SKY HARBOR
CAPITAL MANAGEMENT

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# The Case for Short Duration

Improving credit fundamentals and positive technical tailwinds have served to bolster sentiment for US high yield bonds, and we remain constructive on the asset class despite spread tightening thus far in 2019. At the same time, we recognize that Fed uncertainty, slowing global growth, trade disputes and heightened sovereign risks all have the potential to increase market volatility in this late-expansionary phase. An analysis of prior economic periods with similar threats suggests that short duration high yield strikes an optimal balance between risk and return, creating a compelling investment option at this stage of the cycle. In this overview, we highlight ten attributes of the short duration high yield asset class that should preserve upside capture while offering downside protection in the current market environment.

## 1. Attractive Return Capture

Over a market cycle, we expect short duration high yield portfolios to capture approximately two-thirds of the return of the full high yield index, with half of the volatility. Updating our index-level total return estimates for 2019, we expect a greater-than-average aggregate capture of short duration relative to broad high yield (7.1% vs. 7.8%, or ~ 91% capture). We also expect lower volatility relative to broad high yield.

| ICE BofAML US High Yield Index - H0A0 | HY | 5yr Trsy |
|---|---|---|
| Starting Spread | 533 | 251 |
| Target | 445 | 295 |
| Predicted Change | -88 | 44 |
| Duration | 4.1 | |
| Index Price | 92.3 | |
| Avg Par Coupon | 635 | |
| Tsy Change | 44 | |
| Total Change in Yield | -44 | |
| Capital Gain | 175 | |
| Period Multiplier | 1.00 | |
| Current Yield | 669 | |
| Default Rate | 2.75 | |
| Price (default universe) | 58.7 | |
| Credit Loss | 64 | |
| **Expected 2019 Index Return Estimate** | **7.8 %** | |

| ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index - JVC4 | SD HY | 3yr Trsy |
|---|---|---|
| Starting Spread | 443 | 247 |
| Target | 360 | 290 |
| Predicted Change | -83 | 43 |
| Duration | 2.6 | |
| Index Price | 96.7 | |
| Avg Par Coupon | 613 | |
| Tsy Change | 43 | |
| Total Change in Yield | -40 | |
| Capital Gain | 104 | |
| Period Multiplier | 1.00 | |
| Current Yield | 625 | |
| Rating Migration Rate | 1.50 | |
| Price (downgrade universe) | 80.9 | |
| Downgrade Loss | 21 | |
| **Expected 2019 Index Return Estimate** | **7.1 %** | |

Source: SKY Harbor, BofA Merrill Lynch, ICE BofAML Indices, Bloomberg

## 2. Low Correlation to Treasuries

Similar to broad and ratings-constrained high yield, short duration high yield (we use the ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index, ticker JVC4, as a proxy) maintains a low / negative correlation to treasuries, as demonstrated by the 10-year matrix below:

**Asset Class Correlation Matrix - 10 Years**
(monthly returns through February '19)

| *Ticker* | *Index Name* | *ICE BofAML Current 10-Year US Treasury Index* | *Credit Suisse Leveraged Loan Index* | *ICE BofAML US High Yield Index* | *ICE BofAML BB-B US High Yield Index* | *ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index* | *ICE BofAML US Corporate Index* | *ICE BofAML US Mortgage Backed Securities Index* | *Standard & Poor's 500* | *Russell 2000* |
|---|---|---|---|---|---|---|---|---|---|---|
| GA10 | ICE BofAML Current 10-Year US Treasury Index | 1.00 | | | | | | | | |
| LEVLOAN | Credit Suisse Leveraged Loan Index | (0.40) | 1.00 | | | | | | | |
| H0A0 | ICE BofAML US High Yield Index | (0.24) | 0.89 | 1.00 | | | | | | |
| H0A4 | ICE BofAML BB-B US High Yield Index | (0.20) | 0.85 | 0.99 | 1.00 | | | | | |
| JVC4 | ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index | (0.27) | 0.88 | 0.99 | 0.98 | 1.00 | | | | |
| C0A0 | ICE BofAML US Corporate Index | 0.46 | 0.48 | 0.62 | 0.64 | 0.58 | 1.00 | | | |
| M0A0 | ICE BofAML US Mortgage Backed Securities Index | 0.80 | (0.09) | 0.10 | 0.12 | 0.07 | 0.62 | 1.00 | | |
| SPXT | Standard & Poor's 500 | (0.41) | 0.59 | 0.71 | 0.71 | 0.71 | 0.22 | (0.11) | 1.00 | |
| RTY | Russell 2000 | (0.45) | 0.58 | 0.67 | 0.66 | 0.67 | 0.13 | (0.18) | 0.89 | 1.00 |

Source: SKY Harbor, ICE BofAML Indices, Credit Suisse, Bloomberg

Note: All data in this paper is through February 28, 2019 unless otherwise noted.

