

The Pitfalls of High Yield ETFs



Newsletter – September 2017

“Great things are not accomplished by those who yield to trends and fads and popular opinion.”

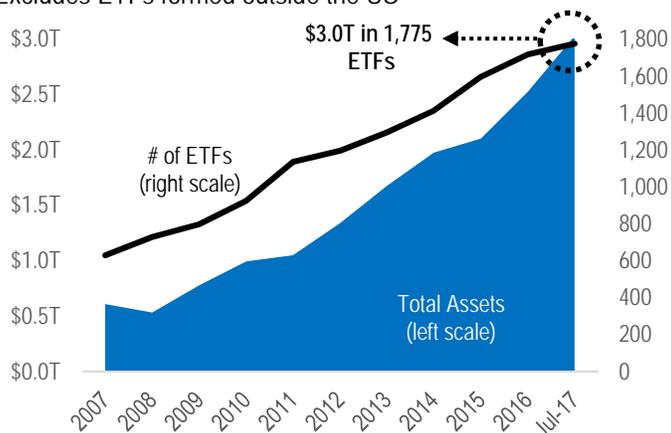
- Jack Kerouac, American Author and Poet (1922 – 1969)

The rapid growth of ETFs

Exchange-Traded Funds, or ETFs, have become an exceptionally popular investment vehicle over the past decade. Trading flexibility, low fees, transparency, and tax efficiency are among the most frequently cited benefits of investing in ETFs. Many reputable consultants, financial journals, and industry pundits have endorsed ETFs as prudent investment vehicles—sometimes as a short-term means of obtaining exposure to a broad asset class, sometimes as a long-term allocation to a diversified portfolio, and sometimes both. Chart 1 highlights the proliferation of ETFs in the US, which comprise more than \$3 trillion in assets spread across more than 1,700 funds. The \$17 trillion open-ended mutual fund industry still dwarfs the ETF market, but ETFs have been taking share at a rapid pace with many experts forecasting this trend to continue.

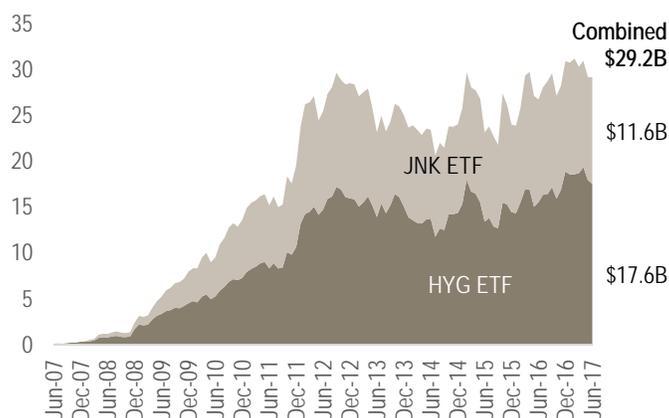
Chart 1: ETF Growth – All Asset Classes

Excludes ETFs formed outside the US



While large cap equities and investment grade bonds (rated BBB or above) comprise the majority of ETF assets, high yield ETFs have also become popular investment vehicles. The two largest high yield ETFs, by far, are the iShares iBoxx US Dollar High Yield ETF and the SPDR Bloomberg Barclays High Yield ETF (because that is a mouthful, we will henceforth refer to these ETFs by their tickers “HYG” and “JNK”, respectively). As shown in Chart 2, these two ETFs have more than \$29 billion in assets and dominate the high yield ETF market—the third largest broad high yield ETF has about \$1 billion in assets.

