

ABR Dynamic Funds' Portfolio Construction Series: Part 22

"Garbage in, garbage out"

Hindsight vs. Foresight

Thus far in this series on portfolio construction, the portfolios have been constructed with the benefit of hindsight. Preparing for the future adds elements of uncertainty. If the past has nothing to do with the future, then using the past as an input to guide allocations for the future may not help. That's essentially what is meant by "garbage in, garbage out."

However, that potential problem exists with any method of investing and should not discourage this one. After all, over time, true diversification has worked better than concentrated bets in whatever has performed well over the past few years. In other words, everyone is using the past to predict the future, but not everyone is doing it wisely.

Fortunately, the discussion doesn't have to end there. There are some lessons that can be learned from consideration of the known knowns, the known unknowns, and the unknown unknowns.

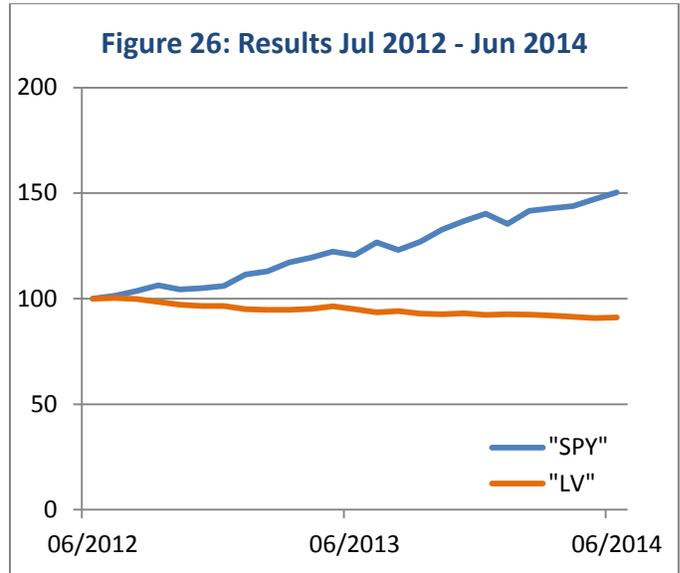
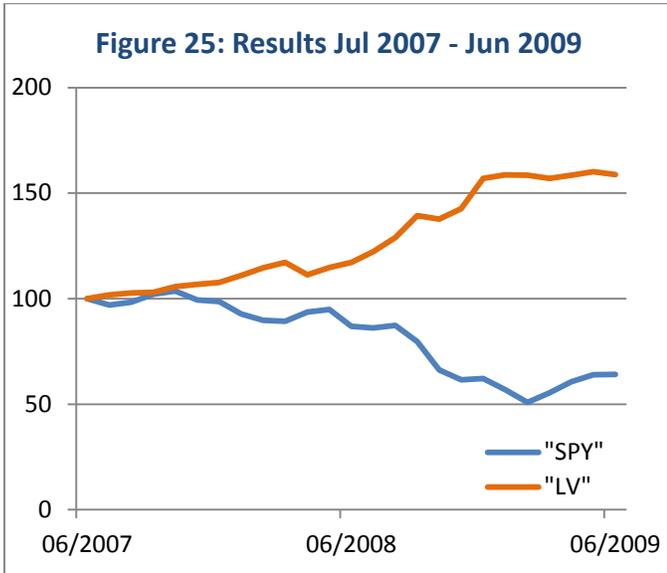
Known Knowns

An important feature of the approach in [installment 20](#) and [installment 21](#) was combining component behaviors with low correlations, behaviors that won and lost at different times. However, going forward, no one can be sure when these behaviors will win or lose. Nevertheless, there are behaviors which are more or less likely to win in specific market environments, even if investors don't know when those market environments will arise.

Knowing that various market conditions will arise and having some level of confidence in how certain asset classes and strategies may behave in those market conditions is as close to a "known known" as we think there is in investing for an uncertain future. Of course, as with everything forward-looking, there are no guarantees.

