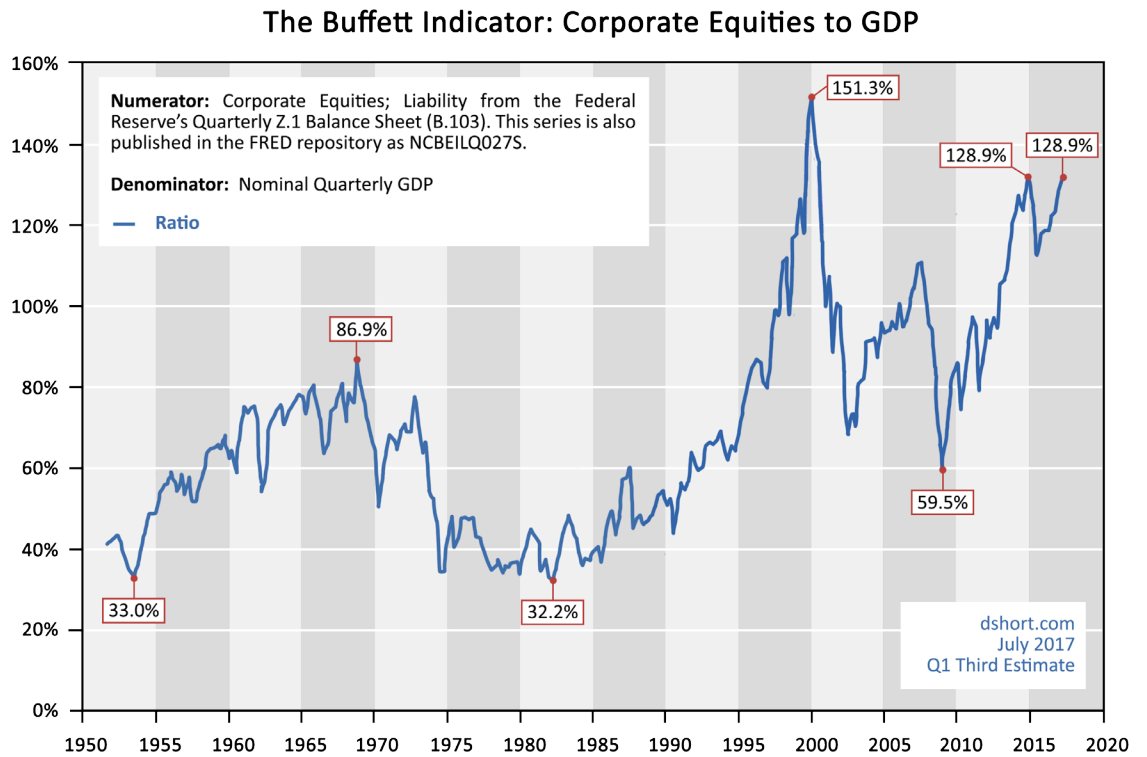
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In simplest terms, we believe the stock market is overvalued.

Below is the respected “Buffett Valuation” (based on Warren Buffett’s fondness for this metric, calling it “probably the best single measure of where valuations stand at any given moment”). It compares the total value of the stock market to a country’s GDP.

As of the time of this writing, the U.S. Buffett valuation is about 1.3, meaning the stock market is about 30% larger than the entire U.S. economy. Historically, markets start getting in trouble when this ratio passes 1.0. And if you’re wondering, the ratio hit a top of around 1.1 before the 2008 crash.

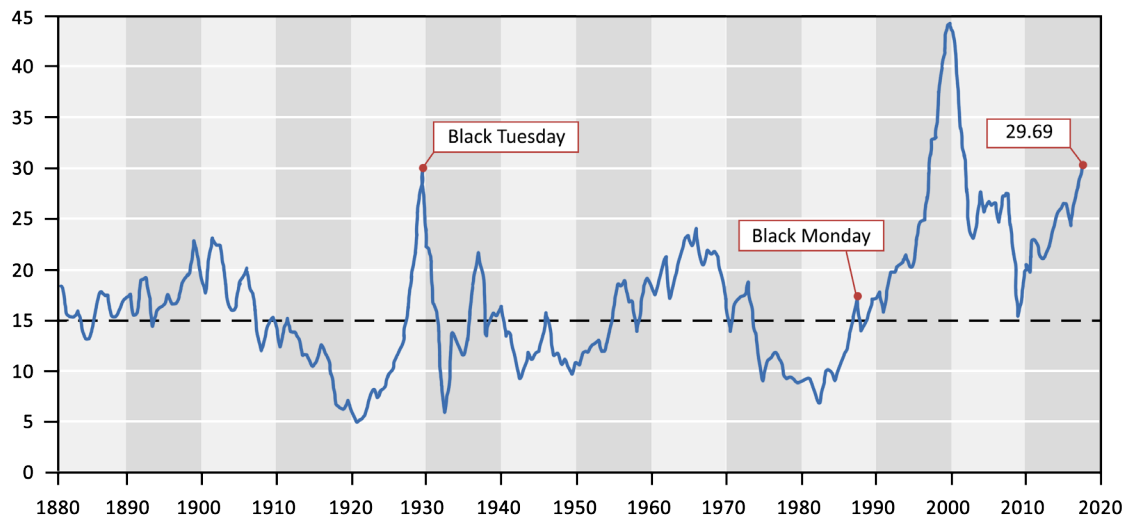
FIGURE 2 Stocks to GDP (1950 - 07/2017)



Source: DShort

For another example, here's my favorite Shiller 10-year PE (CAPE) ratio.