Chart 2: ETF Growth – Popular High Yield ETFs

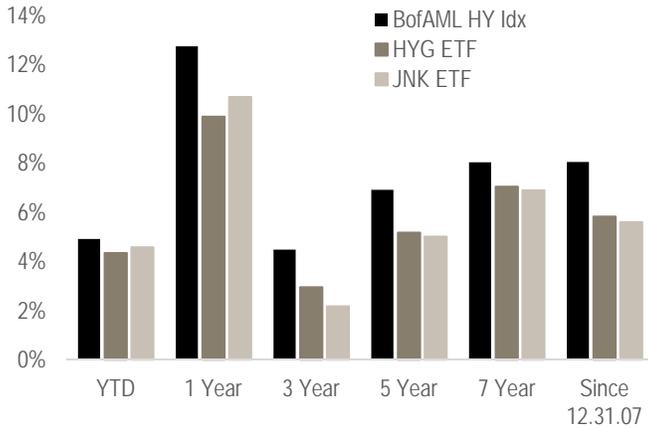


Even at nearly \$30 billion, these two ETFs represent a small percentage of the high yield market (~2.5%), which is around \$1.3 trillion. This is important because many investors have questioned whether heavily traded vehicles like HYG and JNK pose technical risks to the broader high yield market. Our considered opinion is no, given the small market share that ETFs possess. For context, the total high yield ETF market share is about the equivalent of 4 months’ worth of coupon payments from the broad high yield market.

Performance

We use the BofA Merrill Lynch US High Yield Index as our broad benchmark for performance comparisons. This is not the benchmark that HYG or JNK attempt to track, but we thought it would be interesting to see how they stack up against this popular benchmark nonetheless. Chart 3 shows the annualized performance going back to 12/31/2007, which is the longest common history of the ETFs (i.e. the inception of JNK).

Chart 3: High Yield ETF Annualized Performance
As of 6/30/2017



There are several reasons why the ETFs have underperformed the broad index, chief among them is that the ETFs are not designed to track this index. The index is composed of nearly 1,900 bonds, including many that are small and thinly traded. This is a serious problem for ETFs because many investors use them as short term vehicles to gain exposure to the asset class, which often triggers large and frequent cash flows. Not to be thwarted, ETF providers opted to track a lesser-known index, or even create a new index, comprising only the largest and most liquid bonds. HYG is designed to track the Markit iBoxx Liquid High Yield Index, which (coincidentally?) was created just 5 months prior to the launch of HYG. JNK is designed to track the Bloomberg Barclays US High Yield Very Liquid Index.

Table A highlights important differences between the indexes. The two ETF benchmarks have approximately half the number of bonds because they only include the largest and most liquid.

Table A: Minimum Size Requirements
As of August 21, 2017

	BofAML HY Idx	iBoxx Liquid HY Idx	Bloomberg Barclays Very Liquid HY Idx
Issuer Size	>\$250MM	>\$400MM	>\$500
Bond Size	>\$250MM	>\$1B	Note*
# of Bonds ¹	~1,900	~1,000	~900

*Only includes 3 largest bonds per issuer (prior to 2013, it only included the largest issue per issuer).
¹Approximate

ETF Performance: Average Annual Returns as of September 30, 2017

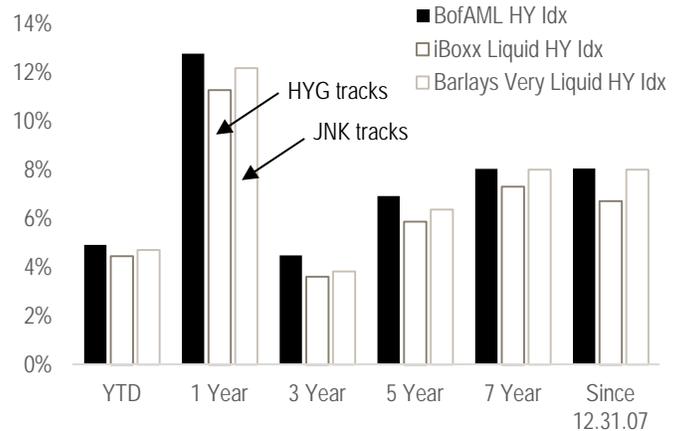
	1 Yr	5 Yr	10 Yr	Since 4/4/07		1 Yr	5 Yr	Since 11/28/07
iShares iBoxx \$ HY ETF (HYG)	7.02%	4.92%	5.61%	5.72% (Market Price)	SPDR Bloomberg Barclays HY ETF (JNK)	7.65%	4.60%	5.83% (Market Price)
	7.39	4.92	5.88	5.75 (NAV)			8.05	4.60
Markit iBoxx Liquid HY Index	7.67	5.38	6.43	6.22	Bloomberg Barclays US HY Very Liquid Index	8.34	5.83	8.01
BofA Merrill Lynch US HY Index	9.06	6.38	7.72	n/a				

Past performance is not a guarantee of future results and current performance may be higher or lower than the performance shown. Investment results and principal value will fluctuate so that shares, when redeemed, may be worth more or less than their original cost. Performance shown is not indicative of fund performance. To obtain performance current to most recent month end for JNK please call 866-787-2257 or for HYG please call 800-474-2737.

