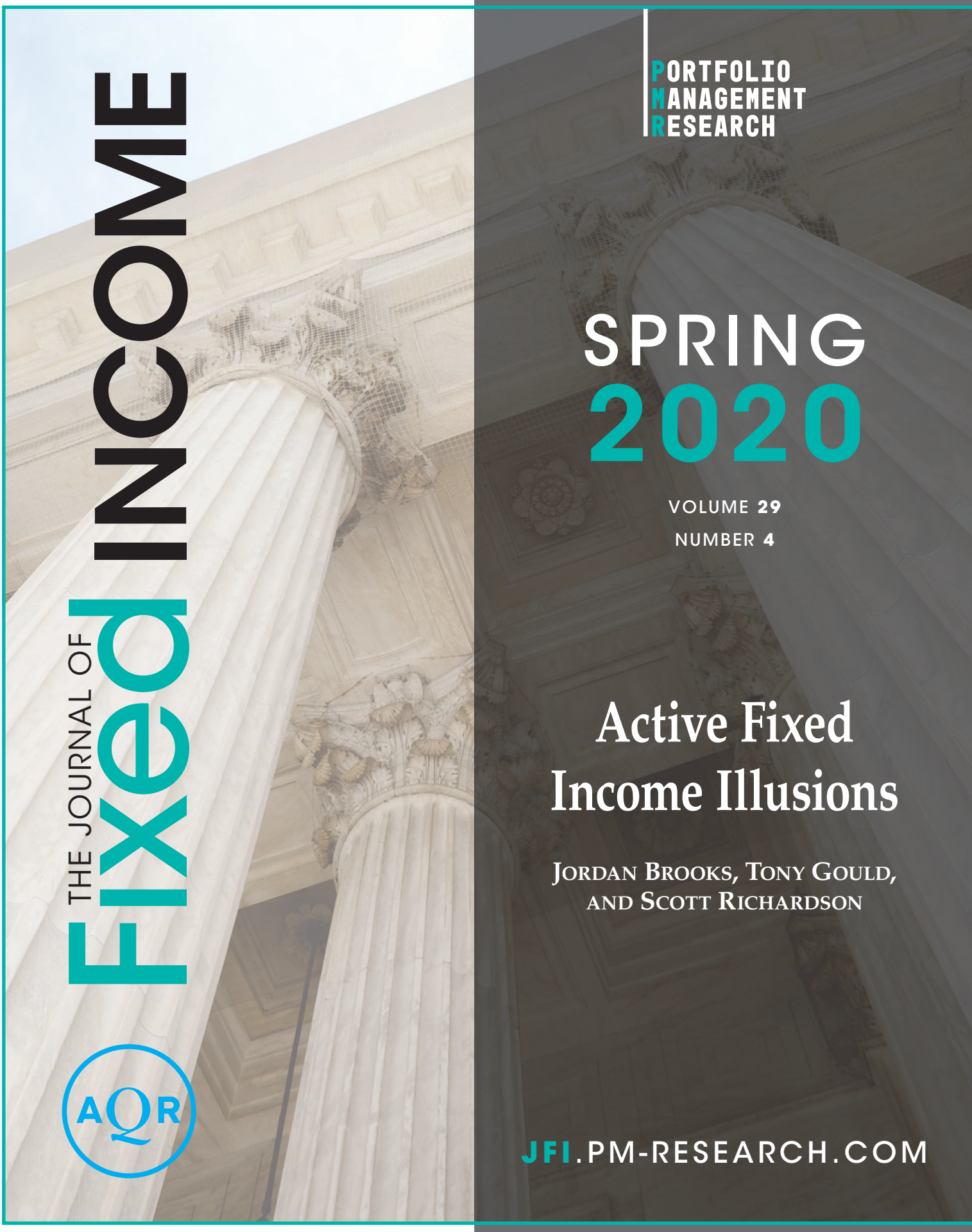

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Active Fixed Income Illusions

JORDAN BROOKS, TONY GOULD, AND SCOTT RICHARDSON

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Active Fixed Income Illusions

Jordan Brooks, Tony Gould, and Scott Richardson

Jordan Brooks
is a principal at AQR Capital Management LLC in Greenwich, CT.
jordan.brooks@aqr.com

Tony Gould
is a managing director at AQR Capital Management LLC in Greenwich, CT.
tony.gould@aqr.com

Scott Richardson
is a principal at AQR Capital Management LLC in Greenwich, CT and a professor at the London Business School in London, UK.
scott.richardson@aqr.com

KEY FINDINGS

- Across US Aggregate, Global Aggregate, and Unconstrained categories, we find that a significant portion of fixed income manager outperformance can be explained by passive exposure to credit risk.
- Credit exposure meaningfully reduces the diversification benefit of fixed income. During the worst 10 quarters for equities, active fixed income strategies have underperformed their benchmarks, at times significantly.
- After allowing for persistent exposure to credit and to other traditional risk premia, active fixed income managers generate virtually no alpha. This result holds both for managers on average in each category and for individual managers.

ABSTRACT: *Over the past 20 years, active fixed income (FI) managers have tended to deliver returns in excess of their benchmarks. This has generated a popular notion that active investing in fixed income markets is "easy." The aim here is to assess the veracity of that notion. Across a broad set of popular active FI categories, this article finds that passive exposures to traditional risk premia (especially exposure to credit risk) explain the majority of FI manager active returns. The resulting implication is that, contrary to popular belief, traditional discretionary active FI strategies offer little in the way of true alpha and that traditional active FI strategies may significantly reduce the strategic diversification benefit of FI as an asset class.*

TOPICS: ***Fixed income and structured finance, performance measurement, fixed-income portfolio management****

*All articles are now categorized by topics and subtopics. **View at PM-Research.com.**

Fixed income (FI) is one of the main holdings in an investor's strategic allocation and represents an important diversifier to equity risk. FI markets are enormous and offer the potential for multiple sources of diversifying returns to asset owner portfolios. As of September 30, 2019, the Bloomberg Barclays Global Aggregate Index contained investment grade rated debt amounting to $56 trillion. Within this broad index rest a variety of bonds issued by governments, government-related entities, corporations, and asset-backed securities. In addition to these components, there are other asset types in the FI market outside of the Global Aggregate, including inflation-linked bonds, tax-exempt municipal bonds, floating rate debt, HY debt, bank loans, and so on.

Prior research has shown a higher risk-adjusted active return (information ratio) for

FI managers than for the average active US large-cap equity manager (see e.g., Baz et al. 2017). This result has led some to suggest that active investing in FI may somehow be "easier" than other asset classes. Reasons cited include a perception of greater inefficiency in FI markets (e.g., non-profit-seeking capital market participants), ad hoc benchmark rules and associated bad selling practices from typical FI investors (e.g., forced selling of downgraded issuers or shorter dated bonds that fall outside of the indexes and the absence of primary market concessions from the reported index returns), and the myriad choices available to FI managers to express investment views both within and outside of the benchmark.

In this article, we undertake a critical evaluation of a broad set of active FI managers to assess whether active FI investing is indeed "easy." We focus on the active performance of FI managers across three broad categories:

(i) US Aggregate benchmarked managers (this category includes traditional Core as well as Core Plus managers).
(ii) Global Aggregate benchmarked managers (this category includes traditional Global Core as well as Global Core Plus managers).
(iii) Unconstrained Bond managers (this category includes both Global and US Unconstrained Bond managers). This last group typically does not have a stated benchmark and instead is benchmarked relative to cash (e.g., LIBOR).