FIGURE 3 Shiller CAPE Ratio (1880 - 2017)

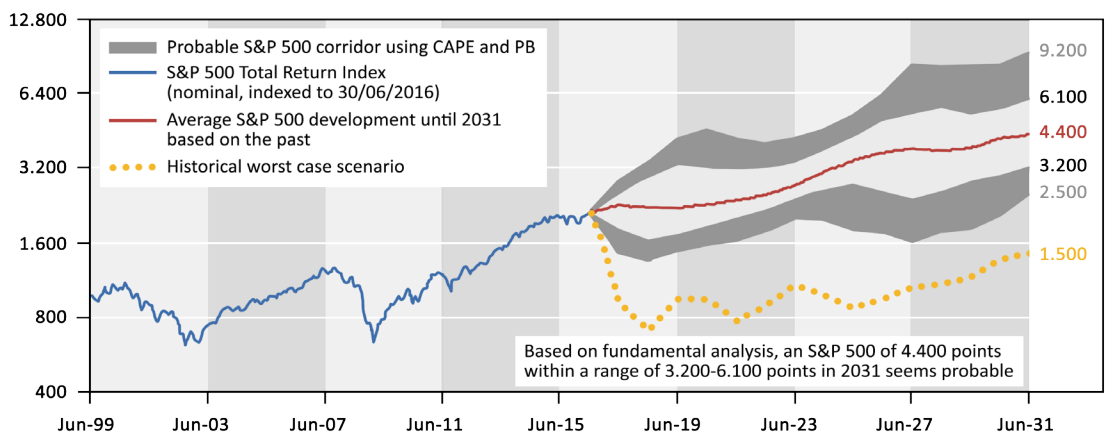


Source: Multpl

Note that we're at the highest valuation we've seen since the record-highs in the 2000 crash. And for any Shiller-detractors, don't miss the main point – pick a basket of your own favorite valuation metrics, and collectively, they'll provide you the same “overvalued” takeaway. Some indicators are even at all-time highs. We could argue over how accurately any single, specific valuation metric approximates by how much, but that would be largely irrelevant; if you look at a basket of common valuation metrics – things like price-to-earnings, price-to-book, price-to-free-cash-flow, and so on – they're all generally saying the same thing: The market is expensive.

Here is a nice illustration from the good folks at Star Capital – I like how they describe the future as a spectrum of possibilities, and they combined the CAPE ratio and P/B:

**FIGURE 4 Possible S&P Returns**



Source: *Star Capital*

In a past blog, we compared the status of the market today to a blackjack player in Vegas, sitting on 16 vs. a dealer's 10 up-card (this means the blackjack player does not have a good hand). Sure, he could take a card, get incredibly luck, and receive either a 4 or 5 so he hits 20 or 21. But odds are he's going to lose the hand.

Similarly, betting on significantly higher valuations from this point carries significant risk. It doesn't mean you might not get lucky and get those greater gains, but if we go by the odds, it's not your safest bet. We track a basket of long term valuation metrics over on [The Idea Farm](#), and the U.S. is the second most expensive market in the world. Getting dealt that 5 right now would require you to be very, very lucky.

### 3. Sentiment

Then there's investor sentiment...

When everyone is loving the stock market and convinced it's going higher, it's often an unwise time to be investing new capital. There are several different investor sentiment indicators suggesting investors are more bullish than ever, but I'll just draw your attention to a recent [Meb Faber Show podcast with Doug Ramsey from Leuthold](#). In it, Doug told us that this is the most optimistic sentiment he's seen in the last eight years. Remember Warren Buffett's adage: "Be fearful when others are greedy and greedy when others are fearful."

On March 1, 2017, [an article in Seeking Alpha](#) reported that The Investors Intelligence survey hit 63.1 – the highest bullish reading since 1987.

**FIGURE 5** High Sentiment and Market Action

| High Sentiment Years & Subsequent Market Action |                           |   |
|---|---------------------------|---|
| Ten Highest Average Sentiment Years             | Average Sentiment Reading | Subsequent Year Gain or Loss in S&P 500 |
| 1976  | 83.7 %                    | -11.5 %                                 |
| 2014  | 76.3                      | 1.38                                    |
| 1965  | 75.6                      | -13.1                                   |
| 1964  | 75.0                      | 9.1                                     |
| 1983  | 72.3                      | 1.4                                     |
| 2013  | 71.0                      | 11.4                                    |
| 1972  | 70.8                      | -17.4                                   |
| 1971  | 70.5                      | 15.6                                    |
| 2004  | 70.3                      | 3.0                                     |
| 1986  | 68.9                      | 2.0                                     |
| <b>Average Return:</b>                          |                           | <b>0.6 %</b>                            |

Source: Leuthold

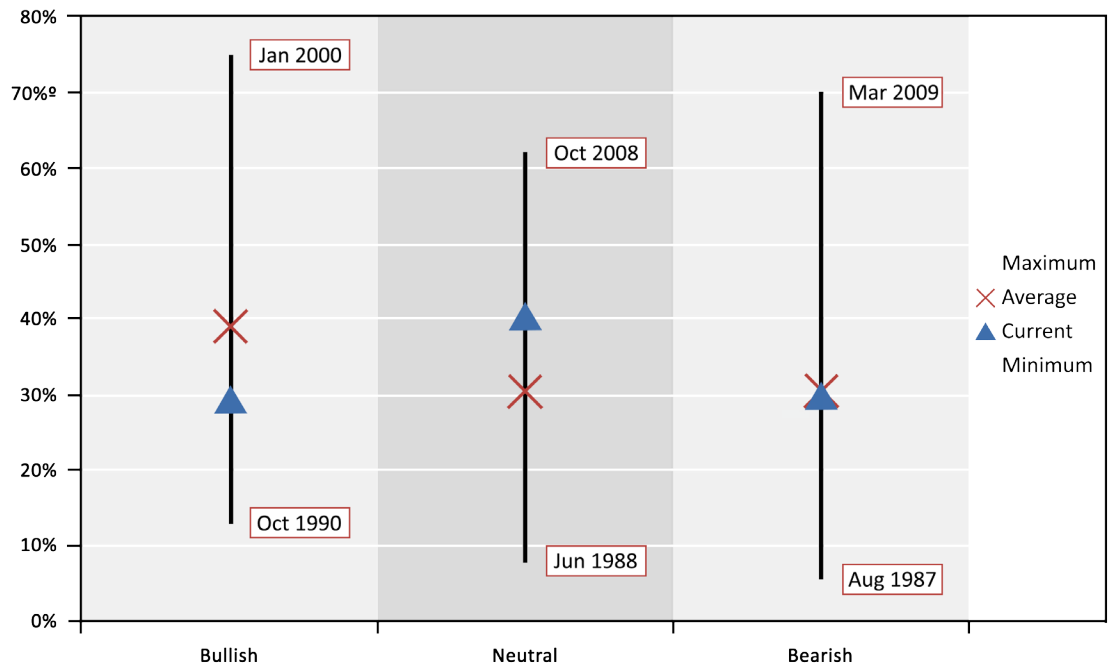
**FIGURE 6** Low Sentiment and Market Action

