



## A Value Investor's Perspective on Tail Risk Protection: An Ode to the Joy of Cash

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Long ago, Keynes argued that the “central principle of investment is to go contrary to general opinion, on the grounds that, if everyone is agreed about its merits, the investment is inevitably too dear and therefore unattractive.” This powerful statement of the need for contrarianism is frequently ignored, with disturbing alacrity, by many investors.

The latest example in the long line of such behavior may well be the general enthusiasm for so-called tail risk protection. The range of tail risk protection products seems to be exploding. Investment banks are offering “solutions” (investment bank speak for high-fee products) to investors and fund management companies are launching “black swan” funds. There can be little doubt that tail risk protection is certainly an investment topic du jour.

I can't help but wonder if much of the desire for tail risk protection stems from greed rather than fear. By which I mean that it seems one of the common reasons for wanting tail risk protection is to allow investors to continue to “harvest risk premium” even when those risk premiums are too narrow. This flies in the face of sensible investing. A safer and less costly (in terms of price, although perhaps not in terms of career risk) approach is simply to step away from markets when risk premiums become narrow, and wait until they widen before returning.

The very popularity of the tail risk protection alone should spell caution to investors. Keynes's edict with which we opened would suggest that the degree of popularity of tail risk protection helps to undermine its benefits. Effectively, you should seek to buy insurance when nobody wants it, rather than when everyone is excited about the idea. An alternative way of phrasing this is to say that insurance (and that is exactly what tail risk protection is) is as much of a value proposition as any other element of investing.

As always, a comparison between price and value is required. One of the nice aspects of insurance in an investment sense is that it is generally cheap when its value is highest (although this may no longer be the case given the rise of so many tail risk products). That is to say, because most market participants appear to price everything based on extrapolation, they ignore the influence of the cycle. Thus they demand little payment for insurance during the good times because they never see those times ending. Conversely, during the bad times, the average participants seem willing to overpay for insurance as they think the bad times will never cease.

### The “What” of Tail Risk

It should be noted that tail risk protection is a very vague, if not actually a poorly defined, term. In order for tail risk protection to make any sense at all, it is vital to define the tail you are seeking to protect against. There is a plethora of potential tail risks one might seek insurance against, but which one (or ones) do you have in mind? As one of my logic teachers reminded us almost weekly and Voltaire advised, “Define your terms.”

We suspect that at the most general level, the tail risk the majority of investors are concerned about is a systemic illiquidity risk/drawdown risk (as was experienced during the 2008 crisis). Of course, this ignores another of Keynes's insights. “Of the maxims of orthodox finance none, surely, is more anti-social than the fetish of liquidity, the doctrine that it is a positive virtue on the part of investment institutions to concentrate their resources upon the holding of ‘liquid’ securities. It forgets that there is no such thing as liquidity of investment for the community as a whole.” But, for the time being, let us assume that systemic illiquidity problems are the tail risk that most investors are seeking to offset.

## The “How” of Tail Risk Protection

We are aware of three general groups of tail risk protection from which investors may choose.

### 1. Cash

This is perhaps the oldest, easiest, and most underrated source of tail risk protection. If one is worried about systemic illiquidity events or drawdown risks, then what better way to help than keeping some dry powder in the form of cash – the most liquid of all assets. (There is much more on the joy of cash to come shortly.)

### 2. Options/contingent claims

Occasionally, the market provides opportunities to protect against tail risk as a by-product of its manic phases. A prime example was the credit default swaps that were a result of the demand for collateralized debt obligations. These instruments were priced on the assumption that there would be no nation-wide decline in house prices, and thus offered a great opportunity (even without the benefit of hindsight) for those who were concerned that such an outcome was more plausible than the market thought.