## 3. Strong Risk-Adjusted Returns in Various Economic Environments

Examining data aggregated over the last twenty years, we find that JVC4 has outperformed broad high yield (ICE BofAML US High Yield Index, ticker H0A0) on a risk-adjusted basis in periods of rising defaults, elevated VIX, rising rates and other identified instances of market stress (including the 2013 Auto crisis, the Great Recession, and the '14 through '16 Energy crisis).

### Periodic Performance

monthly data

| Avg. Monthly Returns | Broad HY (H0A0) | Short Dur. HY (JVC4) |
|---|---|---|
| All Periods (Jan '00 - Jan '19) | 0.59 | 0.55 |
| Rising Default Periods | 0.84 | 0.76 |
| Elevated Volatility Periods | -0.37 | -0.04 |
| Rising Rate Periods | 0.60 | 0.64 |
| Auto Crisis (GM, Ford) | 0.29 | 0.30 |
| Great Recession (Dec. '07 - June '09 | -0.04 | 0.22 |
| Energy Crisis (July '14 - Feb. '16) | -0.43 | -0.27 |

| Periodic Standard Deviation of Returns | Broad HY (H0A0) | Short Dur. HY (JVC4) |
|---|---|---|
| All Periods (Jan '00 - Jan '19) | 2.64 | 1.84 |
| Rising Default Periods | 4.70 | 3.41 |
| Elevated Volatility Periods | 5.58 | 4.14 |
| Rising Rate Periods | 2.52 | 1.69 |
| Auto Crisis (GM, Ford) | 2.09 | 1.07 |
| Great Recession (Dec. '07 - June '09 | 6.39 | 4.86 |
| Energy Crisis (July '14 - Feb. '16) | 1.64 | 1.22 |

| Return per Unit of Risk | Broad HY (H0A0) | Short Dur. HY (JVC4) |
|---|---|---|
| All Periods (Jan '00 - Jan '19) | 0.22 | 0.30 |
| Rising Default Periods | 0.18 | 0.22 |
| Elevated Volatility Periods | -0.07 | -0.01 |
| Rising Rate Periods | 0.24 | 0.38 |
| Auto Crisis (GM, Ford) | 0.14 | 0.28 |
| Great Recession (Dec. '07 - June '09 | -0.01 | 0.04 |
| Energy Crisis (July '14 - Feb. '16) | -0.26 | -0.22 |

Note: Rising Default Periods are those in which defaults increased for at least 5 consecutive months; Elevated Volatility Periods are those in which VIX was 1 standard deviation above average; Rising Rate Periods are those in which the 5yr Treasury yield increased for at least 3 consecutive months.

Source: SKY Harbor, ICE BofAML Indices, Bloomberg

## 4. Outperformance During Periods of Acute Stress

Short duration high yield strategies have historically outperformed broad high yield and the S&P 500 Index during periods of acute stress, with less severe drawdowns as denoted by the chart below.