Past performance is not a guarantee or a reliable indicator of future results.

Chart 4 shows the performance differences between the broad high yield index and the two indexes that HYG and JNK track, respectively. Over most periods, the broad index has outperformed the two indices. Over long periods, however, the Barclays Very Liquid HY Index has performed similarly to the broad index. Additionally, HYG and JNK ETFs charge expense ratios of 0.49% and 0.40%, respectively, which is not reflected in the performance in Chart 4. Also note that the low fee argument in favor of ETFs is less compelling in high yield, as their fee discount to many institutional active mutual funds is modest.

Chart 4: High Yield Index Performance Comparison
As of 6/30/2017



As we learned from Chart 4, the index that HYG tracks has lagged the broad index. Chart 5 shows how HYG has performed compared to the benchmark it is actually designed to track. If it tracked the index perfectly, we would expect the ETF to underperform the index by its 0.49% expense ratio. It has performed a bit worse than this over long periods, but only by a small magnitude.

Chart 5: HYG ETF vs. Benchmark Performance Annualized
As of 6/30/2017

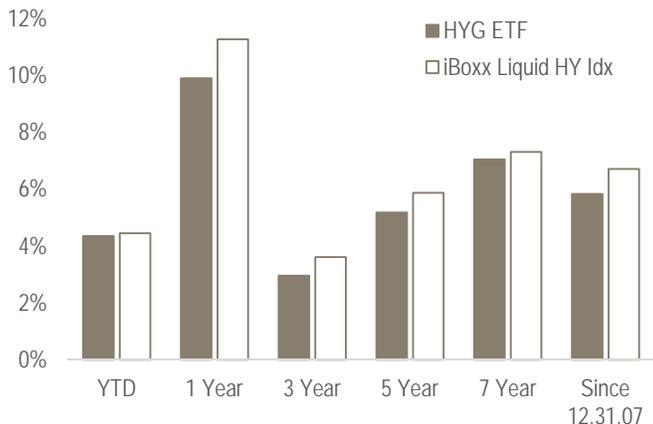
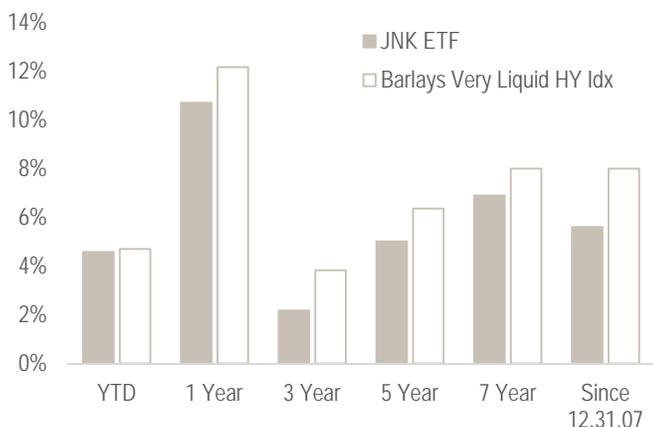


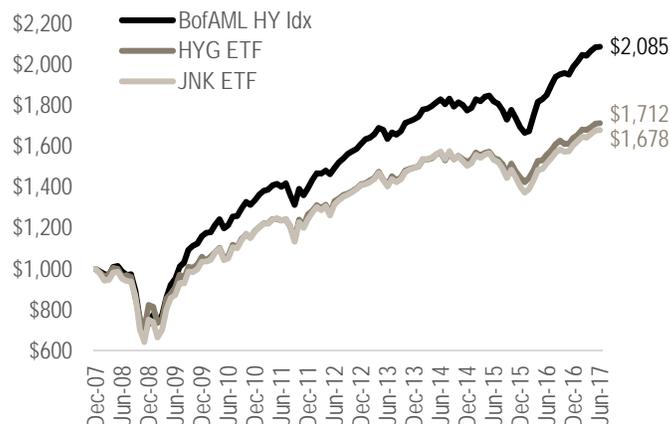
Chart 6 shows the same comparison for JNK and its respective benchmark. As we learned from Chart 4, its benchmark has performed nearly as well as the broad index. Again, if the JNK ETF tracked the index perfectly, we would expect it to underperform the index by its 0.40% expense ratio. As depicted in Chart 6, however, JNK has trailed its index by a considerably wider margin over long periods.