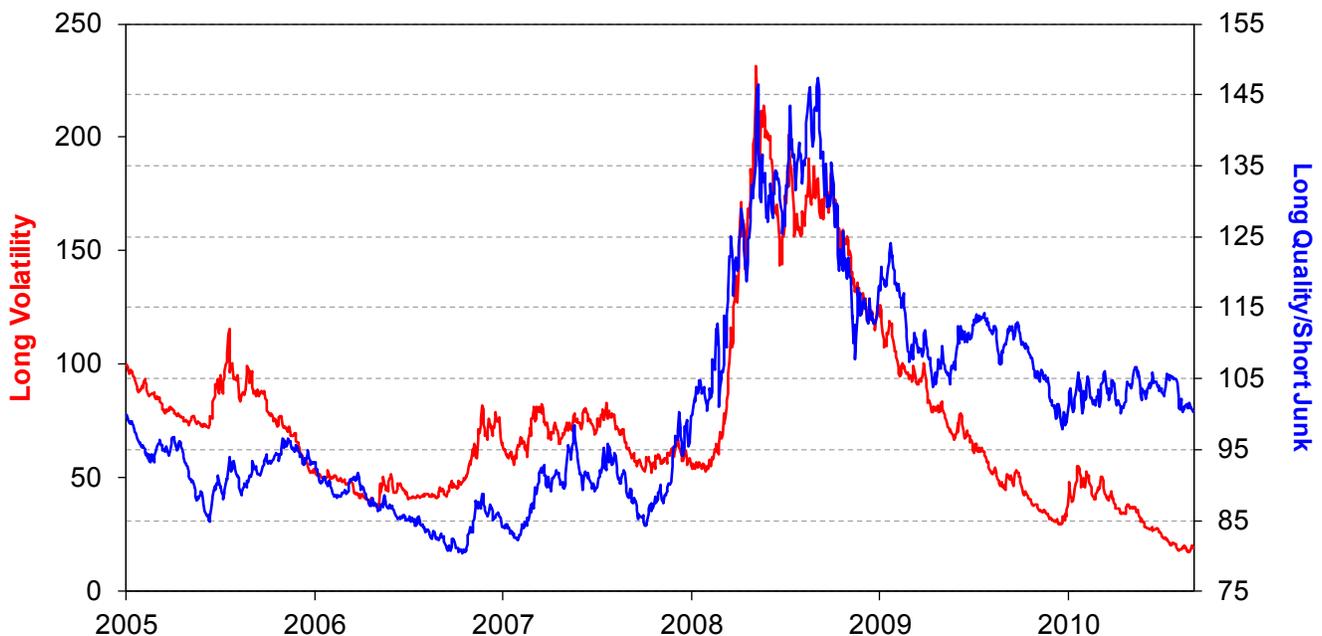
Here, one caveat stands out above all others: one must be cautious of the dangers of over-engineering in this area of tail risk protection. It is too easy to construct an option that pays out under a very specific set of circumstances, and to do so relatively cheaply. But, of course, such an instrument tautologically only pays off under the realization of those specific events, so the tighter the constraints imposed, the less use the option is likely to be as general tail risk protection.

### 3. Strategies that are negatively correlated with tail risk

For the specific type of tail risk (illiquidity events) under consideration here, long volatility strategies are often said to be negatively correlated. The simplest example of such a strategy is just to buy volatility contracts (bearing in mind the roll return will be negative given the upward-sloping term structure of volatility). In the recent crisis, a dollar-neutral long quality/short junk portfolio acted very much like a long volatility strategy (with the added benefit of an expected positive return, in contrast to most insurance options).

## Exhibit 1

### Returns to a long volatility strategy and a quality/junk position



Source: GMO, Bloomberg

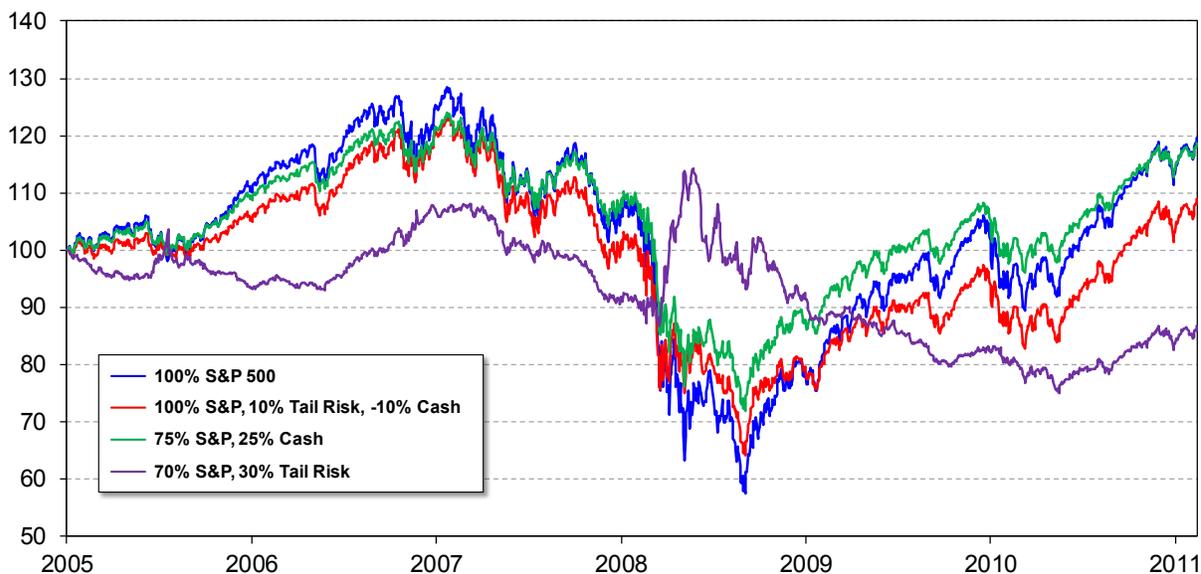
Long Volatility series = SPXSTR (first and second month contracts)