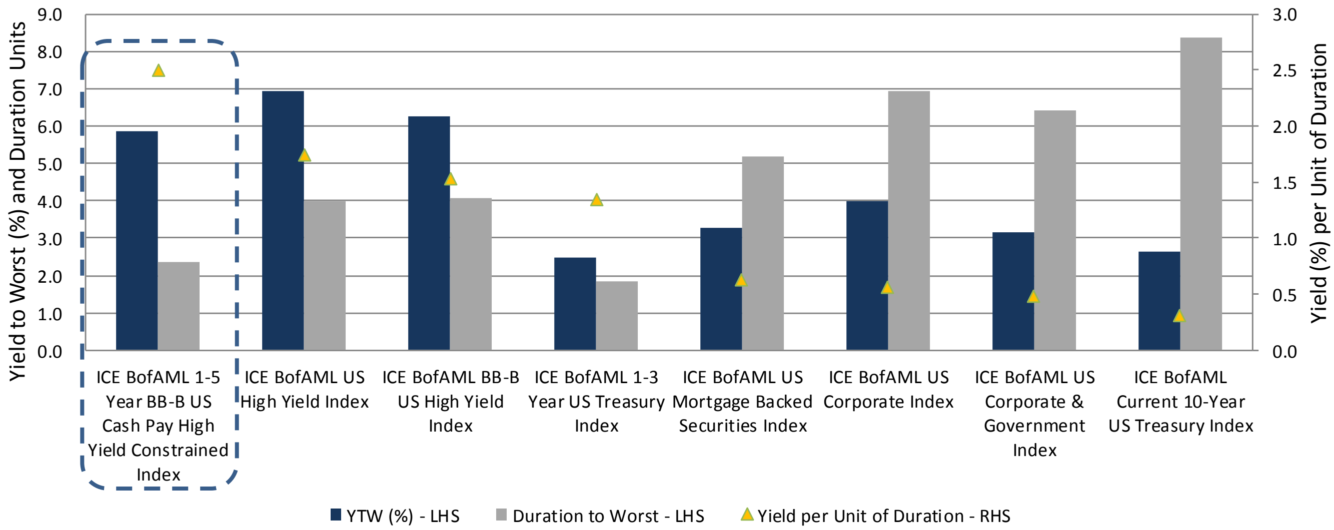
| Time Period | Event | Short Duration High Yield Index (JVC4) | Broad High Yield Index (H0A0) | S&P 500 Index (SPX) |
|---|---|---|---|---|
| Oct-08 | Credit Crisis 2008 | -13.18% | -16.30% | -16.79% |
| Sep-08 | Credit Crisis 2008 (Lehman Default 9/15/08) | -6.14% | -8.30% | -8.91% |
| Nov-08 | Credit Crisis 2008 | -4.91% | -8.43% | -7.18% |
| May-10 | Escalation of Sovereign Debt Crisis | -1.90% | -3.52% | -7.99% |
| Feb-09 | Credit Crisis Bottom | -1.87% | -3.47% | -10.65% |
| Jun-13 | Fear of Rising Rates (Taper Tantrum) | -1.66% | -2.64% | -1.34% |
| Dec-18 | Q4'18 Selloff (fear of Fed misstep and slowing global growth) | -1.57% | -2.19% | -9.03% |
| Mar-05 | Market prepares for Ford and GM downgrade into HY | -1.43% | -2.73% | -1.77% |
| Jul-07 | Sub-prime fears return | -1.41% | -3.14% | -3.10% |
| Sep-14 | Oil price selloff accelerates | -1.17% | -2.10% | -1.40% |
| Dec-14 | Oil prices plummet post OPEC meeting | -1.00% | -1.47% | -0.25% |
| Oct-18 | Q4'18 Selloff (fear of Fed misstep and slowing global growth) | -0.85% | -1.64% | -6.84% |

Source: SKY Harbor, ICE BofAML Indices, Bloomberg

## 5. Attractive Yield per Unit of Duration

Furthermore, we would note that a short duration high yield strategy possesses attractive yield relative to other fixed income products, particularly when viewed in the context of sensitivity to interest rate risk. For example, the JVC4 (the ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index) currently captures 85% of the yield of the full high yield index (ICE BofAML US High Yield Index, ticker H0A0) with only 59% of the duration. As shown below, short duration high yield has the most attractive yield per unit of duration characteristics when viewed against other high yield products, investment grade corporates, mortgages and various government securities.

**Yield to Duration Comparison**



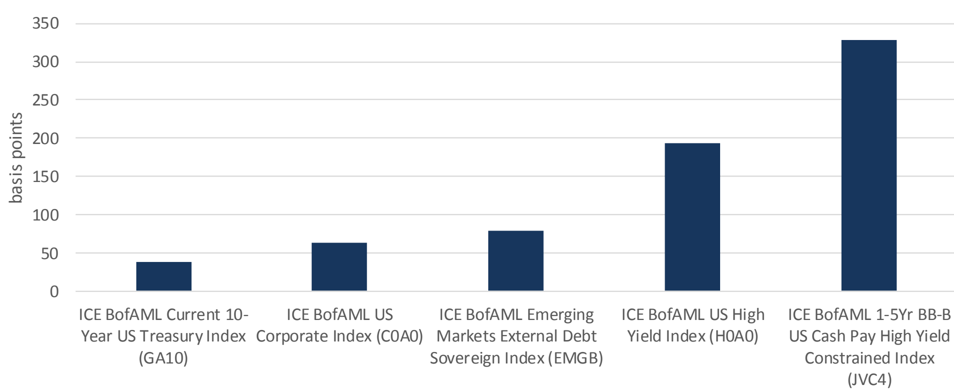

Source: SKY Harbor, ICE BofAML Indices, Bloomberg; data as of January 31, 2019

## 6. Downside Protection via Sizeable Breakevens

Our findings show both broad and short duration high yield to be better positioned than adjacent fixed income indices (10-yr Treasuries, investment grade corporates, EM, etc.) to generate breakeven returns in a rising yield environment. For example, a recently conducted simulation estimates that the ICE BofAML 1-5 Year BB-B US Cash Pay Constrained Index (JVC4) could absorb over 300 bps of linear yield widening over a 12-month period and still generate a total return of 0%. In contrast, the ICE BofAML US Corporate Index (C0A0, a proxy for investment grade credit) could only absorb ~ 60 bps of linear yield widening over a 12-month period before returns fall below 0%. The chart below plots breakevens for several fixed income indices (assumptions listed in the footnotes). We further delineate breakevens for rating buckets within the US high yield index in the righthand chart.