| Low Sentiment Years & Subsequent Market Action |                           |   |
|--|---------------------------|---|
| Ten Lowest Average Sentiment Years             | Average Sentiment Reading | Subsequent Year Gain or Loss in S&P 500 |
| 1994   | 41.4 %                    | 34.1 %                                  |
| 1969   | 42.4                      | 0.1                                     |
| 1974   | 42.7                      | 31.5                                    |
| 1982   | 42.8                      | 17.3                                    |
| 1988   | 44.7                      | 27.3                                    |
| 1968   | 44.8                      | -11.4                                   |
| 1981   | 45.2                      | -14.8                                   |
| 1990   | 45.4                      | 26.3                                    |
| 1970   | 47.0                      | 10.8                                    |
| 2008   | 47.2                      | 23.5                                    |
| <b>Average Return:</b>                         |                           | <b>17.4 %</b>                           |

Source: Leuthold

Oddly enough, the AAIL sentiment surveys are not showing extreme bullishness yet. But we do know that the crowd often gets market turning points correct... just in the wrong direction! When were investors most bullish on stocks? The literal worst time to be bullish in my career? And most bearish? The exact bottom in March, 2009.

FIGURE 7 AAI Stocks Sentiment Survey (07/1987 - 07/2017)



Source: AAI

#### 4. Where's the Volatility

To illustrate our fourth and last red flag, let's borrow a popular cliché from Hollywood...

"It's quiet. Almost too quiet."

To make sure we're all on the same page, the most common measure of volatility is "the VIX." VIX is the symbol for the Chicago Board Option Exchange's Volatility Index. Without getting into too much detail, it's a measure of expected stock market volatility over the short term (ensuing 30 days).

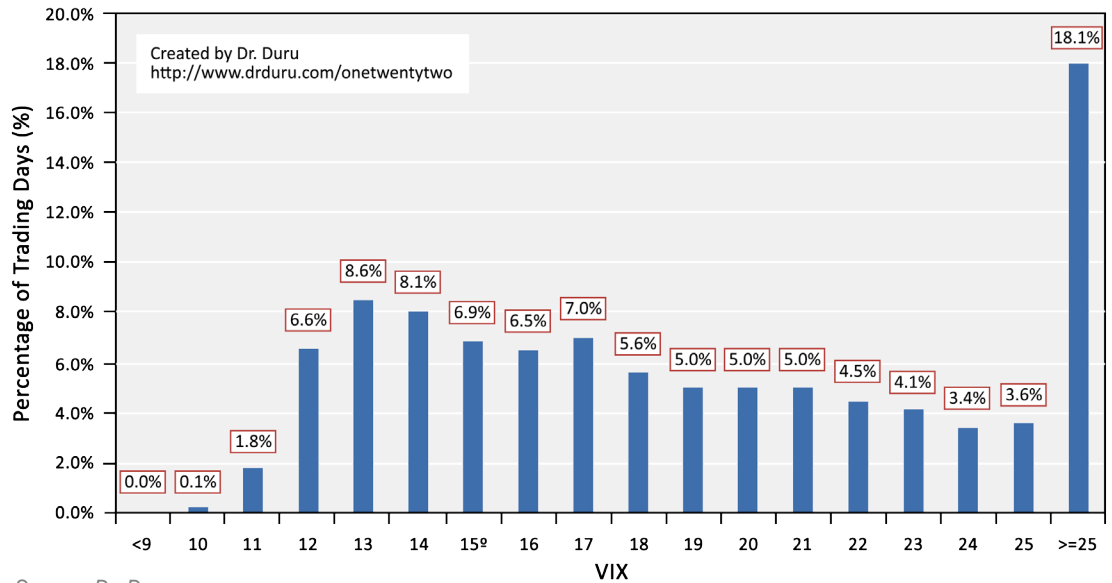
The general line in the sand separating calm markets from fearful markets is a VIX reading of 20. At the end of January, the VIX **dropped below 10** for the first time in a decade. And on June 9, the VIX dropped to 9.37, which is the **lowest reading in 23 years**.

**Even the Fed is concerned.** The Fed minutes from the January report to Congress read, "They also expressed concern that the low level of implied volatility in equity markets appeared inconsistent with the considerable uncertainty attending the outlook for such policy initiatives."

For some added context, here's a table from [Investing.com](http://Investing.com) showing the percentage of time the market spends at various VIX levels.



FIGURE 8 Percentage of Trading Days the VIX Spends Between Certain Levels (1990 - 5/2017)



Now, low volatility does not mean a market blowup tomorrow. We could remain in a low-VIX market for a long time. However, this anemic VIX is another brushstroke painting the broader image of a market that we believe is flashing more yellow and red than green.

So with this in mind, let’s now turn to some of the traditional ways in which investors can try to protect their portfolios.

## Traditional Defensive Strategies

First, to avoid any hate mail, please understand I’m not declaring an imminent market crash based on the aforementioned four red flags. We all know markets can keep climbing far past the point logic would suggest otherwise. And as most of you know, I’m a trend follower at heart, so I’m simply noting that this is all cause for caution, suggesting that this bull’s better days are behind us.

Put another way, I believe we’re seeing yellow warning lights, not red. Red will come if and when the trend finally rolls over, whether that’s in a month, a quarter, or even several years from now – but the precise timing of that market-shift isn’t something I’m trying to predict.

But returning to the present moment, you don’t have to look hard to find reasons to be cautious of the markets. However, what’s the answer? Pulling your money out and shoving it under the mattress isn’t a logical response. So, what then? What can investors do now to help protect themselves?

Well, you buy car insurance to protect your car, right? And homeowners' insurance for a fallen tree or a break-in? Ditto for life insurance as a protection for your family.

Well, do you apply the same logic to your portfolio?

Portfolio protection can take many forms.