Chart 6: JNK ETF vs. Benchmark Annualized Performance
As of 6/30/2017



In the case of HYG, the ETF has tracked its index closely but its index has lagged the broad benchmark. In the case of JNK, its index has performed similarly to the broad benchmark but the ETF has failed to keep pace. Over time, both have yielded strikingly similar results with both lagging the broad index, as shown in Chart 7.

Chart 7: High Yield ETF Growth of \$1,000
As of 6/30/2017



(The Growth of \$1,000 since 12/31/2007 chart reflects a hypothetical \$1,000 investment in the ETF's and index noted. Assumes reinvestment of dividends and capital gains.)

Reasons for performance discrepancies

In addition to fees, it appears to us that three factors have caused the majority of the underperformance relative to the BofA Merrill Lynch US High Yield historically:

1. the lack of small and mid cap credits
2. large fund flows
3. deviations from NAV

The lack of small and mid cap bonds

As discussed earlier, the two ETFs track indices that are focused on the largest and most liquid bonds. The next few charts provide a bit more detail on the underlying composition. Chart 8 shows the allocation to large cap, mid cap, and small cap credits by weight for the broad index and the ETFs. Consistent with prior newsletters and other materials, we define large cap as any bond where the underlying issuer has more than \$1.2 billion in total debt issued; mid cap is \$600 million to \$1.2 billion; small cap is less than \$600 million. HYG has little mid cap exposure and no small cap exposure; JNK has mid cap exposure but little small cap exposure.

Past performance is not a guarantee or a reliable indicator of future results.

Chart 8: High Yield ETF Allocation by Issuer Size
Allocation by Weight, as of August 21, 2017

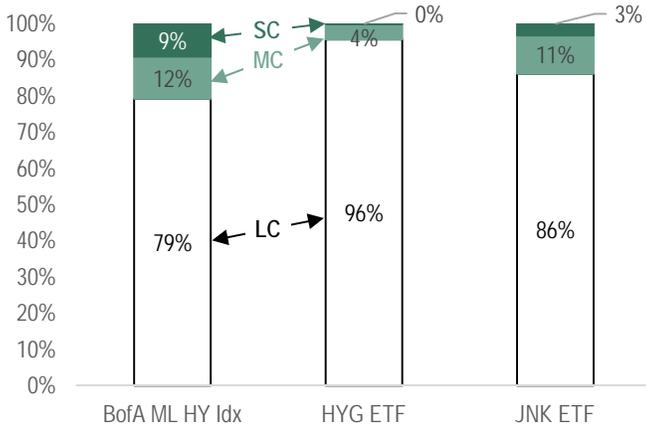
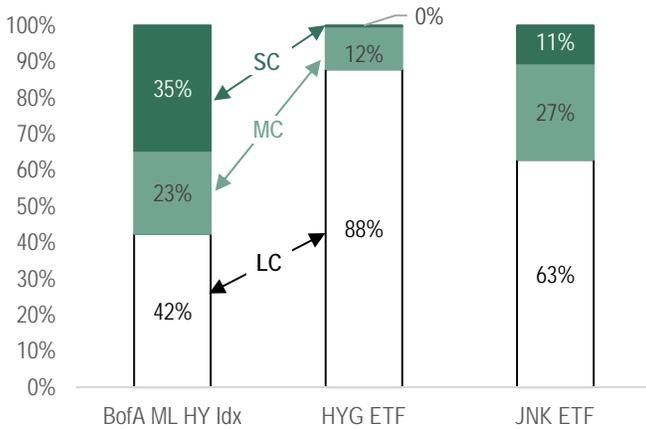


Chart 9 shows a similar analysis but rather than dissecting the market by weight it dissects by the number of bonds—the differences are exacerbated. Nearly 60% of the bonds in the broad high yield index are mid or small cap, compared to just 12% for HYG and 38% for JNK.

