THE FED IS THE NEW VALUE INVESTOR

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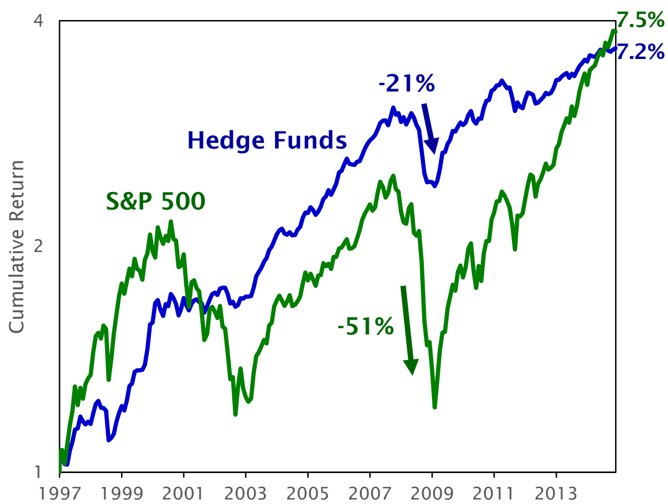
THE DEMISE OF HEDGE FUNDS

Something strange seems to be developing beneath the surface in markets since the financial crisis. Stocks, especially U.S. stocks, have delivered abnormally high returns. The S&P 500 has produced an astounding 15% per year for the last five years. But when you strip away market exposure, active managers have had a surprisingly hard time beating the market. Outperforming the market is always difficult, but even well-known professionals with stellar track records spanning decades have stumbled since the crisis.

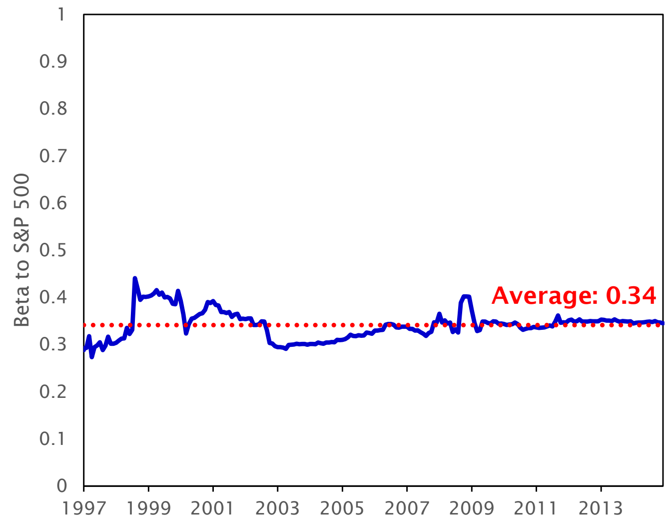
Since 1997, hedge funds have delivered approximately the same returns as the market but with about half the risk [Exhibit 1]. Risk can be defined as volatility or perhaps better as peak-to-trough loss in stress events such as 2008. Doubling the risk-adjusted return of the market is a tall order. It's no wonder institutions have been showing up in droves pouring cash into hedge funds.

EXHIBIT 1: HEDGE FUNDS VERSUS MARKET[1]



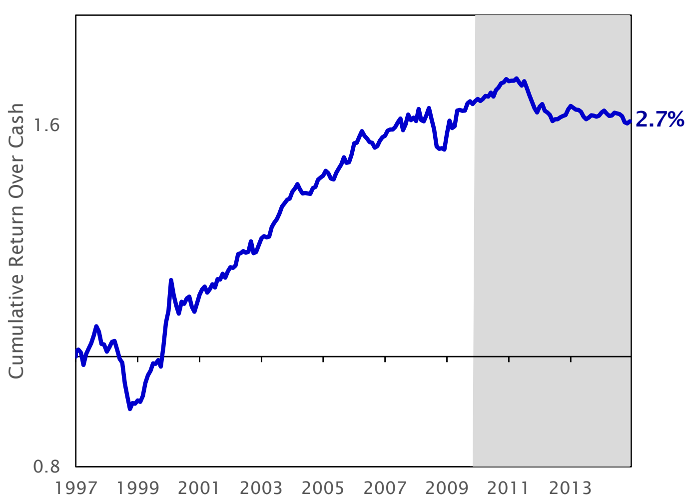
However, this high-level analysis misses an important wrinkle. Some of these returns have been earned by simply running net long the stock market. While actual market exposure is not available, we can proxy using beta [Exhibit 2]. Over the past 18 years, hedge fund net long exposure (beta) seems to have been remarkably stable, around 34%.

