Managed Volatility in the Pandemic: The One-Year Anniversary

MARCH 2021

- The sharp selloff in March of 2020 initially led to comparisons with the onset of the GFC of 2008, but the ensuing monetary and fiscal policies stimulated a bubble in asset prices that now more closely resembles 1999.

- During the intense Q1 market crisis, low-beta portfolios suffered due to sectoral shifts reflective of the pandemic's specific economic consequences. Their brief contribution of downside protection with respect to both fundamentals and returns was lost during the immediate return to a speculatively charged bull market.

- The similarity to the market environment of 1999 reinforces the long-term appeal of managed volatility strategies, which have provided insurance against extended declines in fundamentals or investor sentiment.
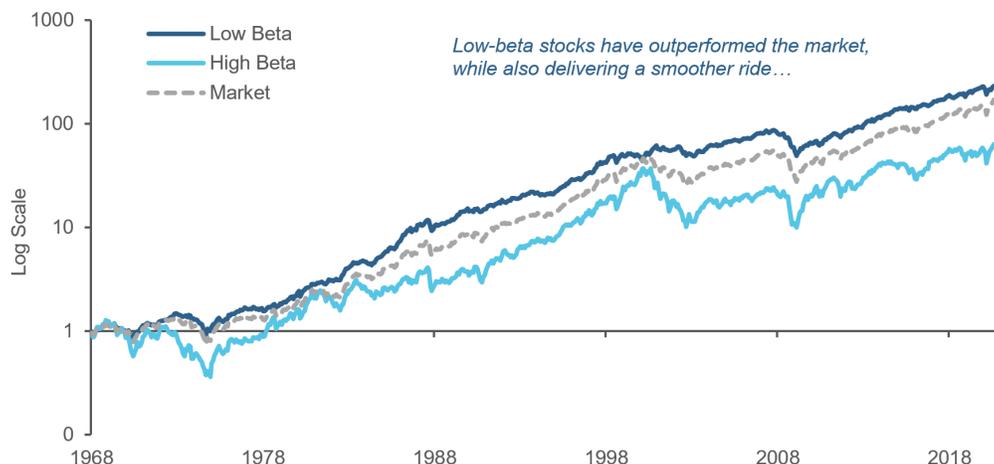
Introduction

The difficult recent performance of low-beta stocks relative to broad indexes has been a painful surprise to low-risk investors. We are now over a year into a global pandemic, which has impaired many face-to-face businesses and would seem to be just the sort of economic shock in which low-risk stocks would shine. After all, low-risk stocks, by design, should offer protection both from broad-based declines in investor sentiment, as they did in 2000-2003, and from broad-based economic shocks, as they did in 2008-2009. What accounts for this apparent discrepancy? And are we to conclude that low-risk investing is no longer a viable route to market-like returns at lower volatility? Or was the past year so peculiar and unlike the aforementioned periods that it shouldn't overly influence our expectations for low-risk investing performance going forward?

This note sheds light on these questions. First, we revisit long-term evidence for the durability of low-risk investing,

highlighting that we have seen many episodes of similar low-beta underperformance, historically. In examining the period of the TMT bubble expansion and its bursting, we note that the speculative expansion of high-beta multiples of 2020 is more like 1999 than the post-TMT-bubble selloff of 2000-2003. Finally, in comparing 2020 to the 2008 GFC, we find that low-beta companies did provide fundamental protection in 2020, albeit less uniformly than the decline of 2008-2009.

From these analyses, we conclude: 1) that the underperformance of low-risk investing in 2020 largely reflects the unique characteristics of the pandemic; 2) that the continuation of speculative behavior reinforces our confidence in the barriers to arbitrage of the low-risk mispricing; and 3) that low-risk strategies will benefit when the 1999-style fervor dissipates.

Figure 1: Low-Beta Performance – Long-Term Perspective

Low- and high-beta series represent compounded returns of cap-weighted portfolios of the highest- and lowest-quintile beta stocks in the U.S. market. Source: Acadian based on data from Kenneth R. French data library. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only. Hypothetical results do not reflect trading costs or management fees and are not a guarantee of actual future results. Every investment program has the opportunity for losses as well as profits.

