



*Drag-Free Float – Undisclosed Location*

## **Legends of the Fall: Where to Hide When Bubbles Pop**

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### **Introduction**

As talk of an AI bubble grows, we are becoming more interested in what comes after the bubble. In our 2025 Q4 letter last fall, we focused on [Investing in Technology](#) as a way to participate in the inflation of the bubble, but now we are asking the question, “What holds up when the bubble pops?” The current AI bubble has strong echoes of the dot-com bubble of the late 1990s, so we are particularly interested in which asset classes do the best during similar periods of extreme valuation spreads between overhyped growth stocks and overlooked value stocks.

### **Valuation Crash vs. Economic Crash**

Every stock market cycle has a unique set of circumstances that contribute to the run-up in stock prices and another set of triggers that lead to the eventual decline. Despite the uniqueness and unpredictability of the individual events, cycles can nonetheless be broadly divided into two types: valuation and economic.

The dot-com bubble is the archetypal example of a valuation cycle. During the inflation phase (1995-2000), irrational exuberance surrounded the potential of the internet. From January 1999 to the peak in March 2000, 321 internet companies went public, and at least two of them (Stamps.com and Corvis)<sup>i</sup> had zero revenue, not just zero profits. During the same time, the Nasdaq 100 Index soared 137%. While the internet ultimately proved to be very important economically and societally, the enthusiasm at the time led to unjustifiably high valuation ratios. In fact, the valuation spread between growth and value stocks reached the 98th percentile.<sup>ii</sup>

During the deflation phase (2000-2002), investors realized they had paid too high a price for the story of internet-fueled growth. Approximately 28% of the internet companies that went public during the bubble were delisted within five years due to business failure. From the peak in March 2000 to the bottom in October 2002, the Nasdaq 100 Index fell 81.1%. Importantly, this crash occurred nearly independently of the broader economy. In fact, while the stock market was crashing, GDP grew at an annualized rate of 1.7% from Q1 2000 to Q4 2002. The National Bureau of Economic Research (NBER) states that there was an 8-month recession from March to November 2001, but it was so mild that GDP actually grew at a 0.7% annualized rate during the so-called recession. Main Street was fine, while Wall Street collapsed. A good way to think about a valuation cycle is that it is largely contained to Wall Street: stocks run up and then crash, but the Main Street economy is mostly unaffected.

At the other end of the spectrum, the 2008 Global Financial Crisis is the quintessential example of an economic crash. In the years preceding the October 2007 market top, the IPO market was subdued, with roughly one-third as many per year as the dot-com bubble. The Nasdaq 100 Index rallied 25% in the 15 months leading to the peak, which is a strong move, but not nearly as extreme as its 137% gain in the 15 months preceding the dot-com peak. The spread between growth and value was lower than normal, ranking only in the 33rd percentile.

During the 2007-2009 decline, the market crashed because the global economy fell into the deepest recession since World War II. U.S. GDP from Q4 2007 to Q1 2009 declined at 2.9% annualized, and according to NBER the recession lasted 18 months from December 2007 to June 2009. Unlike the mostly contained meltdown of extremely overvalued internet stocks during the dot-com crash, the economically driven bear market of the financial crisis slashed stock prices across all sectors as investors worried that the entire financial system might collapse.

## What does well during a valuation crash?

We previously explored which asset classes do well during an economic crash in our Q4 2022 letter [Asset Class Response Function to Yield Curve Inversion](#), so in this letter we will focus on finding the asset classes that do well during a valuation crash. As of the end of September this fall, the spread between growth and value is in the 91st percentile. To look for similar periods in history, we screened the last 36 years of data to find when the growth/value spread was in the 80th percentile or higher, and then focused specifically on S&P 500 declines of more than 10% that started from those elevated valuation spread levels. We found only four declines that fit our criteria, so the sample size is too small to draw strong conclusions. Nonetheless, the evidence makes a compelling case for certain asset classes, dispels some of our preconceived notions and quite convincingly shows what does not work well (*Table 1*).