EXHIBIT 2: HEDGE FUND LONG EXPOSURE[2]



To calculate the true value added by hedge funds, we need to adjust for their consistent net long exposure. Deducting the returns resulting from positive market exposure produces an interesting picture [Exhibit 3].

EXHIBIT 3: HEDGE FUND ALPHA

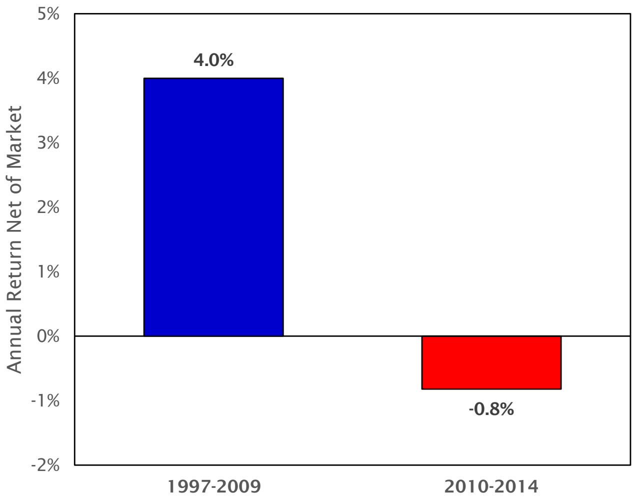


1 Hedge funds represented by HFRI Fund-Weighted Index.

2 Beta calculated over a trailing 3-year half-life.

This chart tells a tale of two distinct periods [Exhibit 4]. In the first period (1997-2009), hedge funds delivered spectacular performance. The second period (2010-2014), however, has been dismal. The last five years have been a terrible time to be invested in the average hedge fund.

EXHIBIT 4: HEDGE FUND ALPHA HAS DECAYED

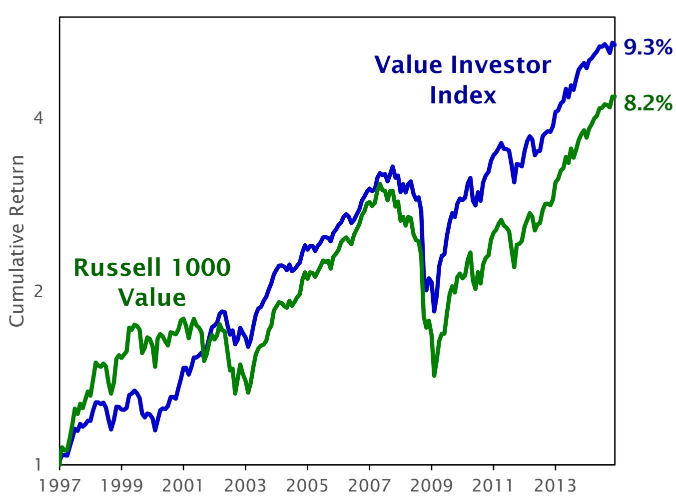


While one of the reasons for this recent underperformance is hedge funds' fee structures, which we believe to be unfavorable to investors (See upcoming Kaleidoscope paper on hedge fund fees), there may be other factors at play.

HEADWINDS FOR VALUE INVESTORS

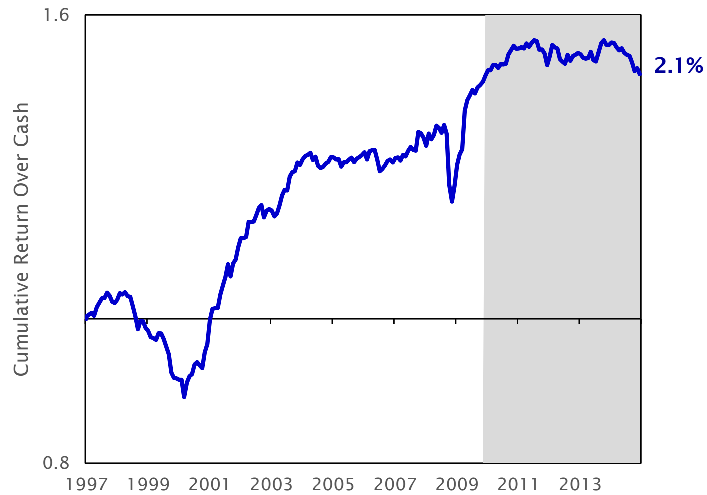
As value investors, we were also interested in how our competitors had fared. We examined the performance of ten prominent value investors, each running multi-billion dollar U.S.-focused equity mutual funds. These managers have track records spanning several decades and well-deserved reputations as best-in-class. We created a "Top Value Investor Index" comprised of these ten funds. Over the past 18 years, these investors have beaten value stocks by 1.1% per year net of fees while taking less risk [Exhibit 5].

