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Passive Aggression

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- **We examine the implications of the shift from active to passive management for liquidity in the investment grade and high yield markets.** We estimate a modest 1.5-3.0% decline in bond turnover directly attributable to assets transitioning from active to passive vehicles, but a much more significant indirect effect in high yield from institutional usage of ETFs.
- **Growing passive assets under management (AUM) in high yield reflect not only true retail investors who own the funds as part of an investment strategy, but also institutional investors who own them primarily for liquidity management.** True retail investors transitioning from active to passive are not a meaningful drag on high yield liquidity, but we believe that institutional ownership leads to a much larger decline in bond turnover. We estimate that this indirect effect reduced high yield bond turnover by 20% in 2016, although it could have been as low as 10% or as high as 30%. This is significant relative to the approximately 140% turnover of high yield and could account for a substantial portion of the decline in turnover since the crisis. Investment grade is not affected by this indirect drag on liquidity, as institutional investors rarely use passive instruments to manage fund flows.
- **We see limited room for further declines in turnover from shifts into passive strategies.** Passive penetration remains low in high yield and could increase, as evidenced by an increasing variety or products, including rates-hedged high yield ETFs, fallen angel ETFs, and target maturity ETFs. However, we do not believe that high yield passive penetration will exceed that in investment grade. Even in that scenario, the turnover implications are limited.
- **The size of secondary high yield ETF volumes is striking.** The four largest high yield ETFs averaged secondary volumes of $1.6bn per day, on only $37bn of AUM. This compares with $12bn of daily volume in the high yield bond market (using TRACE data), which has a size of $1.3trn. Our analysis of retail flows suggests that only a small fraction of these flows can be attributed to retail. At the same time, the flows exceed the liquidity needs of fund managers by at least two-to-one, indicating that other institutions must be responsible for much of the secondary activity. We believe that some of this comes at the expense of secondary bond trading, but given what we know about the liquidity needs of the different owners of high yield, we believe the use of ETFs to substitute away from secondary bond trades is likely nearing saturation.

FIGURE 1
Secondary Volumes in High Yield ETFs Are Striking Relative to Their Size

	Ownership of HY	Annual Secondary Market Turnover
High Yield ETFs	3%	10.7x
Other Owners of High Yield	97%	1.4x

Source: Bloomberg, MarketAxess, Barclays Research

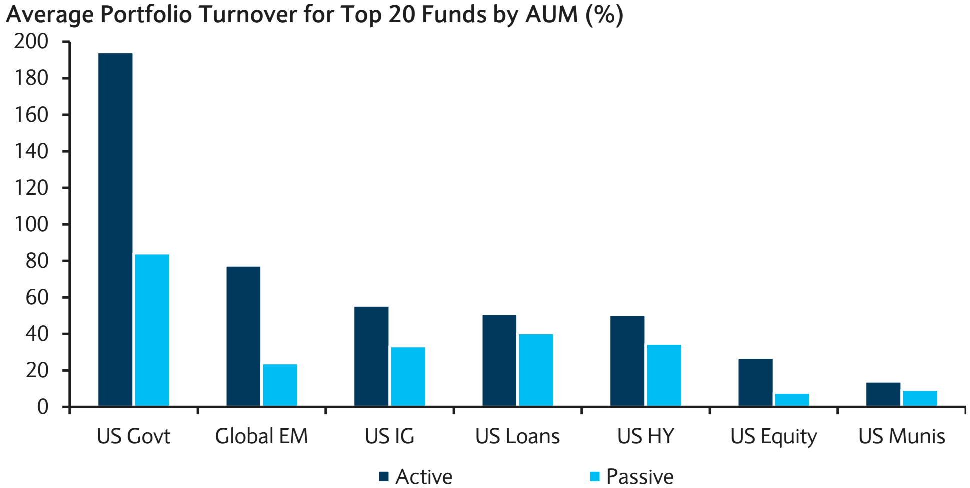
The Ascent of Passive Management

The shift from active to passive management has been a long-simmering issue in financial markets. It has obvious implications for asset managers, who face heightened fee compression and competition for AUM as money flows into passive strategies. We believe it also has implications for the underlying financial markets, along two separate but related dimensions. First, as money shifts into passive strategies, the remaining active managers should face less competition, improving their chances of outperforming their benchmarks. If true, this would help establish an equilibrium split between the two investment styles. On the other hand, passive investing generally involves lower turnover (Figure 2), and an increasing share of passive therefore likely reduces available liquidity. If this second effect dominates, it would limit the ability of active managers to capture opportunities for outperformance; it could even make the shift into passive self-reinforcing.