An interesting example is "SPY" (equity behavior) and "LV" (long volatility behavior). The appendix in [installment 20](#) summarizes them (as well as "TLT" – interest rate behavior – and "MF" – managed futures behavior). Briefly, from that appendix, there are assets which actually provide exposure to the volatility of equities. That direct exposure has been useful because bull markets have been associated with smaller equity swings (lower volatility), and bear markets and crises have been associated with increasing equity swings (rising volatility). There are strategies which seek to mitigate the losses of volatility assets in bull markets while capturing their appreciation in crises; we have called them long volatility behavior, or "LV."

Therefore, it may be logical to expect "LV" to do well when "SPY" is doing particularly poorly and vice versa. This expectation has generally held. For a closer look, [Figure 25](#) shows "SPY" and "LV" in an equity crisis, and [Figure 26](#) shows them in a strong bull market.



Sources: ABR white paper (data from Bloomberg)

Of course, there is absolutely no guarantee that this pattern will continue into the future. However, there are “LV” strategies designed to target this pattern, and many of them have succeeded in the past. Those facts may give investors some level of confidence in their potential to do so in the future. In other words, taking advantage of (as close as there may be to) known knowns may have the potential to make portfolios as robust as possible to various market conditions.

Known Unknowns

We know various market conditions are eventually coming, but we don’t know when. This is a known unknown. Investors expecting a crisis have the (not recommended) option of optimizing their exposures based on a previous crisis. In other words, these investors could maximize the reward for every dollar put at risk in their portfolios just over a crisis period in the historical data. Investors expecting a bull market could do likewise over a bull market period in the historical data (also not recommended).

To explore this approach, we broke down the usual data (Jan 2006 – Jun 2018) into two parts, which combine to form the full cycle:

- “Crisis”: Jan 2006 – Mar 2009
- “Bull Market”: Apr 2009 – Jun 2018
- “Full Cycle”: Jan 2006 – Jun 2018

“Crisis”

Table 9 shows a portfolio that was optimized for the “crisis” along with one that was optimized for the “full cycle.” It reports the results for the “crisis,” the “bull market,” and the “full cycle” time periods. This crisis-optimized portfolio posed challenges. Would an investor expecting the results of the crisis-optimized portfolio, in the “crisis” (green column), really stick with it during the “bull market” (orange column)? Or would s/he abandon that plan before realizing its benefit, if the expected crisis didn’t strike right away?

Table 9 (portfolios optimized for "crisis" and "full cycle" time periods)	Statistics Reported From Time Period:					
	"Crisis"		"Bull"		"Full Cycle"	
	Portfolios Optimized for Time Period:					
	"Crisis"	"Full Cycle"	"Crisis"	"Full Cycle"	"Crisis"	"Full Cycle"
Annualized Return	<u>17.20%</u>	6.44%	<u>0.83%</u>	11.33%	4.85%	10.04%
Annualized Volatility	8.98%	12.50%	5.89%	7.41%	7.07%	8.98%
Sharpe Ratio	1.87	0.49	0.13	1.52	0.67	1.10
Maximum Drawdown	5.8%	14.2%	19.6%	9.1%	19.6%	14.2%
"SPY" Allocation	0%	57%	0%	57%	0%	57%
"TLT" Allocation	1%	30%	1%	30%	1%	30%
"LV" Allocation	70%	66%	70%	66%	70%	66%
"MF" Allocation	42%	22%	42%	22%	42%	22%
Leverage	13%	75%	13%	75%	13%	75%

Net of RFR + 0.40% borrowing cost

Source: ABR white paper (data from Bloomberg)

"Bull Market"

Table 10 reports the results from a portfolio that was optimized for the "bull market," along with the portfolio that was optimized for the "full cycle." The bull market-optimized portfolio again posed challenges. Its results in the "crisis" (orange column) wildly missed the investor's bull market expectations (green column).

