



Value and Interest Rates: Don't Believe (All) the Hype

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- Prevalent narratives that imply a straightforward causal relationship between interest rates and the performance of equity value strategies are oversimplified.
- The relationship is determined by the confluence of many forces. Depending on circumstances, including the state of the economy, the policy environment, and market sentiment, rising (or falling) interest rates may bode either well or poorly for value stocks.
- The relationship also depends on how value is defined and implemented. Therefore, investors should not anticipate that different value strategies will respond similarly to movements in interest rates.

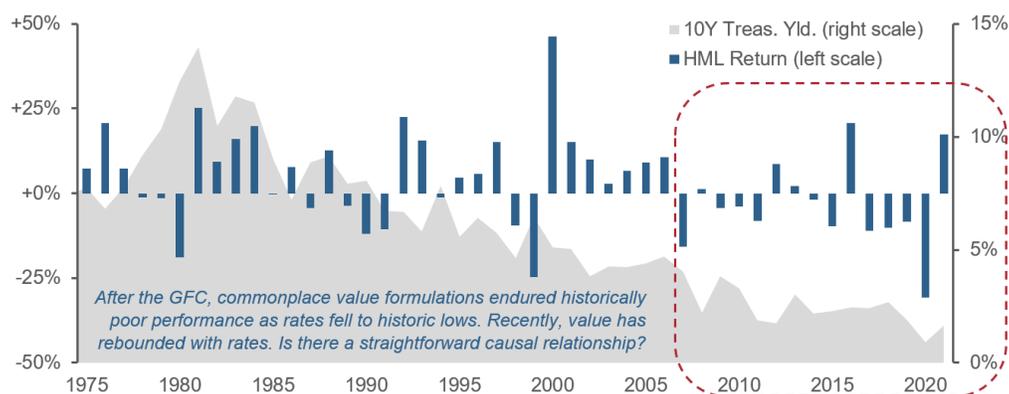
In the decade following the GFC, the relationship between equity value and interest rates came under scrutiny as investors sought to explain the disappointing performance of many value strategies. Practitioners and academics debated whether historically low interest rates were to blame. And recently, some have interpreted the subsequent rebound of both interest rates and value as further evidence of a direct relationship. Such narratives are often rooted in duration-based arguments that assume growth stocks have more distant cash flows than value stocks, which makes their prices more sensitive to interest rate changes. This causal reasoning implies that asset owners should expect value strategies to reliably underperform when interest rates fall and outperform when they rise. It also could motivate timing value investments based on the outlook for interest rates.

In our view, however, investors should not expect such a straightforward relationship between interest rates and value. Recent academic research has cast doubt on the significance of the duration effect, finding that cash flows

of growth stocks do not actually grow meaningfully faster than those of value stocks (Chen 2017).¹ Moreover, we believe that any causal relationship is often overwhelmed by forces that separately influence interest rates and value returns, including the state of the economy, the policy environment, and market sentiment. As a result, rising (or falling) rates may bode well or poorly for value stocks, depending on the underlying circumstances.

In this note, we provide evidence that challenges oversimplified narratives about interest rates and value. By a conventional measure, value appears to have become steadily more sensitive to interest rates since the GFC; however, we show that the phenomenon appears less significant and shorter-term once we control for confounding effects. We then contrast the recent joint behavior of value and interest rates to historical periods in which it has differed, demonstrating that the relationship depends on changing circumstances.

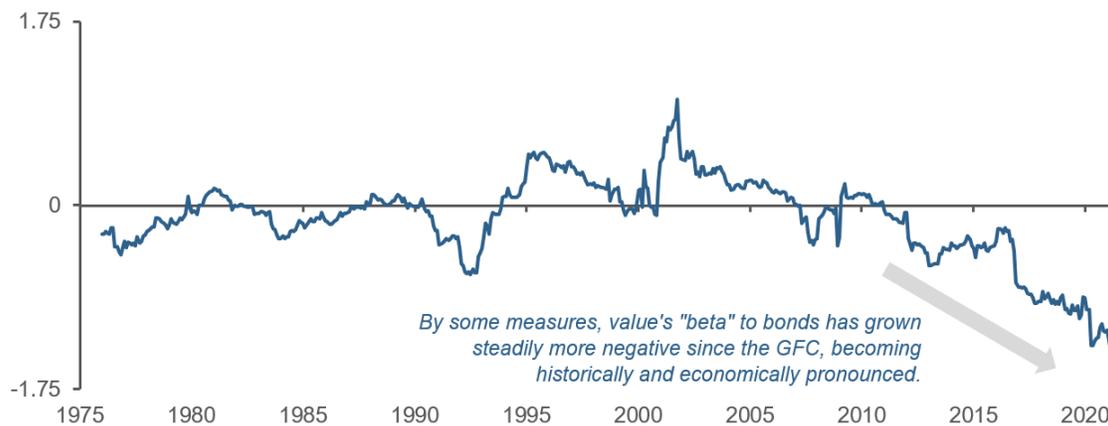
Figure 1: U.S. B/P-Based “HML” Value Factor Performance and 10-Year U.S. Treasury Yields