**Table 1.** Asset class returns during high valuation spread corrections.

| Asset Class/Sector/Investment Methodology      | Full Period<br>Ann Ret | Apr 2000 to<br>Sept 2002 | Jan 2022 to<br>Sept 2022 | Aug 2023 to<br>Oct 2023 | Feb 2025 to<br>Mar 2025 | Avg<br>Ret | Std<br>Dev | Avg Excess Ret<br>vs. S&P 500 | Win<br>Rate | Comp<br>Score |
|------------------------------------------------|------------------------|--------------------------|--------------------------|-------------------------|-------------------------|------------|------------|-------------------------------|-------------|---------------|
| US Lrg/Mid Cap Top 10% Cash Flow Yield Value   | 14.5%                  | 20.9%                    | -11.7%                   | -6.0%                   | -3.2%                   | -0.7%      | 12.5%      | 21.6%                         | 100%        | 8             |
| Gold                                           | 10.1%                  | 16.9%                    | -9.4%                    | 1.1%                    | 11.5%                   | 4.5%       | 10.1%      | 26.8%                         | 100%        | 7             |
| US Equity Market Neutral                       | 3.6%                   | 22.0%                    | 9.2%                     | 8.5%                    | -0.6%                   | 9.5%       | 8.0%       | 31.7%                         | 100%        | 7             |
| US Counter Cyclical Stocks                     | 15.5%                  | 57.4%                    | -14.4%                   | -6.3%                   | 1.1%                    | 6.3%       | 28.2%      | 28.6%                         | 100%        | 7             |
| US Lrg/Mid Cap Top 10% Earnings Yield Value    | 13.1%                  | 37.0%                    | -20.6%                   | -3.6%                   | -6.3%                   | -0.4%      | 21.4%      | 21.8%                         | 100%        | 7             |
| US Healthcare Sector                           | 8.6%                   | -16.5%                   | -13.1%                   | -6.8%                   | -0.2%                   | -9.3%      | 6.2%       | 12.9%                         | 100%        | 7             |
| US 3-Month Treasury Bills                      | 2.1%                   | 9.8%                     | 0.8%                     | 1.3%                    | 0.7%                    | 3.1%       | 3.8%       | 25.4%                         | 100%        | 6             |
| US Energy Sector                               | 9.0%                   | -24.6%                   | 33.8%                    | -1.9%                   | 7.5%                    | 1.6%       | 20.9%      | 23.8%                         | 100%        | 6             |
| US High Yield Bonds                            | 5.7%                   | 1.0%                     | -15.3%                   | -2.1%                   | -0.2%                   | -4.4%      | 6.5%       | 17.9%                         | 100%        | 6             |
| Int'l Lrg/Mid Cap Top 10% Earnings Yield Value | 9.9%                   | -0.1%                    | -23.0%                   | -8.0%                   | 4.9%                    | -7.2%      | 10.5%      | 15.1%                         | 100%        | 6             |
| US Financial Sector                            | 5.0%                   | -11.3%                   | -21.1%                   | -8.0%                   | -2.9%                   | -11.1%     | 6.7%       | 11.2%                         | 100%        | 6             |
| US Total Bond Market                           | 3.5%                   | 25.8%                    | -14.7%                   | -4.6%                   | 2.1%                    | 1.1%       | 14.9%      | 23.4%                         | 100%        | 5             |
| US 7-10 Year Treasury Bonds                    | 3.6%                   | 35.6%                    | -15.7%                   | -5.7%                   | 3.2%                    | 2.7%       | 19.2%      | 25.0%                         | 100%        | 5             |
| Vanguard US Large Cap Value                    | 8.1%                   | -32.8%                   | -14.7%                   | -8.1%                   | -1.7%                   | -15.2%     | 11.6%      | 7.1%                          | 100%        | 5             |
| US Consumer Staples Sector                     | 6.5%                   | -3.5%                    | -11.9%                   | -9.8%                   | 4.0%                    | -5.5%      | 6.2%       | 16.8%                         | 75%         | 4             |
| Int'l Small Cap Value                          | 10.6%                  | -4.3%                    | -24.4%                   | -8.1%                   | 6.6%                    | -8.3%      | 11.1%      | 14.0%                         | 75%         | 4             |
| Japan Small Cap                                | 7.6%                   | -24.0%                   | -21.7%                   | -5.2%                   | 3.9%                    | -12.5%     | 11.6%      | 9.7%                          | 100%        | 4             |
| US Small Cap Value                             | 10.9%                  | 4.9%                     | -15.0%                   | -11.7%                  | -10.8%                  | -8.4%      | 7.7%       | 13.8%                         | 50%         | 4             |
| US Utilities Sector                            | 7.2%                   | -23.5%                   | -6.5%                    | -10.3%                  | 2.0%                    | -10.1%     | 9.2%       | 12.2%                         | 75%         | 4             |
| S&P 900 Pure Growth with High Cash Flow Yield  | 14.3%                  | -11.1%                   | -26.9%                   | -5.6%                   | -9.0%                   | -13.5%     | 8.2%       | 8.7%                          | 50%         | 4             |