EXHIBIT 5: VALUE INVESTOR INDEX RETURNS[3]



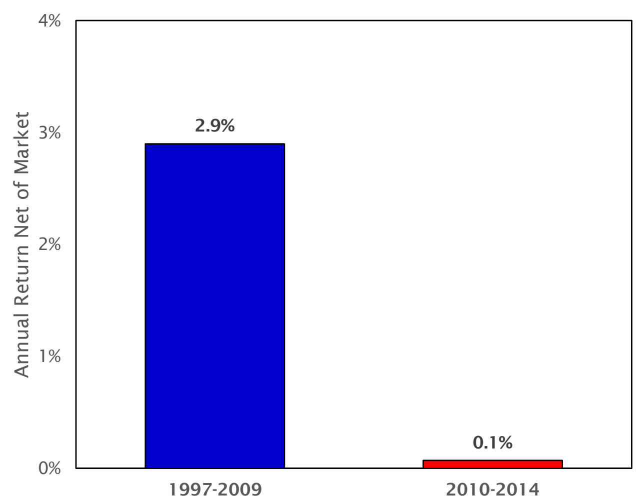
The Top Value Investor Index is comprised solely of long-only mutual funds, but many of our managers hold cash when markets get expensive. As a result, their long-run average beta is only 0.75. As we did with hedge funds, we can strip out this beta. Since 1997, our hand-picked value investors beat the market by 2.1% per year adjusted for trailing beta [Exhibit 6].[4] They underperformed entering the 2000 Tech Bubble but regained all their performance (and then some) when the bubble burst. They again underperformed into the 2008 financial crisis but rebounded strongly in 2009.

EXHIBIT 6: VALUE INVESTOR ALPHA



As with hedge funds, we noticed an interesting decay in performance since the financial crisis. From 1997-2009, our value investors won by 2.9% annually. However, since 2010, they have added almost no value [Exhibit 7].

EXHIBIT 7: VALUE INVESTOR ALPHA HAS DECAYED

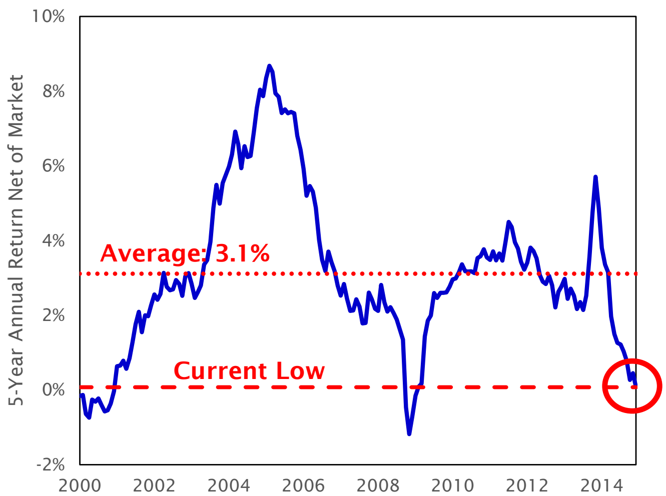


In fact, the current five-year period is the worst for our value investors with the exception of the tech bubble peak and credit crisis trough [Exhibit 8].

3 Top Value Investor Index is equal-weighted, weekly rebalanced portfolio of 10 prominent value investors.

4 Value investors have outperformed a fully-invested value benchmark by 1.1%, but have run only 0.75 beta on average. Adjusting for their more defensive nature, they have outperformed by 2.1%.

Exhibit 8: Value Investor Rolling 5-Year Alpha



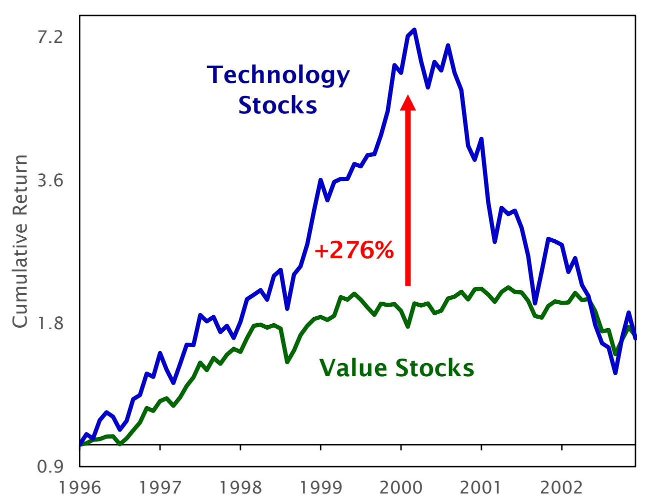
We're seeing a similar story play out in both hedge funds and value managers. Both groups delivered risk-adjusted returns far in excess of the market for an extended period. But over the past five years, they have struggled.