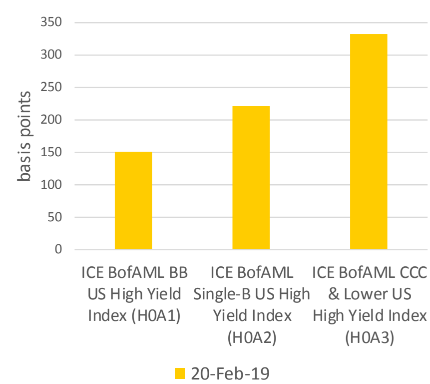
**Breakevens by Index**

12-month time horizon




**US High Yield Breakevens by Rating**

12-month time horizon




Source: SKY Harbor, ICE BofAML Indices, data as of February 2019; Assumptions are as follows: 12-month investment horizon; increases in yield are linear in nature and across all asset classes and occur in equal monthly increments; no credit losses via defaults; coupons are reinvested in their respective strategies; no absorption of increased Treasury yields through spread compression and vice versa; no impact from roll-down as we assume active management repositioning of portfolios.

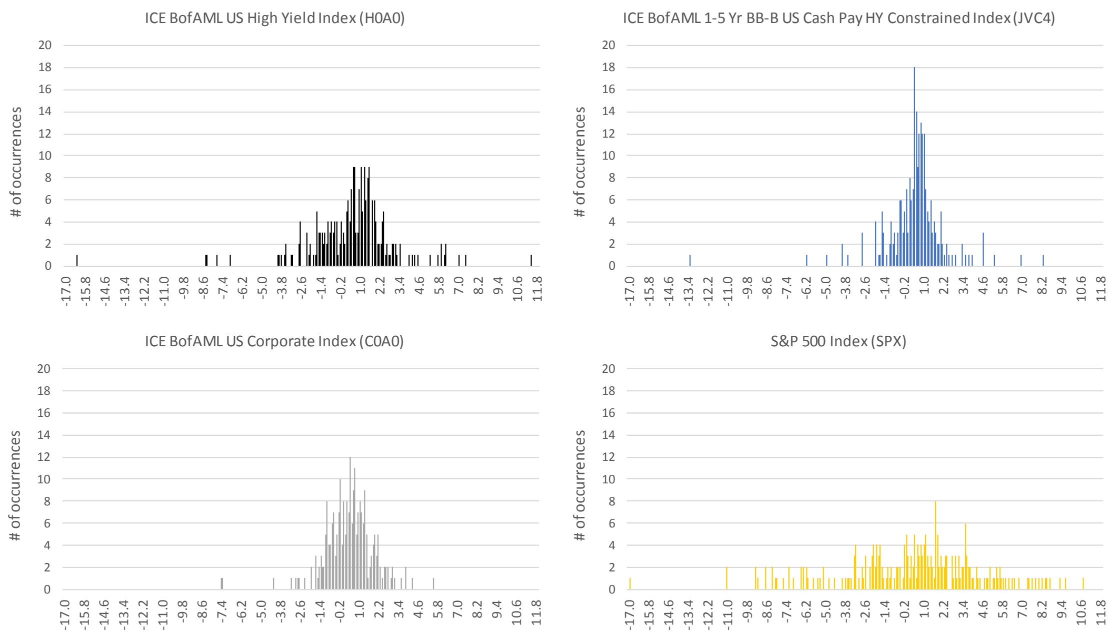
## 7. Consistent Return Profile

For investors who seek to minimize volatility and achieve a more consistent set of monthly returns over time, a short duration high yield strategy stacks up favorably in comparison to adjacent fixed income and equity products. The analysis below measures monthly returns of short duration high yield (JVC4), broad high yield (H0A0), investment grade corporate credit (C0A0) and the S&P 500 Index (SPX). Using a data set of index performance over the trailing 20-year period, both types of high yield provide greater consistency of returns relative to investment grade and equities, with short duration the overall leader in percentage of positive return months.

