ETF Observer

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ETF Insight

Party Like it's 1999

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The S&P 500 notched a fresh all-time high in June. Exchange-traded product, or ETP, flows indicate that investors scrambled to join the party. Morningstar Asset Flow data show that $13.5 billion of net new capital flowed into ETPs offering exposure to U.S. equities during the month of June. This marks the largest month of inflows into this category since December of last year. Are investors late to the party? The debate around whether stocks are over-, under-, or fairly-valued will rage on for the foreseeable future. But there is no debating--and Prince would certainly agree--that "…parties weren't meant to last."

June was a busy month on the new launch front, as 23 new ETPs made their debut. State Street launched a suite of strategic beta ETFs tracking MSCI Quality Mix benchmarks, iShares expanded its "core" series via a combination of new launches and new additions from its existing lineup, and JP Morgan made its ETF debut —launching a strategic beta fund tracking a multi-factor benchmark. There are two common themes at play here. The first is that the latest generation of strategic beta ETPs is being designed to combine multiple factors in such a way as to position themselves as relatively low cost substitutes for traditional active managers as core portfolio building blocks (though they are still in many cases substantially more expensive than their peers benchmarked to traditional cap-weighted indexes). The second is that the "fee war" that has been raging within "bulk beta" (think S&P 500) continues to spread into strategic beta. The fee cut to iShares Core High Dividend (HDV) to 0.12% from 0.40% and the introduction of iShares Core Dividend Growth ETF (DGRO) at an identical fee (both funds track Morningstar indexes, please see disclaimer below), make these funds very competitive (speaking strictly in terms of their relative expense ratios) with comparable offerings from Vanguard (VIG and VYM) and Schwab (SCHD).

This month's Observer features three articles and two fund spotlights from our Passive Strategies research team. Alex Bryan leads off with a look at how to be a savvy contrarian. According to Alex, "Performance tends to persist in the short run, but betting on long-term losers can be a winning strategy." As a lifelong Chicago Cubs fan, I hope that this also applies to professional baseball franchises. Next, Abby Woodham examines the active vs. passive debate within the realm of international small caps. Tom Boccellari bats clean up this month, exploring the benefits of currency hedging in the context of a portfolio of foreign currency-denominated international bonds. This month's spotlight funds include a strategic beta fixed income fund that attempts to side-step some of the pitfalls of market cap weighting a bond portfolio—PowerShares Fundamental High Yield Corporate Bond (PHB). We also spotlight Vanguard Total International Bond Index ETF (BNDX), which offers inexpensive exposure to international debt with limited currency risk.

Finally, I'd like to plug our fifth annual Morningstar ETF Conference. This year's conference will be held from September 17-19 at the Chicago Sheraton. You can find additional details and the full conference agenda here. This year's conference is shaping up to be our best yet—owing to a fantastic lineup of speakers and panelists. This year's keynote and general session speakers include Nobel Laureate Eugene Fama, BlackRock's Russ Koesterich, JP Morgan's Dr. David Kelly, PIMCO's Jerome Schneider, AQR's Ronen Israel, and Wesley Gray of Drexel University. We hope to see you in Chicago in September for three days packed with valuable insights and investment ideas.

Best,

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U.S. Market Barometer

1 Month

		Value	Core	Growth
	US Market 2.44%	2.39%	1.94%	3.00%
Large Cap	1.92%	1.96%	1.32%	2.51%
Mid Cap	3.52%	3.41%	3.23%	3.89%
Small Cap	4.99%	4.08%	4.81%	6.16%

YTD

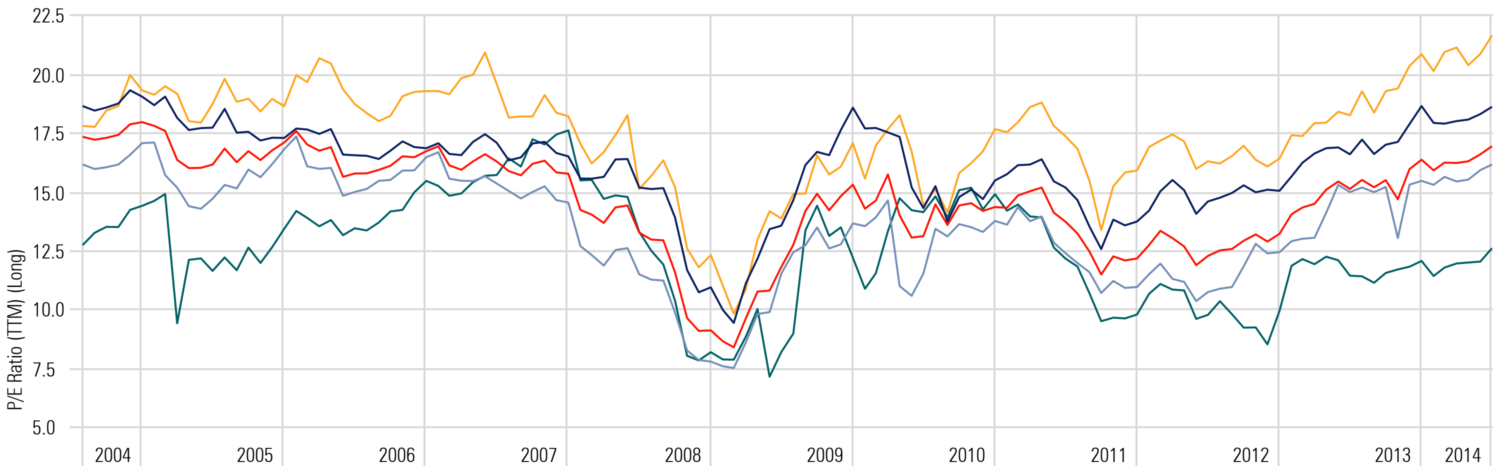
		Value	Core	Growth
	US Market 7.11%	7.35%	7.44%	6.61%
Large Cap	6.94%	6.68%	6.85%	7.33%
Mid Cap	8.31%	9.87%	9.81%	5.58%
Small Cap	5.38%	7.36%	7.01%	1.72%

1 Year

		Value	Core	Growth
	US Market 25.04%	22.42%	23.18%	29.63%
Large Cap	24.22%	20.01%	21.44%	31.34%
Mid Cap	27.69%	29.71%	28.52%	25.21%
Small Cap	25.95%	26.70%	26.34%	24.63%

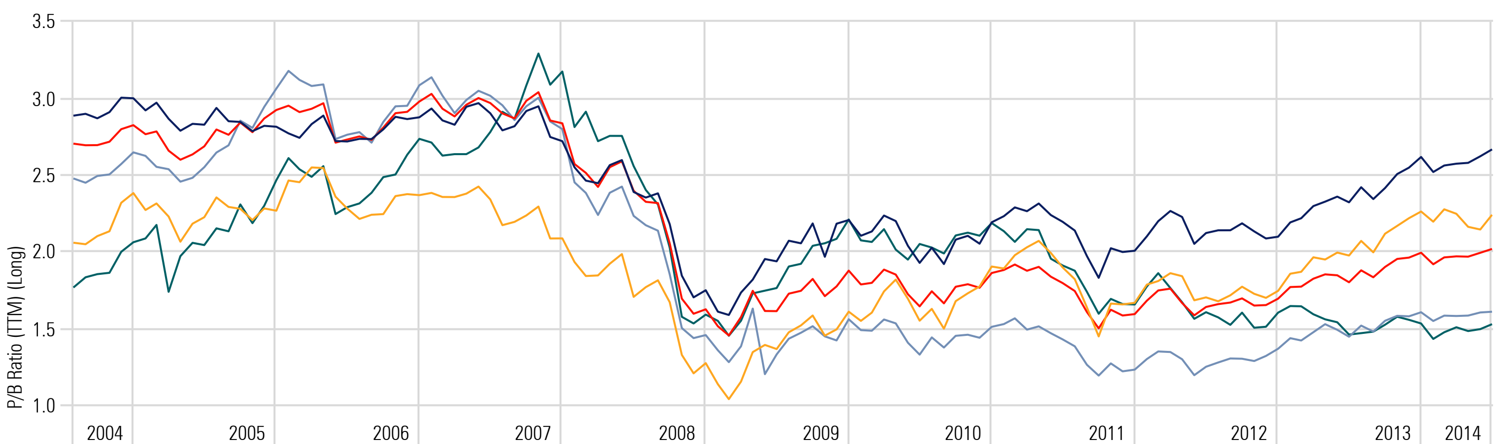
Price/Earnings

Time Period: 7/1/2004 to 6/30/2014



Price/Book Value

Time Period: 7/1/2004 to 6/30/2014



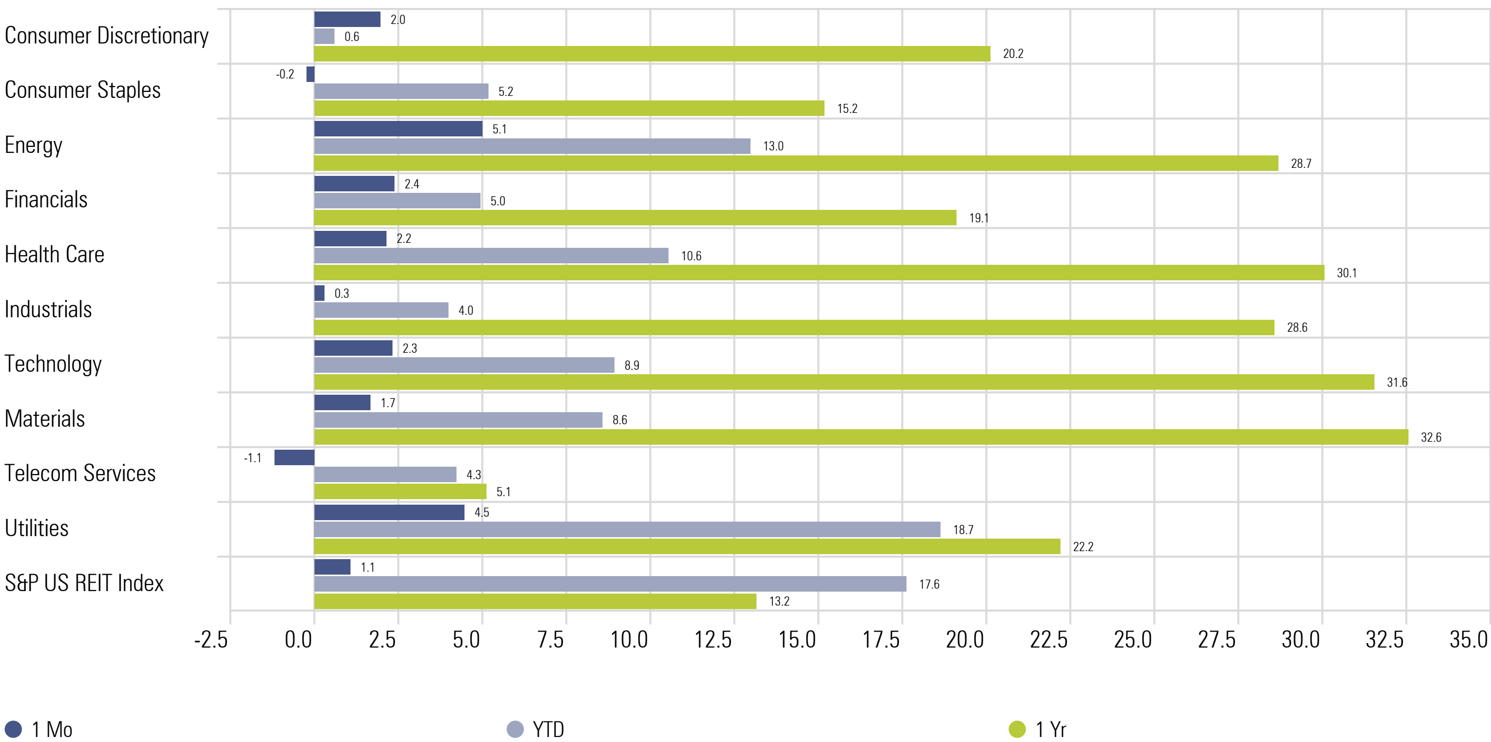
S&P 500 TR USD
Russell 2000 TR USD
MSCI ACWI NR USD
MSCI EAFE NR USD
MSCI EM NR USD