| US Small Cap High Cash Flow Margn + Momtm      | 11.7%                  | -2.4%                    | -21.1%                   | -16.0%                  | -7.4%                   | -12.0%     | 7.3%       | 10.2%                         | 50%         | 4             |
| US Materials Sector                            | 8.1%                   | -16.9%                   | -23.7%                   | -10.8%                  | -2.7%                   | -13.9%     | 7.7%       | 8.4%                          | 75%         | 4             |
| US Industrials Sector                          | 9.1%                   | -31.0%                   | -20.7%                   | -10.6%                  | -5.0%                   | -17.4%     | 9.9%       | 4.8%                          | 75%         | 4             |
| Vanguard US Small Cap Value                    | 9.6%                   | 10.3%                    | -18.8%                   | -12.6%                  | -8.8%                   | -8.1%      | 10.9%      | 14.2%                         | 50%         | 3             |
| Int'l Lrg Cap Value                            | 7.7%                   | -23.2%                   | -19.1%                   | -8.8%                   | 6.1%                    | -12.0%     | 11.3%      | 10.3%                         | 75%         | 3             |
| US Small Cap Top 10% Cash Flow Yield Value     | 12.5%                  | 56.1%                    | -23.3%                   | -9.5%                   | -14.8%                  | -2.0%      | 31.6%      | 20.3%                         | 50%         | 3             |
| Global Copper Mining Sector                    | 11.9%                  | -33.2%                   | -21.7%                   | -21.3%                  | 2.3%                    | -19.4%     | 12.9%      | 2.8%                          | 75%         | 3             |
| Emerging Market Lrg/Mid Cap Value              | 10.8%                  | -38.6%                   | -19.1%                   | -9.9%                   | 2.4%                    | -17.7%     | 15.0%      | 4.6%                          | 75%         | 3             |
| US Micro Cap Value                             | 10.2%                  | -0.3%                    | -24.6%                   | -13.5%                  | -8.2%                   | -12.1%     | 8.8%       | 10.2%                         | 25%         | 3             |
| US Lrg/Mid Cap High Cash Flow Margn + Momtm    | 14.4%                  | -42.3%                   | -20.8%                   | -9.0%                   | -9.1%                   | -21.6%     | 13.6%      | 0.7%                          | 50%         | 3             |
| Vanguard US Small Cap                          | 9.3%                   | -29.2%                   | -23.8%                   | -14.4%                  | -10.9%                  | -19.9%     | 7.3%       | 2.4%                          | 50%         | 3             |
| Global Gold Mining Sector                      | 8.6%                   | 82.9%                    | -24.7%                   | -10.8%                  | 18.0%                   | 9.7%       | 41.4%      | 32.0%                         | 50%         | 2             |
| US Lrg/Mid Cap Top 10% Momtm                   | 11.8%                  | -37.1%                   | -12.0%                   | -12.7%                  | -12.6%                  | -19.4%     | 10.7%      | 2.9%                          | 50%         | 2             |
| US Consumer Discretionary Sector               | 9.2%                   | -20.9%                   | -29.9%                   | -12.3%                  | -14.7%                  | -19.8%     | 6.8%       | 2.5%                          | 25%         | 2             |
| US Micro Cap                                   | 11.1%                  | 6.2%                     | -26.6%                   | -19.5%                  | -16.7%                  | -15.0%     | 12.3%      | 7.3%                          | 25%         | 1             |
| Switzerland Stock Market                       | 6.4%                   | -30.4%                   | -27.5%                   | -12.1%                  | 4.5%                    | -17.5%     | 13.9%      | 4.8%                          | 50%         | 1             |
| US 30-Year Treasury Bonds                      | 3.4%                   | 39.6%                    | -38.2%                   | -24.5%                  | 5.5%                    | -9.0%      | 29.9%      | 13.3%                         | 50%         | 0             |
| S&P 500 Index                                  | 8.6%                   | -43.8%                   | -24.0%                   | -8.3%                   | -6.9%                   | -22.3%     | 14.9%      | 0.0%                          | 0%          | 0             |
| Vanguard US Large Cap Growth                   | 9.2%                   | -53.6%                   | -33.1%                   | -8.4%                   | -11.3%                  | -29.1%     | 18.3%      | -6.9%                         | 0%          | -1            |
| US Technology Sector                           | 10.6%                  | -80.5%                   | -31.2%                   | -7.8%                   | -10.4%                  | -42.3%     | 29.2%      | -20.0%                        | 25%         | -3            |
| Global Semiconductor Sector                    | 14.0%                  | -79.8%                   | -40.7%                   | -17.1%                  | -13.6%                  | -45.9%     | 26.4%      | -23.6%                        | 0%          | -3            |
| Nasdaq-100 Index                               | 11.2%                  | -81.1%                   | -32.5%                   | -8.4%                   | -10.1%                  | -43.1%     | 29.3%      | -20.8%                        | 0%          | -4            |