First, you don't have to invest 100% in stocks. We often say the best way to hedge a risk is to not take the risk in the first place. No one says you must own equities, and cash and bonds are an acceptable "sleep at night" choice. So instead of 100% in stocks, investors could own 80%, or 60%, or even less with the remainder in cash or bonds.

Second, you don't have to limit yourself to only U.S. markets. We feel this choice is a no-brainer. We've spoken often over the past few years about how moving into cheaper foreign equities can be a wise choice in a world dominated by more expensive U.S. shares. Particularly, we believe moving into the cheapest markets by long term valuation metrics could still potentially deliver double digit returns going forward. Additional diversification into foreign bonds, and/or real assets like real estate and commodities historically has done a great job of helping to lower overall portfolio volatility and drawdowns. It does not guarantee protection, but on balance, it helps.

Third, you could add liquid alternatives. Incorporating strategies like trend following and managed futures, or long-short and market neutral equity, can also help to hedge equity risks.

Now, most investors are familiar with these three choices. But there's a fourth one we're going to cover in the next section – and while it too is defensive, if used tactically, it can also be an offensive strategy.

To be clear, it's not for everyone. It's probably also not for "all the time." That said, when used wisely and strategically, it has the ability not only to help protect a portfolio during drawdowns, but actually to profit from it. And in our Appendix, we'll discuss an extension to this strategy that some investors may want to consider which can potentially be applied "all the time."

To contextualize this strategy, we'll start by providing historical numbers from a variety of different asset classes that are generally considered hedging vehicles. After that comparison, we'll look at how this strategy performs when added as a permanent fixture in a portfolio.

## Getting Some Context – Asset Class Returns in Brutal Markets

First, let's start with the bad times. In the chart below, we evaluate the 10 worst months in the S&P 500 since July 1986. U.S. stocks averaged a -11.8% return in those months. The worst month, of course, was October 1987 when stocks fell 21.5%... ouch! (And by the way, if you extend this analysis back to 1900, the average of the worst 10 U.S. stock months is closer to -20%...)

In the below table, we include some of the main global asset classes. What you'll find is that there's a wide discrepancy in the extent to which the asset classes held up – or didn't – in nasty, down months for U.S. stocks.

For example, note how a few asset classes performed equally bad during those times, including foreign stocks, commodities, and REITs.

Also observe how T-bills, 10-year government bonds, and gold performed. We'll comment on those below.

**FIGURE 9** The Worst U.S. Stock Market Months (07/1986 - 12/2016)

| ALL MONTHS<br>07/1986-12/2016 | S&P 500         | Foreign<br>Stocks | 10 Year<br>US Bonds | 30 Year<br>US Bonds | T Bills | Commodities    | REITs           | Gold     |
|-------------------------------|-----------------|-------------------|---------------------|---------------------|---------|----------------|-----------------|----------|
| 10/31/1987                    | (21.53%)        | (13.99%)          | 5.75%               | 8.72%               | 0.44%   | 1.05%          | (14.28%)        | 4.09%    |
| 10/31/2008                    | (16.80%)        | (20.17%)          | (0.97%)             | (0.30%)             | 0.01%   | (28.20%)       | (30.23%)        | (16.89%) |
| 8/31/1998                     | (14.46%)        | (12.37%)          | 3.88%               | 6.69%               | 0.40%   | (5.90%)        | (10.35%)        | (3.42%)  |
| 9/30/2002                     | (10.87%)        | (10.71%)          | 4.45%               | 4.45%               | 0.13%   | 4.57%          | (3.95%)         | 3.52%    |
| 2/28/2009                     | (10.65%)        | (10.23%)          | (1.03%)             | (1.93%)             | 0.02%   | (6.10%)        | (19.46%)        | 1.88%    |
| 2/28/2001                     | (9.12%)         | (7.49%)           | 2.54%               | 3.44%               | 0.39%   | (1.41%)        | (1.30%)         | 0.53%    |
| 8/31/1990                     | (9.04%)         | (9.68%)           | (2.59%)             | (5.13%)             | 0.62%   | 16.59%         | (6.11%)         | 3.94%    |
| 9/30/2008                     | (8.91%)         | (14.42%)          | 0.16%               | 2.37%               | 0.08%   | (12.44%)       | (0.33%)         | 4.84%    |
| 6/30/2008                     | (8.43%)         | (8.16%)           | 0.91%               | 3.52%               | 0.16%   | 9.23%          | (11.25%)        | 4.31%    |
| 1/31/2009                     | (8.43%)         | (9.80%)           | (4.82%)             | (14.53%)            | 0.02%   | (8.94%)        | (16.49%)        | 5.53%    |
| <b>10 Worst Months</b>        | <b>(11.82%)</b> | <b>(11.70%)</b>   | 0.83%               | 0.73%               | 0.23%   | <b>(3.16%)</b> | <b>(11.37%)</b> | 0.83%    |
| <b>Batting Average</b>        | 0%              | 0%                | 60%                 | 60%                 | 100%    | 40%            | 0%              | 80%      |
| <b>ALL Negative Months</b>    | <b>(3.58%)</b>  | <b>(2.77%)</b>    | 0.66%               | 0.91%               | 0.27%   | <b>(0.53%)</b> | <b>(2.14%)</b>  | 0.95%    |
| <b>Batting Average</b>        | 0%              | 25%               | 62%                 | 56%                 | 100%    | 47%            | 35%             | 55%      |

Source: Meb Faber/GFD

T-bills had a great batting average, positive in all ten months, but offered little diversification benefit with average returns of 0.2% in those 10 months.

10-year government bonds were slightly better, with average returns of 0.8% but only positive in six of ten months.

Gold had similar returns of 0.8% and a good batting average of 80%, but also had a terrible month (-16.9%) to coincide with the second worst stock return month (-16.8%). So, hedging is not guaranteed.

Let’s see how all of these various investments performed during longer periods, namely the two big bears in the U.S. since 2000. These bears saw declines of 42.5% and 50.9%. Brutal!

In the table below, notice how foreign stocks had equally bad performance as U.S. stocks. Commodities and REITs held up during the first bear, but collapsed during the second. T-bills had positive, but muted returns, and gold shone nicely. U.S. 10-year bonds also had nice returns of 29.6% and 18.2% across the two bears.