Market Performance

Trailing Total Returns

U.S. Equity Market	1 Month	YTD	1 Year	3 Yr Annlzd	5 Yr Annlzd	10 Yr Annlzd	15 Yr Annlzd
S&P 500 TR USD	2.07	7.14	24.61	16.58	18.83	7.78	4.35
Wilshire 5000 Total Mkt TR USD	2.45	7.00	24.92	16.29	19.15	8.28	5.08
DJ Industrial Average TR USD	0.75	2.68	15.56	13.57	17.83	7.63	5.33
NASDAQ 100 TR USD	3.09	7.87	34.15	19.86	22.31	10.62	4.08
Russell 2000 TR USD	5.32	3.19	23.64	14.57	20.21	8.70	8.01
Global Equity Market							
MSCI ACWI NR USD	1.88	6.18	22.95	10.25	14.28	7.46	4.37
MSCI EAFE NR USD	0.96	4.78	23.57	8.10	11.77	6.93	4.59
MSCI EM NR USD	2.66	6.14	14.31	-0.39	9.24	11.94	8.88

S&P 500 Sectors



Trailing Total Returns

U.S. Fixed Income Market	1 Month	YTD	1 Year	3 Yr Annlzd	5 Yr Annlzd	10 Yr Annlzd	15 Yr Annlzd
Barclays US Agg Bond TR USD	-1.86	4.18	5.38	7.13	3.06	2.55	3.31
Markit iBoxx Liquid IG TR USD	-1.81	6.72	10.25	10.60	6.74	3.85	4.14
BofAML US HY Master II TR USD	-1.08	5.90	12.92	12.92	11.98	6.43	5.18
Morningstar Short-Term US Govt TR	-1.97	0.82	1.95	4.21	-0.21	0.64	1.59
Morningstar Short-Term Corp TR	-1.88	1.78	4.36	6.41	2.38	1.52	2.54
Morningstar Intermediate US Govt TR	-2.12	2.72	3.05	6.12	2.24	2.47	3.36
Morningstar Intermediate Corp TR	-1.77	4.22	7.88	9.15	5.75	3.64	4.38
Morningstar Long-Term US Govt TR	-2.12	9.57	6.02	10.44	4.71	4.23	4.75
Morningstar Long-Term Corp TR	-1.58	9.76	12.83	12.36	8.50	5.09	5.41
S&P Preferred Stock TR USD	-1.34	11.31	10.28	10.96	10.94	3.04	—

Top 10 ETF Providers

Name	# of ETFs	Est. Net Flow ($Mil) 1-Mo	YTD	1-Yr	Market Share: Total Net Assets ($Bil) Present 06-14	Mkt Sh%	Rank	One Year Ago 06-13	Mkt Sh%	Rank
iShares	310	5,457.99	26,767.08	53,679.61	718.40	38.63	1	575.62	40.01	1
State Street	140	8,492.61	(10,846.19)	13,964.18	403.28	21.68	2	328.95	22.86	2
Vanguard	67	6,651.32	31,060.76	59,200.26	383.95	20.64	3	277.69	19.30	3
PowerShares	163	(438.05)	(1,177.15)	5,600.22	101.53	5.46	4	79.61	5.53	4
WisdomTree	67	471.09	(187.53)	3,290.93	35.49	1.91	5	28.97	2.01	5
First Trust	86	1,019.56	6,363.06	11,685.00	27.76	1.49	6	12.09	0.84	11
Guggenheim	68	513.43	4,345.73	9,628.08	27.28	1.47	7	14.48	1.01	8
ProShares	145	(238.61)	2,189.94	4,050.06	27.14	1.46	8	24.91	1.73	6
Van Eck	62	(597.59)	(196.60)	691.28	24.82	1.33	9	21.87	1.52	7
Schwab	21	551.36	3,385.27	6,517.80	21.47	1.15	10	12.18	0.85	10

Top 15 ETF Inflows in June

Name	Ticker	Est. Net Flow ($Mil) 1-Mo	YTD	1-Yr	Market Share: Total Net Assets ($Bil) Present 06-14	Mkt Sh%	Rank	One Year Ago 06-13	Mkt Sh%	Rank
SPDR S&P 500	SPY	4,737.86	(16,322.69)	6,054.44	168.46	9.06	1	133.34	9.27	1
iShares Core S&P Mid-Cap	IJH	2,082.08	(375.14)	3,713.18	23.60	1.27	12	15.98	1.11	16
Utilities Select Sector SPDR® ETF	XLU	1,191.75	1,760.60	617.38	7.11	0.38	56	5.59	0.39	60
iShares MSCI Emerging Markets	EEM	1,153.89	(1,508.71)	1,778.65	39.84	2.14	7	34.62	2.41	6
Consumer Staples Select Sector SPDR® ETF	XLP	926.86	(225.74)	(775.23)	6.64	0.36	60	6.86	0.48	45
iShares Russell 2000	IWM	884.93	(1,700.94)	70.84	26.13	1.40	9	21.52	1.50	9
Vanguard REIT Index ETF	VNQ	765.70	3,549.30	4,326.13	23.86	1.28	10	17.76	1.23	13
iShares MSCI EAFE	EFA	696.05	1,695.51	7,421.90	55.68	2.99	3	40.20	2.79	4
iShares JPMorgan USD Emerg Markets Bond	EMB	674.33	1,477.60	584.15	5.19	0.28	75	4.38	0.30	74
Vanguard FTSE Developed Markets ETF	VEA	667.12	3,972.65	7,430.87	23.53	1.27	13	13.15	0.91	21
Energy Select Sector SPDR® ETF	XLE	629.26	3,184.02	2,855.46	12.68	0.68	33	7.67	0.53	41
Vanguard Dividend Apprec Idx ETF	VIG	618.15	284.68	1,696.98	20.35	1.09	16	15.81	1.10	17
ProShares Ultra MidCap400	MVV	583.00	(892.89)	695.05	0.77	0.04	285	0.10	0.01	634
ProShares Ultra Russell2000	UWM	571.62	786.94	(605.47)	0.82	0.04	277	1.27	0.09	168
UBS AG FI Enhanced Large Cap Growth ETN	FBGX	556.80	556.80	556.80	0.56	0.03	351	--	--	--

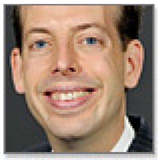
Top 15 ETF Outflows in June

Name	Ticker	Est. Net Flow ($Mil) 1-Mo	YTD	1-Yr	Market Share: Total Net Assets ($Bil) Present 06-14	Mkt Sh%	Rank	One Year Ago 06-13	Mkt Sh%	Rank
iShares 7-10 Year Treasury Bond	IEF	(3,554.53)	2,434.33	1,900.29	6.24	0.34	62	4.30	0.30	76
ProShares Ultra 7-10 Year Treasury	UST	(1,261.09)	634.62	589.24	0.64	0.03	325	0.02	0.00	970
iShares 1-3 Year Credit Bond	CSJ	(1,044.84)	19.35	1,185.71	11.87	0.64	35	10.60	0.74	29
UBS Fisher Enhanced Big Cap Growth ETN	FBG	(1,012.00)	(1,012.00)	(1,005.59)	0.13	0.01	691	0.80	0.06	225
PowerShares QQQ	QQQ	(831.15)	(4,261.55)	(691.02)	43.74	2.35	6	33.65	2.34	7
Market Vectors Agribusiness ETF	MOO	(601.71)	(2,189.72)	(2,698.71)	2.44	0.13	141	4.87	0.34	66
Market Vectors Gold Miners ETF	GDX	(510.53)	(242.34)	1,702.03	7.98	0.43	52	5.81	0.40	57
WisdomTree Japan Hedged Equity	DXJ	(471.67)	(1,717.39)	(65.15)	10.54	0.57	39	9.94	0.69	34
iShares US Real Estate	IYR	(456.58)	835.60	(14.96)	5.08	0.27	78	4.76	0.33	69
iShares MSCI Germany	EWG	(317.04)	(664.58)	360.80	5.54	0.30	71	4.00	0.28	82
Direxion Daily Small Cap Bull 3X Shares	TNA	(316.62)	(91.98)	(175.02)	0.89	0.05	259	0.57	0.04	276
Materials Select Sector SPDR® ETF	XLB	(309.95)	863.49	1,720.57	5.49	0.30	73	2.71	0.19	103
iShares US Energy	IYE	(295.90)	358.93	586.69	2.29	0.12	145	1.24	0.09	171
Technology Select Sector SPDR® ETF	XLK	(258.86)	(1,437.47)	(282.55)	12.62	0.68	34	10.07	0.70	33
SPDR Barclays High Yield Bond	JNK	(247.67)	(504.60)	(43.35)	9.75	0.52	44	9.38	0.65	36

ETF News

J.P. Morgan Begins Its Push into ETFs

Bank's first exchange-traded fund is a passively managed, global equity-oriented strategic beta fund tracking a FTSE index and tapping four separate return factors. Meanwhile, 23 ETFs launched in June – and not a single fund closed.



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On June 17, J.P. Morgan Asset Management rolled out its first-ever exchange-traded fund, a passively managed global-equity-oriented strategic beta ETF that tracks an FTSE index and taps four separate return factors.

The new ETF, JPMorgan Diversified Return Global Equity ETF JPGE, is a strategic beta fund whose index weights stocks from around the world based on four factors: value, size, momentum, and low volatility. Strategic beta funds have gained in popularity and are supported by academic research.

The new fund tracks the FTSE Developed Diversified Factor Index, a rules-based benchmark that J.P. Morgan Asset Management developed on conjunction with FTSE Group. The theory behind the new fund is that J.P. Morgan believes indexes that follow traditional market-cap weighting or that focus on single factors are biased toward equities that are overvalued. To that end, the index considers relative valuation, positive price momentum, low volatility, and specific market capitalization, and also aims to equally diversify risk across global regions and industries. As a result, the index weights sectors fairly evenly, with weightings of between 7.5% and 13.0% for each sector.

As of May 30, 2014, the benchmark had 468 constituents. The new fund has 470 holdings as of this writing, which suggests to us that JPGE practices full replication of its index. In the filing that J.P.Morgan issued in February when it proposed the ETF, the firm noted that the fund generally would not purchase all of the securities in the index. As of this writing, JPGE's top holdings are a host of global firms, including Samsung, Toyota Motor TM, CSL, Wesfarmers, Woolworths, Hyundai, BHP Billiton BHP, Hynix Semiconductor, Woodside Petroleum, and Hutchison Whampoa.

JPGE charges 0.38% after a fee waiver of 0.26%.

Although JPGE is J.P. Morgan's first ETF, it's by no means the first attempt by the broader entity, JPMorgan Chase JPM, to enter the world of exchange-traded products. Since 2009, the bank has backed an exchange-traded note, JPMorgan Alerian MLP Index ETN AMJ, which now has $6.35 billion in assets. Officials at J.P. Morgan Asset Management have been considering creating ETFs for at least the past four years and previously had filed with U.S. regulators to create a physical copper ETF. Although the SEC in 2013 gave the thumbs-up to proposed physical copper ETFs from J.P. Morgan and BlackRock, plans for J.P. Morgan's fund stalled amid declines in copper prices and litigation from copper industry participants, who were fearful that such a product would ultimately mean copper shortages in certain favored locations. On top of all that, the bank decided to put its physical commodities business up for sale, signaling a lack of interest in proceeding.