*The full-period return spans 27.75 years from January 1999 to September 2026.*

There are four primary characteristics we look for in a good hedge investment:

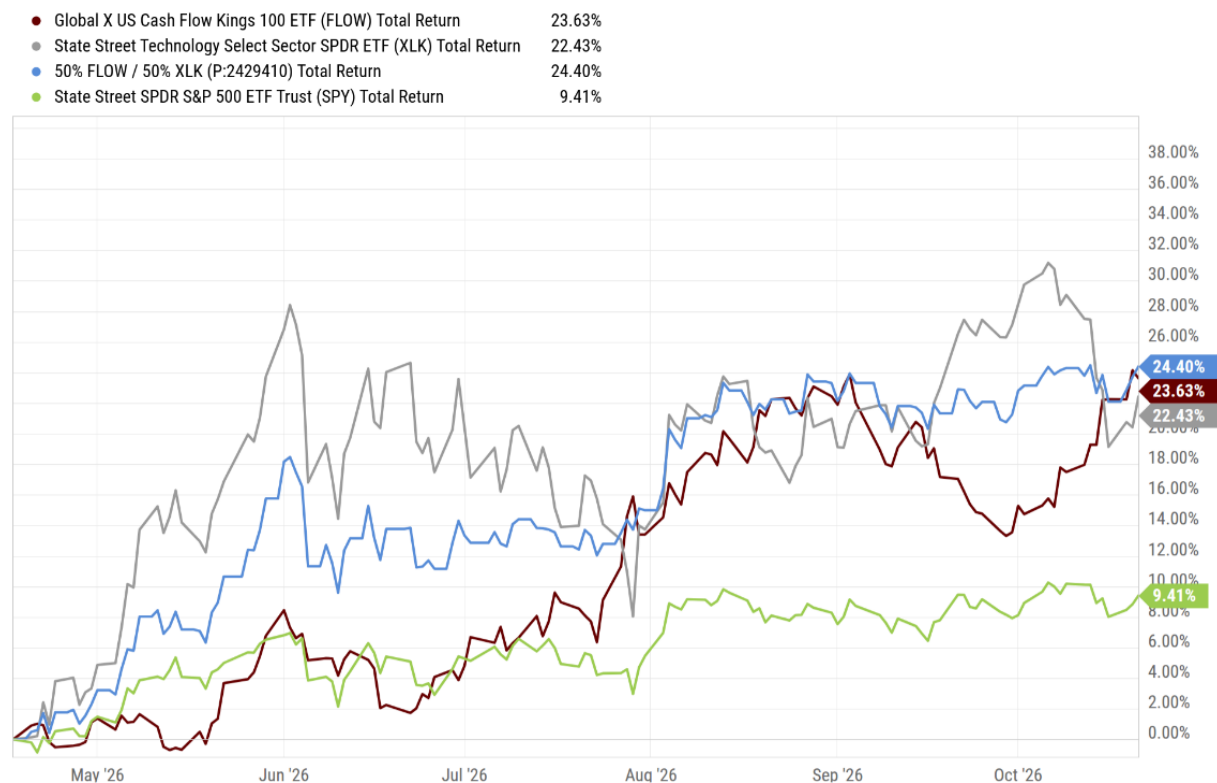
1. Reasonable long-term expected return
2. Moderate to low standard deviation of returns during a crash
3. Significant average outperformance of the S&P 500 during a crash
4. Reliable outperformance of the S&P 500 during a crash