A Tale of Two Bubbles

Why have value managers failed to outperform? In order to answer this question, let's first attempt to precisely define their investment strategy. (We will start with value managers, but will return to other investment styles in a later paper).

Let's go back to the late 1990s, when the Tech Bubble was in full swing. Coming into 2000, technology stocks had performed extremely well [Exhibit 9]. On the other hand, "old-economy" value stocks like U.S. Air had greatly lagged.

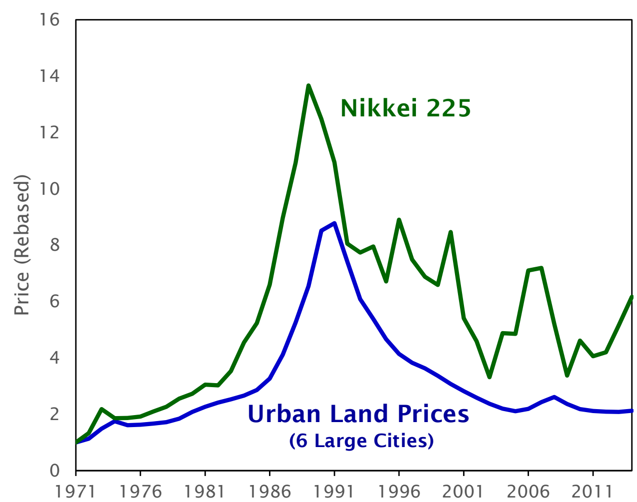
Exhibit 9: The Tech Bubble[5]



Technology stocks were extremely expensive and value stocks were very cheap. Given these valuations, many investors sold the flaky dotcoms and invested in the boring old-economy companies. As the bubble continued to inflate, it turned out to be an extremely painful bet. Several well-regarded value managers went out of business. In 2000, the bubble finally collapsed and those who managed to hang in significantly outperformed.

The world is often too quick to declare the beginning of a new era as a means to justify extraordinary valuations. In the early 1990s, the land under the imperial palace in Tokyo was famously said to be worth more than all of the land in California. Japanese companies traded at similarly ridiculous valuations [Exhibit 10]. Several books were written in the United States declaring the inherent superiority of the Japanese way of doing business.

Exhibit 10: The Japan Bubble



Once again, value investors bet too early against Japanese equities and suffered for several years. Eventually, Japanese stocks and property prices retreated to more normal levels and value investors reaped handsome rewards.

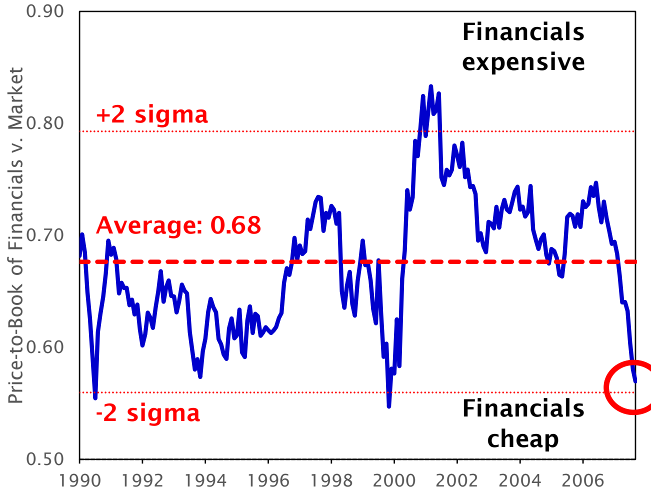
The Risk of Value Investing

Besides the risk of short-term underperformance, what is the risk of being a value investor? In the case of technology stocks, the risk was that the advocates of the new economy were correct and the Warren Buffett-style of valuing companies based on their profitability would be rendered meaningless. Similarly, it was plausible that the Japanese, with their legendary work ethic and efficiency, would permanently leave everyone else in the dust. **We believe that value investors get paid to underwrite the risk associated with paradigm shifts.**

Since markets rarely have paradigm shifts, value investors generally profit from betting on mean reversion. That is until that rare bird - a genuine "this time is different" event - comes down the pike. The most recent example of this was U.S. financial stocks in 2007. After underperforming the market by 23% in 2007, financials appeared extremely cheap. The price-to-book ratio of financials approached half that of the market. Since 1990, there had been only three situations (1991, 1994 and 2000) when valuations of financial stocks had fallen this low [Exhibit 11]. In every case, buying them had resulted in large subsequent gains.