Long Quality/Short Junk series = return spread between quality companies (top 1/3) and junk companies (bottom 1/3) in a universe of the largest 1,000 U.S. companies. Quality and junk are based on the following metrics: profitability, leverage, and volatility of profitability.

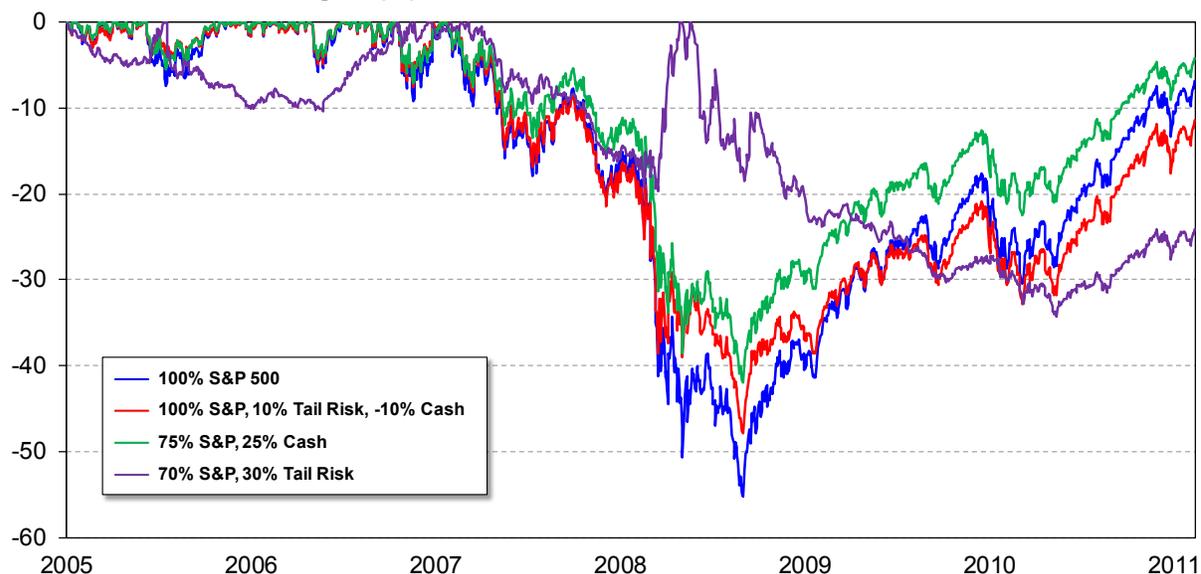
However, if investors are concerned with other tail risks, say, such as inflation, then it is less obvious that these strategies are appropriate. This is one of the failings with many products being marketed as tail risk protection; they are long volatility strategies rather than “general” tail risk protection portfolios.

But, sticking with our tail risk defined as an illiquidity event, Exhibits 2 and 3 show the performance of several possible strategies. Strategy 1 is a simple long S&P 500 position. This represents a benchmark for comparison and, as the global financial crisis revealed, is not a bad proxy for more complex portfolios. Strategy 2 seeks to emulate those portfolios I referred to earlier as being driven by greed. This strategy maintains a 100% investment in the S&P 500 and adds a 10% long volatility position (using short-term VIX futures as above), financed by shorting cash. Strategy 3, a 75% S&P 500/25% cash portfolio, represents an alternative to the greedy approach, which is to run a more conservative portfolio. The final strategy represents an answer to the question: how much tail risk protection would one have needed to have had a flat performance in 2008 and early 2009? The answer is: a 70% S&P 500/30% long volatility strategy.