Managed Volatility: The Long-Term Context

Almost as quickly as the capital asset pricing model (CAPM) was developed in the 1960s by Bill Sharpe and John Lintner, its central empirical implication – that a stock's average returns should increase with its beta – was soundly rejected. In capital market data from the 1920s to the 1960s, there was a barely perceptible positive relationship between beta and average returns. With each successive generation of finance research, this anomaly has not dissipated. If anything, it has strengthened. In 1992, Fama and French declared beta to be "dead," with no link at all to expected returns. And more recent studies, for example by Baker, Bradley, and Wurgler in 2011, have found an inverted relationship, with the compound returns of the highest-beta portfolio of stocks trailing the lowest-beta portfolio, markedly.
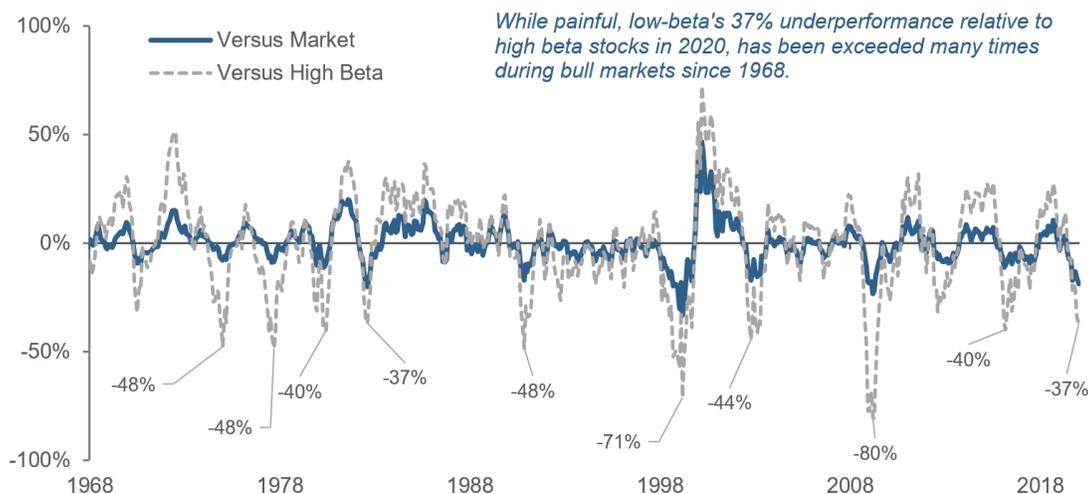
The empirical failure of the CAPM over the past 50+ years, shown in Figure 1, presents an opportunity for risk-averse investors: They can earn returns equal to or greater than a passive market index, with a smoother ride, at levels of risk that are as much as a third lower.[1] But reaping the rewards of low-volatility investing has required a patient approach and the discipline to ignore the siren song of speculative bull markets.

Making Sense of 2020 by the Numbers

During 2020, low-beta stocks underperformed. In fact, they trailed their high-beta counterparts by an eye-catching 37%. But viewed in the long-term context, low-risk stocks' performance in 2020 was not unprecedented. In fact, since the mid-1970s, we have seen many prior episodes of greater underperformance of low- versus high-beta stocks, as shown in Figure 2. These relative drawdowns coincided with strong bull markets, and in such market environments we expect low-vol stocks to underperform, almost mechanically. After all, a low-beta stock, by definition, should trail in a rapidly rising market.

Nevertheless, in 2020, low-volatility stocks underperformed even what we have come to expect during sharp bull markets. Table 1 provides one way of seeing this. During the prior largest low-beta drawdowns since 1968, low-risk stocks underperformed what their trailing market sensitivity would have implied by 5% on average. During 2020, however, they underperformed by 10%, one of the largest shortfalls on record and only exceeded in 1999. This motivates an investigation of further similarities to 1999, a year of speculation followed by a period of declining investor sentiment and dramatic low-beta outperformance, from 2000-2003.

Figure 2: Low-Beta Drawdowns

Low- and high-beta series represent compounded returns of cap-weighted portfolios of the highest- and lowest-quintile beta stocks in the U.S. market. Source: Acadian based on data from Kenneth R. French data library. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only. Hypothetical results do not reflect trading costs or management fees and are not a guarantee of actual future results. Every investment program has the opportunity for losses as well as profits.