**FIGURE 10** The Two Most Recent Bear Markets

| TWO BAD BEARS     | S&P 500  | Foreign Stocks | 10 Year US Bonds | 30 Year US Bonds | T Bills | Commodities | REITs    | Gold   |
|-------------------|----------|----------------|------------------|------------------|---------|-------------|----------|--------|
| 08/00 - 02/2003   | (42.52%) | (42.46%)       | 29.58%           | 29.99%           | 7.31%   | 16.16%      | 28.32%   | 27.55% |
| 10/2007 - 02/2009 | (50.95%) | (56.40%)       | 18.17%           | 25.38%           | 1.84%   | (53.40%)    | (63.19%) | 18.64% |

Source: *Meb Faber/GFD*

So clearly, some of these asset classes did help in bear markets, but I think we can do better. Let’s reveal the strategy that’s potentially going to help us.

## Implementing a Defensive Strategy

The “defensive-but-also-potentially-offensive” strategy centers around buying put options. If you’re unfamiliar with options, it’s beyond the scope of this article to dive into them in detail, but there are plenty of great educational resources out there that can get you up to speed.

The basic idea is that if the market (or your stocks) rolls over, a put option you’ve previously purchased will enable you to either sell your equities at the pre-determined strike price (play defense), or if you don’t own the underlying investment, you’ll be able to profit as the underlying’s market price falls, therein increasing the value of the put you own (play offense).

We refer to this as a “tail risk” strategy. The name comes from the statistical distribution curve, where extreme events tend to occur in either “tail” of the curve. In our case, we’re looking to protect ourselves from those extreme market drawdowns that exist in the far left-side of the distribution curve’s tail.

For simplicity sake, and since the data is public, the tail risk strategy we will utilize is one that buys monthly 5% out-of-the-money options on the S&P 500. We then invest 90% of the portfolio in 10-year U.S. government bonds. (Note: while we sourced the data from the CBOE, this is a different strategy than the [CBOE S&P 500 5% Put Protection Index](#) (PPUT) that holds a long position in the S&P 500 Index. We have also replicated numerous variants with our own datasets but elected to publish with the CBOE data since it is public.)

So, let's now add this tail risk strategy to our earlier comparison to see how it measures up.

Notice in the table below that a simple tail risk strategy had a nice 90% batting average and the highest return at 4.9% during the worst stock months. The only reason it was not 100% was the #10 month of 1/2009, which is the "least worst" of these 10 Worst Months.

FIGURE 11 A Tail Risk Strategy Outperforms in the 10 Worst Months (07/1986 - 12/2016)

| ALL MONTHS<br>07/1986-<br>12/2016 | S&P 500  | Foreign<br>Stocks | 10 Year<br>US<br>Bonds | 30 Year<br>US<br>Bonds | T Bills | Commodities | REITs    | Gold     | TAIL<br>RISK |
|-----------------------------------|----------|-------------------|------------------------|------------------------|---------|-------------|----------|----------|--------------|
| 10/31/1987                        | (21.53%) | (13.99%)          | 5.75%                  | 8.72%                  | 0.44%   | 1.05%       | (14.28%) | 4.09%    | 16.39%       |
| 10/31/2008                        | (16.80%) | (20.17%)          | (0.97%)                | (0.30%)                | 0.01%   | (28.20%)    | (30.23%) | (16.89%) | 15.61%       |
| 8/31/1998                         | (14.46%) | (12.37%)          | 3.88%                  | 6.69%                  | 0.40%   | (5.90%)     | (10.35%) | (3.42%)  | 9.39%        |
| 9/30/2002                         | (10.87%) | (10.71%)          | 4.45%                  | 4.45%                  | 0.13%   | 4.57%       | (3.95%)  | 3.52%    | 6.46%        |
| 2/28/2009                         | (10.65%) | (10.23%)          | (1.03%)                | (1.93%)                | 0.02%   | (6.10%)     | (19.46%) | 1.88%    | 1.13%        |
| 2/28/2001                         | (9.12%)  | (7.49%)           | 2.54%                  | 3.44%                  | 0.39%   | (1.41%)     | (1.30%)  | 0.53%    | 3.36%        |
| 8/31/1990                         | (9.04%)  | (9.68%)           | (2.59%)                | (5.13%)                | 0.62%   | 16.59%      | (6.11%)  | 3.94%    | 0.43%        |
| 9/30/2008                         | (8.91%)  | (14.42%)          | 0.16%                  | 2.37%                  | 0.08%   | (12.44%)    | (0.33%)  | 4.84%    | 1.53%        |
| 6/30/2008                         | (8.43%)  | (8.16%)           | 0.91%                  | 3.52%                  | 0.16%   | 9.23%       | (11.25%) | 4.31%    | 1.27%        |
| 1/31/2009                         | (8.43%)  | (9.80%)           | (4.82%)                | (14.53%)               | 0.02%   | (8.94%)     | (16.49%) | 5.53%    | (5.95%)      |
| <b>10 Worst<br/>Months</b>        | (11.82%) | (11.70%)          | 0.83%                  | 0.73%                  | 0.23%   | (3.16%)     | (11.37%) | 0.83%    | 4.96%        |
| <b>Batting<br/>Average</b>        | 0%       | 0%                | 60%                    | 60%                    | 100%    | 40%         | 0%       | 80%      | 90%          |
| <b>ALL Negative<br/>Months</b>    | (3.58%)  | (2.77%)           | 0.66%                  | 0.91%                  | 0.27%   | (0.53%)     | (2.14%)  | 0.95%    | 1.17%        |
| <b>Batting<br/>Average</b>        | 0%       | 25%               | 62%                    | 56%                    | 100%    | 47%         | 35       | 55%      | 58%          |

Source: Meb Faber/GFD/CBOE

We find similar behavior during long bear markets. As the chart below shows, a strategy of buying puts appears to have been the best hedge to a traditional U.S. stock-centric portfolio.