Source: Acadian and “HML” value factor data from Kenneth R. French data library. Annual HML return is compounded from monthly (i.e., assuming monthly rebalancing). 2021 return and interest rate are through April. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only. The above does not represent investment returns generated by actual trading or an actual portfolio. Hypothetical results are not indicative of actual future results. Investors have the opportunity for losses as well as profits.

Figure 2: Bond Beta of the HML Value Factor

Calculated relative to 10-year U.S. Treasury excess returns over 36-month rolling windows



Beta calculated using an exponentially weighted regression with a 36-month half-life. Data through April 2021. Source: Acadian based on HML value factor data from Kenneth R. French data library. Copyright 2021 Kenneth R. French. All Rights Reserved. For illustrative purposes only. The above does not represent investment returns generated by actual trading or an actual portfolio.

Value and Rates: Nuanced Context

Figure 1 compactly captures why the relationship between value and interest rates has come under scrutiny. For a conventional representation of value, the Fama-French long-short high-minus-low B/P factor (“HML”), it shows that: 1) a historic post-GFC run of poor performance coincided with 10-year Treasury yields falling to historic lows, and 2) that this value factor and interest rates have both recently rebounded.

Figure 2 provides an even more direct picture of the relationship between the two, showing the beta of the HML portfolio to 10-year Treasury returns. Although we suspect that it is more natural for equity investors to think in terms of sensitivity to interest rates rather than to bond returns, we base this portion of the analysis on the latter to normalize for changes in both the level of interest rates and 10-year Treasury duration over the long sample period.²

The right portion of the chart seems to confirm that value’s returns have been quite negatively sensitive to bond returns and have become steadily more so since

the GFC (at least). To calibrate the economic significance of the relationship, the recently estimated bond beta of -1.6 implies that a roughly one-standard deviation monthly Treasury return of $\pm 2\%$ (historically) would generate a roughly $\mp 3.2\%$ return for the long-short value-minus-growth portfolio.³

But as is often the case with popular investing narratives, upon closer examination we find a more complex—and in this case likely less significant—story than headlines suggest. First, looking left across Figure 2, we see no long-term evidence that value has an economically large and consistent bond beta. The beta over the full sample period is small, -0.09. Moreover, the bond beta is quite variable, sometimes negative but sometimes positive, and prone to quick reversals. In other words, the chart does not provide evidence of a reliable relationship where rising interest rates cause significant gains for value and falling rates cause significant losses (or the opposite).

¹ Specifically, Chen argues that cash flows of growth stocks have not, historically, grown consistently and materially faster than those of value stocks. He also finds that regressions of future dividend growth rates on B/M valuations are highly susceptible to survivorship bias, and that once the bias is taken into account, coefficients tend to be positive rather than negative. In addition to other biases in empirical modeling, Chen attributes misperceptions regarding growth duration to improper inferences from Gordon-based valuation models. See Huafeng (Jason) Chen, Do Cash Flows of Growth Stocks Really Grow Faster?, *The Journal of Finance*, Oct 2017, Volume 72, Issue 5, pp. 2279-2330.