**Exhibit 2**  
Tail risk protection in action (Performance, 20/12/05=100)



**Exhibit 3**  
Drawdown for the various strategies (%)



Source: GMO, Bloomberg

## Summary Statistics

Strategy	Return (% p.a.)	Risk (% p.a.)	Max Draw-down (%)
100% S&P 500	3.4	24.3	-55
100% S&P 500, 10% Tail Risk Protection, -10% Cash	1.6	19.6	-48
75% S&P 500, 25% Cash	3.2	16.9	-42
70% S&P 500, 30% Tail Risk Protection	-2.7	11.0	-34

One thing becomes obvious from this illustrative example: tail risk protection is not a magic bullet. The cost of tail risk insurance becomes very evident when compared to the more conservative equities plus cash strategy considered in the sample above. This highlights one of the most important lessons of the exercise: **tail risk protection requires timing** ... the “when” of tail risk protection, if you will. In the sample above, running permanent tail risk insurance similar to that of Strategy 4 leads to what might be called deferred drawdowns, made clear in Exhibit 3.

Also of note is the limited impact of tail risk protection in the “greedy” strategy, run with 100% exposure to the equity market and borrowed cash to buy tail risk protection. The tail risk protection doesn’t really protect the portfolio from a drawdown, but has a significant impact on returns. Whether one can tell the difference between a drawdown of 55% or 48% is arguable. However, the return drag from buying overpriced volatility (VIX futures) in the aftermath of the crisis is marked, reducing the return from 3.4% to 1.6%.

This cautions against one of the prevailing attitudes with respect to tail risk protection, which seems to go along the lines of investors dedicating X% of their assets (where X is less than double digits) and thinking they are protected against bad outcomes. As Strategy 4 shows, substantial levels of tail risk protection are actually needed in the portfolio in order to have any meaningful impact, but this creates its own issues as the example amply demonstrates.

## One Step Beyond

So the question now becomes how we should think about the timing of tail risk protection, putting aside the manner of implementation for the time being. This is where the value discipline comes into its own.

Value investing is the only risk-averse way of investing that I know of. It comes with a ready-made framework for assessing (tail) risk: it demands that we focus upon the risk of the permanent impairment of capital. Furthermore, we can identify three possible paths that could result in this undesirable endpoint. I have written of these many times before, but they bear repeating.

### 1. Valuation risk

This is the risk that is involved in buying overvalued assets. Adopting a valuation-driven approach to asset selection helps mitigate this risk. As implied future returns drop (i.e., the market becomes more expensive), a value investor sells those overpriced assets, thus raising cash. Hence, this approach explicitly takes account of valuation vulnerabilities and the “tail risk” resulting from them.

The idea behind Exhibit 4 came from my friend, John Hussman.<sup>1</sup> It neatly illustrates the dangers inherent in running valuation risk. The horizontal axis plots the level of real return forecast,<sup>2</sup> the vertical axis shows the subsequent deepest drawdown from the point of that forecast over the next three years.