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[1] From 1968-2020, the volatility of the low beta portfolio in Figure 1 was 12.4%, versus 15.8% for the overall market.

Table 1: Ten Worst 12-Month Low-Beta Drawdowns Versus High-Beta Stocks

| 12M Ending | Low Beta | High Beta | Versus High Beta | | Market | Versus Market | |
			Difference	Beta-Adjusted Difference		Difference	Beta-Adjusted Difference
1975-Dec	30%	78%	-48%	-16%	38%	-8%	-2%
1978-Aug	10%	58%	-48%	-30%	19%	-8%	-7%
1981-Apr	26%	66%	-40%	-9%	37%	-11%	-1%
1983-Jul	45%	82%	-37%	7%	65%	-20%	-1%
1991-Oct	22%	70%	-48%	-18%	39%	-17%	-4%
2000-Feb	-10%	61%	-71%	-59%	23%	-33%	-25%
2003-Sep	10%	54%	-44%	0%	27%	-17%	2%
2010-Feb	32%	112%	-80%	-32%	55%	-23%	-7%
2017-Feb	17%	57%	-40%	-13%	27%	-10%	-2%
Average	**20%**	**71%**	**-51%**	**-19%**	**37%**	**-16%**	**-5%**
2020-Dec	5%	42%	-37%	-20%	24%	-19%	-10%

During 2020, low-beta stocks underperformed what their betas would have implied by 10%, more than the historical average (5%).

Low- and high-beta series represent 12-month compounded returns of cap-weighted portfolios of the highest- and lowest-quintile beta stocks in the U.S. market. Beta-adjusted Difference for Low vs. High Beta = Low Beta Return/Beta - High Beta Return/Beta. Source: Acadian based on data from Kenneth R. French data library. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only. Hypothetical results do not reflect actual trading or an actual account and are not a guarantee of actual future results. Every investment program has the opportunity for losses as well as profits.

2020 versus the TMT Bubble

Can we take reassurance from comparisons with the 2000-2003 outperformance of low beta? It becomes clearer on historical inspection that 2020 had less in common with the bursting of the TMT bubble than the TMT bubble's expansion in 1999—in 2020, signs of similar speculative froth emerged. For example, in 1999, the IPO market saw 476 new offerings for a record total of 65 billion dollars. In 2020, there were 165 new offerings for a total of 62 billion dollars, the highest level since 1999. Investor enthusiasm is also expressed in first-day returns, which averaged 57% of proceeds in 1999 and 48% in 2020. The current wave of SPACs is a marker of a fever pitch for new offerings of public equity. In 1999, investor appetite for speculation was perhaps best reflected in E-Trade's 2000 Super Bowl ad that promised to deliver "money out the wazoo." In 2020, Robinhood's promise to democratize investing, abetted by social investing sites on Reddit, led to speculative fever in high-flying growth stocks like Tesla and distressed value stocks like GameStop, to take two illustrative examples.[2] Taking full measure of 2020 points to a paradoxical pandemic bull market, not the sort of bear market where low-risk stocks shine.
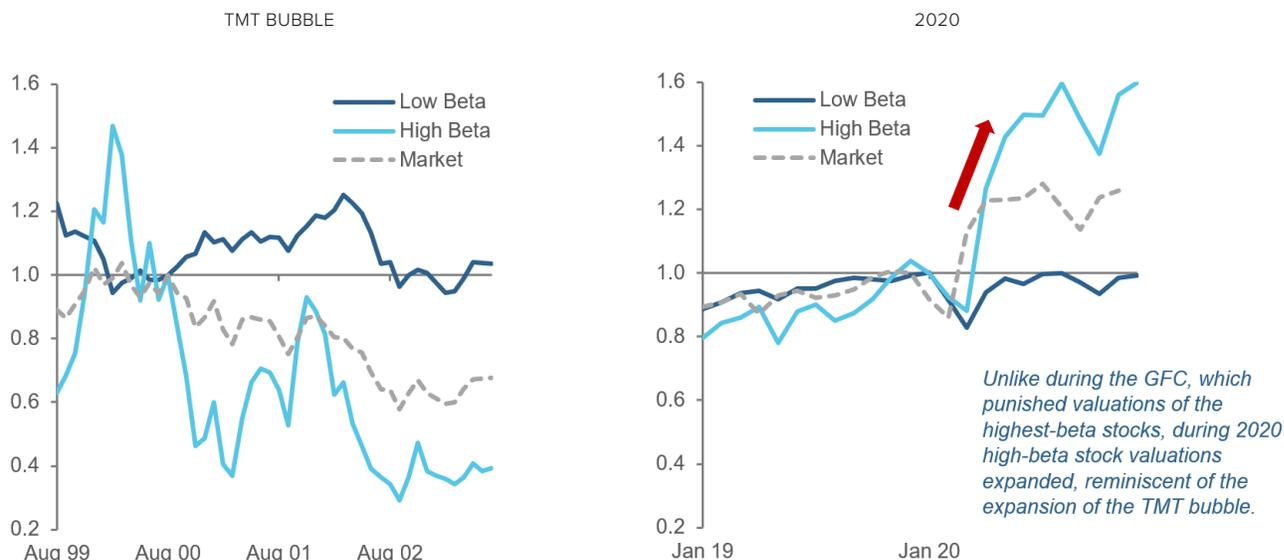
In 2000-2003, when the TMT bubble burst, managed volatility provided ample protection from overvaluation. Forward-looking price earnings ratios dropped much more precipitously for high-beta stocks than for low-beta stocks.