We focus on these three categories because of their preeminence within the active FI manager universe as well as to achieve parsimony in our analysis. We start with all active FI funds within the eVestment database across the three categories described above and apply the following filters:

(i) Remove duplicate funds (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95), and where duplicates exist, retain the fund with the longest return history
(ii) Remove funds with less than a 5-year track record
(iii) Remove Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark)
(iv) Remove non-USD denominated funds.

These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow for meaningful cross-sectional comparisons. Our final sample consists of 454 US Aggregate benchmarked managers, 53 Global Aggregate managers, and 158 Unconstrained Bond managers, covering 82%, 35%, and 90% of the assets under management across the three categories, respectively, as captured in the eVestment database. The smaller proportion of Global Aggregate benchmarked managers relative to the other manager categories is attributable to the greater frequency of non-USD funds and benchmarks that appear to be poorly identified.[1]

There are several dimensions across which FI managers can take active risk:

(i) Security selection within government bonds, securitized assets, and corporate bonds included in the benchmark
(ii) Asset allocation across FI sectors (e.g., duration timing or sector rotation toward or away from the credit/spread risk embedded in corporate bonds or the prepayment risk embedded in asset-backed securities)
(iii) Out-of-benchmark tilts, including riskier high-yield corporate bonds, corporate loans, CLOs, inflation-linked securities, emerging market debt, and/or non-agency mortgages.

Given the multitude of levers and the enormity of FI markets, it can be challenging to understand the determinants of any excess of benchmark performance (or "active returns," hereafter) for FI managers. We have several aims in the article. First, we want to understand the determinants of active returns, with a specific focus on whether FI managers—both in aggregate and individually—have "alpha," defined as the ability

[1] We use benchmarks the managers have specified to eVestment. We have repeated all analyses using pseudo-benchmarks (i.e., the benchmark that most closely tracks the total returns of the respective fund), and our inferences are similar with the larger sample of funds using this alternative approach. We focus on stated benchmarks as that is standard in the literature.

to generate positive active returns after adjusting for passive exposures to traditional risk premia.[2] Second, we are also interested in the typical exposure to traditional risk premia that accounts for FI manager active returns. Third, we will also explore the potential loss of diversification from including active FI mandates with such passive exposures in a broader portfolio.

In the following sections, we first summarize active performance for the three categories of active FI managers outlined above. We find impressive active returns across categories over the past two decades. Next, we introduce a broad but economically intuitive set of traditional risk premia—including duration, corporate credit, emerging markets, and volatility risks—which we believe managers may harness to generate active returns. If active returns are to be of maximal benefit to an investor's portfolio, they should be diversifying to other well-known, and easily accessible, traditional risk premia.

While there is an extensive history of literature in equity markets exploring the importance of adjusting manager performance for systematic risk (e.g., Jensen 1968 and Sharpe 1966), in FI markets, there are multiple sources of systematic risk (rate risk, credit risk, prepayment risk, etc.) that should be accounted for in return attribution. Our analysis reveals, consistent with Mattu et al. (2016), that traditional risk premia explain most of the active returns across all three FI manager categories. Despite the common perception that adding excess returns in FI markets is relatively easy, we find active returns of FI managers largely represent a repackaging of traditional risk premia, and so FI alpha may be merely an illusion. The repackaging of traditional risk premia appears to be a pervasive phenomenon in active management, and investors should be wary of paying active management fees for passive exposures (e.g., Asness et al. 2015). Passive exposure to traditional risk premia can be particularly nefarious in FI as exposure to higher risk and higher yielding segments of the FI market can significantly increase the correlation to equities and mitigate the diversification properties of an investment-grade FI allocation.[3] The resulting loss of diversification could dampen the risk-adjusted performance of an investor's overall portfolio. We show later that this is indeed the case.[4]

REVISITING MANAGER OUTPERFORMANCE

We study performance information from the eVestment database of institutional managers from March 1998 through September 2019. As with all historical analyses of manager returns, there is a concern of survivorship bias and backfilling. In our application, however, survivorship bias concerns are mitigated somewhat as we are not interested in the magnitude as much as the correlation structure of the returns. If anything, these biases will only strengthen the claim that active FI investing is "easy." That said, caution is always advised when interpreting returns from historical data that may have selected "better" managers.[5]

We extract monthly manager and benchmark gross of fee returns for funds that belong to the three categories described earlier: Global Aggregate, US Aggregate, and Unconstrained Bond.[6] As mentioned at the beginning of this article, we impose filters on our funds to

[2] In this article we examine IG benchmarked FI managers. In recent research, Palhares and Richardson (2019) examine long-only active High Yield (HY) credit managers. In contrast to our findings that IG benchmarked managers tend to give too much exposure to risky credit, Palhares and Richardson (2019) find HY managers provide too little exposure to the credit risk premium. They suggest this "under-exposure" to traditional risk premia is likely attributable to a combination of (i) not investing 100% into corporate bonds (credit mutual funds hold relatively less liquid assets inside a daily dealing vehicle and are therefore likely to hold some cash in the fund) and (ii) possibly a desire to hold safer bonds and avoid defaults.

[3] We note that diversification does not eliminate the risk of experiencing investment losses.

[4] Traditional active managers may, however, argue their tilt toward the credit risk premium is tactical, and they are adding value by timing credit spreads. Earlier research (AQR 2017) suggests that this is not a plausible explanation for manager composites. First, credit tilts are consistently positive and do not vary significantly over time. Second, to the extent that there are deviations in credit tilts, they only weakly predict future credit returns.

[5] Despite our (and data vendors') best-faith attempts to capture returns data from both live and defunct strategies, our sampling criteria, which require a minimum of 5 years of return history, may tilt our sample toward ex post successful managers. To the detriment of our thesis, however, this should bias toward finding evidence of alpha and present overly rosy results. Also, even absent our sampling criteria, institutional manager databases like eVestment may be more subject to backfill bias and other voluntary reporting biases than mutual fund databases, which possibly results in overstated average manager performance.

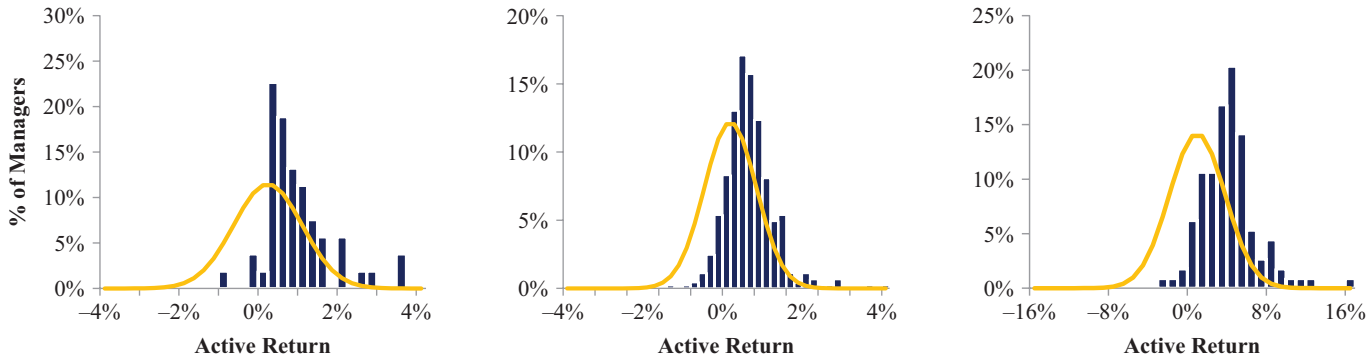
[6] We use "fund" to denote the return streams reported by managers, which may be composites of institutional portfolio returns as well as commingled fund returns.