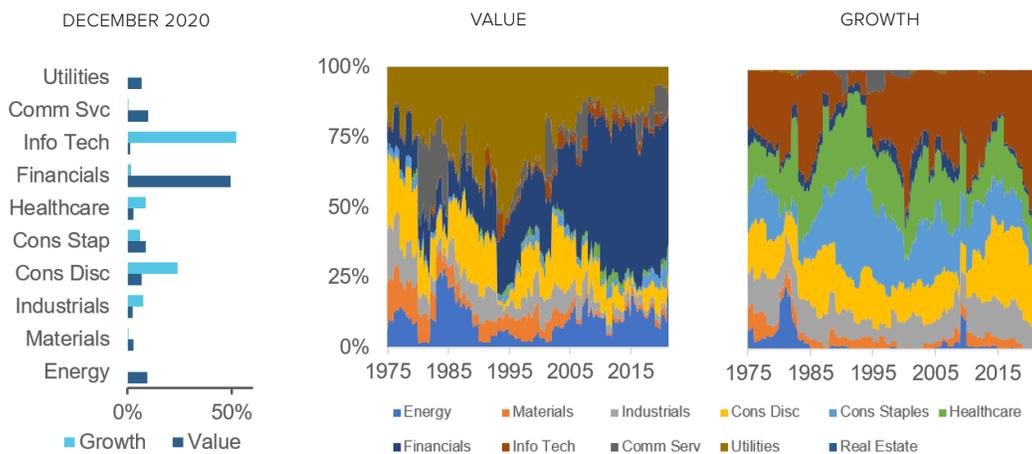
² Analyses based on monthly changes in rates and related approaches lead to similar inferences.

³ Over the three years through April 2021, volatility of 10-year Treasury excess returns was roughly 1.9% per month versus 2.3% over the full 1973-April 2021 sample period. As context, the monthly standard deviation of HML over the 36 months ending April 2021 was 4.0%. The R^2 from the regression over that period is roughly 52%.

Second, although the HML value factor portfolio reflects the most prevalent representation of “value” in the literature, it dates back to the early 1990s. Unsurprisingly, its formulation is rudimentary compared to modern value implementations designed to precisely isolate mispriced fundamentals based on specific behavioral or structural logic.⁴ Unrefined implementations often exhibit material and time varying exposure to risk factors that may influence their interest-rate sensitivity and that, in our view, are not intrinsic to capturing value-related premia.

To illustrate, Figure 3 shows that the sectoral compositions of U.S. large-cap value and growth quintile portfolios have changed enormously over time and currently have remarkably little overlap. While the value quintile was once dominated by utilities, it is now almost 50% financials. In the growth quintile, technology’s weight has jumped more than 35% in only five years. Moreover, the equity betas of these portfolios have also varied considerably over time. As we commented on several years ago, vanilla B/P value exhibited a decidedly defensive character in the early 2000s, but since the GFC it has become “junk” relative to growth (Figure 4).⁵

Figure 3: Sector Composition—Large-Cap B/P-Based U.S. Value and Growth Quintile Portfolios



Charts show two-digit GICS sector composition of hypothetical U.S. large-cap portfolios formed from top and bottom quintile stocks as ranked on the basis of B/P valuation ratio. Large-cap versus small-cap breakpoint is NYSE median market capitalization. Universe contains NYSE, AMEX, NASDAQ common stocks. Portfolios are rebalanced annually and are market-cap weighted. Data through Dec 2020. Sources: Acadian based on data from COMPUSTAT and CRSP® (Center for Research in Security Prices, Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. Crsp.uchicago.edu.). For illustrative purposes only.

Figure 4: Equity Beta—Large-Cap B/P-Based U.S. Value and Growth Quintile Portfolios