We see this in the left panel of Figure 3, which charts the trajectory of high- and low-beta forward P/Es relative to the market's peak.

In contrast with 2000-2003, 2020 looks different. A close look at the right panel of Figure 3 shows that in Q1 2020, low beta P/E ratios actually compressed by slightly more than their high-beta industry group counterparts. This suggests, if anything, a continuation of risk-seeking preferences--the opposite of our expectations during a selloff. Moreover, high-beta P/E ratios have since expanded considerably.

In fact, the COVID selloff seems to have been at most a pause in a period of increasingly speculative valuations, and certainly not a meaningful correction of past overvaluation of riskier companies. Because speculation has continued, we should not view 2020 as indicative of managed volatility's protection from overvaluation in future bear markets. The fog of the pandemic, thriving retail investor speculation, and aggressive monetary and fiscal policy responses have combined to cause an apparent bubble to expand. How far this bubble goes is anyone's guess, but we believe that managed volatility represents an insurance policy against reversion of prices towards fundamentals. In other words, we see managed volatility as well positioned to provide protection against future corrections of current overvaluation.

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[2] The companies mentioned are for illustrative purposes only and are not a recommendation to buy or sell a specific security.

Figure 3: Valuation Trajectories of Low- and High-Beta Stocks – TMT Bubble and 2020

TMT BUBBLE   2020

Unlike during the GFC, which punished valuations of the highest-beta stocks, during 2020 high-beta stock valuations expanded, reminiscent of the expansion of the TMT bubble.

Charts show P/E ratios for the predicted highest- and lowest-beta quintiles of U.S. equities. The beta predictions are fixed at the point of the previous market high among U.S. equities, throughout the exhibit period. Betas reflect a multifactor estimate of market exposure from a commercial risk model. P/E ratios are indexed to 1.0 at the point of the previous market high among U.S. equities. P/E ratios aggregate quintile market capitalization in the numerator and aggregate 12-month ahead quintile earnings forecasts in the denominator. Source: Acadian, based on analysis of IBES forecasts. For illustrative purposes only.