EXHIBIT 1

Positive and Significant Active Returns across FI Manager Categories (November 1997–September 2019)

	Global Aggregate			US Aggregate			Unconstrained		
	Active Return	Tracking Error	Info. Ratio	Active Return	Tracking Error	Info. Ratio	Active Return	Tracking Error	Info. Ratio
Mean	0.7%	2.0%	0.38	0.4%	1.3%	0.37	3.1%	6.4%	0.71
Std	0.9%	0.9%	0.34	0.7%	0.7%	0.45	2.8%	6.7%	0.58
10th Perc.	0.0%	0.9%	0.01	–0.2%	0.6%	–0.17	–0.7%	2.4%	–0.07
90th Perc.	1.9%	3.3%	0.82	1.1%	2.3%	0.82	6.4%	11.0%	1.42

Global Aggregate			US Aggregate			Unconstrained		
Mean	Std.	T-Stat	Mean	Std.	T-Stat	Mean	Std.	T-Stat
0.74%	0.9%	**6.25**	0.45%	0.7%	**14.53**	3.06%	2.8%	**13.75**



Notes: The sample includes 454 US Aggregate benchmarked managers, 53 Global Aggregate benchmarked managers, and 158 Unconstrained Bond managers. Individual funds are sourced from eVestment. We removed funds according to the following criteria; (i) duplicates (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95, and we keep the fund with the longest return history if a duplicate exists), (ii) minimum 5-year track record, (iii) Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark), and (iv) non-USD denominated funds. These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow meaningful cross-sectional comparisons. The inception date of each manager varies. All returns are gross of fees. Active returns are in excess of each manager's stated benchmark as provided by eVestment. Data are from 11/1/1997 to 9/30/2019.

Sources: AQR, eVestment.

remove duplicates, require at least 5 years of returns data, retain only funds that have a benchmark that reflects that category (e.g., we remove Global Aggregate and US Aggregate funds where the tracking error exceeds the volatility of the benchmark itself), and only keep USD denominated funds.

Exhibit 1 reports summary statistics on the distribution of active returns, tracking errors, and information ratios across managers within each of the three FI categories over the last 20 years. Active returns and information ratios are positive within each category. Average active returns range from 0.4% for US Aggregate benchmarked managers to 3.1% for Unconstrained Bond funds, with average information ratios varying between 0.37 and 0.71. The statistical and economic significance of active returns is evident when we visually examine frequency histograms of active returns across managers in each category. To make inferences easier, on top of each frequency histogram, we superimpose a normal distribution that has a zero average value and a variance equal to the variance of active returns across managers in that category. This normal distribution is roughly the distribution of active returns we would expect to see in a world in which expected average active returns are zero across managers. It is clear the empirical distributions are shifted to the right, with the majority of

FI managers having positive active returns. For all three categories, t-statistics of mean active returns within each category are in excess of two, indicating for each category, we can reject the hypothesis that average active manager returns are zero.

At first glance, the story is clear: active FI managers beat their benchmarks (active FI investing appears to be "easy"). As discussed above, many have argued that structural features of the FI market (e.g., OTC trading, refinancing actions of issuers, naïve index reconstitution rules, larger share of participants with non-economic motives, etc.) create more opportunities for active FI managers to add "alpha" (e.g., Baz et al. 2017). At first glance, Exhibit 1 is consistent with this assertion. We now turn to critically evaluating the veracity of this claim.

A simple alternative explanation is that active FI managers are simply delivering exposure to traditional FI risk premia. FI investors may tilt their portfolios to higher risk and higher yielding segments of the FI markets, in which case active returns are simply a manifestation of traditional risk premia. This is a version of "reaching for yield," as it is popularly referenced. To assess whether exposure to traditional risk premia can explain positive active returns, we first conduct analysis at the category level. For all funds in each active FI category, we compute an equal weighted average active return and compare that to the contemporaneous corporate credit return.[7] Exhibit 2A displays scatter plots of the time series of these contemporaneous returns across the three categories. The average active returns for all three categories have a very strong correlation with credit excess returns: 0.77 for Global Aggregate, 0.94 for US Aggregate, and 0.67 for Unconstrained Bond.

These positive correlations are not caused by just a few highly directional FI managers. As an alternative to examining average (across managers) active returns, we can repeat the prior analysis on a fund-by-fund basis and examine the distribution of correlations. We report the results in Exhibit 2B. For Global Aggregate funds, the median correlation between active fund returns and credit excess returns is 0.41, with an interquartile range from 0.25 to 0.69. For US Aggregate funds, the median correlation between active fund returns and credit excess returns is 0.67, with an interquartile range from 0.32 to 0.82. For Unconstrained Bond funds, the median correlation between active fund returns and credit excess returns is 0.60, with an interquartile range from 0.37 to 0.81. The strong positive correlation between active returns and credit excess returns at the aggregate level is also true for most individual funds. Of course, not every FI manager has active returns explained by exposure to risky credit, but the majority do.

We find remarkably consistent results across FI categories: a large portion of active FI manager returns can be explained by exposure to credit markets. It is useful to keep in mind that the above analysis is a returns-based (not holdings-based) attribution. It does not necessarily imply that active FI managers are simply buying risky corporate bonds. However, it does suggest whatever it is they are doing (carry trades, overweighting securitized assets that embed credit risk, etc.) ends up providing the investor with something that resembles—and is highly correlated with—credit exposure. This is hardly comforting for an investment into an asset class that is meant to provide diversification from equity markets.

TRADITIONAL RISK PREMIA

So far, we have shown that FI managers individually and in aggregate handily beat their benchmarks. However, given the strong correlation of active returns for FI managers to credit excess returns, as highlighted in the previous section, it is unlikely that positive active returns for FI managers are indicative of true alpha. We now investigate how much of this outperformance is due to skill in security selection or market timing or simply due to a passive replication of traditional risk premia. This is an important question for investors as traditional risk premia are generally available for lower fees than active management and as exposure to such premia can potentially jeopardize the diversification benefits of FI within a strategic allocation.

Before we dig into this further, we first note that our empirical analysis includes explanatory variables that are tradable assets (e.g., corporate credit excess returns or emerging market excess returns), which we assume are costless to access. While this is reasonable for some of the very liquid traditional risk premia we examine (e.g., term risk, emerging currency risk, and volatility risk), it is arguably less appropriate for the

[7] We measure corporate credit return as an equal weighted combination of (i) Barclays US High Yield Corporate Bond Index return in excess of Duration-Matched Treasuries and (ii) S&P Leverage Loan Index in excess of 3m LIBOR (at 1% floor).

riskier spectrum of traditional risk premia such as the credit risk premium embedded in corporate bonds, corporate loans, and emerging hard currency bonds. Thus, it is possible that excess of benchmark performance of active FI managers may be a cost-effective way to procure exposure to more expensive traditional risk premia. We say "may" as it will all depend on the fee of the active FI manager relative to the fee for the respective traditional risk premia (and remember that our analyses use gross of fee returns).