**FIGURE 12** A Tail Risk Strategy Outperforms in Our Last Two Bears

| TWO BAD BEARS     | S&P 500  | Foreign Stocks | 10 Year US Bonds | 30 Year US Bonds | T Bills | Commodities | REITs    | Gold   | TAIL RISK |
|-------------------|----------|----------------|------------------|------------------|---------|-------------|----------|--------|-----------|
| 08/00 - 02/2003   | (42.52%) | (42.46%)       | 29.58%           | 29.99%           | 7.31%   | 16.16%      | 28.32%   | 27.55% | 42.46%    |
| 10/2007 - 02/2009 | (50.95%) | (56.40%)       | 18.17%           | 25.38%           | 1.84%   | (53.40%)    | (63.19%) | 18.64% | 41.35%    |

Source: Meb Faber/GFD

We think the takeaway is clear: This tail risk strategy has produced strong relative returns during bad months and bear markets.

Now, for those of you who consider yourselves market-timers, you’re likely incredibly excited about the potential returns here – as you should be.

But investors who consistently time markets accurately are a rare breed. What about investors who don’t consider themselves market-timers? Might such a tail risk strategy have any benefit for them? After all, a tail risk strategy is great when timed well. But what if you allocate to such a strategy prematurely? What’s the impact on a portfolio?

These are important questions. Therefore, when evaluating a tail risk strategy, non-market timers have to examine bull markets as well as bears. Fortunately, as you’ll see momentarily, there’s still a strong case to be made for this strategy, even if the timing isn’t perfect.

## Buying Puts – Is it Worth it?

For the periods evaluated above, the tail risk strategy provided the best returns, hands-down. And as just noted, successful market-timers could allocate in and out of tail risk assets to the significant benefit of their portfolios.

But remember, this strategy comes at a cost. You’re paying for the protection. That means investing in a tail risk strategy has some similarities to purchasing insurance. And that’s going to affect overall portfolio returns for those of us who aren’t perfect market-timers.

You see, in a flat-to-rising market, one would expect a tail risk allocation of U.S. government bonds and S&P 500 put options to produce muted, flat, or even negative yearly returns. That’s because if the market doesn’t roll over during the life of the put option you’ve purchased (increasing its value), then the money you spent purchasing those puts will go down the drain, dragging down your overall portfolio returns. In the same manner, if you are able to avoid a car crash for a year, then your auto-insurance

premium can be viewed as having gone down the drain (but we nonetheless renew our auto-insurance each year).

So, the big question for non-market-timers is “do the strong returns in bear markets balance out the poor returns in rising markets?” Does the insurance premium cover the cost of insurance?

To attempt to answer this question, in the chart below we add a tail risk allocation to a U.S. stock portfolio. This is assuming this allocation is added permanently – buy-and-hold and rebalanced. We reference this as “Tail Risk” and provide four different options for the percentage amount of puts one might add to a portfolio.

**FIGURE 13** How Adding a Permanent Tail Risk Strategy Affects Portfolio Returns (06/1986 - 12/2016)

|                     | S&P 500  | 80% S&P<br>20% TAIL RISK | 60% S&P<br>40% TAIL RISK | 40% S&P<br>60% TAIL RISK | 20% S&P<br>80% TAIL RISK | TAIL RISK |
|---------------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| <b>Return</b>       | 9.89%    | 8.74%                    | 7.39%                    | 5.86%                    | 4.16%                    | 2.31%     |
| <b>Volatility</b>   | 15.11%   | 11.36%                   | 8.18%                    | 6.49%                    | 7.38%                    | 10.19%    |
| <b>Sharpe Ratio</b> | 0.44     | 0.48                     | 0.50                     | 0.39                     | 0.12                     | (0.10)    |
| <b>MaxDD</b>        | (50.95%) | (38.20%)                 | (22.96%)                 | (10.28%)                 | (14.40%)                 | (26.64%)  |

Source: Meb Faber/GFD

So, what’s your takeaway as you examine these returns?

I showed this to several people in our office, and one of the responses was “Not one of the put strategy iterations provides better returns than the S&P, so why not just go buy-and-hold S&P?”

That’s an understandable reaction – it might even be yours – but let’s challenge it.

There’s a huge difference between the theoretical and the actual. Investors are great at examining hypothetical returns and drawdowns, and “theorizing” that they’d be able to remain in the market when their portfolios are down 25%, 50%, or 75%. However, when that’s “actually” happening, it’s an entirely different experience.

As any investor who’s had money in the market for a while knows, it can be incredibly painful to watch your portfolio balance being gutted each month during a bear market. Seeing significant losses affects our psyche, and oftentimes leads us to make foolish investing decisions.

In bull markets, we like to think that we’re somehow smarter than average, or more in control of our emotions, but when we’re awash in a sea of red, our rational mindset tends to crumble... fast.

So, when we look at any market strategy, it’s important to investigate not just the longer-term average returns, but certain measures of volatility – specifically, the standard deviation and the max drawdown (MaxDD). After all, what good is a fantastic

longer-term average return, if you sold at the low point of a drawdown because you couldn't handle it?

With this in mind, look again at the chart, now paying special attention to volatility and max drawdown.

See how much improvement adding the permanent tail risk strategy can offer?

Lower drawdowns are much easier to stomach, and in a real-world setting, would do a vastly better job at preventing panic-selling. Given this perspective shift, I would argue the permanent hedge does help – significantly – despite the costs involved. That's because it's more likely to keep your money invested, working for you.

## *Wrapping Up*

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At the time of this writing, we're still enjoying one of the longest bull markets in U.S. equities in history. However, there are myriad signs suggesting this bull is growing weary.

There are plenty of defensive strategies an investor may implement in response, generally involving some form of asset and/or market diversification. But of the strategies we've researched in this white paper, we believe none provide better defense – and offense – than a tail strategy based on put options.

Successful market-timers may immediately see the value in adding a tail strategy to their portfolios. But as we attempted to illustrate in this paper, even investors who don't consider themselves market-timers may still benefit from a tail risk strategy. This is because of its ability to help investors sidestep brutal market drawdowns, keeping investors in the market.

With all this in mind, we would argue that using a tail risk strategy seems to offer significant help – to market-timers and buy-and-hold investors alike.



## Appendix A: Turning a Defensive Strategy into an Offensive Strategy

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Some investors considering adding a tail risk strategy to their portfolios on a semi-permanent basis might be wondering “is there a way to reduce the cost of this insurance”?

