SKY HARBOR
CAPITAL MANAGEMENT

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May 27, 2019

Weekly Briefing

SKYView: Active vs. Passive Management

US high yield ETFs have experienced both strong performance and fund inflows on a year-to-date basis, prompting us to re-visit our active vs. passive management analysis originally conducted in 2017. In this *Weekly Briefing*, we seek to compare high yield ETF performance to the ICE BofAML US High Yield Index (H0A0), as well as a dataset of actively managed high yield funds.

By way of background, the two largest ETFs in the US high yield space – iShares iBoxx High Yield Corporate Bond ETF (ticker: HYG) and SPDR Bloomberg Barclays High Yield Bond ETF (ticker: JNK) – have grown materially since inception (late 2007), and together now possess assets in excess of $26bn. Given such tremendous asset growth, which now accounts for over 2% of the size of the high yield market, as well as a track record going back over eleven years (during both up and down markets), a sufficient set of data exists to conduct a more thorough evaluation.

ETFs vs. the ICE BofAML US High Yield Index (H0A0)

We preface this section of our analysis with the disclosure that neither HYG nor JNK use the same benchmark as most active US high yield managers. The benchmark for HYG is the iBoxx USD Liquid High Yield Index, a market capitalization-weighted index consisting of liquid USD high yield bonds, while the benchmark for JNK is Bloomberg Barclays High Yield Very Liquid Index, an index designed to track a more liquid subset of USD-denominated high yield securities. Active high yield managers, on the other hand, typically use one of several broad high yield market indices created by ICE Bank of America-Merrill Lynch, Barclays, JP Morgan or Citi. For this analysis, we will be using the ICE BofAML US High Yield Index (H0A0), one of the most commonly used benchmarks in the active space, as a proxy for the US high yield index. Since a significant portion of the buyer base views HYG and JNK as an alternative to active high yield management exposure, we believe the comparison is a fair one to make.

Using data going back to 2008 (the first full year of ETF returns available), we compare performance of the high yield ETFs to H0A0, presented below in terms of relative capture.

ICE BofAML US High Yield Index (H0A0) <u>vs</u>. iShares iBoxx High Yield Corporate Bond ETF (HYG) and SPDR Bloomberg Barclays High Yield Bond ETF (JNK)

monthly data, since 2008

Returns	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	U/P vs. Index % of Periods
H0A0 Total Return (%)	(26.4)	57.5	15.2	4.4	15.6	7.4	2.5	(4.6)	17.5	7.5	(2.3)	
HYG Capture	67%	50%	78%	154%	75%	78%	76%	108%	77%	81%	89%	73%
JNK Capture	94%	65%	93%	117%	86%	79%	31%	146%	82%	87%	145%	82%

Standard Deviation of Returns	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	U/P vs. Index % of Periods
HYG Capture	117%	152%	134%	127%	166%	120%	117%	104%	81%	90%	102%	82%
JNK Capture	135%	161%	139%	129%	174%	117%	128%	113%	90%	96%	108%	82%

Source: SKY Harbor, ICE BofAML Indices, Bloomberg
Note: ETF returns are calculated on a price basis; both H0A0 and ETF returns and standard deviations are calculated using monthly data

As demonstrated above, on an annualized basis using monthly returns from the start of 2008 until the end of 2018, ETF performance has been weak relative to the ICE BofAML US High Yield Index. In fact, over the eleven-year data set shown above, HYG and JNK only outperformed the index in three and two periods, respectively. Additionally, we would note that total returns are not the only metric investors are concerned with – the volatility of those returns is also a meaningful part of this comparison. Looking at annualized standard deviation of returns, again using monthly data, we find that both ETFs exposed the buyer to greater volatility relative to H0A0 in every year except 2016 and 2017 (i.e., ETFs are more volatile than the index 82% of the time). **In summary, we would conclude that on an annualized basis through the duration of our data set, ETFs appear to pick up, on average, ~ 80% of the index return, with ~ 115% of the index volatility.**

We concede, however, that this comparison is somewhat unfair. Investors cannot get direct exposure to the ICE BofAML US High Yield Index, and index performance benefits from no management fee, no transaction costs (frictional costs can be quite high, especially in less liquid markets), and an unfettered ability to gain exposure to any and all securities, even those that are illiquid and unavailable for actual purchase. Recognizing this, we attempt to level the playing field, and continue our analysis below, this time comparing ETFs to active managers.