J.P. Morgan officials have made clear that the company's upcoming efforts in ETFs mainly are for an active ETF lineup that would effectively be an adjunct to its lineup of mutual funds. Even so, the bank in February did file for a total of three passively managed, strategic beta ETFs, one of which wound up being JPGE. The other two proposed funds, JPMorgan Diversified Return International Ex-North America Equity ETF and JPMorgan Diversified Return Emerging Markets Equity ETF, remain in registration with the SEC.

2 Large-Cap Growth ETNs Launch for Fisher Investments

In mid-June, UBS and Credit Suisse rolled out two made-to-order exchange-traded notes for Fisher Investments. Offering exposure to an index of U.S. large-cap growth stocks, the ETNs – UBS AG FI Enhanced Large Cap Growth ETN FBGX and Credit Suisse FI Large Cap Growth Enhanced ETN FLGE – appear to have been designed specifically for Fisher. Each product now has more than $500 million in assets, and we presume that much of those assets are proprietary assets from Fisher. Both ETNs charge 0.85%.

UBS Debuts 2 MLP ETNs

During June, UBS also brought to market two ETNs devoted to a very unusual corner of the investment world: master limited partnerships that are not in the energy industry.

Most investors know MLPs as gas pipeline and storage firms, and indeed, quite a bit of the MLP universe consists of large pipeline players such as Kinder Morgan Energy Partners KMP. However, other kinds of firms also have organized using the MLP structure, and the Wells Fargo-managed index that the two new UBS ETNs track includes traditional fund managers and research providers such as Alliance Bernstein AB and Lazard LAZ, alternative asset managers such as Och-Ziff and Fortress Investment Group FIG, and even cemetery and funeral home operator Stonemor Partners STON.

Now, UBS ETRACS Wells Fargo MLP Ex-Energy ETN FMLP and its double-leveraged cousin, UBS ETRACS Monthly Pay 2xLeveraged Wells Fargo MLP Ex-Energy ETN LMLP, have launched and are being offered as income products that would pay a variable monthly coupon linked to the underlying companies' cash distributions, less investor fees. UBS is touting the possible income from this strategy, noting that FMLP as of this writing has a 7.7% index yield, while the leveraged LMLP has an index yield of 15.24%. However, we caution investors that the index yield is an attractive aspect of these products, but it's also a mirage, since it excludes investor fees and applicable withholding taxes. UBS also notes in the fine print that "investors are not guaranteed any coupon or distribution amount under the ETN." Both ETNs charge an annual tracking fee of 0.85%.

IShares Launches 3 Foreign Minimum Volatility ETFs

On June 4, iShares rolled out a trio of passively managed, strategic beta ETFs that hold generally lower-volatility stocks in specific overseas geographies.

IShares MSCI Asia ex Japan Minimum Volatility ETF AXJV, iShares MSCI Japan Minimum Volatility ETF JPMV, and iShares MSCI Europe Minimum Volatility EUMV respectively track MSCI indexes composed of companies in their respective regions that in the aggregate have lower volatility characteristics than broader equity markets in those areas. Academic research has shown that low-volatility stocks historically have offered higher risk-adjusted returns than their more-volatile counterparts, suggesting that the market has not offered adequate compensation for incremental risk. Amid uncertainty in foreign markets, the low-volatility anomaly – which has been observed in every market studied – has been very appealing to investors of late.

The new European ETF holds only companies from developed markets countries in Europe, while the Asia ex-Japan ETF includes firms from both developing and emerging-markets countries or regions, including China, Hong Kong, India, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand. AXJV charges 0.35%, while JPMV costs 0.30% and EUMV levies a 0.25% fee.

State Street Rolls Out 8 "Quality Mix" ETFs

During June, State Street launched eight strategic beta ETFs devoted what the firm is calling "quality mix" strategies. In all cases, the funds track MSCI indexes that select companies from their respective geographic regions that are intended to represent the performance of value, low volatility, and quality factor strategies. All eight ETFs charge 0.30%.

The first two ETFs, SPDR MSCI EAFE Quality Mix ETF QEFA and SPDR MSCI World Quality Mix ETF QWLD, launched on June 5 and are broader in their mandates, as their names indicate. Next, on June 12, State Street rolled out another six single-country "Quality Mix" ETFs: SPDR MSCI Australia Quality Mix ETF QAUS, SPDR MSCI Spain Quality Mix ETF QESP, SPDR MSCI United Kingdom Quality Mix ETF QGBR, SPDR MSCI Canada Quality Mix ETF QCAN, SPDR MSCI Germany Quality Mix ETF QDEU, and SPDR MSCI Japan Quality Mix ETF QJPN.

U.S. ETF Industry Data Dashboard

Morningstar data as of July 1, 2014

Industry Vitals	
Total # of ETPs Currently Listed	1616
ETFs	1413
Total Assets	$1,833,175,264,899
ETNs	203
Total Assets	$27,336,023,182
Total ETP Assets	$1,860,511,288,081

Active ETFs	
Actively managed ETFs	90
Total Assets	$16,421,554,195
% of total ETP assets	0.88%
New Active ETFs Launched in June	0

Coming and Going	June	YTD
New Launches	23	101
Delistings/Closures	0	33
Net Change	23	68
Pending closures	0	

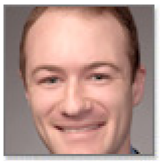
Notable ETF Filings in June
- PowerShares filed for approval for nontransparent actively managed ETFs
- ETFis filed for the Short Squeeze Fund
- ETF Series Solutions filed for the Falah Russell-IdealRatings U.S. Large Cap ETF
- Wells Fargo filed for permission to market actively managed ETFs
- Source ETFs filed for 7 European-themed passive ETFs
- State Street filed for 10 single-country foreign "quality mix" ETFs
- Global X filed for the Global X | JPMorgan Efficiente Index ETF
- Guggenheim filed for the Guggenheim Emerging Market Real Estate ETF
- Global X filed for "guru" ETFs covering Brazil, India, China, Japan, and the U.K.
- PIMCO filed for 5 actively managed ETFs: PIMCO Senior Loan Active ETF, PIMCO Low Duration Investment Grade Corporate Bond Active ETF, PIMCO Investment Grade Floating Rate Bond Active ETF, and 2 mortgage-backed securities-themed ETFs

Perspective

Making Contrarian Investing Work

Performance tends to persist in the short run, but betting on long-term losers can be a winning strategy.

June 25, 2014



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I have always admired contrarians. It isn't easy to think and act independently. Clients evaluate professional managers' performance against a benchmark, often over short windows. Those who underperform for a few years risk losing their clients, even if their investments ultimately pay off. That makes it difficult for many managers to make bold bets. Investing mistakes may also be easier to swallow when everyone is in the same boat. There is comfort in conformity, but this innate social desire can create opportunities for those who have the courage to think independently.

Fear and greed may create herding behavior. Investors tend to chase performance, buying securities that have recently done well and selling those with poor performance. This may partially explain the short-term persistence in asset returns, known as momentum. Generally, assets that have outperformed over the past six to 12 months continue to outperform over the next several months, while those that have underperformed continue to do so. That might suggest that a contrarian strategy wouldn't work well. Indeed, trading against momentum has historically been a losing strategy.

Yet, short-term momentum may push asset prices away from their fair values, leading to long-term reversals in asset returns, which is associated with the value effect. Assets with poor returns over long horizons eventually become cheap, and as a result, may offer better returns going forward. In a study published in 1985, De Bondt and Thaler found that stocks with the worst returns over the previous three to five years outperformed those with the best prior returns over the next three to five years. (However, a disproportionate portion of this outperformance occurred in January.) While this is a fairly crude approach to value investing, it illustrates that investors should fight the urge to extrapolate past performance into the future. Often, assets with dismal past performance offer the best opportunities. (Our own Russ Kinnel's "Buy the Unloved" series describes a contrarian fund strategy that attempts to take advantage of this effect.)

Even if asset returns mean revert on average over the long term, many individual securities will not due to changes in the competitive landscape that may permanently impair a company's fundamentals (think BlackBerry). Investors could more effectively diversify this type of company-specific risk by applying a contrarian strategy using exchange-traded funds, which each hold many securities. To illustrate, I ran an analysis of contrarian strategies with sector, country, and asset class indexes, rather than individual securities. Investors can gain access to each of these indexes through ETFs.

Sector Strategy

It's no secret that sectors fall in and out of favor. To test whether investors could profit from systematically buying the most beaten-down sectors, I studied the 10 Dow Jones U.S. sector indexes. IShares' U.S. equity sector ETFs track these indexes, but investors can get similar exposure through Vanguard and SPDR sector ETFs. Once a year, I ranked the indexes by their returns over the previous five years and selected the three with the worst returns. Initially, these holdings were equally weighted, but they were not rebalanced until they were removed from the portfolio. For instance, if two positions were sold, the proceeds would be divided equally between the two new holdings. However, the existing holding would remain in the portfolio at its current weighting. This approach reduces turnover and makes the strategy easier and less costly to implement. I started the portfolio simulation in December 1996 (using index return data starting in December 1991, the earliest available) and ran it through 2013. I repeated this analysis using the return rankings over the previous four-, three-, two-, and one-year periods. The table below illustrates the results.

Sector Strategy Performance

	Length of Ranking Period						
	5 years	4 years	3 years	2 years	1 year	Equally Weighted	DJ US Index
Annualized Return	12.25%	9.82%	7.20%	6.15%	6.67%	9.07%	7.74%
Standard Deviation	17.97%	19.37%	19.86%	20.90%	23.48%	19.28%	20.15%
Sharpe Ratio	0.51	0.35	0.21	0.15	0.16	0.31	0.24
Turnover	39%	38%	44%	50%	72%	-	-

Figures calculated based on annual return data.

Source: Morningstar Direct and author's calculations.

Consistent with De Bondt and Thaler's findings, a strategy that targets the sector indexes with the worst returns over the previous four- and five-year periods offered better absolute and risk-adjusted performance than the broad market-cap-weighted Dow Jones US Index. However, the portfolio that targeted the sectors with the worst trailing three-year returns did not outperform. As the table above illustrates, the shorter ranking periods tended to have worse performance. These findings are consistent with negative short-term momentum and long-term reversals. Buying assets with poor short-term performance is like trying to catch a falling knife--it's probably going to hurt. But performance tends to mean revert in the long run. Therefore, a strategy of buying assets with a long stream of poor performance has a greater chance of success.

At the end of 2013, the contrarian strategy based on previous five-year returns held the financial, oil & gas, and real estate sector indexes. Investors can get exposure to these indexes through iShares US Real Estate (IYR), iShares US Financials (IYF), and iShares US Energy (IYE). Before pursuing a contrarian strategy, it is good practice to make sure that the valuations jibe with contrarian signal. They are often consistent, but not always. In this case, the financial and energy sectors are currently the cheapest of the 10 indexes based on price/forward earnings and price/book. In contrast, the real estate index trades at the highest multiple of forward earnings, though its price/book valuation is more reasonable. It is currently the fourth-cheapest sector on that metric.

Country Strategy

Investors could apply a similar strategy using single-country index funds in their foreign equity allocations. For this analysis, I included the MSCI country indexes for all members of the developed-markets MSCI World ex USA Index with a December 1969 inception date. This left 17 country indexes. Each year from December 1974 through 2013, I ranked these indexes by their returns over the previous five years and selected the five with the worst returns. I employed the same weighting and rebalancing approach as that described for the sector strategy. As before, I repeated this analysis using four-, three-, two-, and one-year return ranking periods.