Well, it’s been long known that there exists a premium for selling insurance... hey, otherwise why would anyone do it?

So, what if we could combine the best of both worlds? Selling volatility to capture the premium, but buying volatility to protect against big down moves?

Below we re-ran the simulation with the following:

1. S&P 500 total return.
2. Tail Risk strategy – The tail risk strategy we will utilize is the same one from above that buys monthly 5% out-of-the-money (OTM) options on the S&P 500. We then invest 90% of the portfolio in 10-year U.S. government bonds.
3. Put Write strategy – The Put Write strategy is designed to sell a sequence of one-month, at-the-money (ATM), S&P 500 Index puts and invest cash at one- and three- month Treasury Bill rates. The number of puts sold varies from month to month, but is limited so that the amount held in Treasury Bills can finance the maximum possible loss from final settlement of the SPX puts. On a side note, [AQR has suggested](#) that such put write returns could be slightly elevated due to the strategy’s particular rebalance schedule.

We replaced our prior S&P 500 allocation with the Put Write strategy, and lo and behold it really helped returns. Your portfolio is essentially:

Selling monthly S&P 500 ATM puts with the rest in cash, buying 5% OTM puts with the rest in 10-year bonds.

FIGURE 14 Various Returns (06/1986 - 12/2016)

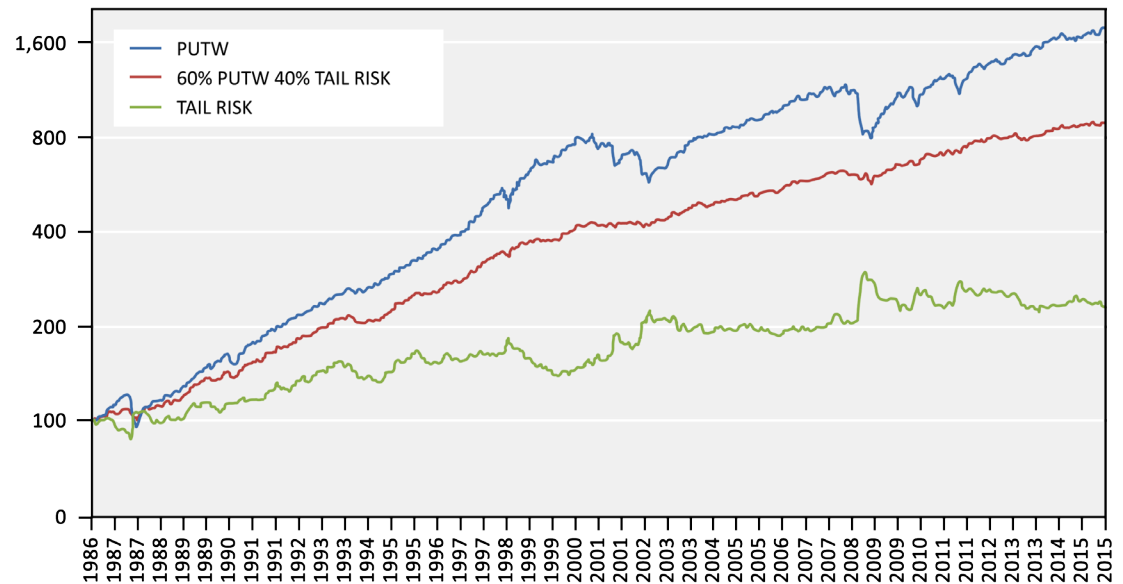
| 6/1986 - 12/2016 | S&P 500  | 80% S&P<br>20% TAIL RISK | 60% S&P<br>40% TAIL RISK | 40% S&P<br>60% TAIL RISK | 20% S&P<br>80% TAIL RISK | TAIL RISK |
|------------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|-----------|
| Return           | 9.89%    | 8.74%                    | 7.39%                    | 5.86%                    | 4.16%                    | 2.31%     |
| Volatility       | 15.11%   | 11.36%                   | 8.18%                    | 6.49%                    | 7.38%                    | 10.19%    |
| Sharpe Ratio     | 0.44     | 0.48                     | 0.50                     | 0.39                     | 0.12                     | (0.10)    |
| MaxDD            | (50.95%) | (38.20%)                 | (22.96%)                 | (10.28%)                 | (14.40%)                 | (26.64%)  |

| 6/1986 - 12/2016 | PUT WRITE | 80% PUTW<br>20% TAIL RISK | 60% PUTW<br>40% TAIL RISK | 40% PUTW<br>60% TAIL RISK | 20% PUTW<br>80% TAIL RISK | TAIL RISK |
|------------------|-----------|---------------------------|---------------------------|---------------------------|---------------------------|-----------|
| Return           | 10.02%    | 8.73%                     | 7.30%                     | 5.75%                     | 4.08%                     | 2.31%     |
| Volatility       | 10.05%    | 6.94%                     | 4.68%                     | 4.74%                     | 7.06%                     | 10.19%    |
| Sharpe Ratio     | 0.67      | 0.78                      | 0.85                      | 0.52                      | 0.11                      | (0.10)    |
| MaxDD            | (32.66%)  | (21.05%)                  | (8.30%)                   | (6.58%)                   | (14.13%)                  | (26.64%)  |

Source: Meb Faber/GFD

And the equity curve,

FIGURE 15 Equity Return of Various Returns (06/1986 - 12/2016)



Source: Meb Faber/GFD

So, what we have is a “permanent” put strategy that, in essence, is self-funding. Historically, it outperforms the S&P while providing substantially reduced volatility and drawdown numbers.



## Appendix B: A Final Note to Advisors

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If you're an investment advisor watching today's market, you might be feeling especially nervous.

That's because negative stock market moves have a leveraged, intensified effect on asset managers and financial advisors... far more than many realize.