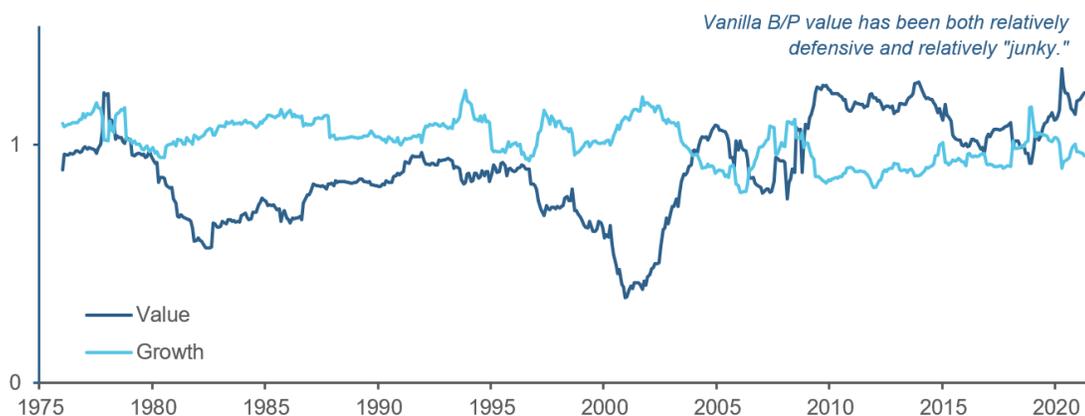
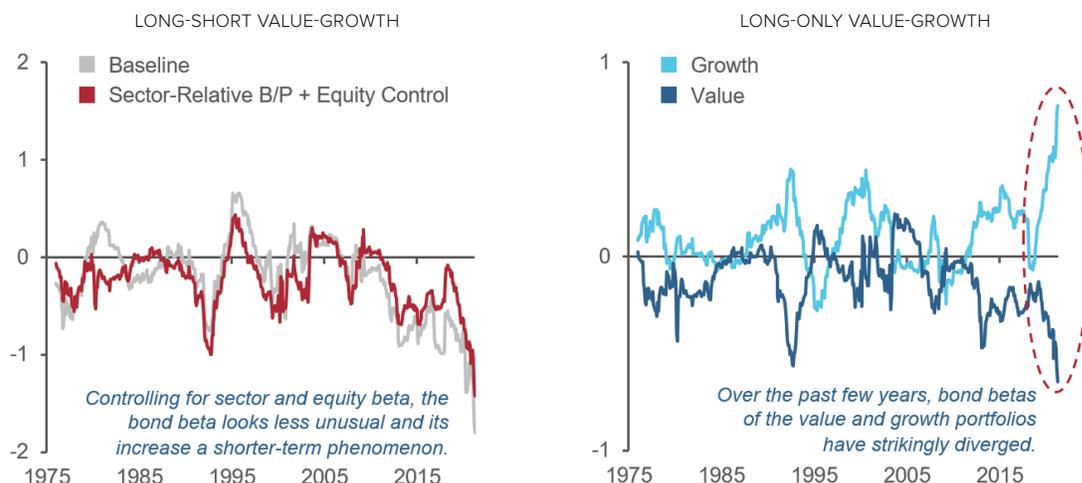


Chart shows beta of hypothetical large-cap value and growth portfolios (formed as described in Figure 3) relative to the cap-weighted market portfolio estimated using 36-month rolling regressions that are exponentially weighted with a 36-month half-life. Data through April 2021. Sources: Acadian based on data from COMPUSTAT and CRSP® (Center for Research in Security Prices, Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. Crsp.uchicago.edu.) and Kenneth R. French data library (Copyright 2021 Kenneth R. French. All Rights Reserved.). For illustrative purposes only.

⁴ For more detail about Acadian’s views on the source of the value premium and best practices for harvesting it, see [Acadian’s Approach to Value Investing](#), November 2019.

⁵ See [Value’s Intricacies and the Margin of Safety](#), Acadian, August 2016.

Figure 5: Bond Betas of Large-Cap U.S. Equity Portfolios

Charts show betas to 10-year Treasury returns of hypothetical value, growth, and long-short value-growth portfolios formed based on sector-relative B/P ratios but as otherwise described in Figure 3. Regressions include a control for cap-weighted equity market exposure. Betas are estimated using 36-month rolling regressions that are exponentially weighted with a 36-month half-life. Data through April 2021. Sources: Acadian based on data from COMPUSTAT and CRSP® (Center for Research in Security Prices, Graduate School of Business, The University of Chicago. Used with permission. All rights reserved. Crsp.uchicago.edu.) and Kenneth R. French data library (Copyright 2021 Kenneth R. French. All Rights Reserved.) For illustrative purposes only.

The prior discussion motivates two adjustments in the estimation of value's sensitivity to interest rates: 1) evaluating B/P on a sector-relative basis, and 2) adding a control for equity market exposure. These two modifications materially change the picture. First, they shrink value's recent bond beta. For a large-cap long-short B/P value quintile portfolio, the bond beta estimated over the three years ending in April drops from -1.8 to -1.4. For a small-cap value portfolio, the reduction is larger, from -1.9 to -1.1.

More important, the modifications reduce the overall variability of value's measured bond beta through time and significantly alter its post-GFC trajectory. As shown in the left panel of Figure 5, after making the adjustments, we no longer see value's sensitivity to rates growing so steadily more negative (compare red to grey). In fact, by this measure, the large-cap bond beta was near zero as recently as mid-2018 (based on data from the prior 36 months). Value's historically high interest rate sensitivity relative to growth, therefore, appears to be a quite recent phenomenon. That sense is reinforced by the right panel, which breaks out the bond betas of the component long-only value and growth portfolios. The chart shows that over roughly the past three years the bond betas of the value and growth portfolios have diverged markedly. The natural question is why?