Country Strategy Performance

	Length of Ranking Period						
	5 years	4 years	3 years	2 years	1 year	Equally Weighted	MSCI W ex US Index
Annualized Return	15.35%	14.38%	12.78%	12.90%	11.61%	13.25%	10.95%
Standard Deviation	27.04%	23.04%	24.39%	27.62%	25.52%	22.36%	21.17%
Sharpe Ratio	0.46	0.49	0.40	0.36	0.34	0.46	0.38
Turnover	39%	46%	44%	52%	73%	-	-

Figures calculated based on annual return data.

Source: Morningstar Direct and author's calculations.

The portfolios of country indexes with the worst returns over the previous four to five years offered notable return improvements over the MSCI World ex USA Index. They were also more volatile, but still managed to generate better risk-adjusted performance. Unlike the contrarian sector strategy, the portfolios formed on shorter-term return rankings kept pace with the benchmark, though they exhibited greater volatility. However, they did underperform when I increased the rebalancing frequency to monthly or quarterly, which suggests that poor performance tended to persist in the short term. Contrarian investing requires patience. Depressed assets may become cheaper in the short run and it can take a long time for them to rebound.

At the end of last year, the five-year contrarian strategy held the MSCI Austria, France, Italy, Japan, and Spain indexes. Investors can gain similar exposure through iShares MSCI Austria Capped (EWO), iShares MSCI France (EWQ), iShares MSCI Italy Capped (EWI), iShares MSCI Japan (EWJ), and iShares MSCI Spain Capped (EWP). Italy, Spain, and France are still scary places to invest. They have been struggling with anemic economic growth over the past few years and, while conditions have improved, they are not out of the woods yet. However, investors' fear can depress valuations and create more attractive return opportunities going forward. Only Japan and Austria look especially cheap relative to the group based on price/forward earnings ratios. But all five country indexes fall in the cheapest half of the selection universe based on price/book ratios, and Japan, Austria, and Italy are the cheapest three.

Asset Class Strategy

Tough though it may be, buying asset classes that have been unloved for few years also appears to be a winning strategy. For this analysis, I included the 10 indexes in the table below in the asset class strategy.

Asset Class	Index
Large-Cap U.S. Stocks	Russell 1000 TR
Small-Cap U.S. Stocks	Russell 2000 TR
Foreign Developed-Market Stocks	MSCI EAFE GR
Emerging-Market Stocks	MSCI EM GR
Commodities	DJ UBS Commodity TR
Gold	London Fix Gold PM
Investment-Grade U.S. Bonds	Barclays US Agg Bond TR
High-Yield U.S. Bonds	BofAML US HY Master II TR
Foreign Government Bonds	Barclays Global Treasury ex US TR
REITs	FTSE NAREIT Equity REITs TR

I followed the same procedure as described for the previous two strategies. However, this strategy targeted the three indexes with the worst prior period returns. I ran the portfolio simulation from the end of 1995 (the earliest point at which five years of data became available for all the indexes) through 2013.

Asset Class Strategy Performance

	Length of Ranking Period						
	5 years	4 years	3 years	2 years	1 year	Equally Weighted	Vanguard Balanced
Annualized Return	10.77%	9.54%	9.16%	6.53%	5.56%	7.99%	7.61%
Standard Deviation	15.06%	13.29%	13.58%	15.55%	18.23%	12.78%	11.55%
Sharpe Ratio	0.52	0.49	0.45	0.23	0.14	0.39	0.40
Turnover	47%	49%	52%	49%	68%	-	-

Figures calculated based on annual return data.

Source: Morningstar Direct and author's calculations.

It is difficult to select an appropriate benchmark for an asset class strategy. For the purposes of this study, I included both the Vanguard Balanced Index (VBINX), which maintains a passive 60/40 allocation to U.S. stocks and bonds, and an equally weighted portfolio of all 10 eligible indexes. The portfolios of indexes with the worst returns over the previous three to five years offered better absolute and risk-adjusted returns than both the equally weighted and Vanguard Balanced benchmarks. Similar to the sector strategy, those with the worst returns over the previous one to two years continued to underperform the benchmarks.

At of the end of 2013, the contrarian asset class strategy based on the previous five-year returns was invested in the Dow Jones UBS Commodity, Barclays US Aggregate Bond, and Barclays Global Treasury ex US indexes. Investors can gain access to the Dow Jones UBS Commodity index through iPath DJ-UBS Commodity Index (DJP). However, bond valuations conflict with the contrarian buy signal. Bonds have underperformed because interest rates have been depressed over the past few years. Yield-to-maturity is an upper bound on the returns investors can expect from bonds over the long term. The current yield-to-maturity on iShares Core US Aggregate Bond (AGG), which tracks the Barclays Aggregate Bond Index, is currently only about 2.1%. The yield-to-maturity on SPDR Barclays International Treasury Bond (BWX), which tracks a capped version of the Barclays Global Treasury ex US index, is even lower (1.8%). If interest rates start to rise, these funds' short-term returns could be worse.

Key Takeaways

- Betting on assets with poor recent performance is a bad idea. In the short term, momentum dominates, which means that recent laggards often continue to disappoint and recent leaders remain aloft.
- However, assets that underperform over longer periods (four to five years) eventually become cheap and poised to offer better returns.
- Investors can take advantage of these long-term reversals with a contrarian strategy using ETFs. This strategy may work better when investors consider valuations together with the contrarian signals.

References

De Bondt, Werner and Thaler, Richard. "Does the Stock Market Overreact?" *The Journal of Finance*, Vol. 40, No. 3, 1985.

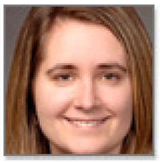
Jehadeesh, Narasimhan and Titman, Sheridan. "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency." *The Journal of Finance*, Vol. 48, No. 1, 1993.

Perspective

Passive vs. Active: Debating International Small Caps

Passively managed funds are a viable option thanks to low fees.

June 20, 2014



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An important decision investors make is whether to use an active or passive strategy in a particular segment of their portfolio. Passive investing is popular for more "efficient" areas of the market, but less-efficient areas, like international small-cap stocks, are thought to provide active managers more opportunities for outperformance.

Passive and Active

An examination of all mutual funds from the Morningstar international small/mid-cap categories (value, growth, and blend) shows that the categories are littered with underperforming funds. We created a data set of all actively managed mutual funds in Morningstar's international small-cap growth, value, and blend categories from the beginning of 2001 through the end of May 2014 and calculated the group's average alpha relative to the MSCI EAFE Small Cap Index. Alpha can be an indication of the unique skills a portfolio manager brought to the table. Three-year return data (from June 2011 through May 2013) was used. The average alpha produced by the active funds over the past three years was 0.02, or almost zero. An investor picking from the broad list would have a less-than-50% chance of picking an outperforming fund. However, it is important to note that the international small-cap categories are somewhat heterogeneous. Funds can invest only in developed markets, or include a slice of exposure to emerging markets. Regional exposure, in addition to stock selection, drives return. In years when emerging-markets stocks outperform, funds with exposure to the region will have a boost to return relative to the category regardless of their stock-picking skill.

Alpha of International Small/Mid-Cap Category Morningstar Medalists

	Morningstar Analyst Rating	5-Year Alpha	3-Year Alpha	5-Year Sharpe Ratio
Wasatch International Growth WAIGX	Bronze	8.00	5.93	0.70
Thornburg International Growth TIGAX	Neutral	8.15	6.23	1.28
Artisan International Small Cap ARTJX	Gold	4.90	7.07	1.03
IVA International IVIOX	Silver	4.18	2.54	1.29
Invesco International Small Company IEGAX	Silver	4.35	2.63	1.05
Columbia Acorn International Select LAFAX	Silver	4.16	2.20	1.06
MFS® International New Discovery MIDAX	Silver	4.37	4.52	1.06
T. Rowe Price International Discovery PRIDX	Bronze	4.33	4.97	1.06
Oakmark International Small Cap OAREX	Bronze	3.07	0.98	0.98
Columbia Acorn International Select LAIAX	Silver	3.12	3.10	0.98
Fidelity Advisor® Intl Small Cap FIASX	Neutral	2.38	0.62	0.96
iShares MSCI EAFE Small-Cap SCZ	N/A	0.38	0.38	0.70
DFA International Small Company DFISX	Silver	1.51	0.25	0.92
Vanguard International Explorer VINEX	Neutral	0.92	-0.56	0.51
DFA International Small Cap Value DISVX	Silver	0.21	1.35	0.84
TCW International Small Cap TGICX	Bronze	N/A	-2.92	N/A
Vanguard FTSE All-Wld ex-US SmCp Idx VFSVX	Silver	-0.18	-0.63	0.78
Third Avenue International Value TVIVX	Neutral	-1.43	-2.09	0.70

Source: Morningstar Direct.

The average results are mediocre, but when we look at the list of funds that receive a Morningstar Analyst Rating, actively managed funds begin to look more attractive. Morningstar analysts generally rate funds that have a track record of reasonable length and significant assets--that is, the funds that investors are likely to be most interested in. These funds have provided significant alpha over the past three- and five-year periods. In the chart shown (previous page), funds are compared with the MSCI EAFE SMID Index if they have less than 10% exposure to emerging-markets stocks, and otherwise to the MSCI ACWI ex-USA SMID Index. SCZ is shown compared with its benchmark, the MSCI EAFE Small Cap Index.

These funds can be quite expensive, however, and their outperformance might not persist. For investors who doubt that these funds' outperformance will persist, choosing a passively managed ETF for one's international small-cap exposure is a reasonable proposition. iShares MSCI EAFE Small-Cap (SCZ) offers exposure to small-cap stocks from 22 developed nations, excluding Canada and the United States. The fund tracks the smallest 15% of the developed international small-cap market and holds more than 1,300 stocks that do not overlap with the MSCI EAFE Index, making it a good complement to exchange-traded funds like iShares Core MSCI EAFE (IEFA).

SCZ's index tracks more than 2,100 stocks, so the fund uses representative sampling to lower the number of stocks but maintain a similar return profile. By sampling, SCZ can use depository receipts instead of local listings and avoid the most illiquid stocks altogether. The fund has outperformed its benchmark over the past five years (demonstrated by the fund’s alpha of 0.38 relative to its own benchmark shown above) because of its sampling, but it could just as likely underperform. Investors should expect this fund to track its index closely, but not perfectly.

This fund's 0.40% expense ratio is average among international small-cap ETFs, but quite low relative to actively managed funds. The funds rated by Morningstar average a 1.22% expense ratio. Over time, that average 0.82% difference in expenses is a high hurdle for active managers to clear.

SCZ's average market cap is $1.85 billion, compared with the Morningstar medalist average of $3.12 billion. Smaller companies generally offer higher return than the broad market over time in exchange for more volatility, so this ETF is most suitable as a satellite investment for long-term investors with high risk tolerance. SCZ's sector and regional holdings have remained constant over time. The fund does not include South Korean or Canadian stocks. Top country weightings include Japan (27%), the United Kingdom (20%), and Australia (7%). The fund's three primary sector exposures are industrials (23%), financials (21%), and consumer discretionary (17%).

A portion of the fund's distribution is withheld for foreign tax purposes from companies in some countries, and the dividend yield figure is net of this tax. Investors can file for a foreign tax credit to offset these taxes, but not if the fund is held in a tax-advantaged account. In 2012 and 2011, more than 70% of distributions from this fund were qualified.