EXHIBIT 2A

Active FI Returns Correlating Strongly with Credit Markets Quarterly Returns, 1997–2019

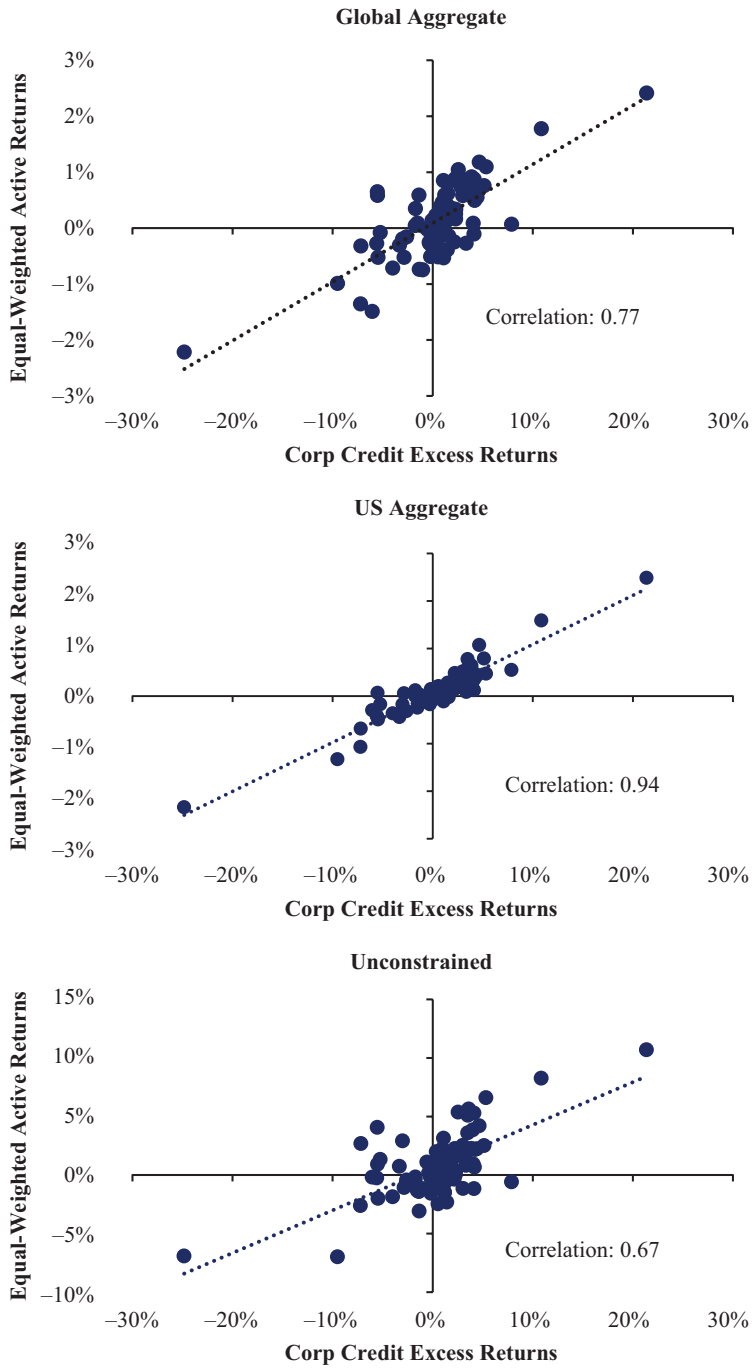
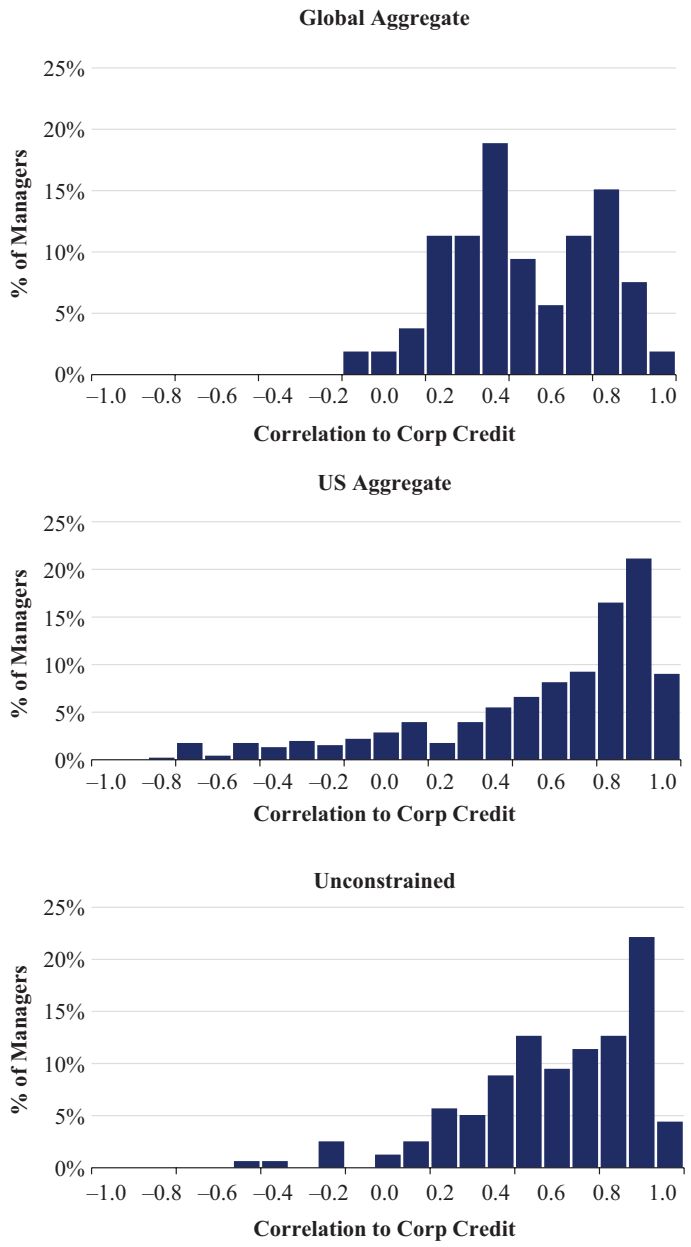


EXHIBIT 2B

Distribution of FI Active Returns: Corporate Credit Correlation



Notes: Exhibit 2A graphs the active (excess of benchmark) returns of each composite against corporate credit excess returns, defined as 50%/50% Barclays US High Yield Corporate Bond Index return in excess of Duration-Matched Treasuries/S&P Leverage Loan Index in excess of 3m LIBOR (at 1% floor). Exhibit 2B reports a relative frequency histogram for the full sample correlations between the active returns of individual managers in each category and corporate credit excess returns. The sample includes 454 US Aggregate benchmarked managers, 53 Global Aggregate benchmarked managers, and 158 Unconstrained Bond managers. Individual funds are sourced from eVestment. We removed funds according to the following criteria: (i) duplicates (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95, and we keep the fund with the longest return history if a duplicate exists), (ii) minimum 5-year track record, (iii) Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark), and (iv) non-USD denominated funds. These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow for meaningful cross-sectional comparisons. The inception date of each manager varies. All returns are gross of fees. Active returns are in excess of each manager's stated benchmark as provided by eVestment. Data from 11/1/1997 to 9/30/2019.