2020 versus the GFC

In March of 2020, naturally we made comparisons with the 2008 post-Lehman bankruptcy selloff, but in contrast to 2008-2009, the pandemic was an economic realignment of fundamentals rather than a broad-based shock. This is evident in a comparison of changes in aggregate industry-level analyst earnings forecasts between the two episodes. The left panel of Figure 4 shows that in 2008-2009, there were much more negative revisions in earnings forecasts for high-beta industries than for low-beta industries, which makes sense to the extent that industry betas crudely proxy for industry sensitivity to broadly deteriorating economic conditions.
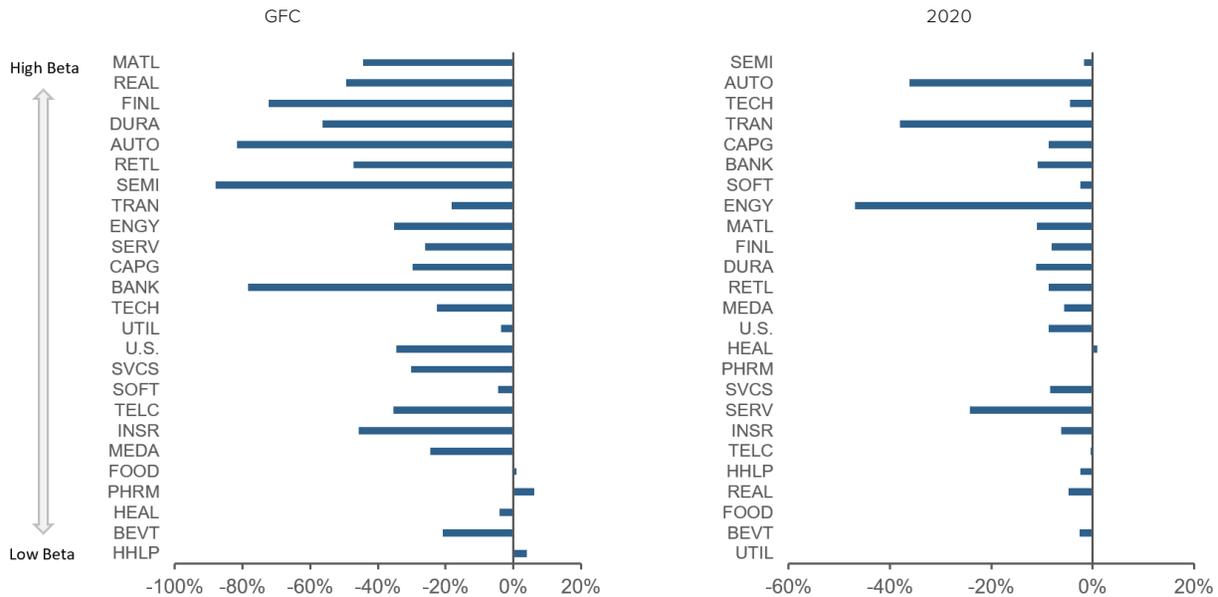
In 2020, though, fundamental protection looks less closely related to beta. While there was still some correspondence between higher beta and more negative earnings revisions, it was markedly less pronounced than in 2008-2009. Among high-beta industries, for example, we see a widely varying impact. Some saw large deterioration, including autos, transportation, and energy, while others did not, including semiconductors, technology (hardware), and software. Indeed, we now know that a handful of industries, such as online retailers, actually benefited from the pandemic shock, while very few did in 2008-2009.

This economic realignment independent of beta contributed to the underperformance of low-risk investing in 2020. Looking forward, however, the pandemic's uneven effect on fundamentals across industries does not undermine our confidence in low volatility's potential to provide fundamental protection during future bear markets. First, the outcome was closely linked to the peculiarities of the cause. As the pandemic progressed, it became apparent that the shift of the economy from face-to-face, from travel and tourism, and from personal services to stay-at-home and durable goods involved losers and winners. As the economy normalizes, these fundamental trends will reverse, though how much is a subject of debate.

Second, even during 2020, low-beta companies' earnings prospects were damaged significantly less than high-beta companies'. This is evident in Figure 5, which follows the trajectory of analysts' one-year ahead earnings forecasts relative to the prior market peak. In other words, during 2020, low-beta stocks still provided considerable fundamental protection. Relative to the GFC, however, we have seen a visibly quicker and somewhat sharper recovery in high-beta companies' earnings forecasts.