Chart 9: High Yield ETF Allocation by Issuer Size
Allocation by # of bonds, as of August 21, 2017



The reason that small and mid cap exposure is so important is summarized in Charts 10 and 11. Chart 10 shows the performance of the BofAML US Small Cap and BofA ML US Large Cap High Yield indexes over the past 20+ years. This is not a perfect comparison because the indexes define large and small differently than we do (by individual bond size rather than issuer size) but it certainly captures some of the effect. Chart 11 does use our definition of small and mid cap, and shows their spread advantage over large caps. We believe the small and mid cap portion of the high yield credit market is broad and rife with opportunity. Investing in high yield bonds but ignoring small and mid cap credits is like eating a chocolate chip cookie without the chocolate chips—we'd sacrifice the cookie before we'd sacrifice the chocolate chips.

Chart 10: Performance by Credit Size
As 6/30/17

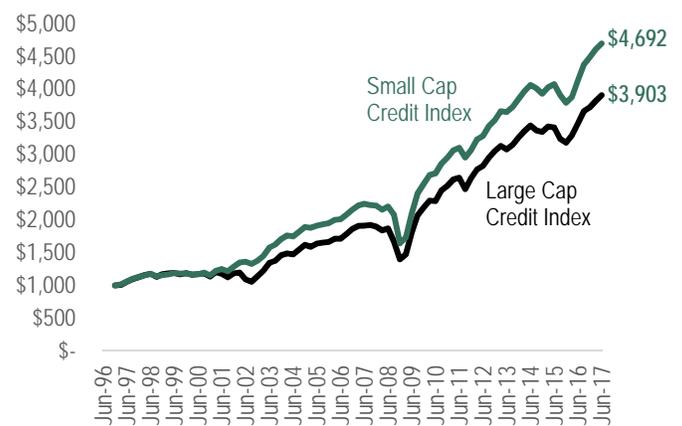
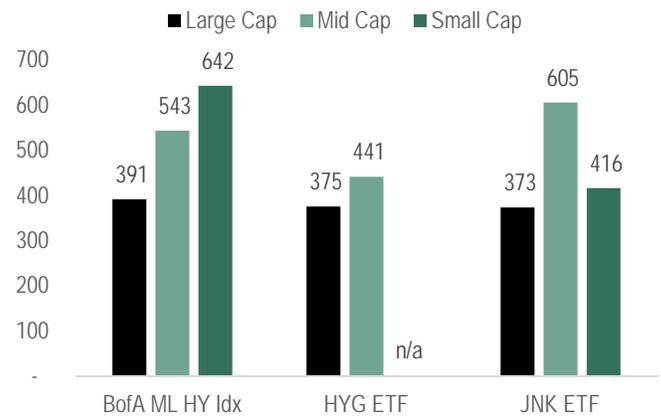


Chart 11: Spread Over Treasuries
As of August 21, 2017



Large fund flows

ETFs trade intraday like stocks, and popular ETFs like HYG and JNK are heavily traded. These are appealing characteristics to traders looking to enter and exit the high yield asset class rapidly. This trading flexibility, however, is not costless.

To understand why, it is important to recognize how ETFs work. First, like a standard open ended mutual fund, a net asset value (“NAV”) is calculated at the end of each day, which is the market value of its underlying holdings divided by the ETF’s shares outstanding. ETFs are required to disclose holdings daily, so the NAV is updated regularly throughout the trading day by the exchange on which it is traded, based on price changes of its underlying holdings. Importantly, the NAV is not the price that an investor would pay to buy a share of the ETF. Instead, the investor pays the market price, which is determined by intraday supply (sellers) and demand (buyers). Often, but not always, the NAV and market price move in lockstep.

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Typically, if the market price deviates from the NAV, the ETF will issue new shares (if the market price > NAV) or redeem existing shares (if the market price < NAV) to/from an Authorized Participant (“AP”). For example, let’s assume the market price is higher than the NAV due to strong demand. The AP would buy the underlying securities in the market, exchange this basket for new shares in the ETF, and then sell those shares to the marketplace. The AP is effectively acting as a market maker. The reverse occurs when market price is lower than the NAV—the AP would buy shares in the ETF and redeem them by selling the underlying securities. The counterparty to the AP, the investor buying or selling ETF shares, bears the trading costs incurred by the AP, which effectively insulating existing ETF shareholders. Both of these examples describe an *in-kind* transaction, where the AP executes the trading of the underlying securities in the marketplace. It represents a form of financial engineering that actually makes sense...in certain markets. It makes sense that this would work well in large, liquid, open markets (e.g. US equity) but less well in small, illiquid markets that shutdown in periods of stress (e.g. emerging markets, high yield).