Table 10 (portfolios optimized for "bull" and "full cycle" time periods)	Statistics Reported From Time Period:					
	"Crisis"		"Bull"		"Full Cycle"	
	Portfolios Optimized for Time Period:					
	"Bull"	"Full Cycle"	"Bull"	"Full Cycle"	"Bull"	"Full Cycle"
Annualized Return	<u>-5.99%</u>	6.44%	<u>17.34%</u>	11.33%	10.77%	10.04%
Annualized Volatility	17.32%	12.50%	8.98%	7.41%	11.97%	8.98%
Sharpe Ratio	-0.37	0.49	1.92	1.52	0.89	1.10
Maximum Drawdown	39.2%	14.2%	8.2%	9.1%	39.2%	14.2%
"SPY" Allocation	84%	57%	84%	57%	84%	57%
"TLT" Allocation	59%	30%	59%	30%	59%	30%
"LV" Allocation	0%	66%	0%	66%	0%	66%
"MF" Allocation	0%	22%	0%	22%	0%	22%
Leverage	43%	75%	43%	75%	43%	75%

Net of RFR + 0.40% borrowing cost

Source: ABR white paper (data from Bloomberg)

The results of the bull- and crisis-optimized portfolios in Tables 9 and 10 indicate that this approach, of anticipating market conditions and constructing portfolios based on those expectations, was not robust to errors in expectations. That, combined with the fact that it has been exceedingly difficult to forecast market conditions with any useful level of precision, makes this approach problematic. However, the portfolio optimized for the "full cycle" in Tables 9 and 10 weathered the various market conditions much better.

Unknown Unknowns

Of course, unknown unknowns are possibilities of which we aren't even aware, so, strictly speaking, there's nothing more to say about them. However, the following brief comments touch on two regimes which are unknown, at least to the data of the past few market cycles. These brief discussions should not be taken as a prediction that these regimes will materialize.

Inflation

The last period of significant and extended inflation in the U.S. ended in the 1980s. Data since then may not be very useful for constructing a portfolio for an inflationary regime. In other words, "garbage in, garbage out."

For example, a "TLT" allocation may be a loser instead of a winner in periods of inflation. On the other hand, certain "MF" strategies, with the potential to utilize both long and short exposures to commodities, bonds, and currencies, *might* be able to benefit from the meaningful trends in those assets that *might* result from an extended period of significant inflation.

There is, of course, no reason to limit oneself to "SPY," "TLT," "LV," and "MF," both in general, and especially for an investor who has another preferred asset for inflation hedging.

Stagnation

Over the 30 year period from 1989 to 2018, Japan's Nikkei 225 stock index was down 33.6% (1.4% annualized)ⁱ. An investor of the opinion that the U.S. may be facing such a time period would not expect "SPY" to be a very useful part of his/her portfolio, no matter what the lifetime data of the S&P 500 indicate ("garbage in, garbage out"). This investor could look to other asset classes or other geographies for possible help.

Observations

1. Starting from a baseline of a well-diversified portfolio (not "60/40") that was created to weather both various market conditions and various regimes, it can be very risky to make large adjustments. The level of certainty one would need to have in one's market outlook, in order to warrant large adjustments, is a very high bar.
2. Leverage didn't measure risk very well. In the two rightmost columns of Table 10, despite using less leverage, the bull-optimized portfolio had higher volatility, a lower Sharpe ratio, and a bigger maximum drawdown than the diversified (full cycle) portfolio. Investors seeking a certain level of return with low leverage have often taken on excessive concentration risk, usually concentration in equities.

Looking Ahead: In the next installment, we will address the following question:

- *Once investors have selected the behaviors they want in their portfolios, how might they go about selecting specific investments to gain exposure to those behaviors?*

ⁱ Return does not include dividends. The S&P 500 Index (also without dividends) was up 802.7% (7.6% annualized) over the same time period.