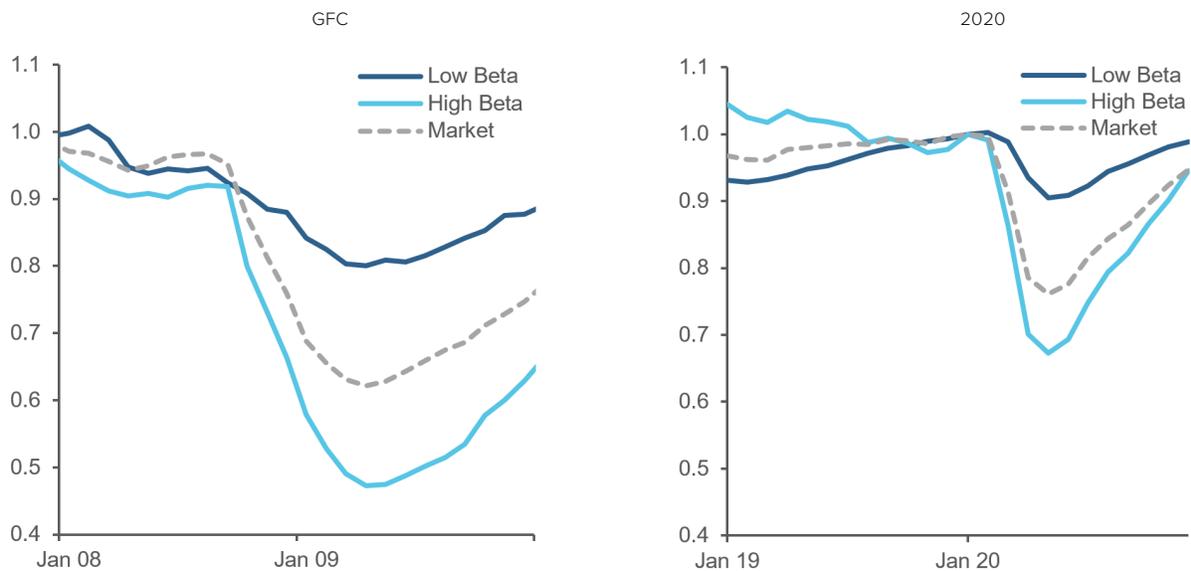## Figure 4: Changes in Earnings Forecasts across Industries

During the GFC, changes in industry-level earnings forecasts were aligned with their market betas. That was much less true in 2020, when the peculiar nature of the pandemic's economics dictated the fundamental impact to a much greater degree. Among high-beta industries, for example, autos, transportation, and energy were hurt, while semiconductors, technology, and software were largely unscathed.

Charts show percentage changes in aggregate 12-month ahead earnings forecasts relative to the previous market high among U.S. equities. Betas reflect a multifactor estimate of market exposure from a commercial risk model. Source: Acadian, based on analysis of IBES forecasts. For illustrative purposes only.

Figure 5: Fundamental Protection Provided by Low-Beta Stocks – GFC and 2020

Analyst earnings forecasts (1Y ahead) relative to market peak

Charts show aggregate estimated earnings for the predicted highest- and lowest-beta quintiles of U.S. equities. The beta predictions are fixed at the point of the previous market high among U.S. equities, throughout the exhibit period. Betas reflect a multifactor estimate of market exposure from a commercial risk model. Earnings aggregates are indexed to 1.0 at the point of the previous market high among U.S. equities. Source: Acadian, based on analysis of IBES forecasts. For illustrative purposes only.

Table 2: Downside Participation — Ten Worst One-Month Drawdowns since 1968

| Month | First Month | | | Two Month Cumulative | | | Three Month Cumulative | | |
	Low Beta	Market	High Beta	Low Beta	Market	High Beta	Low Beta	Market	High Beta
1987-Oct	-13.7%	-22.6%	-31.0%	-20.2%	-28.4%	-37.9%	-17.1%	-23.2%	-31.6%
2008-Oct	-13.0%	-17.2%	-22.8%	-15.7%	-23.6%	-34.6%	-15.6%	-22.3%	-31.9%
1998-Aug	-11.7%	-15.7%	-22.8%	-7.5%	-10.1%	-18.1%	-1.8%	-3.4%	-9.4%
2020-Mar	-9.0%	-13.3%	-20.9%	-0.6%	-1.4%	-7.0%	2.2%	4.1%	1.9%
1973-Nov	-8.9%	-12.2%	-23.9%	-6.6%	-11.1%	-23.9%	-8.4%	-10.7%	-16.6%
1980-Mar	-11.1%	-11.7%	-17.3%	-4.8%	-7.1%	-12.4%	-0.3%	-1.4%	-5.4%
1978-Oct	-7.9%	-11.2%	-20.4%	-4.8%	-8.2%	-15.3%	-3.8%	-6.7%	-13.7%
1974-Sep	-10.1%	-11.0%	-10.9%	6.7%	3.8%	-1.8%	2.0%	-0.3%	-6.2%
1970-Apr	-8.0%	-10.5%	-19.4%	-11.2%	-16.2%	-27.5%	-14.7%	-20.6%	-34.4%
2000-Nov	2.3%	-10.2%	-18.9%	6.7%	-8.7%	-19.3%	-1.0%	-5.3%	-9.1%
Average	**-9.1%**	**-13.5%**	**-20.8%**	**-5.8%**	**-11.1%**	**-19.8%**	**-5.9%**	**-9.0%**	**-15.6%**