We quantify this second effect of the shift from active to passive in the corporate credit markets. There are different implications for investment grade than for high yield. We estimate that the direct effect of the transition from active to passive is a 2.8% drop in investment grade turnover, compared with 1.7% in high yield. Passive has had a larger effect on turnover in investment grade owing primarily to higher penetration of passive funds in that market. That said, the turnover implications are limited because retail has a small presence in the investment grade market and, more important, because passive instruments are not typically used by institutional funds[1] to manage liquidity needs.

FIGURE 2

Average Portfolio Turnover for Top 20 Funds by AUM (%)



Source: Bloomberg

In high yield, the use of passive vehicles by fund managers to manage flows leads to significant indirect effects on turnover. We estimate that this behavior reduced annual turnover by 20% in 2016. The liquidity implications of reduced turnover are likely more severe for high yield, where some securities are already difficult to trade, and institutional managers have taken steps to manage liquidity risk more actively.

State of Passive Strategies across Asset Classes

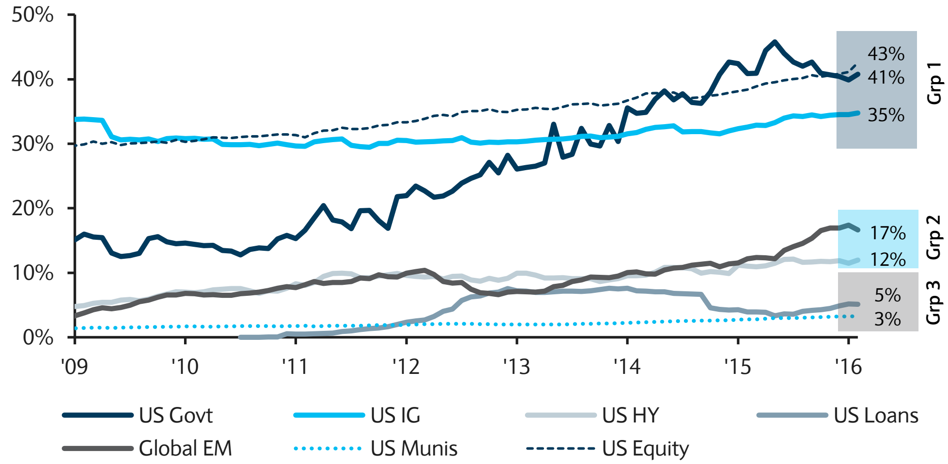
The flows into passive strategies have not been uniform across asset classes (Figure 3). In equities, US government, and US investment grade, passive strategies have a significant share of retail assets. While already over 40%, the passive share continues to increase in both equity and government funds. In loans and municipals, the passive share has remained small, likely

[1] We use the term “institutional” to distinguish between individuals and professional investment managers. Thus, “institutional” includes not only pensions, endowments, and foundations, but also fund managers whose end users may be retail investors.

for structural reasons. US high yield and emerging markets currently sit between those two extremes. They have seen some growth in passive strategies since the onset of the credit crisis, with the introduction of ETFs a likely catalyst. However, the shift has been small, and we may be overstating the extent of true retail passive investing, as institutional investors use ETFs to help manage cash needs. Clearly, in absolute terms, high yield has the potential for a substantial further shift into passive, given the gap to the high penetration asset classes mentioned above.

FIGURE 3

Share of Mutual Fund and ETF Assets in Passively Managed Vehicles



Note: Asset class breakdown based on EPFR classification. Source: EPFR

The Effect of Passive on Investment Grade Turnover

There are three components to this calculation: the ownership share of mutual funds in the investment grade market, the share of passive in the funds universe, and the difference in turnover between active and passive funds.