Rather than an in-kind transaction where the AP does the trading of the underlying securities, cash transactions can occur in less liquid markets and/or during periods of stress. Here, the ETF would redeem/issue shares for cash to/from the AP. In this case the ETF is responsible for trading the underlying securities. The ETF’s existing investors would incur implicit and explicit trading costs, including the cash held on hand to help manage flows. In other words, it is likely that ETF investors bear the trading costs incurred in times of stress.

It is difficult to determine just how costly this is to shareholders over the long-term. Given that fund flows are substantial as a percentage of total assets (see Charts 12 and 13), particularly during periods of stress, we believe it to be consequential.

Chart 12: HYG ETF Monthly Fund Flows as a % of Assets
As of 6/30/17

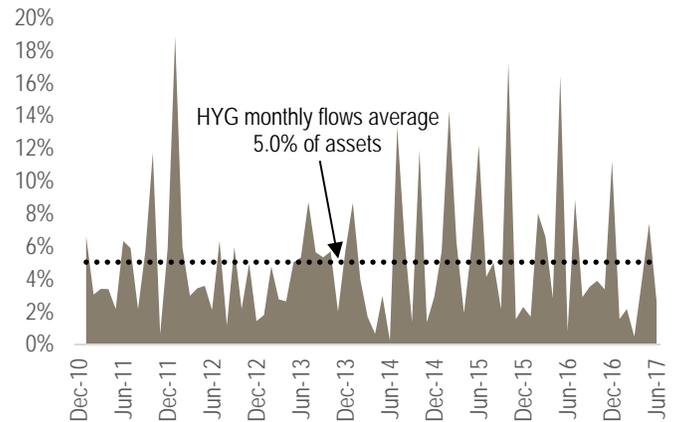
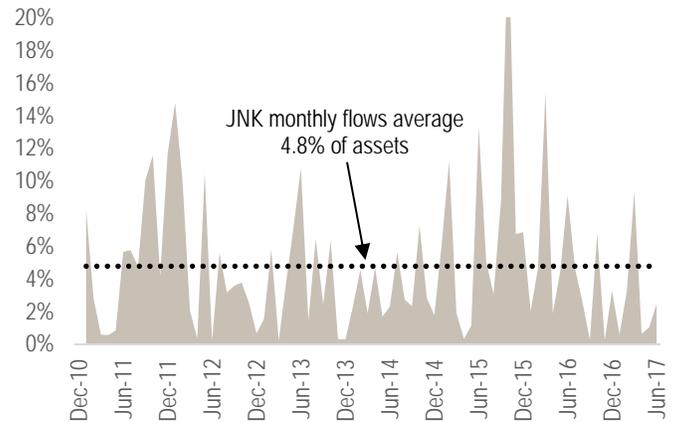


Chart 13: JNK ETF Monthly Fund Flows as a % of Assets
As of 6/30/17



Deviations from NAV

In most environments, the ETFs’ market price is reasonably in line with its NAV due to the redemption/new issue process facilitated by the AP. This can break down in highly volatile and/or periods of stress. Chart 14 shows the market price’s premium/discount historically using month end data. Chart 15 isolates the boxed period from Chart 14, showing the daily premium/discount for the period of 9/1/08 through 3/30/09. APs may step away from market making functions in highly volatile markets because they are concerned about dried up liquidity in the secondary market. Also, many bonds in the high yield market do not trade on any given day, so the last transaction may not be indicative of the true market value when markets are excessively volatile—the true market value can be difficult to ascertain.