Low- and high-beta observations represent portfolios of the highest- and lowest-quintile beta stocks in the U.S. market. Source: Acadian based on data from Kenneth R. French data library. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only.

As the rapid recovery of earnings expectations suggests, and no doubt thanks to the massive monetary and fiscal stimulus responses, the most recent bear market of 2020 was so brief that the market had fully recovered by the end of May. At the onset of past bear markets, the instantaneous reaction has often been a somewhat indiscriminate selloff. One would expect low-beta stocks to offer immediate protection, and they do, but not as much as their historical betas would imply. That makes sense, if investors are selling stocks broadly, rather than picking and choosing amongst their holdings.

In March 2020, the performance of low-beta stocks closely resembled their long-run average over the ten worst monthly selloffs since 1968. In Table 2, we see the cap-weighted market lost 13.3% in March of 2020, while low- and high-beta stocks fell 9.0% and 20.9%, respectively--almost precisely matching the average first month declines of 13.5%, 9.1%, and 20.8% for the market, low-beta stocks, and high-beta stocks, respectively.

But after that first month, 2020 diverged sharply from the historical pattern. Typically, as a bear market ages, investors realize the fundamental protection that low beta offers, and low-beta relative returns improve, as a result. This is most evident in two-month cumulative performance in the table, where the average low-beta loss drops from 9.1% to 5.8%, while high-beta stocks remain down an average of 19.8%, little-changed from their first month loss of 20.8%. After three months, high-beta stocks have actually suffered a larger decline relative to the market, 1.7x, than after the first month, 1.5x.

So, contrary to popular perception, during the initial market selloff in 2020, low-risk stocks behaved much as we would expect over the month. But March 2020 is the only episode in the table with a materially positive cumulative three-month market return. Amid the sharp recovery, the behavioral effects that typically reinforce low beta's downside protection never had a chance to materialize before those stocks were overwhelmed by a speculative rally.

Looking Forward

Managed volatility has a long track record of providing returns equal to or greater than passive market indexes at lower risk. This has been true for more than 50 years, starting in 1968 through the present. Despite this long-term track record, there have been many episodes where low-beta stocks have lagged their high-beta counterparts by more than the 37% shortfall in 2020.

And just as in February 2000, when low beta trailed their high beta counterparts by 71%, the underlying logic for low-risk investing remains strong. As Baker, Bradley, and Wurgler conclude in 2011, low-risk stocks are neglected for behavioral and institutional reasons. Investors are prone to overpay for high-risk, speculative stocks. And institutions are reluctant to accept the risk of trailing in a bull market that a low-risk tilt in their portfolios entails. While recent years have seen greater interest in low-risk investing, this shift in assets has been small when compared to the scale of global markets and the prevalence of traditional benchmarked mandates and not nearly enough to erode the thesis of managed volatility investing.

The challenging performance in 2020 is best understood as the expansion of a speculative bull market favoring high-risk stocks that was barely dented by a short pandemic panic. In many ways, this period resembles 1999 more than it resembles prior bear markets. While the timing of the TMT bubble contraction was unknowable in advance, excessive risk-seeking behaviors were obvious then, just as they are now. Clearly, capitulating on low-risk investing in 1999 would have been the wrong prescription, given the subsequent performance of the strategy. As long as this current market environment continues, it will remain challenging for disciplined, low-risk investors. But, we believe that when this reverses or even normalizes, the underlying drivers of managed volatility performance, which remain intact, will re-emerge, delivering risk-adjusted performance more in line with the lengthy history of capital markets.

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