**Return Consistency of Asset Class**
monthly data, trailing 20 years

| | ICE BofAML US High Yield Index H0A0 | BB-B US Cash Pay HY Constrained Index JVC4 | ICE BofAML US Corporate Index C0A0 | S&P 500 Index SPX |
|---|---|---|---|---|
| Number of Observations | 240 | 240 | 240 | 240 |
| Average Monthly Return (%) | 0.57 | 0.55 | 0.45 | 0.40 |
| # of Positive Months | 161 | 178 | 157 | 146 |
| # of Negative Months | 79 | 62 | 83 | 94 |
| % Positive Months | 67% | 74% | 65% | 61% |

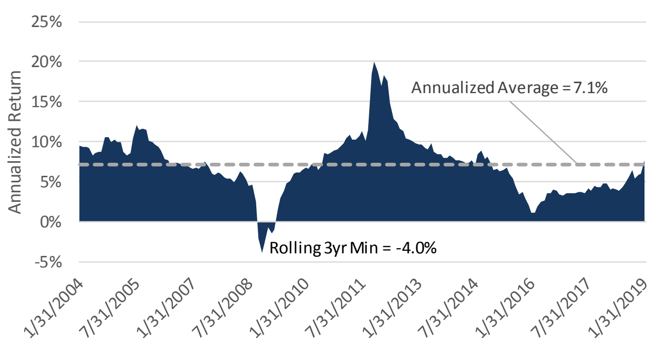
**Monthly Return Histograms**
trailing 20 years



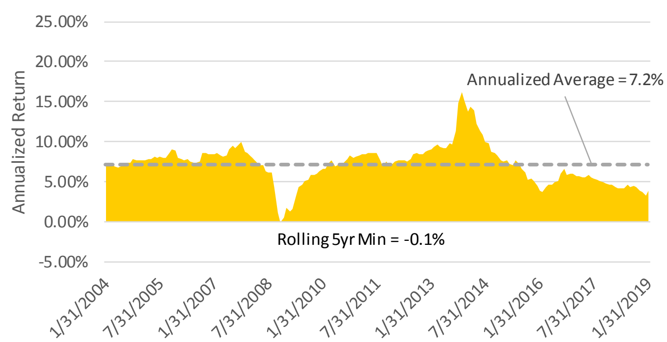

Source: SKY Harbor, ICE BofAML Indices, Bloomberg

Short duration US high yield has also provided consistent annualized returns over multi-year periods. As demonstrated below, the JVC4 index has generated average annualized returns of 7.1% and 7.2% over rolling 3 and 5-year periods, respectively, with only moderate drawdowns.

**Annualized Monthly Rolling 3-Year Short Duration High Yield Returns**
ICE BofAML 1-5Yr BB-B US Cash Pay High Yield Constrained Index (JVC4)



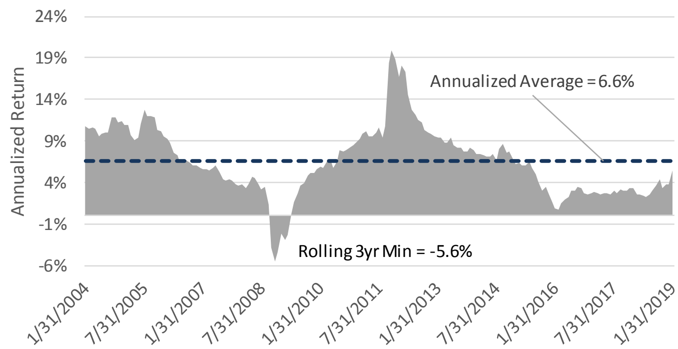

**Annualized Monthly Rolling 5-Year Short Duration High Yield Returns**
ICE BofAML 1-5Yr BB-B US Cash Pay High Yield Constrained Index (JVC4)



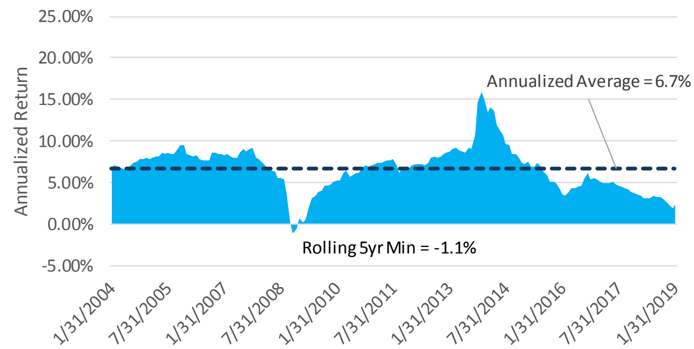

Source: SKY Harbor, ICE BofAML Indices, Bloomberg

For Euro investors, short duration US high yield has provided similarly resilient results net of EUR currency hedging costs, as demonstrated below:

**Annualized Monthly Rolling 3-Year Short Duration High Yield Returns**
ICE BofAML 1-5Yr BB-B US Cash Pay High Yield Constrained Index (JVC4), *EUR Hedged*