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Chart 14: JNK & HYG Premium/Discount to NAV
As of 6/30/17, Monthly data

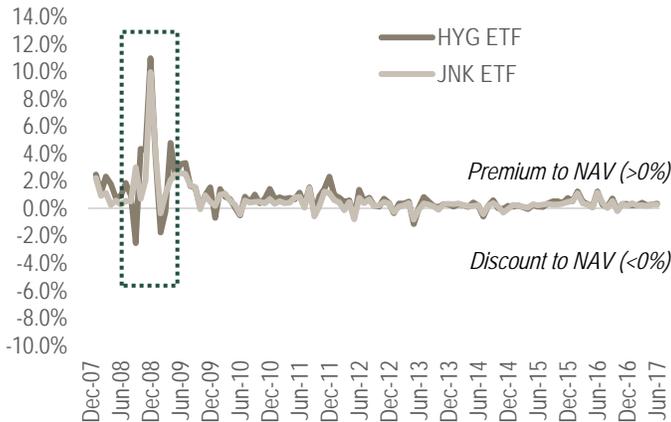
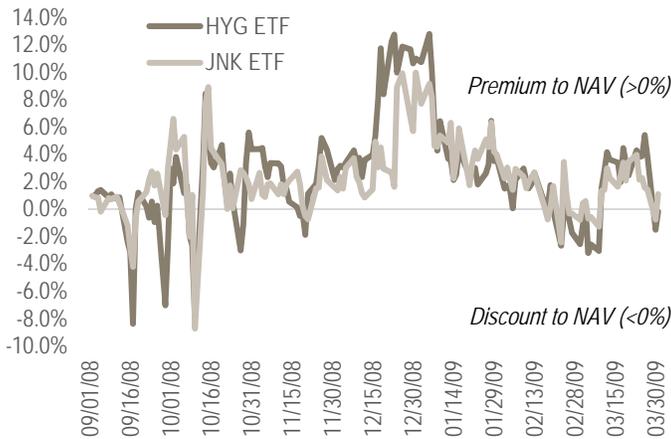


Chart 15: JNK & HYG Premium/Discount to NAV
9/1/2008 – 3/30/2009, Daily data



If an investor had perfect foresight, he could have invested at an 8% discount to NAV and exited at a 12% premium to NAV, earning 20% even if the NAV remained unchanged. Conversely, for an investor with perfectly flawed foresight, he could have invested at a large premium and sold at a large discount locking in a poor return even if the NAV remained unchanged. Charts 16 and 17 show the year by year returns for the two ETFs relative to their respective benchmarks. The dramatic underperformance in 2009 for both funds was in no small part due to the large premiums to NAV that they traded at when the year began.

Chart 16: HYG vs. Benchmark Calendar Year Performance
As of 6/30/2017

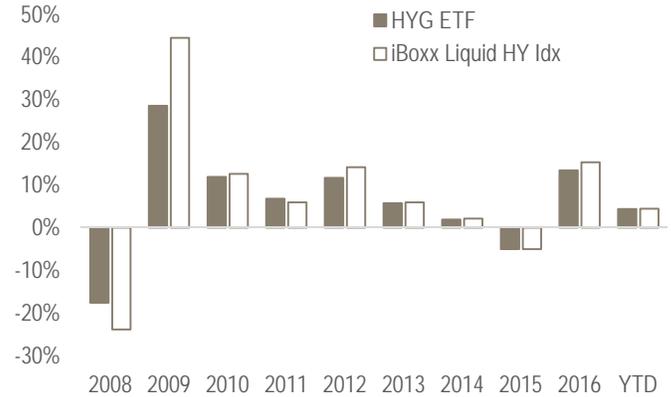
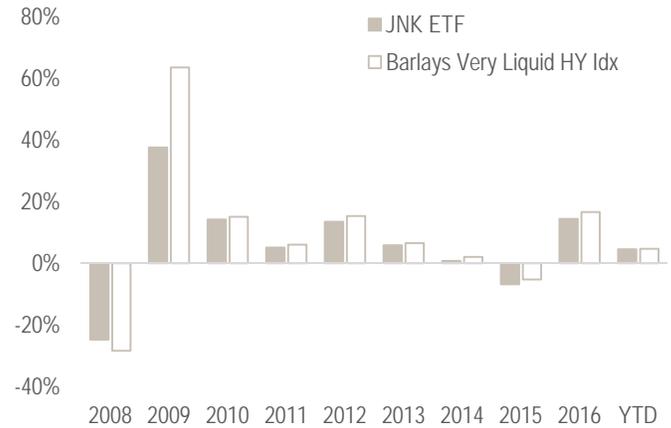


Chart 17: JNK vs. Benchmark Calendar Year Performance
As of 6/30/2017



While the challenges of high yield ETFs are pervasive, they pale in comparison to the difficulties of bank loan ETFs. At least with high yield bonds the assets (bonds) and the liabilities (ETF shares) have the same settlement cycle, so redemptions can be accommodated simultaneously with cash sales. Banks loans, however, are subject to a 7-10 day settlement period, or approximately 3x longer than the ETF share settlement. This results in a structural liquidity mismatch that has the potential to result in redemption problems reminiscent of the auction rate preferred/leverage closed end fund market that occurred during the global financial crisis.