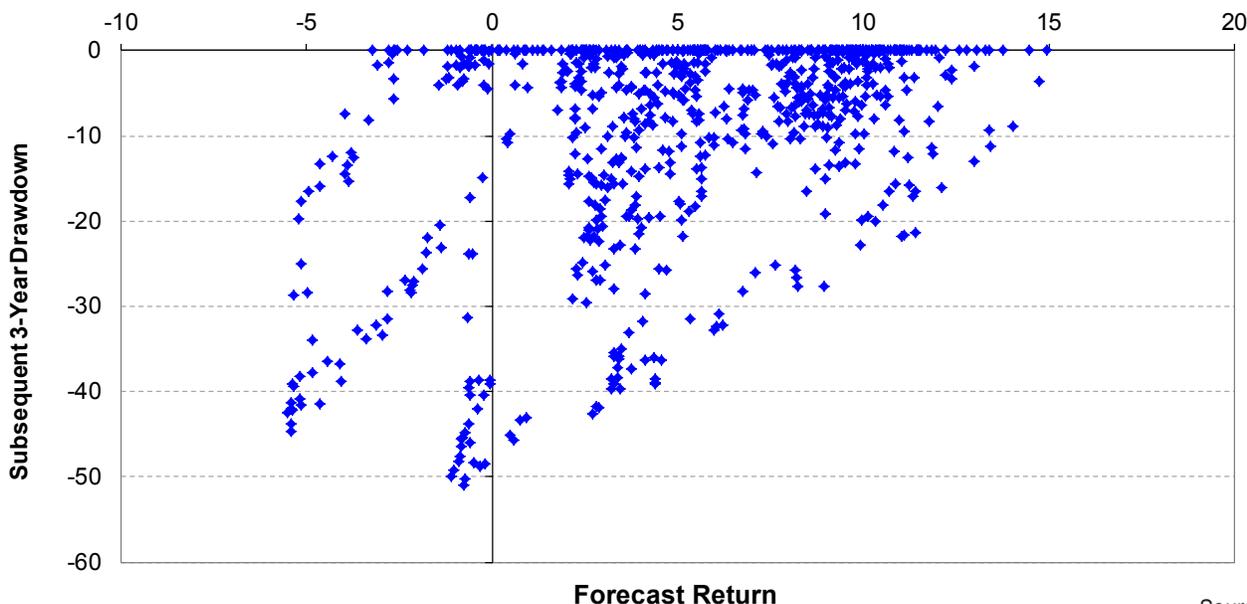
The exhibit clearly illustrates the risk-averse nature of value investing. The worst of the market’s drawdowns occur when forecast returns are below 5% real, and this risk grows as the forecast return drops to zero and below. Indeed, at forecasts of zero and below, investors run the risk of seeing their investment halve over the next three years! (N.B. GMO’s current S&P 500 forecast is 0% annually.)

<sup>1</sup> [www.hussmanfunds.com](http://www.hussmanfunds.com)

<sup>2</sup> Of course, we at GMO have been doing these forecasts in real time since 1994, but this chart shows data from 1940 onwards. I have created a series of forecasts for market returns based on mean reversion in the Graham and Dodd P/E. They correlate very closely with the real time forecasts we have made, so provide a rough proxy of what we might well have been saying if we had been around at the time.

Conversely, when the forecast return is 10% or higher, the risk of deep drawdown over the subsequent three years is relatively muted, limited as it is to around 20%. Thus, as valuations become more and more attractive, the downside becomes less and less – the margin of safety at work.

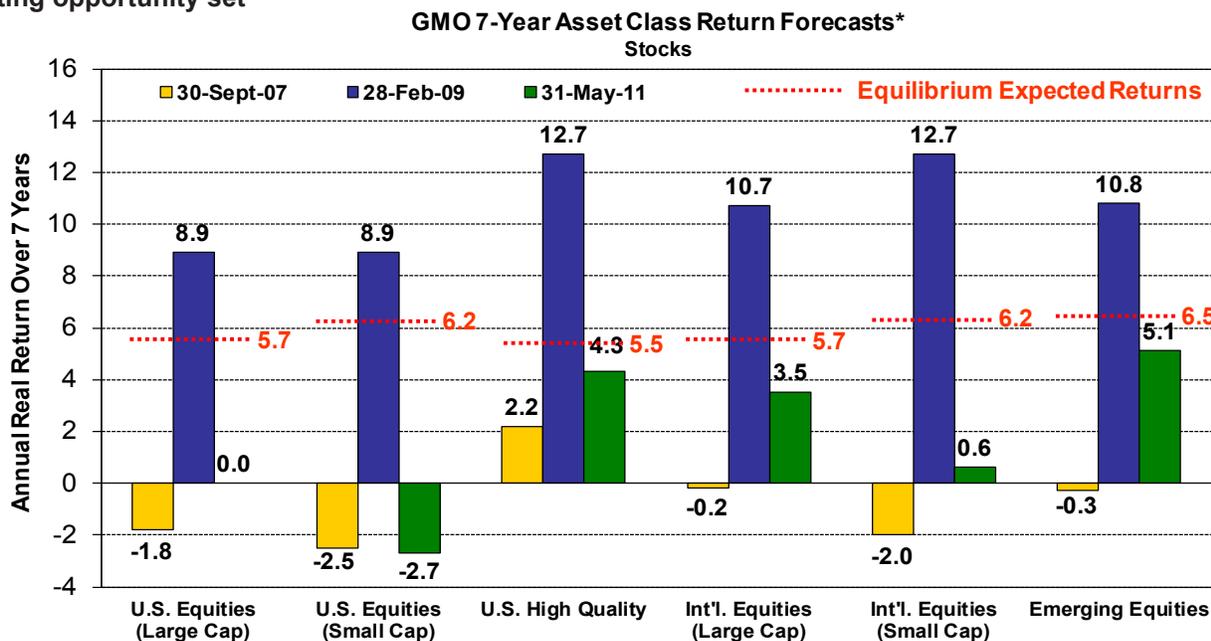
**Exhibit 4**  
**Low forecast returns run the risk of deep drawdowns (1940-2010)**