Other Passive Options

The only ETF to offer both developed- and emerging-markets small-cap exposure is Vanguard FTSE All-World ex-US Small Cap Index ETF (VSS), which allocates about 15% of its holdings to emerging markets. VSS' 0.20% price tag is one of the lowest available. Only Schwab International Small-Cap Equity ETF (SCHC) is priced to compete with VSS, and it costs 0.19%. SCHC's portfolio gives more weight to European stocks than VSS does.

Another popular fund is SPDR S&P International Small Cap (GWX), which includes securities with a market cap of less than $2 billion instead of sorting constituents by market-cap percentile. As a result, it has one of the smallest average market caps in the category. GWX has the most exposure to Asian stocks and includes South Korean and Canadian equities. Unfortunately, GWX's 0.59% expense ratio is very high.

Perspective

Currency Hedging Makes International Bonds Easier to Own

International bond funds are a great way to diversify a fixed-income portfolio, but currency movements can create unnecessary volatility.

July 3, 2014

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It isn't uncommon for investors to diversify their stock holdings abroad. Sure, currency fluctuations can make international equities a bit riskier than their domestic counterparts, but they do not significantly alter the risk profile. In contrast, currency risk can make international bonds significantly more volatile than U.S. bonds. For example, over the past decade, the Barclays Global Aggregate Ex USD Index was more than twice as volatile as the Barclays U.S. Aggregate Bond Index. Currency movements can dominate international-bond funds' performance in the short term. This often makes them more suitable as a bet against the U.S. dollar than as a way to share in the bond returns foreign investors enjoy. Hedging currency risk can solve this problem.

Without currency movements, international bonds have historically exhibited volatility comparable to their domestic counterparts. The hedged version of the Barclays Global Aggregate Ex USD Index only exhibited about a third of the volatility of its unhedged counterpart over the past decade. The dramatic reduction in volatility that currency hedging offers may allow conservative investors to invest abroad more comfortably and better diversify their interest-rate and credit risk.

To illustrate the benefits of currency hedging for bond funds, consider the period between Jan. 28, 2002, and March 18, 2008, when the dollar experienced a 40% decline. During this period, the returns of the unhedged-currency indexes were more than twice those of their hedged-currency counterparts. However, the unhedged-currency indexes experienced much greater volatility, which translated into less-attractive risk-adjusted performance.

Bond Index Peformance When the Dollar Depreciates: January 28, 2002–March 18, 2008

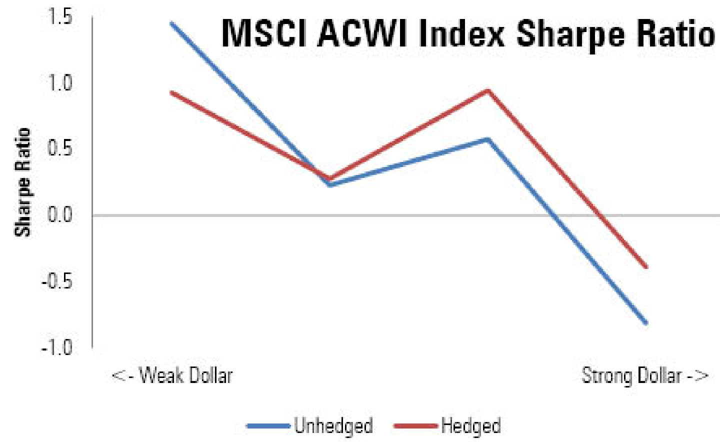
Index	Returns	Volatility	Sharpe Ratio
Aggregate Index			
Barclays Gbl Agg Ex USD TR USD	12.28	7.74	1.59
Barclays Gbl Agg Ex USD TR Hdg USD	4.76	2.25	2.12
Treasury Index			
JPM GBI Global Ex US TR USD	12.06	7.91	1.52
JPM GBI Global Ex US TR Hdg USD	4.95	2.41	2.05

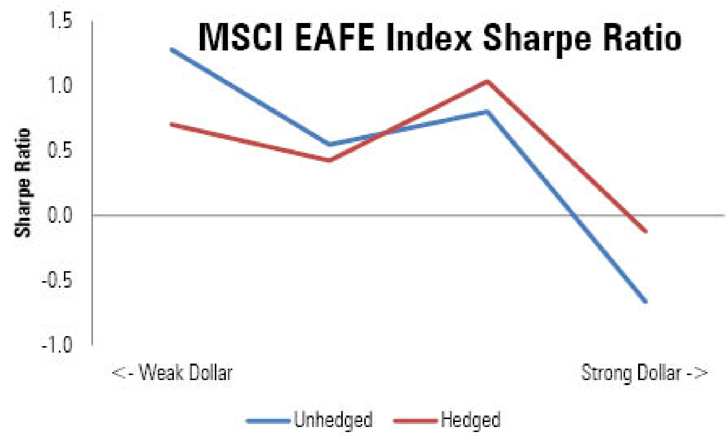
Source: Morningstar Direct.

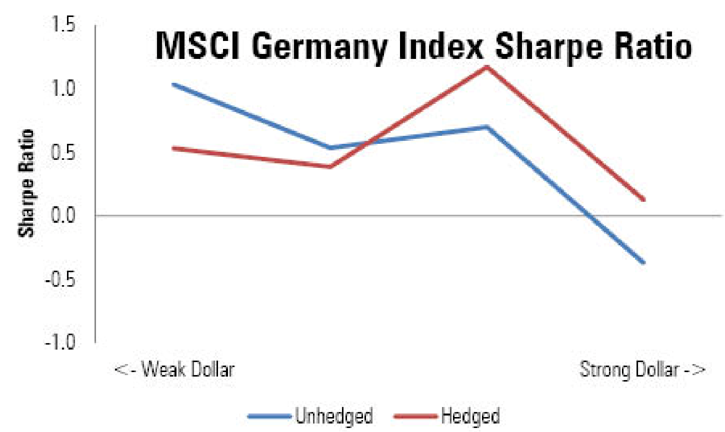
If the unhedged indexes didn't offer better risk-adjusted performance when the depreciation of the dollar offered such a massive tailwind, they are unlikely to offer better risk-adjusted performance over most periods.

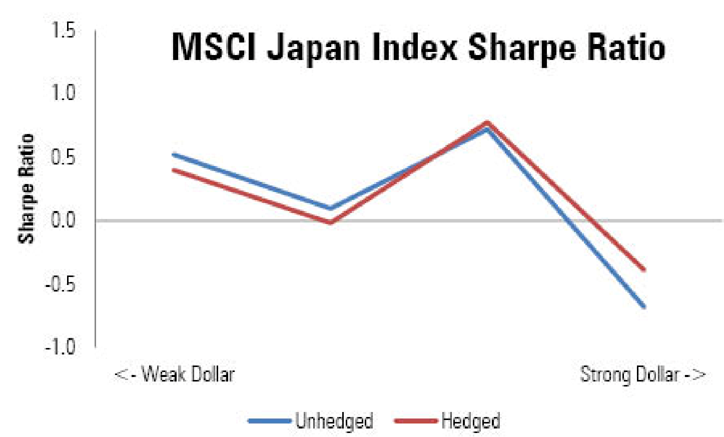
Currency Hedging: Bonds Versus Stocks

However, it might make more sense to leave currency risk unhedged for international stocks because currency movements contribute to a smaller portion of their total volatility. To evaluate how changes in the strength of the dollar would affect stocks' risk-adjusted returns, I compared how the hedged and unhedged versions of the MSCI All Country World, MSCI EAFE, MSCI Germany, and MSCI Japan indexes performed during years when the U.S. dollar strengthened and weakened. I further divided these periods into years where the change in the value of the dollar was small (less than 5%) and large (more than 5%). The charts below show the risk-adjusted returns for the four indexes as a function of the strength of the dollar.


MSCI ACWI Index Sharpe Ratio
Sharpe Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
<- Weak Dollar
Strong Dollar ->
Unhedged
Hedged

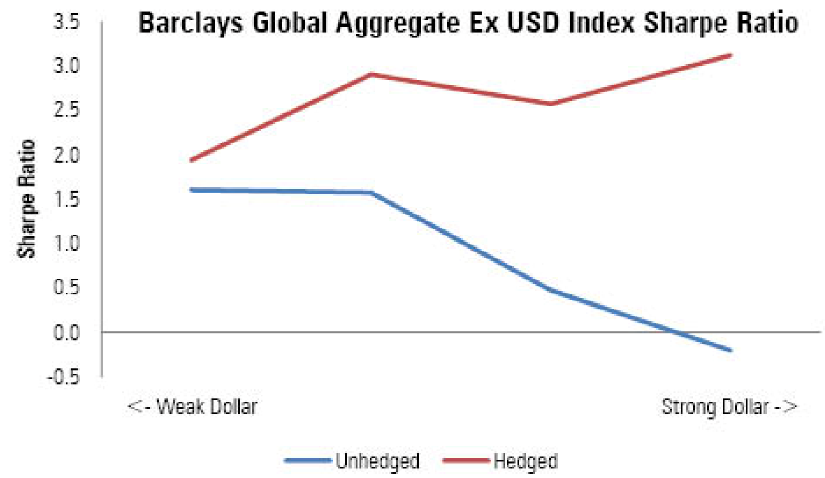

MSCI EAFE Index Sharpe Ratio
Sharpe Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
<- Weak Dollar
Strong Dollar ->
Unhedged
Hedged

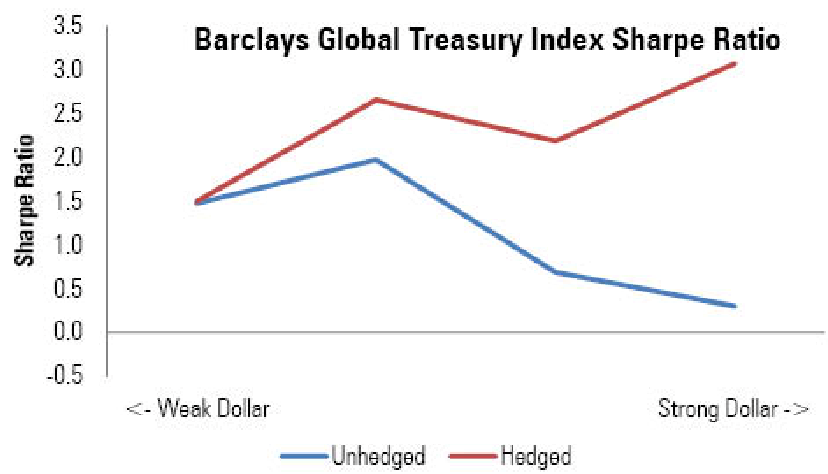

MSCI Germany Index Sharpe Ratio
Sharpe Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
<- Weak Dollar
Strong Dollar ->
Unhedged
Hedged

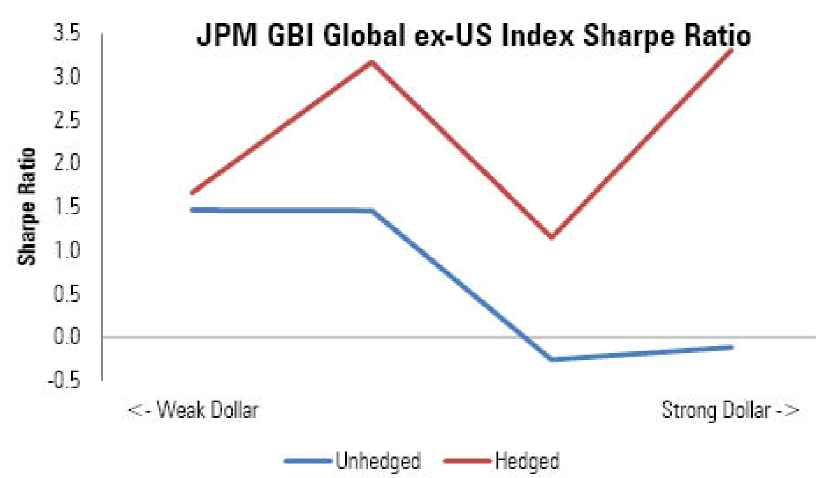

MSCI Japan Index Sharpe Ratio
Sharpe Ratio
1.5
1.0
0.5
0.0
-0.5
-1.0
<- Weak Dollar
Strong Dollar ->
Unhedged
Hedged

As expected, as the dollar weakened, the unhedged-currency indexes generally provided greater risk-adjusted returns than their hedged counterparts. As we move to a stronger dollar, on average, the hedged index generally provided better risk-adjusted returns.