ETFs vs. Active Managers

Using the eVestment Global Database, we created a data set of managers we believe are most representative of a broad market US high yield mandate. An initial screen of US high yield managers within the eVestment database provides information on over 150 funds. In an effort to eliminate more conservative and shorter duration strategies, as well as more aggressive/distressed mandates, we excluded entries that contained descriptive terms such as “constrained,” “short duration,” “high quality,” “defensive,” “aggressive,” or “distressed” in the product name category. We also limited the manager set to only those with at least $1bn in AUM, and those who report returns net of fees. After screening for these qualifications, our set was reduced to 50 managers, which we believe are representative of a broad, long-only US high yield strategy.

Below, we compare returns of both HYG (left side chart) and JNK (right side chart) to the median manager from our data set, as well as the 25th and 75th percentile managers (gateway to 1st and 4th quartiles). Data in each chart represents the difference in performance, in basis points, between each ETF and manager subset, and is done on a rolling 1yr, 3yr, 5yr, 7yr, and 10yr basis, all periods ended April 30, 2019.

Performance: iShares iBoxx High Yield Corporate Bond ETF (HYG)
monthly data, as of April 20, 2019

Reference	Rolling Return Difference (in bps)				
	1yr	3yr	5yr	7yr	10yr
HYG vs.					
25th Percentile Active Manager	(109)	(232)	(290)	(309)	(417)
Median Active Manager	85	(38)	(49)	(76)	(125)
75th Percentile Active Manager	270	140	180	144	142

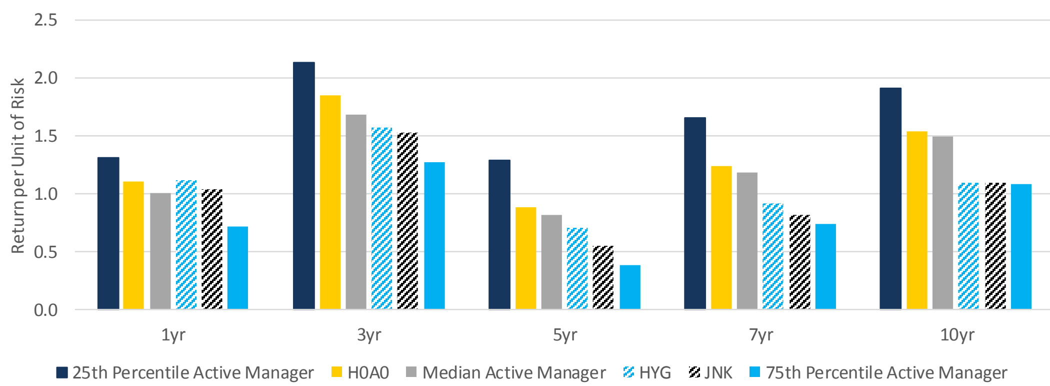
Performance: SPDR Bloomberg Barclays High Yield Bond ETF (JNK)
monthly data, as of April 20, 2019

Reference	Rolling Return Difference (in bps)				
	1yr	3yr	5yr	7yr	10yr
JNK vs.					
25th Percentile Active Manager	(111)	(211)	(343)	(336)	(374)
Median Active Manager	82	(16)	(102)	(103)	(82)
75th Percentile Active Manager	268	162	127	118	186

Source: SKY Harbor, ICE BofAML Indices, Bloomberg, eVestment Global Database; data through April 30, 2019
Note: ETF returns are calculated on a price basis; H0A0, ETF, and manager returns and standard deviations are calculated using monthly data
Note: Median and Quartile Rank managers were selected by removing high yield managers in the eVestment database that included conservative, constrained, high quality, defensive, or distressed tags within their fund name; additionally, managers with under $1bn in AUM were eliminated. The SKY defined data set includes 50 managers meeting the aforementioned criteria

As demonstrated above, both HYG and JNK have provided weaker returns in all periods relative to the 25th percentile manager (gateway to top quartile) in our data set. Additionally, the ETFs compare unfavorably to the median manager in most time periods (all but trailing 1yr returns). **As such, we would say that high yield ETF returns are in line with 3rd quartile active manager performance over the long run, and close to 4th quartile performance on a risk-adjusted basis over the trailing 10yr period**. Also, note that active manager performance data is net of management fees, so the comparison accurately represents USD-denominated realized returns from the perspective of an investor.