In Table 1, these four characteristics are addressed in the columns 'Full Period Ann Return', 'Std Dev', 'Avg Excess Return vs. S&P 500', and 'Win Rate'. Using a simple numeric ranking, we calculated a Composite Score shown in the final column of the table. There is no perfect hedge, and depending on which of the four characteristics you prioritize, your ranking may differ. Based on our ranking, we think investments that have a Composite Score of 7 or higher have a strong combination of our four primary hedge characteristics.

Unsurprisingly, three of our long-time favorite hedges landed in the top group: Gold, Equity Market Neutral and Counter Cyclical Stocks. Of these, Equity Market Neutral delivered the highest excess return, beating the S&P 500 by an average of 31.7% over the 4 corrections, but its desirability is held back by its low historical return. Fortunately, newer Equity Market Neutral funds deliver nearly twice the expected return because they target twice the volatility of old funds. Counter Cyclical Stocks score very well but are held back by the large standard deviation of their returns during a crash. We also expect their incredible 15.5% full-period annualized return to revert to a more normal 8 to 10% range in the future.

The most promising new hedge against a valuation correction is the U.S. Large/Mid Cap Top 10% Free Cash Flow Yield Value investment methodology. We were originally attracted to this strategy because it provides a well-designed approach to invest in the top 10% deep value, yet highly profitable companies. The full period return of 14.5% seems too good to be true but is actually in line with academic research which regularly finds that the cheapest decile of a given valuation metric returns 3 to 6% more than the capitalization-weighted index. We are encouraged that the live performance of this methodology has produced a 13.0% annualized return since its January 2017 inception.<sup>iii</sup> As a hedge against a valuation correction, it has beaten the S&P 500 by an average of 21.6%, winning all four times, with only moderate standard deviation during the crashes. The combination of a high expected return with a strong hedge against a valuation crash makes this methodology an extremely attractive addition to a diversified portfolio. By pairing this strategy with the technology sector, we smooth out the ride significantly while maintaining exposure to both high-return investments (*Figure 1*).

**Figure 1.** Pairing U.S. Large/Mid Cap Top 10% Free Cash Flow Yield Value (FLOW) with the Technology Sector (XLK): The Sum is Greater than the Parts



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The low correlation between FLOW and XLK allows for effective rebalancing that systematically sells high and buys low, producing a higher combined return (24.4%) than either individual holding (23.6% and 22.4%).

Before doing this research, we naively assumed that U.S. Small Cap and U.S. Small Cap Value would both be strong hedges during a valuation correction. While they did outperform the S&P 500 on average during corrections, their win rate was only 50%, so it was a toss of a coin whether or not they would provide protection on any given correction. On average, U.S. Small Cap Value outperformed by a respectable 13.8%, but it was significantly behind the strongest hedges, which outperformed by more than 20%. On the other hand, U.S. Small Cap only outperformed by 2.4%, demonstrating its low value as a hedge. We also assumed that the U.S. Consumer Staples Sector would be a good hedge, and while it was decent, it was held back by its lower return and win rate of only 75%.