Drivers of Value-Rate Dynamics: Historical Perspective

To understand the recent behavior of value's beta to bonds, we examine the drivers of value's performance and interest rates over the past few years. We focus this discussion on a U.S. large-cap B/P-based formulation of value that typifies prevalent narratives on the topic. From late-2018 through much of 2019, this representation of value steadily underperformed growth. At the same time, bonds rallied; 10-year Treasury yields steadily declined by more than a point to less than 2%. The left panel of Figure 6 shows that during this period, the value-growth portfolio and Treasuries generated near mirror-image returns, consistent with the increasingly negative value-growth bond beta shown in Figure 5.

We attribute some of value's underperformance *directly* (causally) to the behavior of interest rates, although to a sentiment effect rather than a simple cash flow duration-based explanation. As Treasury yields fell back towards what were then historic lows (pre-COVID), asset owners faced intensifying pressure to find sources of return that they saw as adequate to meet their performance targets. That pressure likely contributed to the bid for growth assets during 2019, and made it difficult for strategies positioned otherwise, including value-oriented investments, to keep up.⁶

But value's negative bond beta during this period also reflected the influence of several other forces on both interest rates and equities. One such factor was the state

⁶ See [Returns to Value: A Nuanced Picture](#), November 2019.

of the economy. The Chicago Fed's National Activity Index (CFNAI) shows that conditions were above long-term trend through mid-2018 but gradually deteriorated into the first few months of 2019 (Figure 6, right). That cooling simultaneously dampened both long-term interest rates as well as the earnings prospects of low P/B stocks whose fundamentals were already discounted by the market due to their sensitivity to economic conditions. Value stocks, by that definition, underperformed as their multiples contracted relative to more expensive, less cyclically geared stocks.

Expectations regarding future monetary policy also affected both interest rates and value stocks during this period. As signs of economic weakness emerged in late 2018, the bond market started to price in rate cuts even though the Fed was still hiking. After Fed Chair Powell signaled a pivot towards easing in January 2019, Treasuries steadily rallied; the 10-year yield fell to 2% before the central bank finally started to cut at the end of July (Figure 6, middle). Yet economic conditions were not sufficiently robust to benefit cyclically sensitive low B/P value stocks.

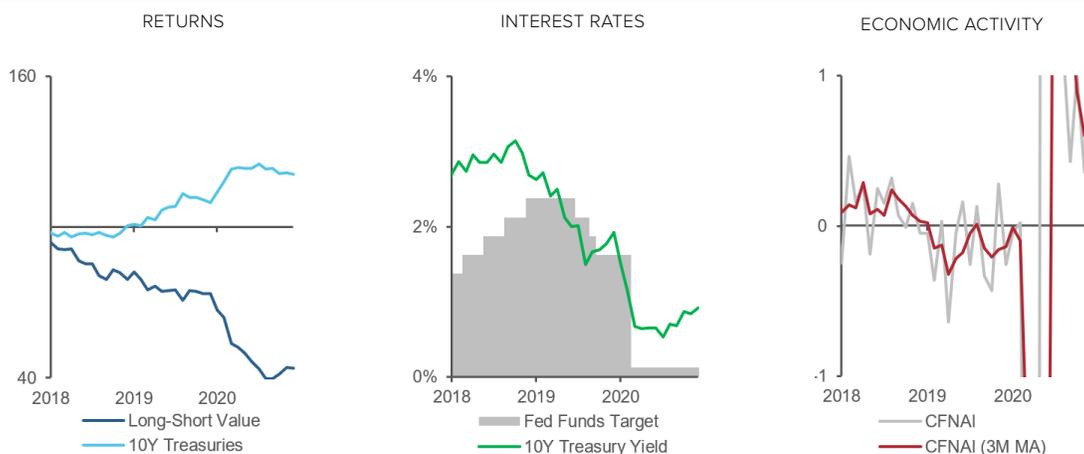
The analysis demonstrates that the relationship between interest rates and value depends on the investing climate. In 2019, economic conditions and the policy environment put downward pressure on interest rates and simultaneously set the stage for value underperformance. While this confluence of factors led to a negative bond beta during this period (subsequently

magnified by COVID-related circumstances), in different contexts, economic conditions, the policy environment, market sentiment, and other forces might cause bonds and stocks to move in tandem.