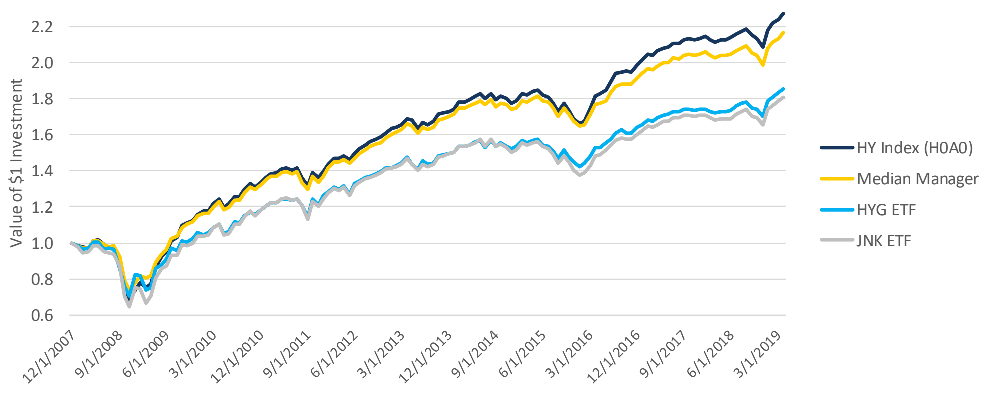
Risk Adjusted Returns
monthly data through April 30, 2019



Source: SKY Harbor, ICE BofAML Indices, Bloomberg, eVestment Global Database; data through April 30, 2019

While the degree to which HYG and JNK underperform the index and the median active manager tends to vary by year, the drag is consistent and adds up over time. Presented below is a hypothetical investment of $1 at the start of 2008 (start of first full year in existence for HYG and JNK). The degree to which an investment in passive mandates would suffer relative to an active manager is material.

Hypothetical Growth of $1 by Various Investment - January '08 to April '19
monthly data



Source: SKY Harbor, ICE BofAML Indices, Bloomberg, eVestment Global Database; data through April 30, 2019

Recent ETF Performance

While the annual return and volatility analysis conducted earlier in this briefing demonstrated that high yield ETFs have underperformed the ICE BofAML US High Yield Index (H0A0) in approximately 80% of periods tested, recent returns (YTD and trailing 1yr) skew positively for passive funds (although volatility remains elevated).

Return and Volatility Capture: ETFs vs. Index

monthly data through April 30, 2019

		Rolling (annualized)				
Returns (through Apr 30, 2019)	**YTD**	**1yr**	**3yr**	**5yr**	**7yr**	**10yr**
H0A0 Total Return (%)	8.9	6.7	7.8	4.8	6.3	10.2
HYG Capture	97%	105%	85%	78%	80%	79%
JNK Capture	107%	105%	88%	67%	75%	83%