Source: GMO

Given the link between low forecast returns and subsequent drawdowns, the dry-powder value of cash should be obvious. Holding cash allows one to invest when the opportunity set looks much better (i.e., after the drawdown). As Seth Klarman<sup>3</sup> notes, “Why should the immediate opportunity set be the only one considered, when tomorrow’s may well be considerably more fertile than today’s?”

**Exhibit 5**  
**Shifting opportunity set**



\*The chart represents real return forecasts for several asset classes. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.

Source: GMO  
 As of 5/31/11

<sup>3</sup> Seth Klarman, “The Painful Decision to Hold Cash,” 2004 Year-End Letter, Baupost Group.

One oft-cited argument currently is that with the return on cash at close to zero, one should stay in overvalued assets. This is, of course, exactly what the Fed would like you to do. Bernanke, et al., have made no secret of the fact that they have encouraged speculation on a massive scale. However, in our view it is better to hold cash and deal with the limited real erosion of capital caused by inflation, rather than hold overvalued assets and run the risk of the permanent impairment of capital. As Warren Buffett has said, holding cash is uncomfortable, but not as uncomfortable as doing something stupid.

## 2. Fundamental risk

This is the “danger of a loss of quality and earnings power through economic changes or deterioration in management” as Ben Graham put it. Essentially, fundamental risk represents write-downs to intrinsic value (i.e., the risk of a value trap).

Thinking about fundamental risk allows us to help define the tails we may be worried about, beyond those covered by valuation risk. What are the risks to intrinsic value (or, indeed, our estimates thereof) and how can we seek to protect ourselves against these outcomes, and at what cost?

For instance, if we are worried about inflation or, indeed, deflation (or are even unsure of which of the two we face), then thinking about how this impacts fundamental value is a useful exercise. As is incorporating protection against the event (or our uncertainty) into the portfolios (as long as it can be done cheaply, of course).

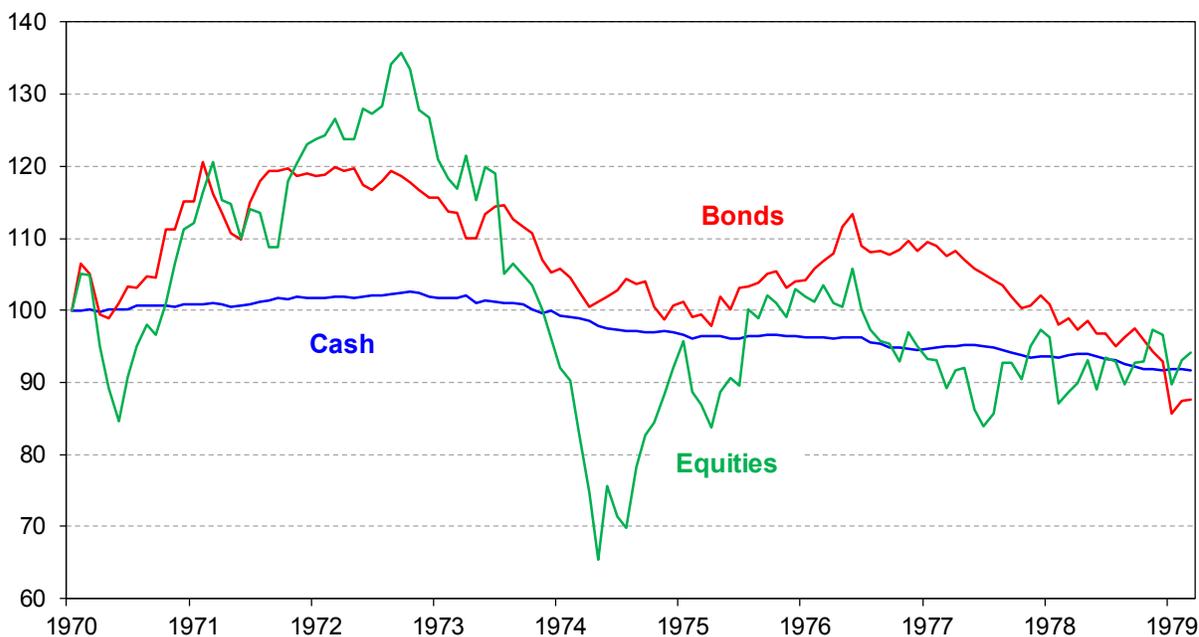
As an aside, on inflation and deflation and protecting portfolios, cash once again has benefits. In order to generate optimal portfolios we would need a perfect macroeconomic crystal ball. That is to say, if we knew for certain that deflation was in the future, then bonds would make sense. Conversely, if we knew that inflation was a sure thing, then cash would make sense.