1. Ownership of Mutual Funds

We estimate the ownership share of each of the major holders of corporate bonds each year in our *Outlook*. The most recent estimate was a 16-18% share for mutual funds, a slight increase from previous years. This is computed by summing the investment grade corporate holdings of the investment grade funds database from EPFR. This category is really investment grade core funds, and many of those included own more than just corporates – the investment grade aggregate fund is a common benchmark, and it also includes Treasuries and mortgages. Therefore, we aggregate the underlying corporate holdings at the fund level to arrive at our estimate.

2. Passive Share

Next, we estimate the share of passive among this group, at 37%. The high passive penetration rate reflects the relatively mature nature of the passive industry in investment grade; the passive share has also been quite stable over the post-crisis period. Again, this analysis goes beyond the EPFR investment grade classification, which includes non-corporates, to specifically reflect the share of investment grade corporate bonds held in passive vehicles. We arrive at this estimate using the active or passive categorization at the fund level and then aggregate up the corporate holdings for that fund.[2]

[2] In both investment grade and high yield, we identified a small group of funds that are categorized as active, but have management fees and turnover statistics that are more akin to passive. While the prospectuses for these funds confirm that they can exercise discretion similar to active managers, we believe the funds are effectively passive. As a result, we consider funds with management fees less than 30bp and turnover less than 40% as passive.

3. Turnover

Finally, we compare turnover for active and passive funds. These statistics are reported at the fund level. As mentioned above, investment grade core funds often include more than just corporate bonds, and assets such as Treasuries would likely have higher turnover than corporate bonds. Since we cannot apportion turnover by security type, we estimate the corporate turnover by looking only at dedicated corporate funds.[3] We then assume that the broader funds have turnover in their corporate positions similar to the dedicated funds.[4]

In addition, the turnover rates reported are calculated as the percent of the portfolio that is replaced in a given year. For example, a fund that sells 50% of its bonds and replaces them through market purchases would report a turnover of 50%. However, the associated trading volume could be as high as 100% (it could be lower than 100% if some of the purchases were done through the primary market). Therefore, we need to gross up the reported turnover statistics to translate them into secondary volumes. We double the reported numbers, recognizing that this is likely biased slightly upward (although this, too, is likely mitigated by our focus on the difference between active and passive funds, which participate in the primary market to a similar extent).

We estimate that active funds trade 112% of their AUM per year and passive funds trade 67%. In other words, a shift from active to passive reduces secondary volume by 45%.

Effect of Passive on Turnover

We estimate the total effect of passive management on volumes in investment grade corporate bonds as the product of ownership, passive penetration, and the difference in turnover (Figure 4). The result of 2.8% is relatively small for an asset class with approximately 70% annual turnover. This is despite the high level of passive penetration, which is balanced by the relatively low ownership of retail.

FIGURE 4

Estimating the Direct Effect of a Shift to Passive on Investment Grade Bond Turnover

Source: EPFR, Bloomberg, Barclays Researcht

Other Considerations

It is possible that our retail category misses some passive vehicles – such as third-party money managed by institutional managers that is not in fund form. This would show up in our "other" category of ownership, which is roughly 20% of the market. Even if the majority of this category is third-party money (and assuming a similar split between active and passive), we would estimate the total effect of passive at around 5% in turnover terms.

[3] We classify investment grade core funds as corporate funds if their portfolios are at least 75% corporate, based on Bloomberg data.

[4] Many "Agg" funds are sub-managed by different teams by product type (ie, Treasuries, securitized, and corporates).

While more meaningful, that is still a small effect relative to the size of the decline in investment grade turnover.

The Effect of Passive on High Yield Turnover

Our first pass at high yield is to run the same calculation:

- Retail fund ownership, at approximately 35%, is higher than in investment grade.
- The passive share of funds is 15% – smaller than investment grade and mostly in the form of ETFs. The vast majority of the growth in passive has come since the credit crisis.
- The active-passive turnover difference is 32%. We estimate active turnover at 102% and passive turnover at 70%.