It is worth noting that not all value investment methodologies are created equal. Bland strategies that tilt toward value have such weak factor exposure that their long-term returns

are significantly lower than the returns of stronger factor methodologies that focus on the top 10% most undervalued stocks. For example, the Vanguard Value ETF (VTV) invests in 298 of the 421 stocks in its U.S. large-cap investment universe; it is more accurate to say it avoids growth than it invests in value when it owns 70.8% of large-cap stocks. While all three U.S. top 10% value strategies beat the S&P 500 by 3.9% or more, the Vanguard Value ETF lagged the S&P by 0.5%. Importantly, generic value funds also provide significantly less protection during a valuation crash. Considering that deeper value funds deliver both higher long-term returns and protect more during a valuation crash, you may wonder why milktoast Vanguard value funds are so popular. We believe there are two primary reasons:

1. Most investors prefer funds that behave similarly to the broad market. If a fund owns 70.8% of the stocks in its starting investment universe, it is unlikely to have an exceptionally bad year relative to that market, so it is easier for investors to hold and accumulate a fund that never looks terrible.
2. Most investors confuse price and value. Price is what you pay; value is what you get. With limited time and resources, the average investor can quickly and easily choose a Vanguard fund because its expense ratio is low. This is a good first step because it reduces how much the investor pays, but it may leave considerable value on the table when the excess return of more focused methodologies can be significantly above the higher fee they charge.

From the supply side, Vanguard is unlikely to launch a focused fund because of capacity constraints. It is not possible to invest 100 billion dollars in the top 10% most undervalued companies without driving up their price, destroying the excess return potential of the strategy.

Considering that the point of this research was to find investments that hold up well during a valuation correction, it is not surprising that U.S. Large Cap Growth, the Technology Sector, Semiconductors and the Nasdaq 100 Index are the opposite of a valuation hedge. They all significantly and consistently underperformed the S&P 500 during valuation corrections. Despite underperformance during corrections, these assets are an important part of a diversified portfolio because their long-term returns are strong and their performance during bull markets can be spectacular. When these growth investments are paired with high-return strong hedges such as Top 10% Free Cash Flow Value, the total return of the portfolio is increased, as seen in Figure 1. For a more thorough explanation of how this works, please see our Q4 2020 letter: [Rebalancing Alpha](#).

## Conclusion

It is extremely difficult to correctly time an investment bubble. That said, with research and careful portfolio construction, it is possible to achieve reasonable participation during the

inflation phase while maintaining prudent hedges to provide significant protection against the eventual deflation phase. In this letter, we showed that U.S. Large/Mid Cap Top 10% Free Cash Flow Yield Value, Gold, Equity Market Neutral and Counter Cyclical Stocks are all strong hedges against a valuation correction.

Best,

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<sup>i</sup> Amazingly, both companies survived the crash, but from peak to trough, Stamps.com fell 97.6% and Corvis declined 99.6%.

<sup>ii</sup> The spread between growth and value is calculated by AQR using a composite value metric that includes five value measures: book-to-price, earnings-to-price, forecast earnings-to-price, sales-to-enterprise value, and cash flow-to-enterprise value. It is based on data from January 1990 to December 2025.

<sup>iii</sup> The fund we are referencing is the Pacer US Cash Cows 100 ETF (COWZ). This fund had such exceptional performance that its assets under management swelled to \$29.2 billion in 2024, forcing it to change its investment methodology to focus on only the largest 400 stocks, abandoning its deep value methodology. Fortunately, a copycat fund was launched by a competing firm: Global X U.S. Cash Flow Kings 100 ETF (FLOW). FLOW has outperformed COWZ since its July 10, 2023 inception, and has yet to be discovered by the masses, so its asset base is a nimble \$36 million.