5 Technology Stocks represented by NASDAQ 100 and Value Stocks represented by Russell 1000 Value.

EXHIBIT 11: FINANCIALS LOOK CHEAP IN 2007

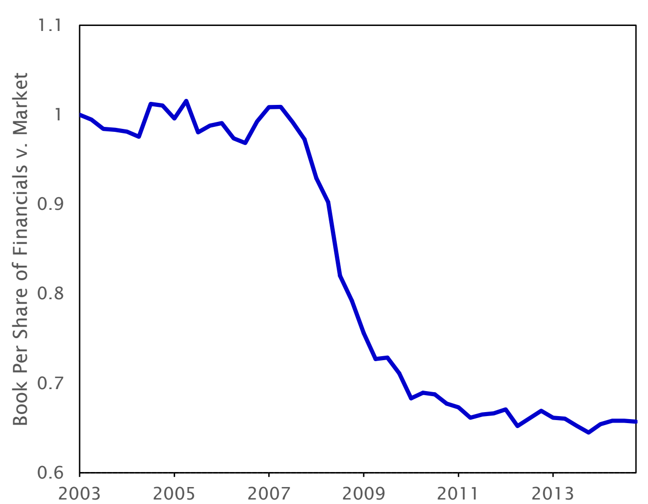


Armed with this data, several value investors saw the 2007 selloff as an obvious buying opportunity. In 2008, when Bear Stearns went bust, these investors, believing the bet to be even more attractive, loaded the proverbial boat. And why wouldn't they? For most of their lifetimes, they had been rewarded for doubling down each time their stocks went against them.

A typical conversation between two value managers would go something like this: "Bill, if you liked the stock at $50 you must love it at $25. Surely you're going to buy more, right?" Clients lauded portfolio managers for having conviction in their thesis and nerves of steel when they responded to underperformance by increasing their bet. Those investors who acted less bravely often ended up losing the account. So the incentives were clearly in place for investment professionals to respond in this manner.

Unfortunately, what followed was very costly for many value managers. In October 2008, Lehman Brothers collapsed and billions of dollars of write-offs ensued [Exhibit 12]. Several value managers who bought or over-weighted financial stocks went out of business. It has been over six years since the bet on financials was first placed. Even today, the fundamentals of U.S. financials have still not recovered relative to the broad market.

EXHIBIT 12: FUNDAMENTALS OF FINANCIALS NEVER RECOVER



Fortunately, years like 2008 don't come around too often. However, when they do, value investors are more or less guaranteed to run straight into the teeth of it. As a result, the return profile of value investors tends to resemble a series of modest gains followed by the occasional large loss.

Consider the prominent value manager who famously outperformed the S&P 500 for fifteen years in a row. His performance [Exhibit 13] was often compared to Babe Ruth's famous hitting streak. Billions of dollars poured into his mutual fund. Then, in a mere three years he managed to wipe out almost all of his accumulated gains.

EXHIBIT 13: THE WINNING STREAK ENDS

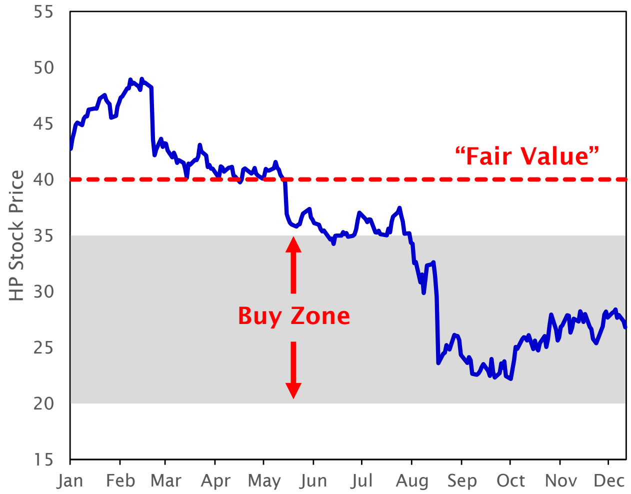
This profile of small gains followed by the occasional large loss looks awfully similar to that of writing insurance. The insurance underwriter safely collects a monthly premium until the hurricane blows through, resulting in large losses. Similarly, selling stock market insurance through put options earns consistent returns until a 1987- or 2008-style market crash strikes. While value investors rarely traffic in actual options, one has to wonder if there is something about their strategy that intrinsically results in this short option profile.