In contrast, currency hedging almost always makes sense for bonds. The charts below illustrate the risk-adjusted performance of the hedged and unhedged versions of the Barclays Global Aggregate Ex USD Index, Barclays Global Treasury Index, and JPMorgan GBI Global ex-US Index using the same procedure described above.







Unlike the equity indexes, the unhedged-currency index did not provide better risk-adjusted returns even when the dollar was weak. This is because of the large volatility that currency movements introduce relative to bonds' total volatility.

Limitations of Hedging Currency

Hedging currency can increase costs. However, most bond index fund holdings are denominated in the largest, most-liquid currencies like the British pound, Japanese yen, and euro, which are relatively cheap to hedge.

Currency hedging does not remove all currency risk. Expected currency movements are priced into forward currency contracts, which funds use to hedge their exposure. Interest-rate parity predicts that currencies with higher local interest rates will depreciate relative to those with lower interest rates. This decline in the value of the higher-yielding currency should offset its yield advantage. While this relationship does not always hold in practice, the market generally uses this principle to set forward prices.

It may also be difficult for portfolio managers to hedge the right amount. Because forward currency exchange contracts used to hedge currency exposure are generally reset each month, portfolio managers must estimate the value of their portfolios when the forward contracts expire at the end of the month. To do so, they must take into account changes in credit spreads, interest-rate movements, and cash flows into and out of the portfolio. Because it is difficult to estimate these variables perfectly, funds may become over- or underhedged. However, currency hedging should still remove most of the volatility that currency fluctuations create.

Investment Options

Currently, the only currency-hedged ETF is Vanguard Total International Bond Index (BNDX). Based on the Barclays Global Aggregate ex-USD Float Adjusted RIC Capped (USD Hedged) Index, this fund offers a mix of international treasury and corporate bonds for a low fee of 0.20%.

PIMCO Foreign Bond (U.S. Dollar Hedged) (PFORX), which has a Morningstar Analyst Rating of Silver, offers actively-managed currency-hedged exposure to foreign government bonds. It charges a 0.50% expense ratio.

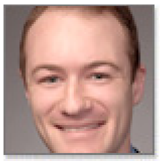
Key Takeaways

- International-bond funds are a great way to diversify a bond portfolio, but investors need to manage currency risk appropriately.
- Currency movements often account for most of foreign bond portfolios' volatility.
- While hedging currency does not completely eliminate currency risk, it gives investors purer exposure to the underlying bonds in the fund.

ETF Spotlights

Spotlighting a Fundamental Junk Bond ETF & a Currency Hedged Global Bond ETF

Morningstar analyst insight, plus two complimentary full-length ETF research reports.



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PowerShares Fundamental High Yield Corp Bond PHB

This high-yield bond index fund attempts to avoid some of the pitfalls of market-cap weighting, but it may introduce a new problem.

The fund weights its holdings according to fundamental measures of their issuers' size, including sales, cash flow, dividends, and the book value of their assets. This approach may give the fund less exposure to heavily indebted companies than its peers that weight their holdings by the market value of each issue. But where market-cap weighting offers the advantage of tilting a portfolio toward the most-liquid bonds, this fund may overweight some of the less liquid issues. These bonds can be more difficult to obtain and more expensive to trade.

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Vanguard Total International Bond ETF BNDX

While investing in international-bond funds can help diversify credit and interest-rate risk, high fees and currency risk can diminish their appeal. Vanguard Total International Bond ETF (BNDX) attempts to address these problems.

Over the past decade, the fund's benchmark exhibited comparable volatility to the Barclays U.S. Aggregate Bond Index. However, the fund's current yield-to-maturity (1.7%) is below that of the Barclays U.S. Aggregate Bond Index (2.0%). Its duration (seven years) is also higher than the Barclays U.S. Aggregate Bond Index's (five years), introducing greater interest-rate risk, which could hurt returns if rates rise. Additionally, the average credit rating of the fund's holdings (A) is slightly lower than that of the Barclays U.S. Aggregate Bond Index (AA), which skews heavily toward U.S. Treasuries. However, the diversification benefits that international bonds can offer, coupled with the fund's low fees and hedged currency exposure, could make this a worthy addition to a U.S.-heavy portfolio.

PowerShares Fundamental High Yld Corp Bd PHB

Morningstar Rating™
★

Morningstar Category	**Category Index**	**Prospectus Benchmark**
US ETF High Yield Bond	Barclays US Agg Bond TR USD	RAFI® Bonds US High Yield 1-10 USD

Fixed Income Asset Allocation

Portfolio Date: 6/30/2014

	%
Government	0.0
Municipal	0.0
Corporate	98.8
Securitized	0.0
Cash & Equivalents	1.2
Derivative	0.0

Performance

Time Period: 7/8/2009 to 7/7/2014

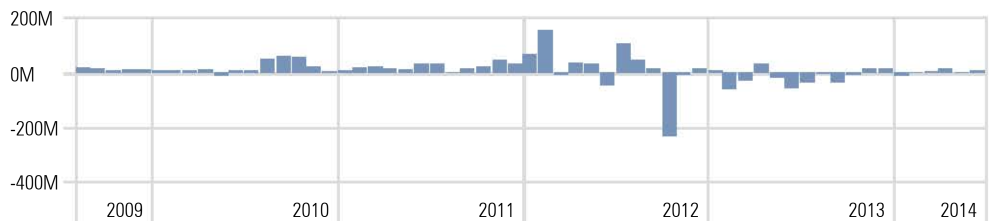
Snapshot

Inception Date	11/15/2007
Expense Ratio %	0.50
Assets (millions)	667
Avg Dly Vol (3 Mo)	195,446
12 Month Yield %	4.43
Portfolio Date	7/7/2014
Distribution Freq	Monthly
ETN	No
Replication Method	Physical-Sample
Fund Lgl Structure	Open Ended Investment Company

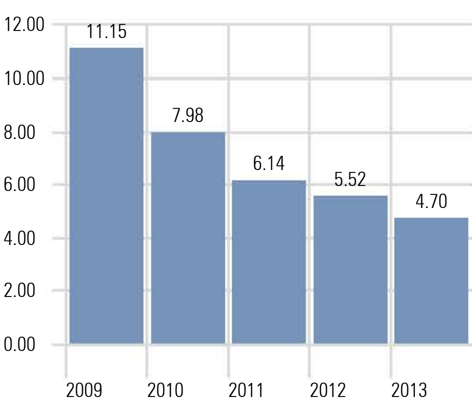
Annual Returns %

	2009	2010	2011	2012	2013	YTD
PowerShares Fundamental High Yld Corp Bd	32.95	9.70	5.94	11.98	4.33	4.32
Barclays US Agg Bond TR USD	5.93	6.54	7.84	4.21	-2.02	3.42
US ETF High Yield Bond	41.38	11.77	4.40	13.19	6.16	4.07

Monthly Fund Flows (millions)



Annual Income Return %



Risk/Return Analysis (3 Years)

	ETF	Cat Index	Cat Avg
Standard Deviation %	5.14	2.77	5.62
Arithmetic Mean %	0.60	0.30	0.64
Sharpe Ratio	1.39	1.29	1.40
R-Squared	8.00	—	2.41
Beta	0.52	—	0.26
Alpha %	5.26	—	6.73
Treynor Ratio	13.81	—	18.15
Sortino Ratio	2.40	2.31	2.42

Suitability

By Alex Bryan 6/30/2014

Traditional market-cap-weighted bond indexes get a lot of flak for assigning the largest weights to the most heavily indebted issuers. For instance, it may not be optimal for investors to hold more General Motors debt just because GM needs to raise more money. Market-cap-weighted equity indexes share this potential drawback. Companies that issue stock can increase their market capitalizations without any changes in the fundamentals of the business, simply by raising more cash through the sale of additional shares to the public. However, this issue is likely less pronounced for stock than bond indexes because most companies rely more heavily on debt financing than equity. Skewing toward the most heavily indebted issuers may be particularly problematic in the high-yield bond market because these issuers may carry greater default risk than their less indebted counterparts. The biggest debtors may also be more likely to suffer a credit-rating downgrade, which could hurt performance.

PowerShares Fundamental High Yield Corporate Bond PHB attempts to address this issue by weighting its holdings according to fundamental measures of their issuers' size, including sales, cash flow, dividends, and the book value of their assets. This approach may give the fund less exposure to heavily indebted companies than its peers that weight their holdings by the market value of each issue. But where market-cap weighting offers the advantage of tilting a portfolio toward the most-liquid bonds, this fund may overweight some of the less liquid issues. These bonds can be more difficult to obtain and more expensive to trade. In order to limit this potential problem, the fund's benchmark, RAFI Bonds US High Yield 1-10 Index, restricts its holdings to issues with at least $350 million in par value outstanding.

Yet, this benchmark may still be more difficult to replicate than a market-cap-weighted index. Over the trailing three years through March 2014, the fund lagged its benchmark by 1.26% annualized, considerably more than its 0.50% expense ratio. This underperformance does not inspire confidence. If it continues, it could erode the index's potential performance edge relative to a market-cap-weighted alternative.

PowerShares Fundamental High Yld Corp Bd PHB

Morningstar Rating™
★

Morningstar Category	Category Index	Prospectus Benchmark
US ETF High Yield Bond	Barclays US Agg Bond TR USD	RAFI® Bonds US High Yield 1-10 USD

Fundamental View

Although the fund's fundamental weighting approach may reduce its exposure to the most heavily indebted companies, nearly all high-yield bonds are issued by companies with a high degree of leverage. Companies can get there either intentionally by way of a debt-financed acquisition or recapitalization, or unintentionally, as a result deteriorating business fundamentals. Either way, the risk posed by leverage is the same. As leverage increases, so does the probability of default and bankruptcy. The high yield that these bonds offer is compensation for this risk.

In contrast to some of its index peers, PHB excludes bonds that either Moody's or S&P rate below B3/B-. This exclusion may help improve the fund's risk-adjusted performance. Investors reaching for yield may be tempted to tilt toward the lowest-grade bonds and, in their quest for income, push the prices of these bonds above their fair values. During the past 10 years, the Bank of America Merrill Lynch US High Yield CCC or Below Index generated lower risk-adjusted returns than the corresponding BB and B indexes. The CCC index's option-adjusted spread (compensation for credit risk) is currently the lowest it has been since 2007.

During the past 10 years, BB rated bonds offered better risk-adjusted returns than their investment-grade and lower-credit-quality counterparts. Most investment-grade funds cannot hold BB rated securities, which can create forced selling when investment-grade issues are downgraded to BB. These issues may also be less attractive to investors reaching for yield than their lower-quality counterparts. As a result, they may become undervalued relative to other bonds. BB/Ba bonds account for close to 60% of the fund's assets, which may give it a more favorable risk/reward profile than many of its peers, even if it offers a slightly lower yield.