Sources: AQR, eVestment.

Exhibit 3 lists the eight traditional risk premia used in the remainder of the article. The factors were chosen to be both broad and economically intuitive.[8] We believe the general economic exposures FI managers can employ include levering up duration/interest rate exposures (proxied by US Term, Global Term, Global Aggregate, and Inflation-Linkers), systematically holding riskier credit (proxied by Corporate Credit, Emerging Market Debt, and Emerging Market Currencies), or selling volatility on rates (which can be done either directly by selling options or indirectly by overweighting mortgage securities, which are short prepayment optionality, or other negatively convex assets).[9] There may be additional traditional risk premia employed by managers, but we will consider exposure to such premia alpha in our analysis, alongside returns from profitable security selection, sector rotation, market timing, etc.

Exhibit 3 also reports basic statistical characteristics for the eight traditional risk premia as well as their pairwise correlations. All eight risk premia were positively rewarded in this time period, with Sharpe ratios ranging from 0.15 (long emerging currencies vs. USD) to 1.09 (Global Aggregate index returns in excess of cash). Not surprisingly, there is strong commonality between US Term, Global Term, Global Aggregate, and Inflation-Linkers; investment-grade rated bonds all share a strong common global component of risk-free rates. Similarly, we observe strong commonality between credit-sensitive FI traditional risk premia such as Corporate Credit, Emerging Market Debt, and Emerging Currency premia, all of which exhibit non-trivial correlation to equities. It is worth emphasizing this last point. As we noted in the introduction, FI is a key component of most asset owner portfolios, in part due to the diversification benefits FI offers relative to growth-sensitive assets such as equity markets. If active FI managers provide exposure to credit-sensitive FI risk premia, this can significantly reduce the diversification benefit of the FI allocation. Finally, Volatility Risk Premium appears to be an independent risk premium, as evidenced by the low correlation with the other risk premia.

IS THERE EVIDENCE OF ALPHA AT THE CATEGORY LEVEL?

Having defined a set of traditional risk premia, we now ask whether any manager outperformance remains at the category level once we account for passive exposure to these premia—that is, do the categories have positive alphas? To accomplish this, we decompose manager returns into the components driven by exposure to traditional risk premia and the component that cannot be explained by traditional risk premia—alpha. The distribution of alphas across managers is of primary interest—after adjusting for exposure to traditional risk premia, do we still see outperformance? The analysis uses non-overlapping quarterly returns data for the period November 1997 through September 2019.[10]

We start with an analysis of FI managers in aggregate across our three categories. Specifically, we run regressions of equal-weighted active returns (across managers within each category) onto the set of traditional risk premia listed in Exhibit 3. We display these aggregated regression results in Exhibit 4. Traditional risk premia explain a large portion of the variation in active returns within each category (R^2 statistics, which measure the percentage of variance explained by explanatory factors, range from 68% for Global Aggregate managers to 90% for US Aggregate managers). Active returns on equal-weighted portfolios within each category tend to load strongly on both corporate credit and emerging currency exposure. For each category, alphas are neither economically nor statistically significant.[11] The regression-based attribution below each table reiterates this point by decomposing active

[8] Parsimony is an important consideration in our choice of risk premia for each category. For example, for US Aggregate and Global Aggregate managers, we capture term premia cleanly using US Treasuries and Global Treasuries, respectively. As the Unconstrained category is benchmark-agnostic, we use excess of cash returns on the Global Aggregate index as our proxy for term premia. Global Aggregate index returns are very highly correlated with Global Treasuries but also contain exposure to global investment-grade corporates and global investment-grade securitized assets, both of which are presumably part of strategic allocations for Global Unconstrained managers. Thus, using Global Aggregate index returns for Unconstrained managers parsimoniously captures multiple relevant premia, at the cost of a slightly less clean attribution of active returns into different sources of investment-grade risk.

[9] Brooks, Tsuji, and Villalon (2019) use FI implied volatility as an explanatory variable in explaining the performance of PIMCO Total Return Fund under Bill Gross.

[10] As FI manager returns tended to exhibit serial correlation over 1- to 3-lags, using quarterly data instead of monthly data helps mitigate its impact in our regression statistics.

[11] Note that our regression-based alphas adjust for the average exposure to traditional risk premia. Any ability to profitably time these exposures will show up as alpha in our analysis.

EXHIBIT 3
Traditional Risk Premia Proxies

Description of Risk Premia

Risk Premia	Proxies	Relevant Categories: Global Aggregate	Relevant Categories: US Aggregate	Relevant Categories: Unconstrained	Descriptions
Term	US Term		•		Bloomberg Barclays US Treasury excess of cash returns*
Term	Global Term	•			Bloomberg Barclays Global Treasury Hedged excess of cash returns
Term	Global Aggregate			•	Bloomberg Barclays Global Aggregate Hedged excess of cash returns
Term	Inflation-Linkers			•	Bloomberg Barclays Global Aggregate Treasury Inflation-Linked Hedged excess of cash returns
Credit	Corporate Credit	•	•	•	50%/50% Barclays US High Yield Corporate Bond Index return in excess of Duration-Matched Treasuries/S&P Leverage Loan Index in excess of 3m LIBOR
Credit	Emerging Debt	•	•	•	Barclays Emerging Market Debt Duration-Adjusted excess returns
Credit	Emerging Currency	•	•	•	Equal-weighted emerging market currencies
Volatility	UST Implied Volatility	•	•	•	Delta-hedged straddles on 10y Treasury futures

Risk and Return Statistics (November 1997 to September 2019)

Factors	US Term	Global Term	Global Aggregate	Inflation-Linkers	Corp Credit	Emerging Debt	Emerging Currency	Volatility
Ann. Return	2.6%	2.8%	2.9%	3.9%	2.3%	3.8%	1.0%	3.6%
Ann. Vol.	4.3%	2.8%	2.7%	4.8%	7.6%	11.1%	6.8%	4.3%
SR	0.61	1.01	1.09	0.82	0.30	0.34	0.15	0.85
Skew (Mo.)	0.04	0.10	–0.09	–0.41	–1.38	–3.45	–0.82	–1.59
Max DD	–8.4%	–4.9%	–5.3%	–10.3%	–38.6%	–33.3%	–23.3%	–13.5%

Correlations (November 1997 to September 2019)

	US Term	Global Term	Global Aggregate	Inflation-Linkers	Corporate Credit	Emerging Debt	Emerging Currency	Volatility	S&P 500
US Term	1								
Global Term	0.89	1							
Global Aggregate	0.88	0.96	1						
Inflation-Linkers	0.64	0.67	0.75	1					
Corporate Credit	–0.45	–0.37	–0.16	0.11	1				
Emerging Debt	–0.33	–0.27	–0.11	0.11	0.67	1			
Emerging Currency	–0.08	–0.09	0.04	0.22	0.45	0.58	1		
Volatility	0.08	0.12	0.21	0.23	0.23	0.23	0.13	1	
S&P 500	**–0.31**	**–0.25**	**–0.12**	**0.05**	**0.61**	**0.65**	**0.55**	**0.18**	**1**

* *The term "excess of cash" here means excess of 3-m Treasury bill returns.*

returns into exposures to traditional risk premia and uncorrelated alpha. Across categories, after accounting for exposure to traditional premia, the residual (gross of fee) alpha is close to zero (between seven basis points annualized for Global Aggregate managers and 32 basis points annualized for Unconstrained managers). As the title of our article suggests, positive active returns for many FI managers may only be an illusion of alpha.