We combine these in the same fashion as above in Figure 5. The result is only modestly higher than in investment grade, at 1.7%. The direct effect remains limited because the lower passive share more than offsets the higher degree of retail ownership.

FIGURE 5
Estimating the Direct Effect of a Shift to Passive on High Yield Bond Turnover

Source: EPFR, Bloomberg, Barclays Research

However, the effect of passive on high yield turnover is more complicated than this. We believe that a substantial portion of the assets reported as passive does not represent true retail passive investing, in contrast to investment grade. Instead, it represents institutional managers using passive vehicles, including ETFs, to manage their inflows and outflows. Managers trade ETFs to fund outflows or invest inflows, and it is likely that at least some of these flows replace trades in the secondary corporate bond market.

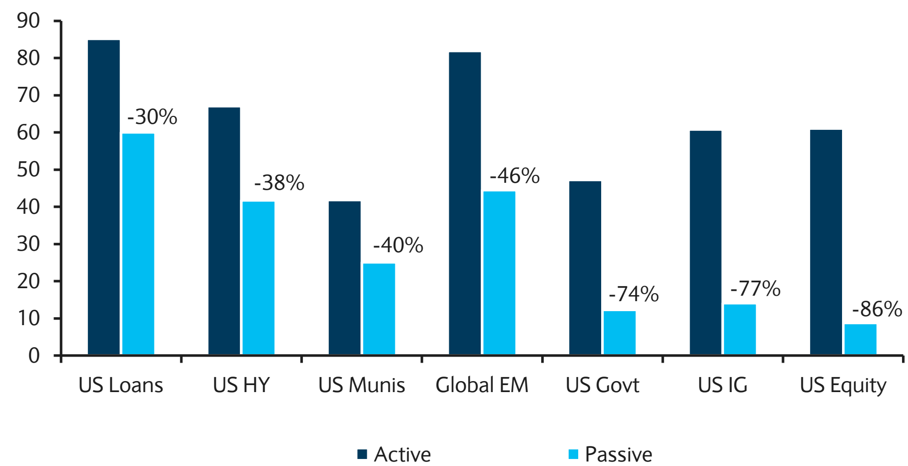
In *Using ETFs to Mitigate Fund Flows*, we showed that inflows and outflows are not perfectly correlated across funds. On average, 54% of fund flows are "diversifiable," meaning that portfolio managers can reliably use ETFs instead of trading bonds to satisfy a significant share of their own fund flows. Indeed, an analysis of the magnitude of fund flows at the fund level suggests that approximately 25% of the outstanding float in high yield ETFs could be held by portfolio managers with daily liquidity needs.

Several pieces of evidence support this view (alongside anecdotal evidence from money managers and ETF traders). The first is the high concentration of assets among passive high yield funds. The top three passive funds represent 68% of passive high yield assets, while the top three passive government and equity funds represent 39% and 16% of passive assets, respectively. All of the large passive funds in high yield are ETFs, which have the benefit of trading in the secondary market. High concentration leads to larger secondary flows, which is useful for institutional managers trying to use ETFs to manage inflows and outflows. Without sufficient secondary trading, selling of shares is more likely to lead to share destruction, which relies on the liquidity of the underlying market. ETFs mitigate liquidity needs only to the extent that their secondary trading volumes are large relative to primary volumes (ie, share creation and redemption volumes). A large number of thinly traded ETFs would not be useful to institutional managers. Indeed, the largest four high yield ETFs have secondary volumes of 4-8x primary volumes.

The second piece of evidence is price. The active-passive cost difference for high yield is much lower than for asset classes with significant passive penetration (Figure 6). In fact, it is larger only than loans, where the passive share is de minimis. One of the draws of passive for retail investors is lower fees, and we would expect cost savings to be a key selling point for funds targeted at those investors. Given the high concentration, there appears to be room for funds to compete for retail share with lower fees. In contrast, an institution looking to ETFs to help manage liquidity is unlikely to be interested in a new, lower cost fund that has less secondary liquidity.