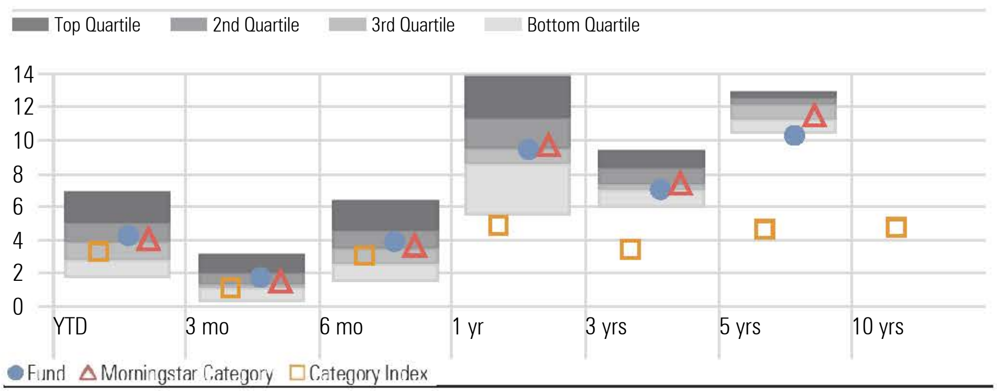
As of this writing, the fund carries a 4.4% yield to maturity. While this yield may appear attractive relative to investment-grade alternatives, high-yield bonds' spread over Treasuries is currently fairly low. As of June 20, 2014, the option-adjusted spread on the Bank of America Merrill Lynch US High Yield Master II Index (a commonly cited high-yield bond benchmark) was about 3.4%. Since the end of 1996 (the earliest this data is available), the median spread was 5.3%.

Credit spreads tend to widen during recessions and times of uncertainty, when issuers may have less capacity to service their debt. This sensitively to the business cycle causes high-yield bonds to behave more like equities than investment-grade bonds. The Bank of America Merrill Lynch US High Yield Master II Index was 0.74 correlated with the S&P 500 over the past decade. During that time, it was only 0.27 correlated with the Barclays U.S. Aggregate Bond Index.

High-yield bonds tend to outperform investment-grade bonds during periods of rising interest rates, which usually occur as the economy strengthens, because the benefit of tightening credit spreads partially offsets the negative effect of rising rates. The fund's moderate duration (4.0 years) should also help mitigate losses when rates rise.

Trailing Returns Relative to Peer Group %

Peer Group (5-95%): Exchange Traded Funds - U.S. - High Yield Bond



	YTD	3 mo	6 mo	1 yr	3 yrs	5 yrs	10 yrs
PowerShares Fundamental High Yld Corp Bd	4.32	1.77	4.00	9.51	7.09	10.34	—
Barclays US Agg Bond TR USD	3.42	1.23	3.06	4.95	3.47	4.65	4.81
US ETF High Yield Bond	4.07	1.56	3.67	9.74	7.47	11.51	—

Fund Credit Quality

	ETF	Cat Avg
AAA %	1.17	3.83
AA %	0.00	0.42
A %	0.00	1.17
BBB %	7.53	5.29
BB %	43.06	30.95
B %	48.02	40.37
Below B %	0.22	15.27
Not Rated %	0.00	2.70

Coupon Range

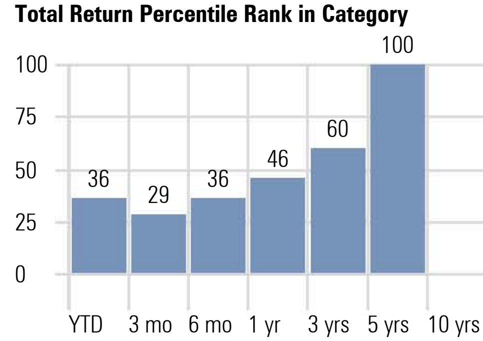
	ETF	Cat Avg
0 to 1 %	0.00	5.03
1 to 2 %	0.00	0.08
2 to 3 %	0.88	0.17
3 to 4 %	3.48	0.34
4 to 5 %	16.18	2.42
5 to 6 %	25.04	6.53
6 to 7 %	27.74	19.35
7 to 8 %	18.72	18.35
8 to 9 %	5.95	20.93
9 to 10 %	0.93	6.12
10 to 11 %	0.20	0.48
11 to 12 %	0.00	0.48
12 to 15 %	0.00	12.05
15+ %	0.00	0.00

Market Performance Statistics

Time Period: 11/16/2007 to 7/7/2014

	ETF	Cat Index	Cat Avg
Up Capture Ratio %	6.69	100.00	10.70
Down Capture Ratio %	-7.85	100.00	-13.04
Max Drawdown %	-41.15	-5.08	-37.11
Max Gain %	111.52	38.43	130.17
Best Month %	10.64	3.73	10.68
Worst Month %	-18.66	-2.36	-17.67

Total Return Percentile Rank in Category



PowerShares Fundamental High Yld Corp Bd PHB

Morningstar Rating™
★

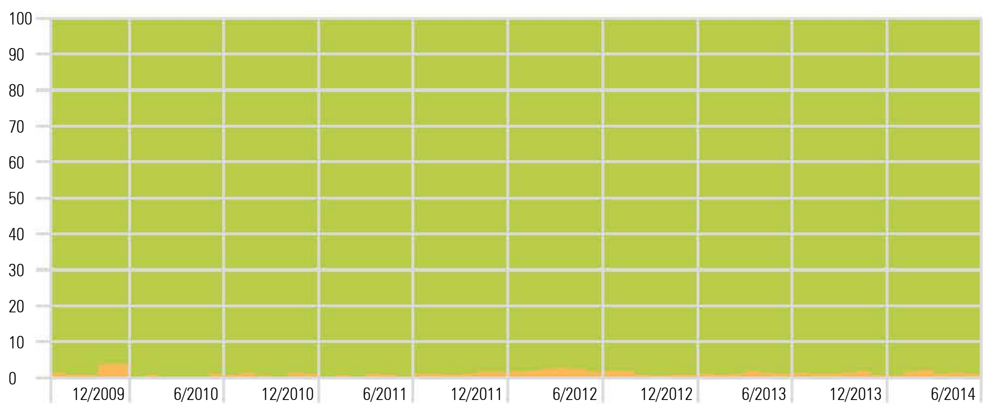
Morningstar Category	**Category Index**	**Prospectus Benchmark**
US ETF High Yield Bond	Barclays US Agg Bond TR USD	RAFI® Bonds US High Yield 1-10 USD

Portfolio Construction

The fund employs representative sampling to track the RAFI Bonds US High Yield 1-10 Index, which includes nonconvertible, fixed-coupon high-yield corporate bonds with up to 10 years until maturity. All issuers must be publicly traded companies. Each bond in the index must also have a par value of at least $350 million outstanding and carry either a Moody's or S&P rating of BB+/Ba1 or lower, but not below B3/B-. That means that the fund may hold some bonds that one of the agencies has rated BBB/Baa, as long as the other assigned a BB+/Ba1 rating or lower (but above B3/B-). The index calculates the percentage weight of each issuers' sales, cash flow, dividends (where applicable), and book value of assets against the aggregate values of each of those metrics. To reduce turnover, the index uses five-year averages for each factor, except book value. The index averages those four values to assign each issuer's weight. For those companies that do not pay dividends, the average of the other three factors determines the issuer's fundamental weight. If the issuer has more than one qualifying bond, the index selects the largest issue with 1-5 years to maturity and the largest issue with 5-10 years to maturity. Therefore, there can be up to two bonds per issuer. In these cases, the index divides the issuer's weight equally between the two bonds. The index rebalances to the fundamental weights annually in March and makes other adjustments monthly.

	ETF	Cat Avg		ETF	Cat Avg
Yield to Maturity %	4.45	5.65	Turnover Ratio %	23.00	30.05
12 Month Yield %	4.43	7.61	% Asset in Top 10	9.61	66.87
SEC Yield %	3.30	—	# of Holdings	261	635

Fixed Income Super Sector Breakdown History



Government % | Municipal % | Corporate %
Securitized % | Cash & Equivalents % | Derivative %

Top 10 Holdings

Portfolio Date: 7/7/2014

	Maturity Date	Portfolio Weighting %
Kinder Morgan Fin Corp Ulc 5.7%	1/5/2016	1.17
General Mtrs 144A 4.875%	10/2/2023	1.09
General Mtrs 144A 3.5%	10/2/2018	1.07
Regions Bk Birmingham Ala 7.5%	5/15/2018	0.99
Flextronics Intl 5%	2/15/2023	0.93
Cco Hldgs Llc / Cco Hldgs Cap 6.625%	1/31/2022	0.92
Goodyear Tire & Rubr 8.25%	8/15/2020	0.86
Windstream 7.75%	10/15/2020	0.86
Hertz 6.75%	4/15/2019	0.86
Hca 6.5%	2/15/2016	0.85

Morningstar Fixed Income Style Box™

Not Available

Fixed Income Portfolio Statistics

	ETF	Cat Avg
Average Eff Duration (yrs)	—	3.51
Average Eff Maturity (yrs)	—	5.35
Average Coupon %	6.22	7.92
Average Price	107.45	190.33
Average Credit Quality	B	B

Current Fixed Income Sub Sector Breakdown

	ETF	Cat Avg
Government %	0.00	1.21
Government Related %	0.00	0.43
Municipal Taxable %	0.00	0.03
Municipal Tax-Exempt %	0.00	0.03
Bank Loan %	0.00	1.02
Convertible %	1.49	0.62
Corporate Bond %	97.09	83.63
Preferred Stock %	0.00	0.78
Agency Mortgage-Backed %	0.00	0.38
Non-Agency Residential MBS %	0.00	0.35
Commercial Mortgage-Backed %	0.00	0.54
Covered Bond %	0.00	0.00
Asset-Backed %	0.00	1.07
Cash & Equivalents %	1.42	4.67

Bond Maturity Breakdown

	ETF	Cat Avg
1 to 3 Years %	11.14	1.17
3 to 5 Years %	18.43	21.41
5 to 7 Years %	30.32	25.54
7 to 10 Years %	38.46	39.68
10 to 15 Years %	0.51	2.27
15 to 20 Years %	0.00	1.35
20 to 30 Years %	0.00	1.07
30+ Years %	0.00	1.04

PowerShares Fundamental High Yld Corp Bd PHB

Morningstar Rating™
★

Morningstar Category	Category Index	Prospectus Benchmark
US ETF High Yield Bond	Barclays US Agg Bond TR USD	RAFI® Bonds US High Yield 1-10 USD

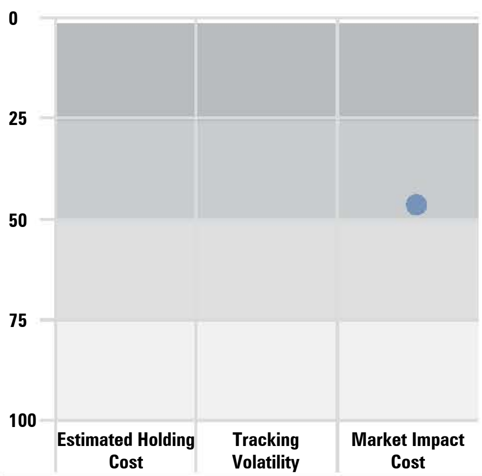
Fees

The fund's 0.50% expense ratio is comparable to similar high-yield-bond ETFs. However, SPDR Barclays High Yield Bond JNK is a tad cheaper (0.40% expense ratio). Tracking error may add to this cost. Over the trailing three years through March 2014, the fund has lagged its benchmark by 1.26% annualized.