Equal-weighted portfolios are interesting and illustrative, but do we see similar results when we look at individual managers? Exhibit 5 reports the distributions of annualized alphas (the intercepts in individual

manager regressions of active returns onto traditional risk premia) within each category. Similar to Exhibit 1, we superimpose a normal distribution on the empirical distribution. Unlike Exhibit 1, however, the superimposed mean-zero normal distribution here closely tracks the empirical data. For only one category (US Aggregate) is there any statistical evidence of positive alpha, but while statistically significant, the alpha is economically quite small—only 0.10% annualized (and that is before fees).

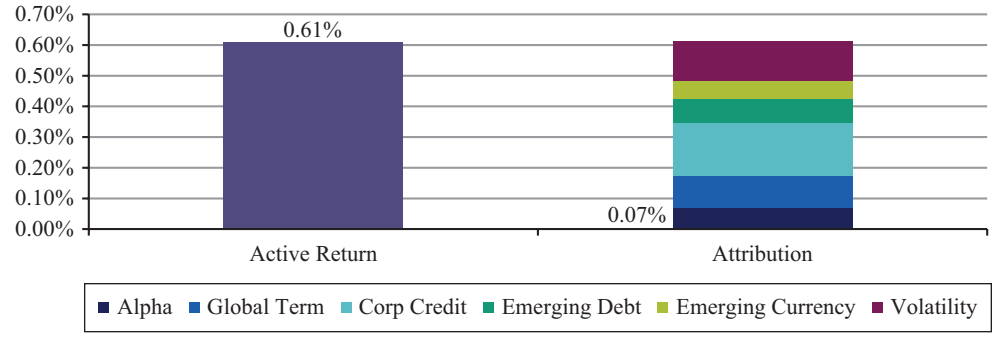
Stated simply, the distribution of alphas we observe within each category is broadly consistent with a world in which the true average alpha across managers is zero, and likely negative net of fees (gross of fees, average alphas within the Global Aggregate and Unconstrained categories are negative, at –0.05% and –0.14%, respectively). Again, the inference is that the historically positive active FI returns are only an illusion of alpha.

EXHIBIT 4
Minimal Alpha after Controlling for Traditional Risk Premia

Regression Statistics and Active Return Decomposition

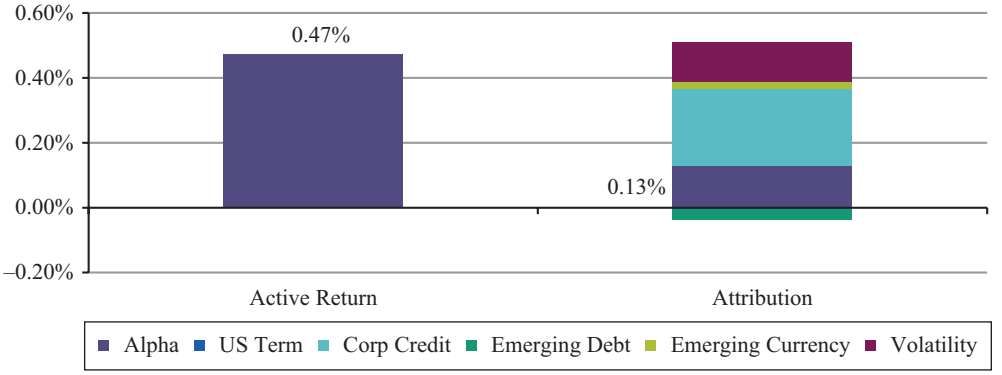
Global Aggregate

	Ann. Alpha	Global Term	Corporate Credit	Emerging Debt	Emerging Currency	Volatility	R^2
Coefficient	0.07%	0.04	**0.07**	0.02	**0.04**	0.04	**68%**
T-Statistic	0.3	1.2	5.4	1.7	2.7	1.7	



US Aggregate

	Ann. Alpha	US Term	Corporate Credit	Emerging Debt	Emerging Currency	Volatility	R^2
Coefficient	0.13%	0.00	**0.10**	–0.01	**0.02**	**0.03**	**90%**
T-Statistic	1.5	–0.2	16.3	–1.6	2.5	3.7	



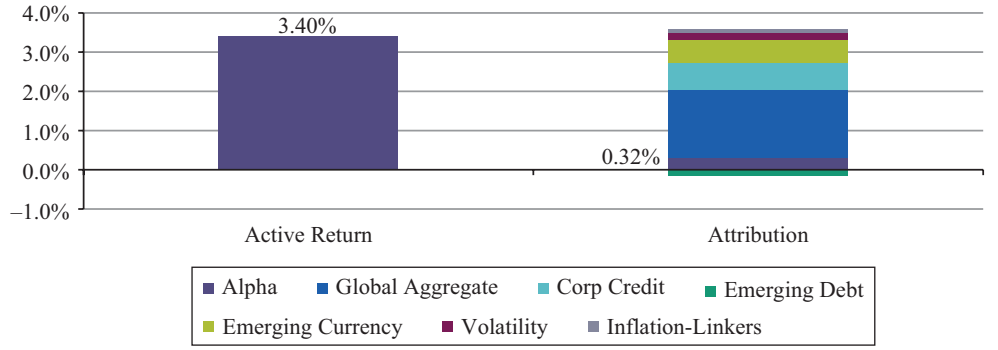
(continued)

EXHIBIT 4 *(continued)*

Minimal Alpha after Controlling for Traditional Risk Premia

Unconstrained

	Ann. Alpha	Global Aggregate	Corporate Credit	Emerging Debt	Emerging Currency	Volatility	Inflation-Linkers	R^2
Coefficient	0.32%	**0.59**	**0.30**	–0.04	**0.44**	0.05	0.02	**79%**
T-Statistic	0.5	3.9	6.7	–1.1	8.4	0.7	0.2	



Notes: This exhibit reports regression results where the equal-weighted average active return of managers within each category is projected onto the relevant traditional market risk premia identified for each category in Exhibit 3. Regressions use non-overlapping quarterly returns data for the period November 1997 through September 2019. Regression intercept is annualized. The sample includes 454 US Aggregate benchmarked managers, 53 Global Aggregate benchmarked managers, and 158 Unconstrained Bond managers. Individual funds are sourced from eVestment. We removed funds according to the following criteria: (i) duplicates (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95, and we keep the fund with the longest return history if a duplicate exists), (ii) minimum 5-year track record, (iii) Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark), and (iv) non-USD denominated funds. These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow for meaningful cross-sectional comparisons. The inception date of each manager varies. All returns are gross of fees. Active returns are in excess of each manager's stated benchmark as provided by eVestment.

Sources: AQR, eVestment.