But optimal solutions often aren't robust. They work under one scenario, which can only be known ex post. When constructing portfolios ex ante, the aim should be robustness, not optimality. Cash is a more robust asset than bonds, inasmuch as it responds better under a wider range of outcomes. Cash also has the pleasant feature that, when starting from a position of disequilibrium (i.e., a level away from fair value), it doesn't impair your capital as it travels down the road of mean reversion to fair value (unlike most other assets).

### Exhibit 6

#### Cash defends against inflation (the U.S. in the 1970s)

Real returns, 1970=100



Bonds = 10-year government bonds  
Equities = S&P 500

Source: Datastream

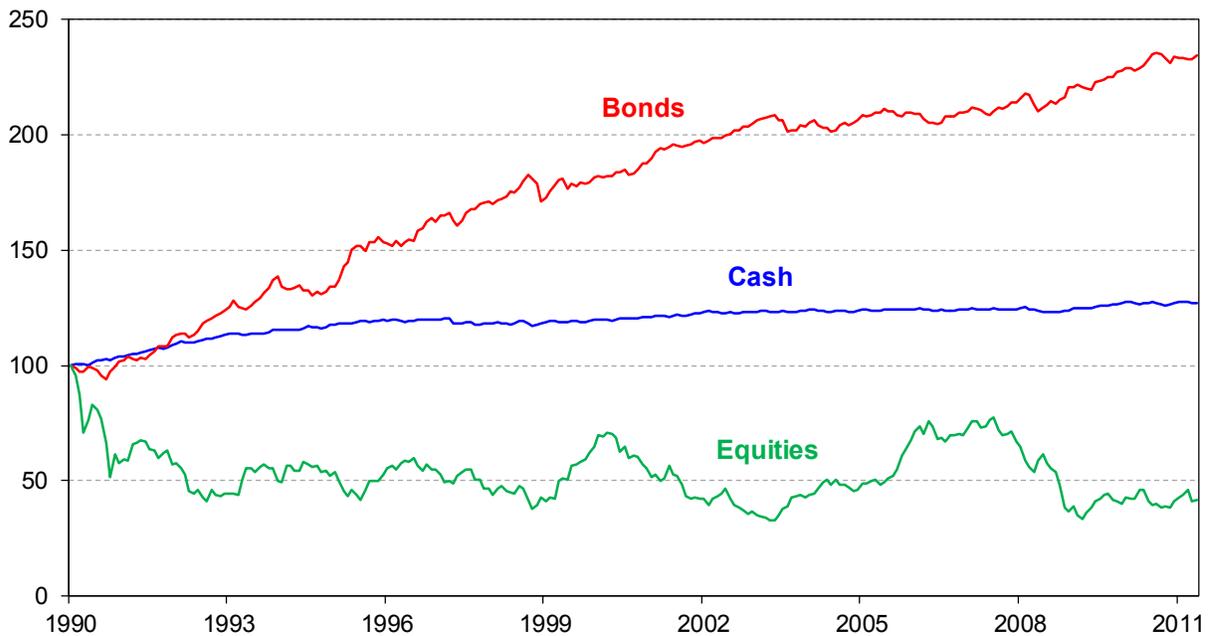
Because of its zero duration, cash fares better than bonds in an inflationary environment. (This assumes that central banks seek to raise cash rates in response to inflation – an assumption, admittedly, that may be less valid at the current juncture than ever before.)