FIGURE 6

Average Expense Ratio for Top 20 Funds by AUM (bp)



Source: Bloomberg

Finally, the largest high yield ETFs are benchmarked to either a liquid sub-index or a short duration sub-index, with very little style diversity. The close link to the benchmark is important for institutions looking to minimize tracking error, but less important for retail-oriented funds, which we would expect to target specific segments of the market. Although there has been some recent movement on this front (more on this below), the largest funds are surprisingly similar. The only differentiation has been the few funds focused on short-duration assets, which is particularly telling, given that short-duration bonds are commonly used as cash substitutes by high yield portfolio managers with daily liquidity needs.

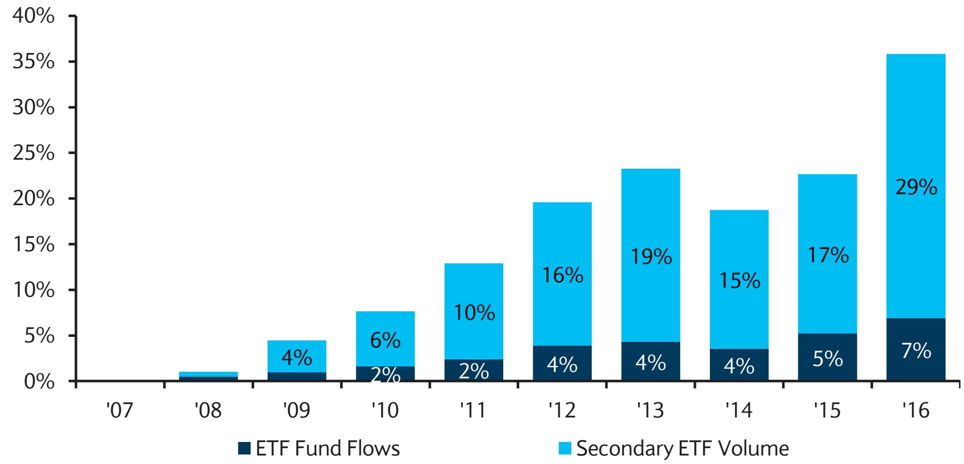
Estimating the Indirect Effect on Turnover of Institutions Using ETFs

The passive share of high yield fund AUM can therefore be thought of as comprising two different types of owners: retail investors that own ETFs as part of their investment strategy and institutions that use them primarily for liquidity management. Secondary flows from the first group are not replacing corporate bond trading – they are similar to gross flows for an open-end mutual fund, which are netted at NAV. Secondary flows from institutions, however, may be replacing trades in the underlying corporate bonds.

This is an important differentiation, because the overall flows for high yield ETFs are large relative to the size of the high yield market, despite the relatively small size of the funds. Daily TRACE volumes in high yield bonds averaged $12bn last year. Secondary trading in the four largest high yield ETFs, which represent only about 3% of total high yield assets, was $1.6bn daily in 2016. The contrast in turnover is striking: we estimate annual turnover of about 1.4x for high yield, while the ETF numbers imply annual turnover of 10.7x. Secondary ETF volumes are so significant that, if they were fully substituting away from secondary corporate activity, the implications for bond turnover would be substantial. Figure 7 divides total secondary ETF volume by the size of the high yield market to convert those volumes into a turnover-equivalent measure.

FIGURE 7

ETF Volumes Divided by High Yield Par Outstanding



Note: ETF flows are subtracted from secondary ETF volumes. Source: Bloomberg

In order to understand the size of the ETF volumes, we estimate the potential contribution from a few possible sources of activity. First, we estimate how much secondary volume could be coming from retail owners of ETFs. For the overall retail fund universe, average daily gross fund flows have been $731mn over the past 15 months. ETFs represent about 9% of retail, which would indicate that ETF gross flows from that investor base would be at most $65mn, per day (assuming that retail directly owned 100% of the ETFs outstanding, which we know not to be the case). Even if retail owners were more likely to trade ETFs than buy or sell open fund vehicles – which sounds sensible given the intraday tradability of ETFs – we think it is unlikely that retail owners make up more than 10% of total secondary volumes in ETFs.