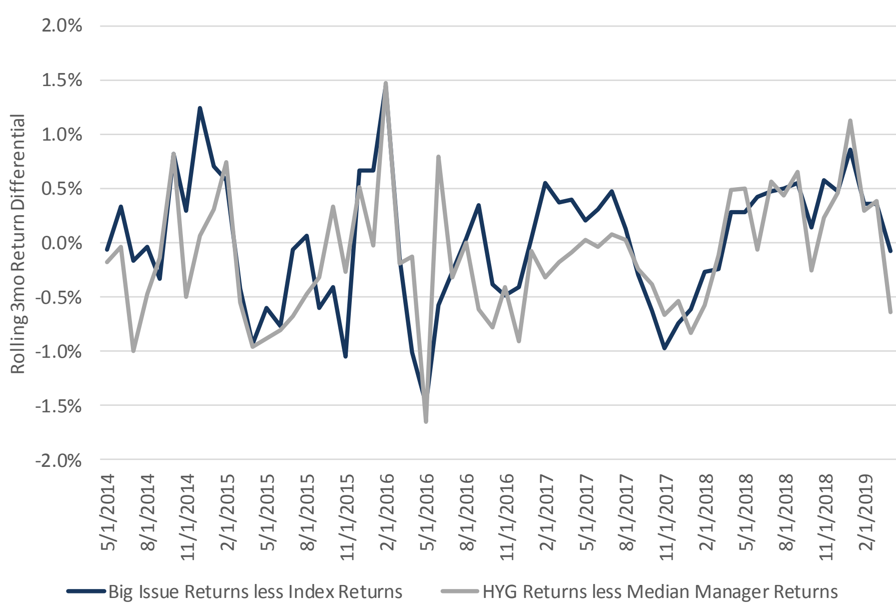
		Rolling (annualized)				
Standard Deviation of Returns	**YTD**	**1yr**	**3yr**	**5yr**	**7yr**	**10yr**
HYG Capture	115%	104%	100%	98%	107%	110%
JNK Capture	119%	113%	107%	108%	114%	117%

Source: SKY Harbor, ICE BofAML Indices, Bloomberg
Note: ETF returns are calculated on a price basis; both H0A0 and ETF returns and standard deviations are calculated using monthly data

Has something meaningfully changed in the dynamic between active and passive management within the high yield space, or should we expect reversion? As discussed in several *Weekly Briefing* pieces in 2019, outperformance of the largest/most liquid bonds in the index has been pervasive over the last several quarters, likely the consequence of flows into vehicles offering daily liquidity and a general lack of sustained conviction on the part of managers. Looking back over the last five years, there has been a high degree of correlation (~ 70%) between outperformance of large issues (≥ $1bn in face value) relative to the full index, and outperformance of high yield ETFs (we use HYG as a proxy) relative to the median active manager.

ETF Success Driven by Large Issuer Outperformance

trailing 3mo returns



Source: SKY Harbor, ICE BofAML Indices, Bloomberg, eVestment Global Database; data through April 30, 2019

Conclusion

Over the long run, we continue to find ETFs (HYG and JNK) to be unfavorable proxies for broad US high yield market risk, as demonstrated by the capture of ~ 80% of H0A0 returns and ~ 115% of H0A0 volatility on an annualized basis going back to 2008. While such ETFs have performed like a 3rd quartile active manager over the long run, recent results have surpassed historical capture rates given a favorable backdrop for the largest issuers in the index. We, however, do not believe this dynamic will persist.

On the Calendar

Occurred

Event	Release Date	Period	Survey	Actual	Prior
Existing Home Sales	21-May-19	Apr	5.35m	5.19m	5.21m
Initial Jobless Claims	23-May-19	18-May	215k	211k	212k
New Home Sales	23-May-19	Apr	675k	673k	692k

Upcoming

Event	Release Date	Period	Survey	Actual	Prior
Conf. Board Consumer Confid.	28-May-19	May	130.5		129.2
GDP Annualized QoQ	30-May-19	1Q	3.1%		3.2%
GDP Price Index	30-May-19	1Q	0.9%		0.9%

Source: SKY Harbor, Bloomberg

Recommended Reading

Wells, Peter, et al. (2019, May 23). Investors Rush into Treasuries as Trade and Growth Fears Rise. *Financial Times* (subs. req.), Retrieved from https://www.ft.com/content/da1dcdcc-7d5a-11e9-81d2-f785092ab560

Nussbaum, Alex and Smith, Grant (2019, May 22). Oil Suffers Worst Day of 2019 as Trade Turmoil Swamps Confidence. *Bloomberg*, Retrieved from https://www.bloomberg.com/news/articles/2019-05-22/oil-beaten-down-on-rising-u-s-stockpiles-demand-concerns?srnd=premium