The early 1990s provide an example. From 1992-1995, economic conditions and Federal Reserve policy resulted in value's bond beta becoming positive (see Figures 2 and 5). Figure 7 offers reminders of the economic and policy context from the time. In Q3 1990, the economy slipped into a shallow recession that was triggered by anti-inflationary rate hikes and the oil price shock that accompanied Iraq's August invasion of Kuwait. The Fed's policy response was strong; it steadily cut its target rate from 8% all the way to 3% by September 1992. Although economic activity quickly rebounded back to long-term trend, conditions remained uncertain in 1993, and inflation was subdued.

Figure 7-left shows that as a result of these economic and policy conditions, value and bonds simultaneously rallied during much of 1993: Treasury yields fell, with some investors anticipating further rate cuts,⁷ while value stocks continued to rebound from their recessionary losses as their fundamentals recovered and multiples expanded. Value and bonds remained positively correlated in 1994, but this time both fell as conditions evolved. Surging economic activity caused bonds to sell off and the Fed to start raising rates. At the same time, value weakened in response to the tightening, reflecting multiple contraction.

Figure 6: Recent Context—Value, Rates, and the Economy from 2018-2020



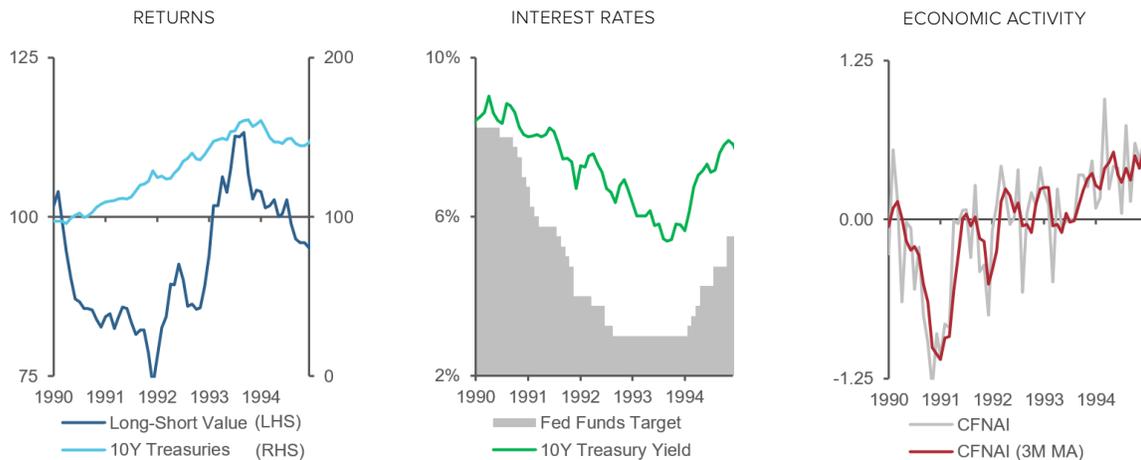
Large-cap long-short value-growth portfolio returns calculated as described in Figure 3. Source: Acadian based on data from Bloomberg (Fed Funds Target Rate/Midpoint, CFNAI, CFNAI 3M Moving Average). For illustrative purposes only. The above does not represent investment returns generated by actual trading or an actual portfolio. Hypothetical results are not indicative of actual future results. Investors have the opportunity for losses as well as profits.

⁷ See 30-year Treasury Bond Yield Falls below 6%, *The New York Times*, September 3rd, 1993, for discussion of then-contemporary economic conditions.

The deflation of the TMT bubble provides a second example in which a confluence of factors resulted in a positive bond beta (Figure 8). This episode also highlights the influence of market sentiment on the relationship between interest rates and value in addition to economic and policy conditions. As tech valuations collapsed, value dramatically outperformed growth for much of 2000-2001. Bonds simultaneously rallied as deteriorating sentiment and economic softness weighed on Treasury yields in 2000 and as the Fed slashed policy rates beginning in January 2001.