That leaves institutional owners to make up the remainder of the secondary flows. We can estimate the possible trading from open-end mutual funds, starting with the gross flows statistic cited above. Even if retail fund managers exclusively used ETFs to manage flows, this activity would account for about 46% of secondary ETF volumes. This is surely an overestimate of those institutions' activity, for two reasons. First, only about 54% of those flows are diversifiable, meaning that ETFs cannot reasonably be used to satisfy every inflow and outflow. Second, these managers do not exclusively use ETFs for liquidity management – they also use other portfolio products, such as CDX, and liquid bonds. Unless fund flow volatility picks up materially, we believe that any incremental liquidity effect of retail funds using ETFs would likely be small.

Other institutions (eg, institutional asset management mandates, pensions, endowments, foundations, and hedge funds) must therefore be driving a significant share of secondary

ETF volume. Surveys have indeed shown[5] that these institutions have consistently increased their use of fixed income ETFs in recent years. At least some of this activity likely comes at the expense of bond trading. Some is also likely from trading that is opportunistic, given the high liquidity of high yield ETFs, such that participants are taking shorter-term views on high yield that would not otherwise be implemented in bonds. Given the high daily ETF volumes and the limited proportion that could be assigned to investors with the most demand for liquidity, we believe the negative effect of passive management on high yield turnover is likely nearing saturation.

Could Passive Have an Even Larger Effect in the Future?

Although the indirect channel discussed above is responsible for most of the effects of passive strategies on turnover today, we believe there is relatively little room for it to grow. Institutional holdings are likely near saturation, based on our analysis of fund-level flow volatility – absent a change in the nature of fund flows.

However, the direct channel could grow, given the small share of high yield passive investments. The implications for high yield liquidity could increase if the share of passive management becomes more akin to that of other high-penetration asset classes. There are signs of potential growth in retail-oriented passive, as evidenced by a growing variety of products, including rates-hedged high yield ETFs, fallen angel ETFs, and target maturity ETFs, which are clearly intended to be used as investment strategies rather than liquidity vehicles. Sub-indices can be challenging to track because of low liquidity, but funds can alleviate this problem by judiciously choosing sub-indices with lower turnover, such as specific maturities or fallen angels.

To determine the likelihood of meaningful gains in passive share, we compare high yield with other asset classes along two dimensions that we believe contribute to the attractiveness of passive strategies:

- The potential for active alpha generation. The more sources of systematic and idiosyncratic risk an asset class is exposed to, the more avenues an active manager has to outperform. We stack up high yield versus the high-penetration asset classes.
- The existence of viable, investable passive instruments with limited tracking error and low transaction costs. We assess the potential attractiveness of passive high yield investments to retail investors.

Potential Sources of Alpha

The promise of outperforming a benchmark is increasingly plausible when active managers have many demonstrable paths to doing so. However, asset classes are not created equally with respect to alpha opportunities. Asset classes have different sources of systemic or idiosyncratic risk, and those with more sources of risk are more suitable for active management.

We assess the potential for active outperformance, incorporating dimensions of risk and liquidity and market structure (Figure 8). We score market structure and liquidity on a scale of one to five, with higher numbers representing higher liquidity and ease of settlement. A higher score in this section makes a passive instrument easier to create. We score potential sources of alpha, also from one to five. Higher scores in these areas improve the potential for alpha in that asset class, increasing the “active score.” We then compute an overall ratio as the total score for alpha divided by the total score for market structure and liquidity.

[5] See *Institutional Investment in ETFs: Versatility Fuels Growth*, Greenwich Associates Q1 2016.

This approach is admittedly arbitrary, but it is telling that the asset classes with the highest scores have thus far had lower passive penetration, and vice versa, suggesting that market structure, liquidity, and opportunities for alpha are key determinants in the tug of war between active and passive strategies. For example, the US government asset class has a low active score, with very high liquidity and few sources of alpha, making it an ideal target for passive management.[6] US equities have a few more sources of alpha, but they are also quite liquid, and some of the most commonly used equity indices have a limited number of securities relative to fixed income indices. At the other extreme, US loans and municipals have high active scores, with both structural impediments to passive management and significant sources of potential alpha.