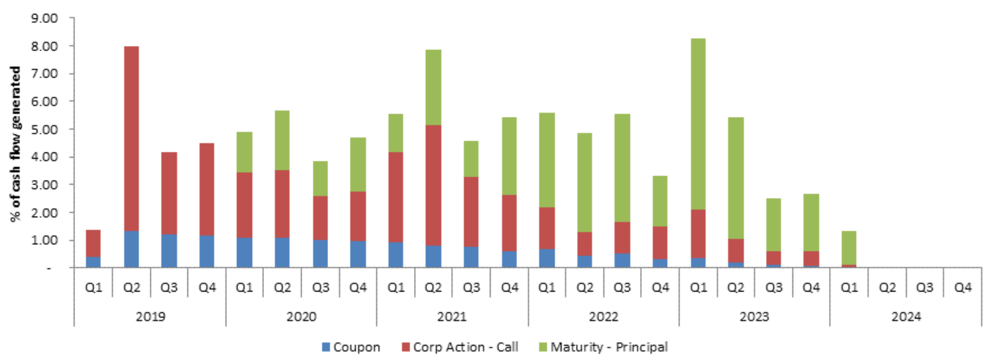

**Annualized Monthly Rolling 5-Year Short Duration High Yield Returns**
ICE BofAML 1-5Yr BB-B US Cash Pay High Yield Constrained Index (JVC4), *EUR Hedged*




Source: SKY Harbor, ICE BofAML Indices, Bloomberg

## 8. High Natural Turnover Allows for Consistent Portfolio Construction Optimization

As an illustration of the benefits of high natural turnover, we look to the ICE BofAML 1-5 Year BB-B US Cash Pay High Yield Constrained Index (JVC4) – our proxy for short duration high yield. The high expected natural turnover generated through calls, tenders and maturities allow for portfolio optimization amidst changing economic, fundamental, and volatility expectations in an efficient and costless manner. Below is an estimate of the cash expected to be generated from corporate actions if the securities are redeemed according to current market expectations.

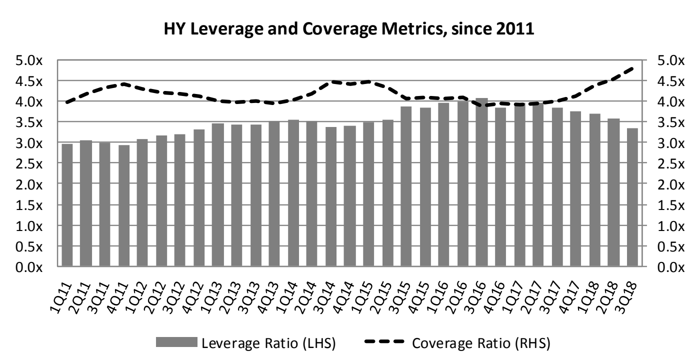



Source: SKY Harbor, ICE BofAML Indices, data as of March 4, 2019

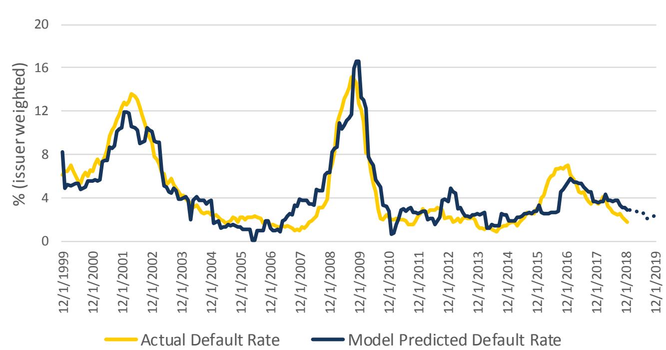
## 9. Positively Trending Credit Fundamentals

US High Yield aggregate credit metrics have been trending positively since Q1'17, with last-12-month (LTM) net leverage and coverage now better than current cycle averages. Additionally, issuer-weighted defaults have declined below 2%, and are expected to remain below the long-run index average (~ 4.5%) throughout 2019.