Advisors have exposure to the stock market through:

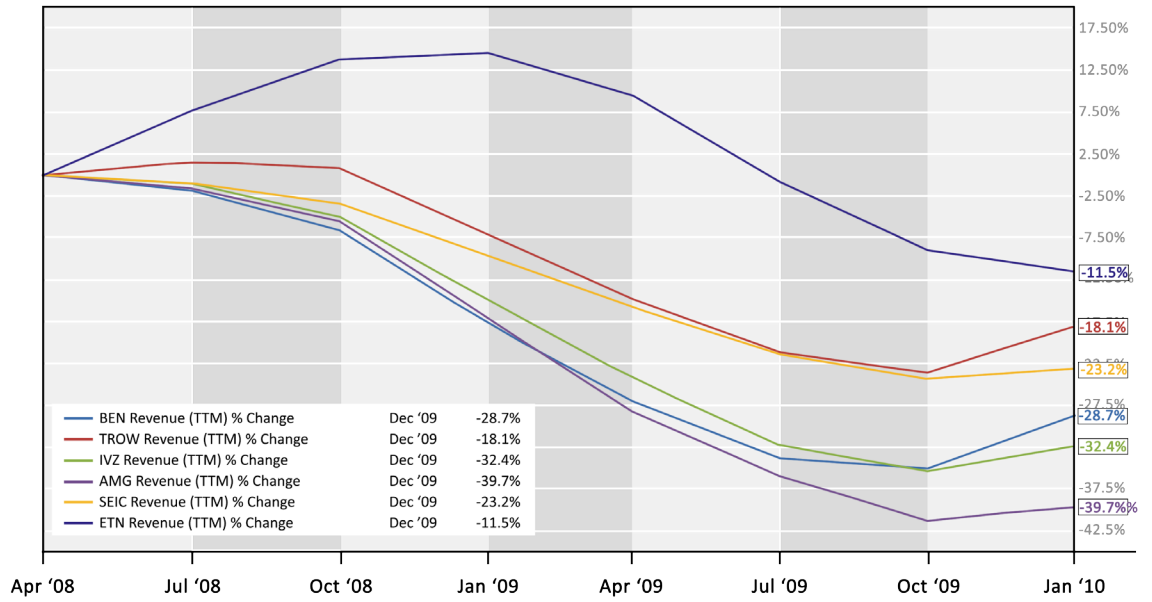
1. Their personal portfolio – obviously, a bear market will erode the value of the advisor's own portfolio.
2. Their shorter-term business revenue (i.e. client portfolios) – a bear market will decrease the size the advisor's total book (client market cap), resulting in less revenue spun off from the smaller asset base.
3. Their longer-term business revenue – lengthier bear markets will result in some clients panicking and withdrawing their investments entirely, which could permanently shrink the advisor's book.
4. If the advisor is an employee of a parent company, he/she risks potential employment termination due to downsizing.

You can view some of the correlated effects in the two charts below.

These charts highlight the revenues (Figure 16) and stock prices (Figure 17) of a number of representative asset managers that still exist today. While some asset managers may have weathered the global financial crisis and posted more positive results, we believe the below list to be representative of some of the largest asset managers that survived the global financial crisis. Also recall, many asset managers like [Lehman Brothers and Bear Stearns didn't survive the global financial crisis](#) and their stock prices and revenues saw declines of catastrophic levels.

Revenue for asset managers in the global financial crisis declines across the board...

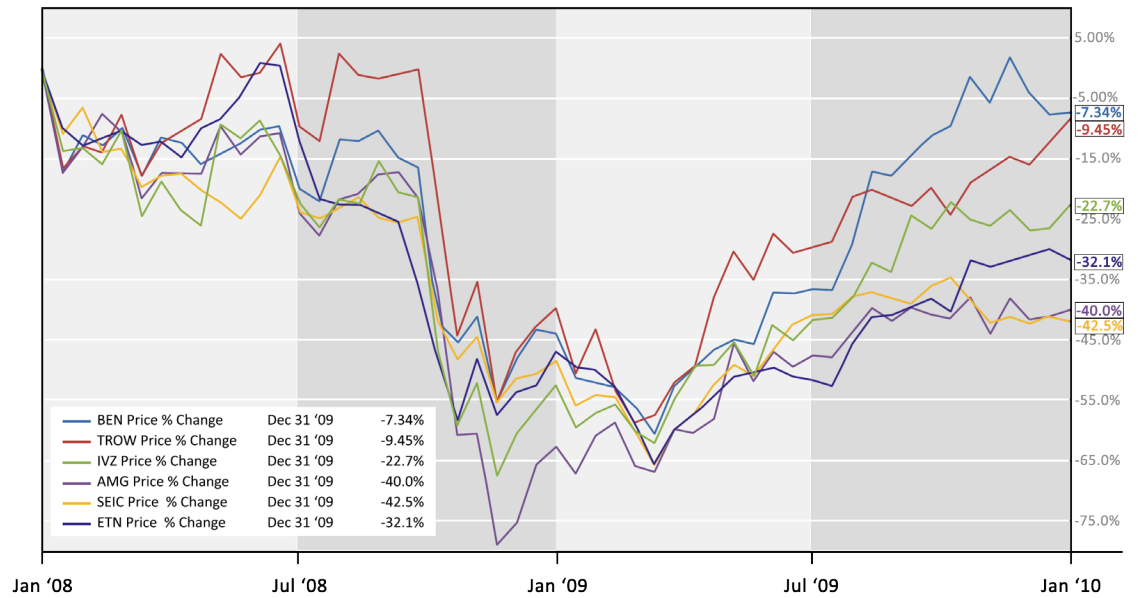
FIGURE 16 Revenue of Selected Asset Managers (04/2008 - 01/2010)



Source: YCharts

And not surprisingly, their stocks take a hit...

FIGURE 17 Stock Returns of Selected Asset Managers (01/2008 - 01/2010)



Source: Stockcharts.com

And while the revenues and stock prices of these large asset managers eventually recovered, it shouldn't be assumed that all asset managers - especially small to medium-sized shops - can simply ride out similar challenging markets.

Simply put, a falling stock market negatively impacts only the investment portfolio of the average individual investor. Yet for advisors, it impacts their personal portfolio, their shorter-term business income, potentially their longer-term business income, and in dire situations, the viability of their company. Many investors can reduce their equity exposure, but many advisors and investment companies cannot.

Given this heightened sensitivity, it may be more appropriate for an advisor to purchase a tail risk strategy, therein hedging its business revenues, than it might be for the average individual investor.

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