FIGURE 8

Asset Class Scores for Liquidity and Sources of Alpha (1 = Low, 5 = High)

	US Govt	US Equities	US IG	US HY	Global EM	US Loans	US Munis
Market Structure and Liquidity							
Liquidity	5	4	3	3	2	3	1
East of Settlement	5	5	5	5	5	2	5
Exchange/OTC	OTC	Exch	OTC	OTC	OTC	OTC	OTC
Systematic Alpha							
Market Risk	1	5	2	4	5	4	2
Rates/Term Risk	5	1	4	2	4	1	5
New Issue	1	2	4	4	4	4	3
Idiosyncratic Alpha							
Dispersion of Security Returns	1	5	3	5	5	4	2
Number of Securities	1	3	4	3	3	2	5
Number of Issuers	1	3	2	2	2	2	5
Number of Sectors	1	3	3	3	5	3	5
Security Features[1]	1	1	3	5	3	5	5
Active Score	1.2	2.6	3.1	3.5	4.4	5.0	5.3

Note: Security features include collateral, seniority, covenants, and embedded options. Source: Barclays Research

The active score for US high yield is in the middle; it appears somewhat more amenable to active management than equities and investment grade credit, but less so than other asset classes with a low passive share. This speaks to the possibility of continued gains in passive – certainly, this scenario does not appear to be precluded by the nature of the asset class, despite the high level of alpha potential.

The Viability of Passive High Yield

In liquid asset classes, full index replication is a viable passive strategy. However, there are enough small issues in high yield with irregular trading that implementing this strategy is not practical. Instead, passive high yield funds are benchmarked against liquid sub-indices, such as the Bloomberg Barclays US HY Very Liquid Index (VLI). These sub-indices are almost liquid enough to replicate, but the funds still utilize sampling: US high yield ETFs typically own about 90% of the members of their liquid sub-index benchmarks. This level of sampling limits tracking error while allowing passive managers to avoid incurring excessive transaction costs from being forced to trade the least liquid securities.

[6] The gap to the other asset classes is likely overstated somewhat, as government funds likely have sources of alpha (eg, though securities lending) that we do not account for.

The potential downside of using a sub-index is if the characteristics of the sub-index differ in some material way from the broader index, such that the passive funds are structurally set up to underperform active funds that can invest in the full universe. While this was true to a certain extent at one time, changes to the way the VLI and similar indices are constructed have limited the differences (Figure 9).

FIGURE 9

Comparison of US High Yield and US HY Very Liquid Indices

	Yield (%)	OAS (bp)	Duration (yrs)	Average Rating	Liquidity Cost Score (%)
US High Yield Index	5.75	380	4.02	B1/B2	1.1
US HY Very Liquid Index (VLI)	5.65	363	4.01	B1/B2	0.9

Source: Bloomberg

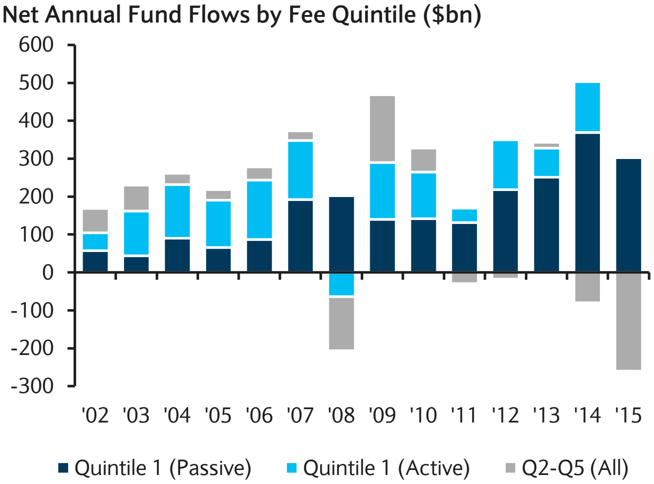
We do not believe that the VLI is likely to systematically underperform or outperform the overall high yield market, and the distribution of liquidity in the underlying bonds is sufficient for managers to track the performance of the sub-index closely enough. As a result, we do not believe that viability poses an impediment to gains in passive share.