GAUGING THE LOSS OF DIVERSIFICATION FOR INVESTORS EMPLOYING TYPICAL FI MANAGERS

Given the strong performance of corporate credit over the last 20 years, the effective structural credit overweight embedded in active returns of Global Aggregate, US Aggregate, and Unconstrained Bond managers has improved the standalone performance of these strategies, but it has reduced their diversifying characteristics. Such diversifying characteristics are a central motivation for holding FI within a strategic asset allocation as they have historically mitigated equity risk. Given the high correlation between corporate credit and equities, by being overweight credit risk, FI managers are inducing positive correlation to equities relative to the benchmark. Indeed, the correlations of active FI returns to US equities (S&P 500) over the full sample (March 1998–September 2019) are 0.64, 0.68, and 0.51 for Global Aggregate, US Aggregate, and Unconstrained Bond managers, respectively. Correlations of active FI manager returns to Global Equities are of a similar magnitude.

To better gauge how correlation with equity risk in FI manager active returns mitigates the diversifying effects of FI within a portfolio, we compare US Aggregate benchmark returns and US Aggregate active FI manager returns, both against S&P 500 (all returns are in excess of cash). Over the full sample, the US Aggregate has tended to provide excellent diversification to equities, realizing a –0.34 correlation with the S&P 500 (Exhibit 6, Panel A). An equal-weighted portfolio of US Aggregate benchmarked managers realized a higher correlation to equities over the full sample of –0.12 (Exhibit 6, Panel B). This effect is much stronger since 2008 where FI managers across categories have tended to have an even higher effective credit exposure.

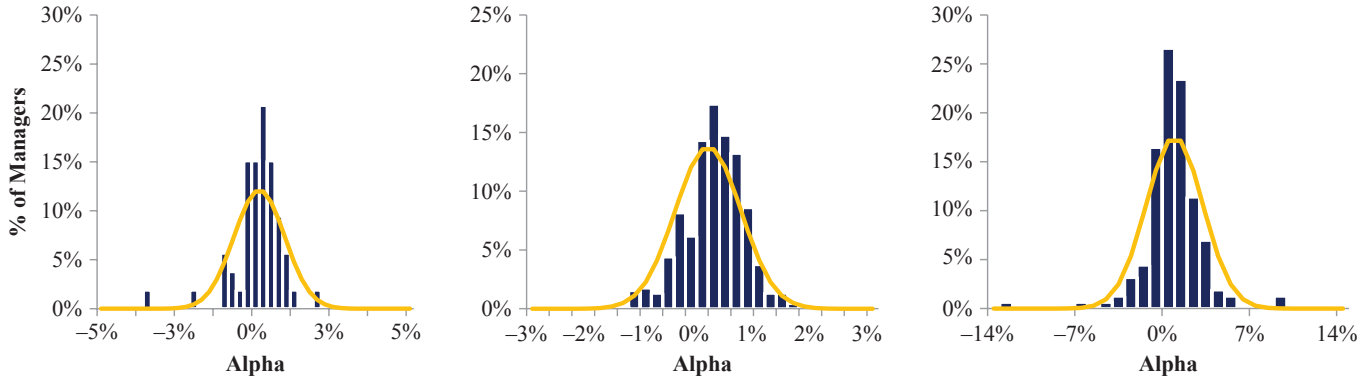
EXHIBIT 5

Alphas across Managers within Each Category

Global Aggregate		
Mean	**Std.**	**T-Stat.**
–0.05%	0.8%	–0.49

US Aggregate		
Mean	**Std.**	**T-Stat.**
0.10%	0.6%	**3.58**

Unconstrained		
Mean	**Std.**	**T-Stat.**
–0.14%	2.3%	–0.78



Notes: This exhibit reports regression results where the active return of individual managers within each category is projected onto the relevant traditional market risk premia identified for each category in Exhibit 3. Regressions use non-overlapping quarterly returns data for the period November 1997 through September 2019. The regression intercept is annualized, and the relative frequency histogram reports the distribution of annualized alphas across active FI managers in each category. The regressions do not necessarily have common time periods as strategies could start and end at different times. The sample includes 454 US Aggregate benchmarked managers, 53 Global Aggregate benchmarked managers, and 158 Unconstrained Bond managers. Individual funds are sourced from eVestment. We removed funds according to the following criteria: (i) duplicates (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95, and we keep the fund with the longest return history if a duplicate exists), (ii) minimum 5-year track record, (iii) Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark), and (iv) non-USD denominated funds. These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow for meaningful cross-sectional comparisons. All returns are gross of fees. Active returns are in excess of each manager's stated benchmark as provided by eVestment.

Sources: AQR, eVestment.

For example, during this time period, the correlation of US Aggregate returns to the S&P is –0.19 while an equal-weighted portfolio of US Aggregate active managers has realized a positive correlation of +0.15. Similar inferences are seen in Exhibits 6C and 6D for Global Aggregate benchmarked FI managers. Overall, the structural credit overweight of Active FI managers can be strong enough to change the sign of the correlation of FI returns to equity returns from negative to positive, especially so following the global financial crisis.

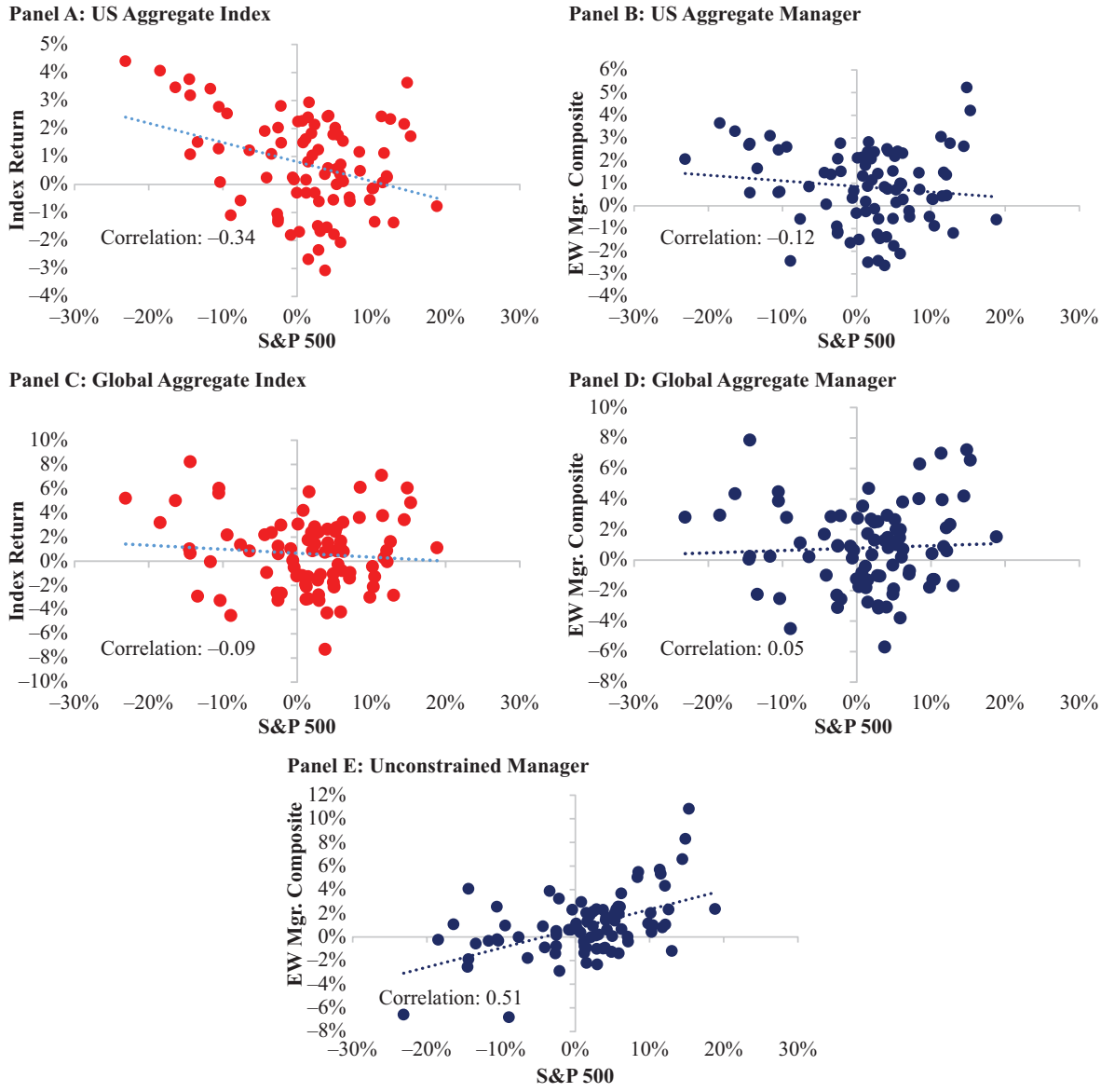
Despite the strong performance of credit over the sample, the positive correlation induced by an active effective credit overweight can have undesirable effects in the context of a total portfolio. As a proxy for a typical strategic allocation, we use a 60% US Equities/40% US Bonds portfolio. We look at two 60/40 portfolios: "60/40 Index," which holds 60% in the S&P 500 and 40% in the US Aggregate index, and "60/40 Active," which holds 60% in the S&P 500 and 40% in a portfolio that equal-weights across US Aggregate benchmarked active FI managers. The annualized volatility of 60/40 Index over the full sample is 9.5%. Holding a portfolio of US Aggregate benchmarked managers in place of the US Aggregate, annualized volatility rises by 0.3% to 9.8%. Over the last 10 years, the risk impact has been roughly similar; 60/40 Index has realized 7.4% annualized volatility while 60/40 Active has realized 7.6%.