**High Yield Net Leverage and Coverage Metrics**
quarterly data




**SKY Harbor 3-Factor Default Model**
monthly data

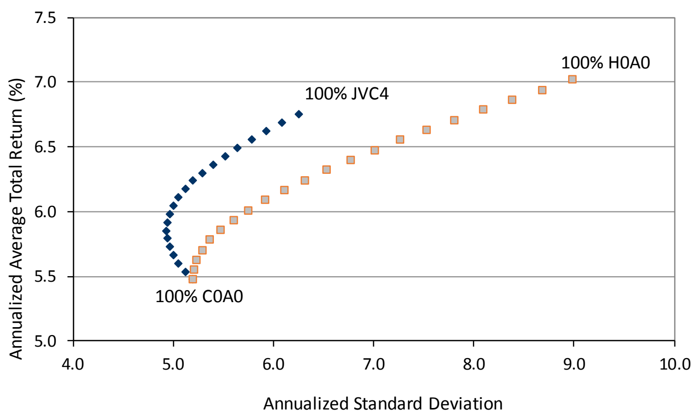



Source: SKY Harbor, BofA Merrill Lynch, Federal Reserve, Capital IQ, Bloomberg

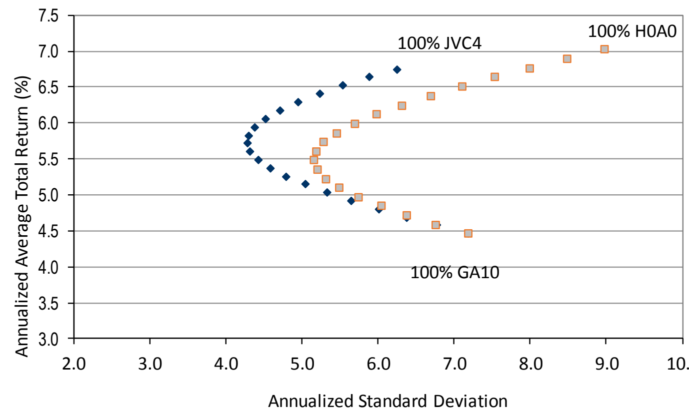
## 10. Benefits of Diversification

By virtue of limited correlation to other asset classes, short duration high yield can improve portfolio diversification. As demonstrated below, an allocation to high yield (especially short duration high yield) can expand the efficient frontiers of investment grade corporate and 10-year Treasury portfolios. Additionally, exposure to short duration high yield can reduce the volatility of a large-cap equity portfolio with minimal return concession.

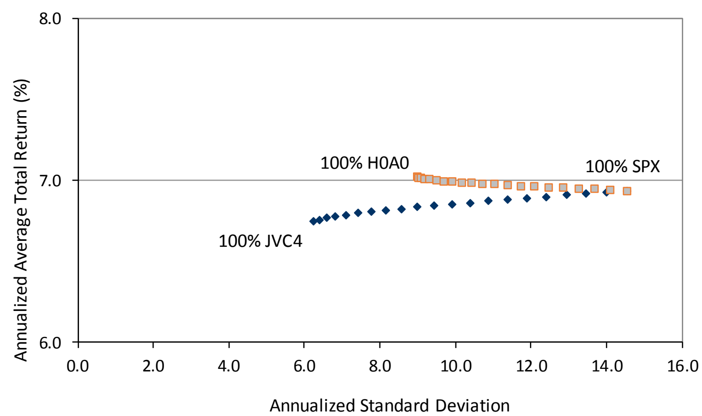
**High Yield (JVC4 & H0A0) vs. Investment Grade Corporates (C0A0)**
monthly data, trailing 20 years