US high yield does have characteristics that make it amenable to passive management. Furthermore, a liquid sub-index can be a viable proxy for the overall market, giving passive managers a solid foothold. While the asset class has good potential sources of alpha, its "active score" is only marginally better than that of investment grade, where 37% of funds are passively managed, compared with 15% in high yield, apparently leaving considerable room for passive strategies to grow.

More recent products stand out because of their much lower costs and focus on a broad-market index rather than a liquid sub-index. Those choices imply that these products are meant for cost-sensitive retail investors rather than liquidity-sensitive institutional managers. Lower costs are indeed a key feature for retail investors. Morningstar data show that funds in the lowest fee quintile have attracted the lion's share of inflows for a long time and that the other 80% of funds have, in aggregate, experienced net outflows over the past decade (Figure 10). This trend has driven continued fee compression across the entire fund landscape. The average management fee for active funds in 2000 was 101bp, according to Morningstar; that average had dropped to 78bp by the end of 2015. Even passive funds are responding to the demand for lower costs, with the average fee dropping from 26bp to 18bp over the same period (Figure 11).

FIGURE 10

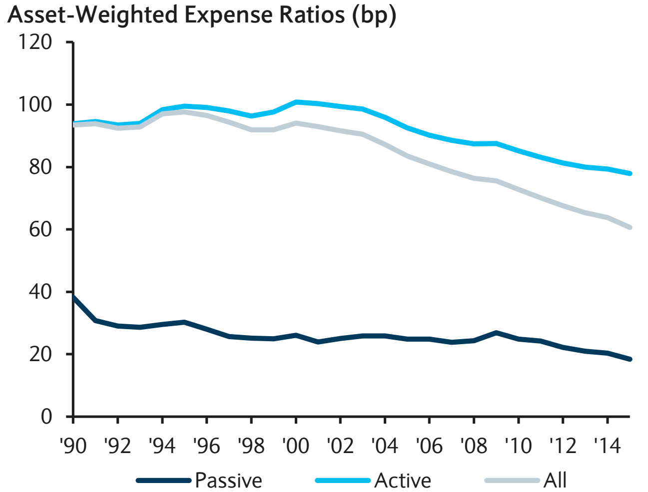
Net Annual Fund Flows by Fee Quintile ($bn)



Note: Data as of December 31, 2015. Source: Morningstar

FIGURE 11

Asset-Weighted Expense Ratios (bp)



Source: Morningstar

The Future of Passive High Yield

We believe not only that passive is viable in high yield, but also that its penetration rate is likely to increase. Assuming that half of the current 15% passive share actually represents institutions using the ETFs for their liquidity and simplicity, the true retail passive share of high yield could increase about 29% before it matches investment grade, where passive is almost entirely a true retail product; that scenario would put the passive share of high yield at about 45%. We see that as a cap, given that high yield passive should be no more viable than investment grade passive. However, the associated decline in high yield turnover under even a 45% passive penetration rate is only an additional 3.6%. As shown above, most of the adverse effects of passive management on high yield liquidity do not come from true retail substitution, but rather from institutional usage.

Thus, understanding the growth in institutional usage is the key to determining potential future liquidity impairment. Retail funds already use ETFs for liquidity management, and we believe that barring a meaningful change in fund flow volatility, that channel may be saturated. That said, institutions such as pensions and endowments could certainly continue to increase their usage, some of which would substitute for bond trading. Importantly, this continued shift could lead to a self-reinforcing decline in high yield liquidity. More passive strategies should theoretically make it easier for active managers to outperform as competition declines. However, liquidity also deteriorates with more passive investment, making it more difficult to convert alpha opportunities into actual outperformance. If the latter effect dominates, the shift to passive could become self-reinforcing. We believe active investors will be grappling with this trade-off for the foreseeable future, particularly in years of low idiosyncratic volatility.

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