While the risk tends to be higher for the 60/40 Active strategy compared to the 60/40 Index strategy, the more important consideration is the potential loss of diversification benefit from active FI managers tilting to riskier assets. This loss of diversification has tended to rear its head at quite painful times for investors. For example, if we look at the average performance of both 60/40 portfolios during the 10 worst equity quarters, 60/40 Active has lagged 60/40 US Index by an average of 0.24% per quarter. Taking the most extreme quarterly equity market loss as an example, the fourth quarter of 2008 in which

EXHIBIT 6

Persistent Credit Exposure Reducing the Diversifying Benefits of FI

Index and Average Manager Total Returns versus S&P 500



Notes: This exhibit reports scatter plots of non-overlapping three monthly returns of FI returns and the S&P 500. Panel A compares the US Aggregate Index return relative to the S&P 500. Panel B compares an equal-weighted average of active US Aggregate benchmarked FI manager returns to the S&P 500. Panel C compares the Global Aggregate benchmark to the S&P 500. Panel D compares an equal-weighted average of active Global Aggregate benchmarked FI manager returns to the S&P 500. Panel E compares an equal-weighted average of Unconstrained Bond manager returns to the S&P 500. The sample includes 454 US Aggregate benchmarked managers, 53 Global Aggregate benchmarked managers, and 158 Unconstrained Bond managers. Individual funds are sourced from eVestment. We removed funds according to the following criteria: (i) duplicates (a duplicate is a fund within the same fund family where the correlation of active returns exceeds 0.95, and we keep the fund with the longest return history if a duplicate exists), (ii) minimum 5-year track record, (iii) Global Aggregate and US Aggregate funds without a stated benchmark or where that benchmark appears to be poorly identified (as evidenced by fund tracking error exceeding the volatility of the stated benchmark), and (iv) non-USD denominated funds. These criteria result in a representative sample of actively managed FI funds within each category with (i) sufficient data for our analyses and (ii) sufficient similarity to allow for meaningful cross-sectional comparisons. All returns are gross of fees. Active returns are in excess of each manager's stated benchmark as provided by eVestment.

Sources: AQR, eVestment.

US equities returned –23%, US Aggregate returns were 4.4%, somewhat mitigating the equity drawdown experienced during the crisis. US Aggregate FI manager returns, on the other hand, were roughly half that of the US Aggregate Index (2.1%) due to the underperformance of credit. During the quarter in which it was needed most, active FI diversification was elusive.

CONCLUSIONS

Across multiple categories of active FI managers, we detect little evidence of manager skill—either in aggregate or individually. Despite impressive active (excess of benchmark) returns posted by a variety of active FI managers, once we control for well-known traditional risk premia, the residual alpha appears to be negligible, a result with important implications for asset owners.

First, what is an appropriate fee for active returns that consist primarily of exposures to traditional risk premia? Our analysis is based on gross of fee fund manager returns, so a key question for asset owners is whether the positive (gross of fee) active return is commensurate with the traditional beta exposures and any residual alpha that is left over. For some active FI managers, that is possible, but for many it may not.

Second, when active returns are strongly correlated to other traditional risk premia, especially those that are "long risk" (e.g., Corporate Credit premium, Emerging Market Credit premium, and Volatility premium), this threatens to dampen the strategic diversification benefit of allocating to the FI asset class. This can be particularly problematic for asset owners who have multiple external FI active managers. Our results suggest pervasive evidence of traditional risk premia (especially corporate credit risk) explaining most active FI manager active returns. The commonality in this "reaching for credit risk" may lead to a substantial reduction in the diversification benefit of the FI asset class when hiring multiple active managers.

ACKNOWLEDGMENTS

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ADDITIONAL READING

Superstar Investors

Jordan Brooks, Severin Tsuji, and Daniel Villalon
The Journal of Investment
https://joi.pm-research.com/content/28/1/124

ABSTRACT: *Many famous investors are outspoken about their investment philosophies and carefully apply them to a select number of securities. In this article, we seek to apply their wisdom systematically to determine whether their philosophies might generate alpha when*

applied broadly. We show how four very different, extraordinary track records—from Berkshire Hathaway, PIMCO's Total Return Fund in the Gross era, George Soros's Quantum Fund, and Fidelity's Magellan Fund under Peter Lynch—can be viewed as expressions of a handful of systematic styles.

Style Investing in Fixed Income

Jordan Brooks, Diogo Palhares, and Scott Richardson

The Journal of Portfolio Management
https://jpm.pm-research.com/content/44/4/127

ABSTRACT: *Style investing has become part of the investing nomenclature for equity markets. To date, despite the massive size of fixed-income markets, little research has examined the efficacy of style-based investing in fixed income. In this article, the authors summarize a common style-based framework for capturing excess returns for both government and corporate bonds. Importantly, from an investor perspective, these style-based excess returns are highly diversifying with respect to the classic risk premiums in fixed-income markets (i.e., term premium and credit risk premium) and exhibit low macroeconomic sensitivities.*