The next section assumes some familiarity with options. For those of you who have never dealt with options, feel free to skip it and go directly to "Don't Fight the Fed."

VALUE INVESTOR, OPTION SELLER?

What exactly is the trading strategy of a value investor? Let's look to Hewlett-Packard, a stock that was recently in favor with many value investors. In the summer of 2011, the price of HP almost halved [Exhibit 14].

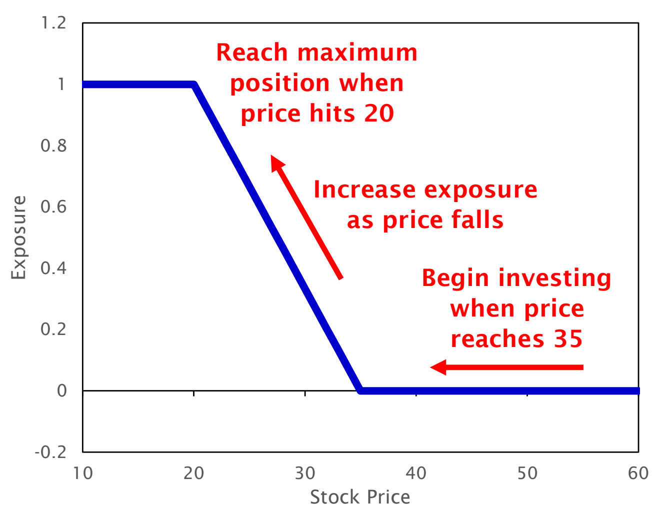
Exhibit 14: Hewlett-Packard Stock Price (2011)



When a well-known stock like HP collapses, it is bound to spark the interest of value investors. Every manager will have his or her own unique estimate of fair value, but let's assume that the consensus fair price for HP was $40.

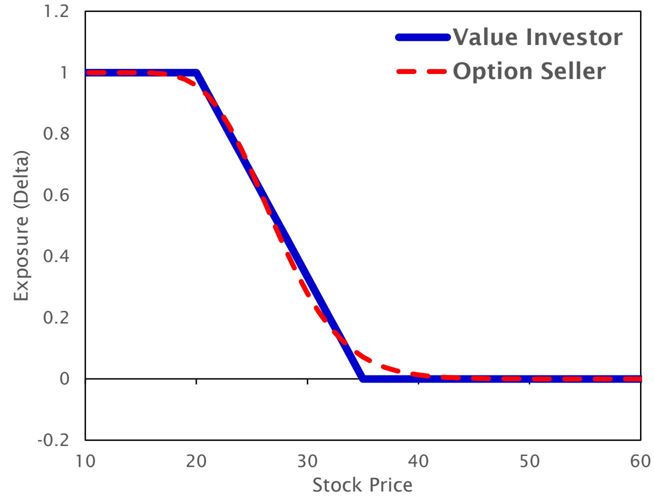
With the stock at $50, the investor would have no position. Let's assume that the typical value manager would start buying only when the stock fell to $35. She would increase her position as the price continued to drop, until reaching her maximum position with the stock at $20. Based on this behavior, we can draw the value investor's reaction function [Exhibit 15].

Exhibit 15: Value Investor Reaction Function



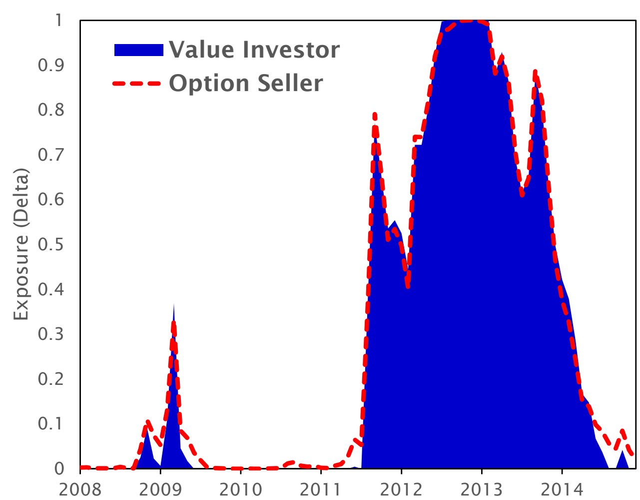
Instead of following this strategy, what if the manager had decided to sell a 6-month put option struck at $27.5? (We picked $27.5 because it is the level at which the manager would be halfway invested). Selling put options is scary because, as a stock drops, effective exposure (delta) tends to quickly increase. Conversely, as a stock rallies, exposure to price moves decreases. Similar to our value investor, the put option seller's exposure increases in response to adverse price moves. In fact, the reaction functions of the two investors are almost identical [Exhibit 16].