Cash is also a pretty good deflation hedge. Obviously, as prices fall, cash gains in real terms. Of course, all else being equal, bonds with a higher duration do better. Take the Japanese example shown in Exhibit 7. Cash does well in the initial stages of the bubble bursting (as per the valuation risk analysis above). In 1995, Japan's CPI enters deflation (albeit mild) and remains flat for the next decade and a half, give or take. Cash maintains purchasing power in real terms. Of course, bonds do better than cash over this period, but to know that ex ante would require perfect foresight regarding the path of Japanese inflation – something beyond our ken.

### Exhibit 7

#### Cash defends against deflation (the Japanese example)

Real returns 1990=100



Bonds = 10-year government bonds  
Equities = Nikkei 225

Source: Datastream

Thinking about fundamental risk also reduces the “black swan” element of investing. Nassim Taleb<sup>4</sup> defines a black swan as a highly improbable event with three principle characteristics: 1) it is unpredictable; 2) it has a massive impact; and 3) ex post explanations are concocted that make the event appear less random and more predictable than it was.

It should be noted that some black swans are a matter of perspective. Taleb asks us to think of turkeys in the run-up to Thanksgiving. From the turkeys’ perspective, each day a kindly human arrives and treats them to fresh water and feed. Then, suddenly, a few days before Thanksgiving, the very same human massacres all of the turkeys. Clearly, from the turkeys’ point of view, this was a complete black swan event. But from the farmer’s perspective, this was anything but a black swan.

Rather than genuine black swans, most financial implosions are the result of “predictable surprises” (a term coined by Michael Watkins and Max Bazerman<sup>5</sup>). Like black swans, predictable surprises have three characteristics: 1) at least some people are aware of the problem; 2) the problem gets worse over time; and 3) eventually the problem

<sup>4</sup> Nassim N. Taleb, *The Black Swan: The Impact of the Highly Improbable*, New York, NY, Random House, 2007.

<sup>5</sup> Michael Watkins and Max Bazerman, “Predictable Surprises: The Disasters You Should Have Seen Coming, and How to Prevent Them,” Cambridge, MA, Harvard Business Press, 2004.

explodes into a crisis, much to the shock of most. As Bazerman says, “The nature of predictable surprises is that while uncertainty surrounds the details of the impending disaster, there is little uncertainty that a large disaster awaits.” This speaks to the requirement of patience when it comes to dealing with bubbles.

So, in essence, fundamental risk appraisal helps us identify which tail risks we should be worried about, provides context for the decisions that we have to take, and allows for the construction of more robust portfolios.

### **3. Financial risk**

This risk covers such elements as leverage and endogenous factors (e.g., crowded trades). Forsaking the use of leverage obviously removes a large part of the problem, as does having a contrarian bent because this greatly reduces the risk of over-crowded trades. However, in a world of mark to market, one still needs to be cognizant that the behavior of other market participants can impact one’s portfolio.

Thus, the multifaceted approach to risk that is embodied within the value approach seems to naturally minimize some elements of tail risk (those associated with valuation risk), and leads to a focus on other aspects of tail risk (fundamental risk and financing risk).

### **Conclusions**

Tail risk protection appears to be one of many investment fads du jour. All too often those seeking tail risk protection appear to be motivated by the fear of missing out (not fear at all, but greed). However, the surge of tail risk products may well not be the hoped-for panacea. Indeed, they may even contain the seeds of their own destruction (something we often encounter in finance – witness portfolio insurance, etc). If the price of tail risk insurance is driven up too high, it simply won’t benefit its purchasers.

When considering tail risk protection, investors must start by defining the tail risk they are seeking to protect themselves against. This sounds obvious, but often seems to get scant attention in the tail risk discussion. Once you have identified the risk, you can start to think about how you would like to protect yourself against that risk. In many situations, cash is a severely underappreciated tail risk hedge. The hardest element of tail risk protection is likely to be timing. It is clear that a permanent allocation is likely to do more harm than good in many situations.

When it comes to timing tail risk protection, a long-term value-based approach and an emphasis on absolute standards of value, coupled with a broad mandate (a wide opportunity set, or, investment flexibility, if you prefer) seems to offer the best hope.

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