Conclusion

The high yield market has several traits that make it ill-suited for an exchange traded fund. Accordingly, the most popular high yield ETFs have lagged the broad benchmark by wide margins. HYG tracks an index that has underperformed the broad benchmark and while JNK tracks an index that has kept pace,

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the fund itself has not. Both suffer from the same pitfalls of investing in high yield ETFs. To maintain adequate liquidity, the ETFs omit what we believe to be the most compelling and opportunistic segment of the market: small and mid cap credits. Further, liquidity for large cap high yield credits is often not sufficient to absorb the massive fund flows that can occur during times of stress—this creates challenges/costs that are ultimately borne by the investor.

Hotchkis & Wiley High Yield Research

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All investments contain risk and may lose value. Investments in debt securities typically decrease in value when interest rates rise. This risk is usually greater for longer-term debt securities. Investment by the fund in lower-rated and non-rated securities presents a greater risk of loss to principal and interest than higher-rated securities. The Fund may invest in derivative securities, which derive their performance from the performance of an underlying asset, index, interest rate or currency exchange rate. Derivatives can be volatile and involve various types and degrees of risks. Depending on the characteristics of the particular derivative, it could become illiquid. Investment in Asset Backed and Mortgage Backed Securities include additional risks that investors should be aware of such as credit risk, prepayment risk, possible illiquidity and default, as well as increased susceptibility to adverse economic developments. The Fund may invest in foreign as well as emerging markets which involve greater volatility and political, economic and currency risks and differences in accounting methods.

The investment objective of HYG seeks to track the investment results of an index composed of U.S. dollar-denominated, high yield corporate bonds. The investment objective of JNK seeks to provide investment results that, before fees and expenses, correspond generally to the price and yield performance of an index that tracks the U.S. high yield corporate bond market. The gross expense ratio of HYG is 0.49% while the gross expense ratio of JNK is 0.40%. Please consult a tax professional for information on your particular situation. All investments involve risks.

Data reference to "High Yield Market" refers to the BofA Merrill Lynch US High Yield Index. Chart 1: ICI; Charts 2-3, 5-11, 14-16: Bloomberg; Charts 4 & 17: Bloomberg, Barclays; and Charts 12-13: Bloomberg, ETF.com. Table A: BofAML, Markit iBoxx, Bloomberg/Barclays. **Diversification does not assure a profit or protect against loss in a declining market.**

The BofA Merrill Lynch US High Yield Index tracks the performance of below investment grade, but not in default, US dollar-denominated corporate bonds publicly issued in the US domestic market, and includes issues with a credit rating of BBB or below, as rated by Moody's and S&P. The index does not reflect the payment of transaction costs, fees and expenses associated with an

investment in the Fund. The BofA Merrill Lynch U.S. Large Cap High Yield Index and BofA Merrill Lynch U.S. Small Cap High Yield Index track securities by market cap of the BofA Merrill Lynch U.S. Cash Pay High Yield Index which represents below investment grade US dollar denominated bonds making coupon payments in cash and that have at least \$100 million in outstanding issuance. The Bloomberg Barclays US High Yield Very Liquid Index measures the performance of publicly issued US dollar denominated high yield corporate bonds with above-average liquidity. The Markit iBoxx Liquid High Yield Index consists of liquid USD high yield bonds, selected to provide a balanced representation of the broad USD high yield corporate bond universe. It is not possible to invest directly in an index.

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Spread is the percentage point difference between yields of various classes of bonds compared to treasury bonds. Auction rate is the interest rate that a security will pay during a specific period as determined by an auction. The SPDR® Series Trust Funds are distributed by State Street Global Markets, LLC. The iShares Funds are distributed by Blackrock Investments, LLC.

Investments in ETFs are subject to additional risks that do not apply to conventional mutual funds, including the risks that the market price of the shares may trade at a discount to its net asset value ("NAV"), an active

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