Exhibit 16: Value Investors Reaction Function Resembles Exposure of Short Put Option



For the sake of simplicity, let's assume that our value investor would exit her position in the same manner as she entered. Let's further assume that her estimation of fair value does not change over time. If we do this, we can track her HP exposure through time. We can also monitor her exposure assuming she had opted instead to sell a put option [Exhibit 17]. Once again, the value investor's and option seller's positions line up almost perfectly.

Exhibit 17: Value Investing Is Put Selling[6]



This is a startling conclusion. While value investors almost never explicitly sell options, their trading strategy gives them exposure very similar to that of option sellers. We don't think it's too much of a stretch to say that **value investors are selling options!**[7] We can only speculate, but perhaps Warren Buffett was aware of this fact when he chose to sell long-dated puts on the stock market in the mid-2000s.

Geek note: Value investors don't simply start buying when a stock drops below fair value. They wait for stocks to fall *materially* below fair value before buying. In the prior example, value investors might estimate fair value to be $40 but only start buying at $35. This gap between fair value and their buy trigger defines their "margin of safety". To be more

6 Positions have been smoothed using a 22-day moving average.

7 Technically, value investors replicate the returns associated with the delta hedge of a short put option, not that of the short put option itself

precise, value investors replicate the profile of an *out-of-the-money* -- rather than an *at-the-money* -- put option seller.

By stepping in when prices are falling, value investors provide a form of insurance to the market. Like all insurance, this activity should produce positive returns on average for the underwriter. Careful value investors have certainly prospered over the long run. The puzzle is why providing insurance through value investing has not been rewarded over the past five years.

DON'T FIGHT THE FED

Perhaps the most important new factor in the markets over the last five years has been the massive intervention by global central banks. The goal of the intervention has been to stimulate economic activity by pushing up asset prices. They have achieved this by lowering cash rates, forcing investors to seek yield in risky assets such as credit and high dividend-paying stocks. But the impact of Fed intervention has also caused the broader stock market to appreciate as earnings yields seem relatively more attractive with cash now yielding zero.

While many have discussed the effect of Federal Reserve intervention on the *level* of asset prices, few have focused on the impact of the *timing* of intervention. The crucial aspect of Fed activity is that it occurs reliably in response to market declines. In fact, every major decline since 2008 has been met with a swift response by the Fed [Exhibit 18].

EXHIBIT 18: THE MARKET HAS RESPONDED TO FED INTERVENTION

Value investors sell options by increasing exposure to stocks as they fall in price. Similarly, the Fed effectively sells options by stepping in every time the market begins to decline. Both value investors and the Fed provide insurance to the market by supporting it when it begins to sell off. In other words, **<u>the Fed is the new value investor</u>**.

To be fair, the Fed has been supporting the market since the late 1980s. But there is an important difference between the actions of the Fed under Yellen versus Greenspan and Bernanke. In 2008, the Fed allowed Bear Stearns and Lehman Brothers to fail. Given the massive wipeout that followed, this decision is now viewed as a dangerous mistake. Having learned their lesson, the Fed is now rushing in to support the market in response to even routine 20% drops. **<u>In this way, the Fed is acting like a value investor who demands a small margin of safety before investing.</u>**

In the past, the Fed has actually *helped* value managers. By waiting to respond in 2008, Bernanke allowed asset prices to get to distressed levels, giving value investors just enough time to do their analyses and snap up attractively priced securities. In fact, several value investors got heavily invested in early 2009, right in time for Fed intervention to kick in, giving them a very high return over a short period. As shown by our Top Value Investor Index, 2009 was a fabulous time to be bottom-fishing for deep value stocks.

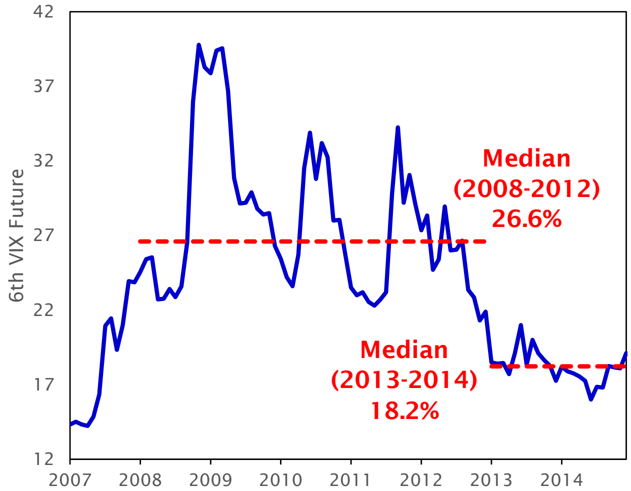
Since 2010, however, the Fed has changed tactics. The Fed is now reacting far more quickly. Small market selloffs are followed by immediate responses. **<u>By quickly riding to the rescue, the Fed is effectively front-running value investors.</u>** Consider the massive funds raised by distressed debt investors to buy credit in Europe in anticipation of great buying opportunities. Due to Fed-style jawboning by the European Central Bank, prices for European credit instruments never got to extreme levels [Exhibit 19], As a result, many of these funds have either remained un-invested or generated mediocre returns.