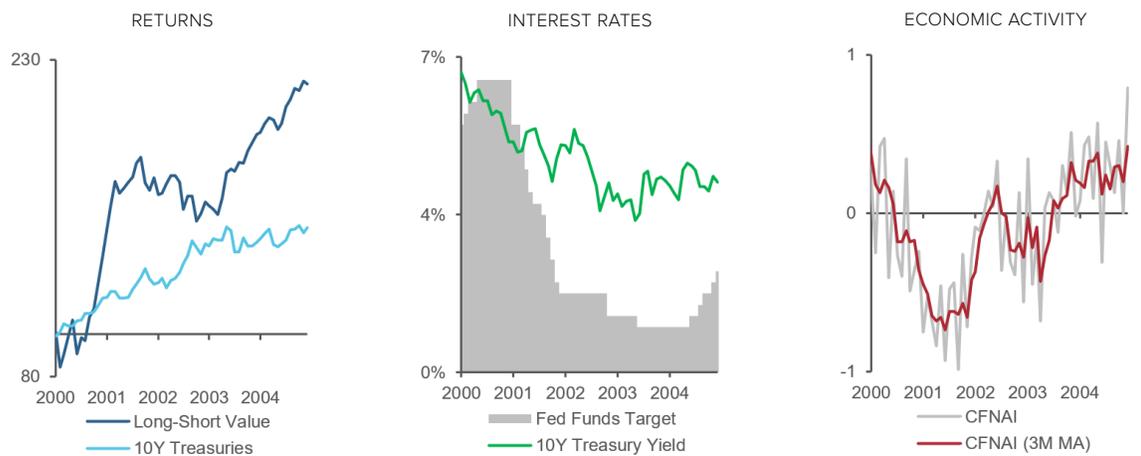
Value and bonds again exhibited positive correlation in the aftermath of the bubble's collapse. By 2004, economic activity was above long-term trend, and the Fed started to raise policy rates in July. Value extended its rally as low P/B stocks generated decent earnings growth and continued to benefit from relative multiple expansion. Nevertheless, bonds rose because the fixed income market did not seem convinced of the recovery. Longer-term interest rates fell for much of 2004, with their slide attributed to concerns about the real impact of rising energy prices, falling overall inflation expectations, and labor market weakness.⁸

Figure 7: Case Study—The Early 1990s



Large-cap long-short value-growth portfolio returns calculated as described in Figure 3. Source: Acadian based on data from Bloomberg (Fed Funds Target Rate/Midpoint, CFNAI, CFNAI 3M Moving Average). For illustrative purposes only. The above does not represent investment returns generated by actual trading or an actual portfolio. Hypothetical results are not indicative of actual future results. Investors have the opportunity for losses as well as profits.

Figure 8: Case Study—Aftermath of the TMT Bubble



Large-cap long-short value-growth portfolio returns calculated as described in Figure 3. Source: Acadian based on data from Bloomberg (Fed Funds Target Rate/Midpoint, CFNAI, CFNAI 3M Moving Average). For illustrative purposes only. The above does not represent investment returns generated by actual trading or an actual portfolio. Hypothetical results are not indicative of actual future results. Investors have the opportunity for losses as well as profits.

⁸ See CNN/Money, *Bond Market Isn't Sold on Economy's Strength*, September 14, 2004.

Conclusion

Because the relationship between interest rates and value depends on the confluence of many factors, investors should not expect that value-oriented investments will respond consistently to rate increases or decreases. In the present environment, if robust economic activity causes real interest rates to rise, then cyclically sensitive low P/B stocks might benefit. The same stocks might suffer, however, if rates rise due to inflationary expectations that also trigger fears of central bank tightening. By the same token, falling interest rates do not necessarily bode poorly for value, despite the post-GFC experience.

Investors should also not expect that different implementations of value will respond uniformly to rising or falling rates. Unrefined value portfolios often have substantial and time-varying exposure to risk factors that, while not intrinsic to harvesting fundamental mispricings that give rise to value-related premia, may greatly influence their apparent interest rate sensitivity.

Moreover, standalone value implementations, including those (like HML) that serve as the basis for many popular narratives about value behavior, may exhibit very different sensitivity to interest rates than multifactor investing approaches that interact value with other types of signals, including information about quality and fundamental growth.

The complexity and context dependence of the relationship between value and rates does not preclude the possibility of improving value-oriented equity strategies by incorporating interest rates as an input into forecasting or as a risk control. Investors should not expect that timing value based on interest rates will be easy, however. Moreover, making use of information about interest rates at minimum calls for a disciplined investment process in which the incremental benefit can be precisely evaluated. Otherwise, desired effects will likely be swamped by unintended consequences.

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