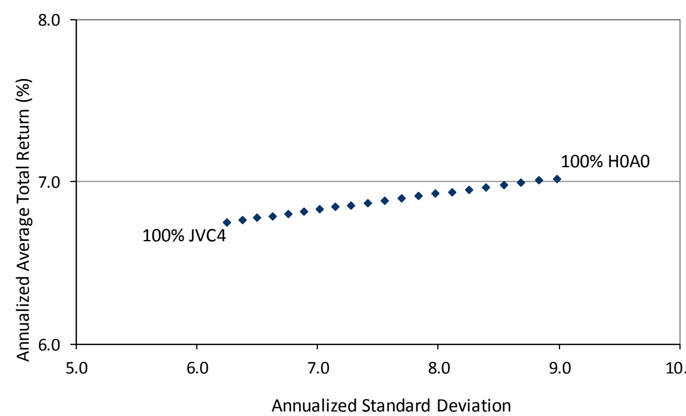

**High Yield (JVC4 & H0A0) vs. 10-Year Treasury Index (GA10)**
monthly data, trailing 20 years




**High Yield (JVC4 & H0A0) vs. S&P 500 Index (SPX)**
monthly data, trailing 20 years



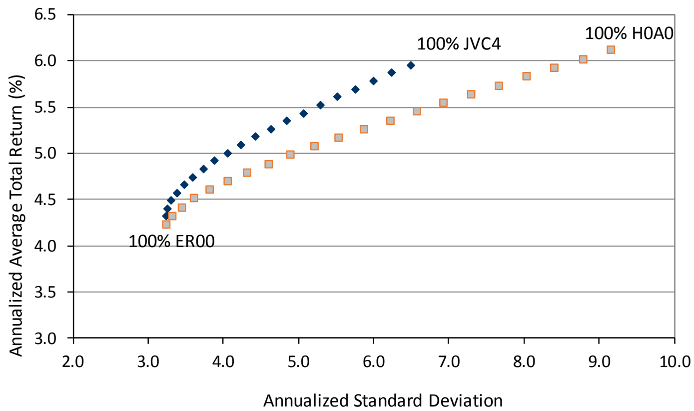

**Short Duration High Yield (JVC4) vs. Broad High Yield (H0A0)**
monthly data, trailing 20 years



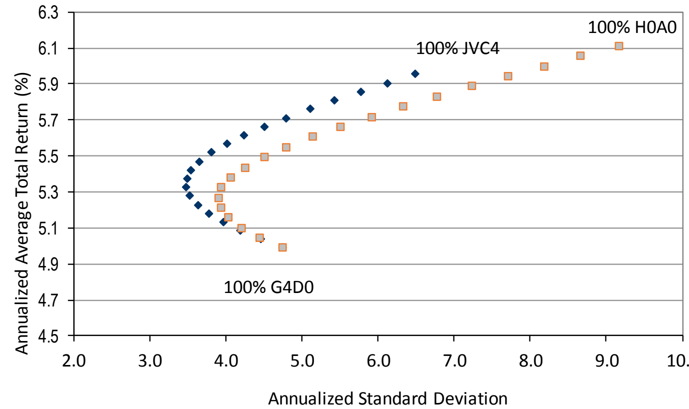

Source: SKY Harbor, ICE BofAML Indices, Bloomberg

The rise in hedging costs have created total return headwinds, particularly for European investors interested in US high yield. Below, we demonstrate that an allocation to short duration high yield - net of FX hedging costs - can also expand the efficient frontiers of Euro Corporate, German Government and Euro Stoxx 50 portfolios. Additionally, exposure to EUR hedged US high yield (both broad and short duration) can reduce the volatility of a Euro High Yield portfolio without necessitating a give-up in total return.

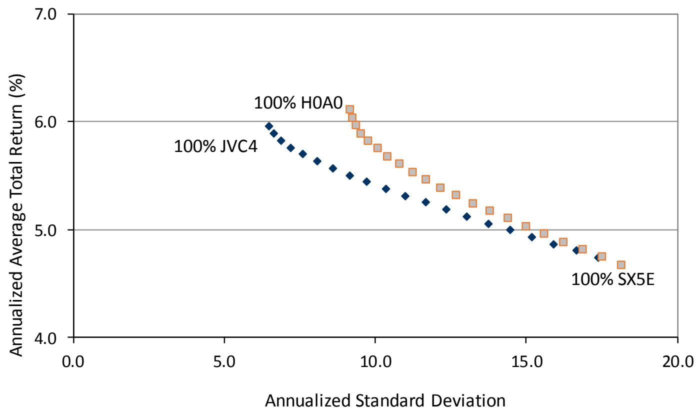
**<u>EUR Hedged</u> High Yield (JVC4 & H0A0) vs. Euro Corporate Index (ER00)**
monthly data, trailing 20 years



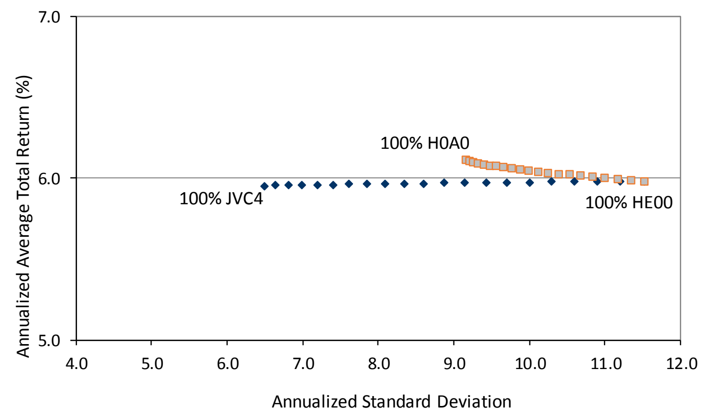

**<u>EUR Hedged</u> High Yield (JVC4 & H0A0) vs. 7-10Yr German Gov Index (G4D0)**
monthly data, trailing 20 years




**<u>EUR Hedged</u> High Yield (JVC4 & H0A0) vs. Euro Stoxx 50 (SX5E)**
monthly data, trailing 20 years




**<u>EUR Hedged</u> High Yield (JVC4 & H0A0) vs. Euro High Yield (HE00)**
monthly data, trailing 20 years




Source: SKY Harbor, ICE BofAML Indices, Bloomberg

## Important Disclosures and Disclaimers