EXHIBIT 19: EUROPEAN CREDIT SPREADS

Central banks are the new multi-trillion dollar value investors. Since value investing is effectively option selling, we should be able to see the impact of the Fed in options markets. Entering 2010, the implied volatility of short- dated options had returned to normal levels from the distressed peaks of the crisis. On the surface, it appeared that the Fed had prevailed and markets were now functioning normally. While the prices of short-dated options had returned to average levels, however, long-dated option prices remained elevated [Exhibit 20]. In fact, in mid-2011, the implied volatility of long-dated options reached levels similar to that of 2008. The market had bought into the Fed guarantee over the short-run, but was expecting trouble over the long-run.

The Fed sensed this unease. Fed officials responded in September 2011 by declaring that rates were going to stay "lower for longer". Not surprisingly, this commitment caused long-term rates to rally. Interestingly, the market also viewed this promise of low rates as a commitment that the Fed was not ready to take off the training wheels anytime soon. This caused long-dated implied volatility to collapse. The market's increased confidence spurred a strong rally. Since the announcement, the S&P 500 has nearly doubled in value.

Exhibit 20: S&P 500 Long-Dated Implied Volatility



Final Thoughts

Besides demanding a smaller margin of safety, the obvious response to central bank intervention is to become a "Fed Watcher" and attempt to anticipate Yellen's and Draghi's actions. Some investors who have traditionally avoided macro investing are now going down this path. This is a fun game to play but a hard one to win. For those value investors who would rather stick to their knitting, we believe there are a couple of promising avenues.

First, the Fed is focused on developments in the equity and fixed income markets. However, it does not respond to movements in many other asset classes. For instance, crude oil has tumbled -50% since the summer without evoking a response from the Fed. Value investors have historically focused their efforts on equity and credit markets, as these assets have a series of discountable cash flows. However, as discussed, Fed intervention has made these markets more difficult to navigate. Currency and commodity markets are harder to value, but their fair price can be estimated using other means. Commodity markets and currencies with less active central banks should provide fertile opportunities for open-minded value investors.

Our second suggestion is slightly technical, but is potentially quite important. The Fed watches the absolute level of markets but cares little about the relative dispersion across markets. So while QE has managed to crush the day-to-day volatility of the stock market, the spread between the best and worst performing sectors is still very wide. For example, Biotech stocks have been one of the best performing groups over the last five years, delivering a 32% average return. On the other hand, gold stocks have returned -15% per year. Like the Fed, most value investors focus on absolute than on relative value. Since the Fed is likely to intervene before stocks can reach absolute levels of cheapness, this puts value investors directly in the crosshairs of the Fed. By focusing on relative value, investors can continue to demand large margins of safety.

The irony of this whole situation is that **the most careful value investors who demand the greatest margin of safety have been hurt most by the Fed's intervention**. On the other hand, investors who are willing to take the Fed's backstop at face value have prospered. If we have learned anything from 2008, it is that the buildup of moral hazard in the financial system can be extremely destabilizing. Rather than dance to the Fed's music, Kaleidoscope is focusing its research efforts on applying value investing to more fertile areas minimally impacted by the actions of the Federal Reserve. We would warmly recommend you do the same.

Key Points

1. Active managers should be evaluated net of their equity market exposure
2. On this basis, hedge fund managers and value investors have both struggled since 2010
3. Value investors tend to have high hit rates but suffer large losses in paradigm shifts
4. Value investors' trading strategies replicate short out-of-the-money put options
5. Similarly, the Fed effectively sells put options by intervening when markets fall
6. The Fed has become more quick to respond to market declines, front-running value investors with large margins of safety
7. Given Fed intervention, value investors should extend their opportunity set to currencies, commodities, and relative value

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Data sources: Bloomberg, Japan Statistics Bureau, Hedge Fund Research, Russell, Standard and Poor's, Tokyo Stock Exchange, Markit, CBOE, NASDAQ. All data as of 12/31/2014.