Expenses

	ETF	Cat Avg
Net Expense Ratio %	0.50	0.47
Expense Waiver	—	—
Expense Waiver Expiration Date	—	—
Expense Waiver Type	—	—
Prospectus Date	2/28/2014	—

Percentile Rank Relative to ETF Universe



Total Cost Analysis Data Points

Estimated Holding Cost %	—
Tracking Volatility %	—
Market Impact Cost %	0.03

Estimated Holding Cost is essentially the difference between the ETF return and the benchmark return and represents the realized cost of replicating the benchmark. Lower or even negative costs indicate that the ETF is doing a better job of matching its benchmark while minimizing costs.

Tracking Volatility measures the uncertainty with which an ETF tracks a benchmark. A higher tracking error indicates a wider confidence interval for expected performance around the benchmark. Lower numbers and ranks are better.

Market Impact Cost represents the liquidity of the ETF and is based on the average market price movement in percent caused by a $100,000 trade in the ETF. Calculated as the residual volatility unexplained by movements in NAV and the previous day's premium or discount, scaled by average dollar volume traded. Lower numbers and ranks are better.

Alternatives

SPDR Barclays High Yield Bond JNK (0.40% expense ratio) and iShares iBoxx $ High Yield Corporate Bond HYG (0.50%) offer similar exposure. In contrast to PHB, these funds apply market-cap weighting. They also include CCC rated bonds, which could make them a little risker. JNK currently offers a higher yield to maturity (5.7%), while HYG's 4.5% yield is comparable to PHB's.

Actively managed Fidelity High Income SPHIX (0.72% expense ratio) may be more appealing for investors who prefer to stay away from market-cap weighting and potentially benefit from fundamental research. It is currently the only high-yield bond U.S. open-end mutual fund that carries a Morningstar Analyst Rating of Gold.

Management

Longest Tenured Manager	Multiple
Manager Tenure (Longest)	6.67
Manager Tenure (Average)	4.58
Exchange	NYSE ARCA
Web Address	www.invescopowershares.com

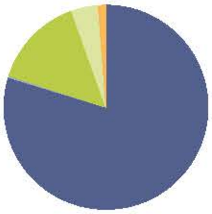
Vanguard Total Intl Bd Idx ETF BNDX

Morningstar Rating™

Morningstar Category	Category Index	Prospectus Benchmark
US ETF World Bond	Barclays US Agg Bond TR USD	Barclays Gbl Agg ex-USD Float TR Hdg USD

Fixed Income Asset Allocation

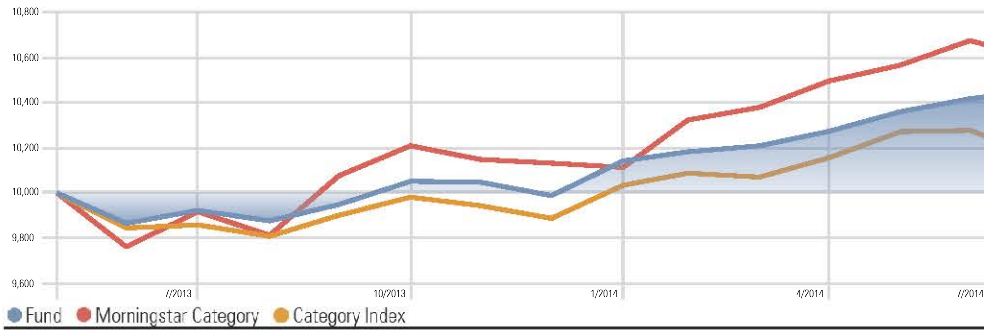
Portfolio Date: 5/31/2014



	%
Government	79.7
Municipal	0.3
Corporate	14.5
Securitized	4.2
Cash & Equivalents	1.2
Derivative	0.0

Performance

Time Period: 6/1/2013 to 7/8/2014



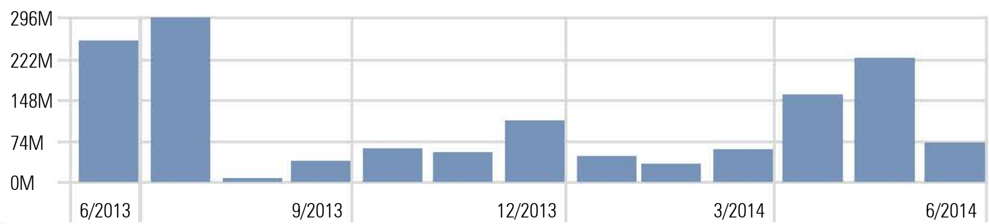
Snapshot

Inception Date	5/31/2013
Expense Ratio %	0.20
Assets (millions)	1,447
Avg Dly Vol (3 Mo)	245,791
12 Month Yield %	1.45
Portfolio Date	5/31/2014
Distribution Freq	Monthly
ETN	No
Replication Method	Physical-Sample
Fund Lgl Structure	Open Ended Investment Company

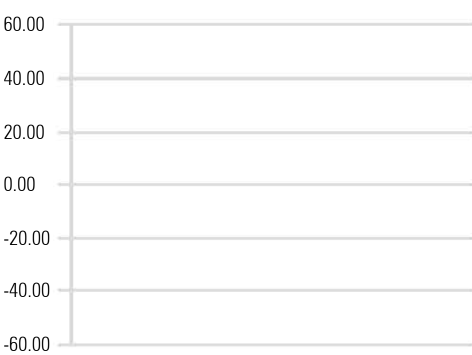
Annual Returns %

	2009	2010	2011	2012	2013	YTD
Vanguard Total Intl Bd Idx ETF	—	—	—	—	—	4.38
Barclays US Agg Bond TR USD	5.93	6.54	7.84	4.21	-2.02	3.63
US ETF World Bond	8.45	3.18	3.62	10.07	-0.95	5.13

Monthly Fund Flows (millions)



Annual Income Return %



Risk/Return Analysis (3 Years)

	ETF	Index	Cat Avg
Standard Deviation %	—	2.77	7.86
Arithmetic Mean %	—	0.30	0.29
Sharpe Ratio	—	1.29	0.47
R-Squared	—	—	15.69
Beta	—	—	0.83
Alpha %	—	—	0.49
Treynor Ratio	—	—	5.57
Sortino Ratio	—	2.31	0.74

Suitability

By Thomas Boccellari 6/24/2014

Vanguard Total International Bond Fund ETF offers diversified exposure to foreign investment-grade government, corporate, and securitized bonds. It may be a suitable core holding for investors looking to diversify their bond holdings outside the United States. The fund's broad geographic exposure may help diversify interest-rate and credit risks. While its holdings are issued in local currency, the fund hedges its currency exposure, which helps reduce volatility.

The fund uses one-month forward contracts to hedge its currency exposure. While currency hedging can protect the fund from a strengthening dollar, it can also reduce returns from a weakening dollar.

While most unhedged international-bond funds have historically exhibited low correlation (0.40) to the Barclays U.S. Aggregate Bond Index over the past 10 years, this is primarily due to currency volatility. In contrast, the Barclays Global Aggregate ex-U.S. Hedged U.S. Dollar Bond Index has higher correlation (0.75) to that U.S. benchmark.

The fund's current yield-to-maturity of 1.7% is below the 2.0% yield-to-maturity of the Barclays U.S. Aggregate Bond Index. Further, the fund's seven year duration is higher than the Barclays U.S. Aggregate Bond Index's five year duration, giving the fund greater exposure to interest rate movements which could hurt capital appreciation if interest rates rise. The fund also exposes investors to a little more credit risk than the U.S. benchmark. The average credit rating of its holdings (A) is slightly lower than that of the Barclays U.S. Aggregate Bond Index (AA). Consequently, it may offer a less favorable risk/reward profile.

Vanguard Total Intl Bd Idx ETF BNDX

Morningstar Rating™

Morningstar Category	Category Index	Prospectus Benchmark
US ETF World Bond	Barclays US Agg Bond TR USD	Barclays Gbl Agg ex-USD Float TR Hdg USD

Fundamental View

Because the fund weights its holdings by float-adjusted market cap, the most heavily indebted issuers receive the largest weightings in the portfolio. This weighting approach could increase credit risk because the issuers with the heaviest debt burdens may be the most susceptible to ratings downgrades. However, the fund's focus on investment-grade issuers helps mitigate some of this credit risk. Japan, which represents the fund's largest country (22.2%) and government debt (19.0%) weighting, has the largest debt/GDP ratio (more than 200) of any developed country. While the Japanese government currently has a long-term S&P and Fitch credit rating average of AA-, the outlook is negative and the short-term is A+. While the chance of default is very low, a downgrade could cause a drop in bond prices, which could hurt the fund.

Shinzo Abe, Japan's prime minister, and his newly appointed Bank of Japan governor, Haruhiko Kuroda, have put a plan into action that would double the monetary base in an effort to hit an inflation target of 2%. Intended knock-on effects would be rising asset prices, increased spending by consumers and businesses, and a weaker yen. While the plan has been well-received and capital expenditures have been trending up, Japan still faces structural challenges, including an aging and thrifty population, which could hamper the country's turnaround.

The fund also has significant exposure (18%) to government bonds issued in Europe. While economic conditions across the European Union have improved over the past few years, more than a fourth of the portfolio is invested in many relatively weak countries like France, Italy, and Spain.

The European Central Bank recently lowered rates to a record low of 0.15%, while short-term rates in Japan are close to 0.10%. Although interest rates where many of the fund's holdings are invested will likely remain low in the short term, they have little room to fall and plenty of room to rise as economic growth picks up. This could hurt the fund's performance over the long term because bond prices tend to fall as interest rates rise.

While the fund only has a 12-month record, it has done a good job hedging currency exposure over that period. Since the fund's inception, the fund has had minimal tracking error to its benchmark.

Fund Credit Quality

	ETF	Cat Avg
AAA %	24.97	26.22
AA %	45.49	20.03
A %	10.32	13.82
BBB %	19.21	22.42
BB %	0.00	7.29
B %	0.00	5.24
Below B %	0.01	1.68
Not Rated %	0.00	3.30

Coupon Range

	ETF	Cat Avg
0 to 1 %	12.70	0.88
1 to 2 %	17.96	16.47
2 to 3 %	17.46	7.96
3 to 4 %	18.94	13.27
4 to 5 %	18.13	9.86
5 to 6 %	8.11	14.39
6 to 7 %	2.01	4.90
7 to 8 %	1.12	4.26
8 to 9 %	0.47	2.45
9 to 10 %	0.15	2.84
10 to 11 %	0.18	0.22
11 to 12 %	0.00	0.49
12 to 15 %	0.07	0.44
15+ %	0.00	0.02

Market Performance Statistics

Time Period: 6/1/2013 to 7/8/2014

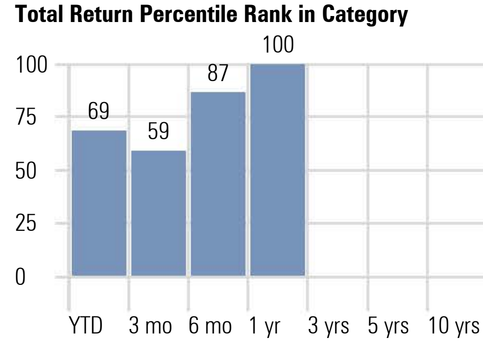
	ETF	Cat Index	Cat Avg
Up Capture Ratio %	49.79	100.00	91.01
Down Capture Ratio %	36.02	100.00	71.93
Max Drawdown %	-2.04	-3.03	-4.09
Max Gain %	6.43	6.00	10.17
Best Month %	1.54	1.48	2.68
Worst Month %	-1.34	-1.55	-2.31

Trailing Returns Relative to Peer Group %

Peer Group (5-95%): Exchange Traded Funds - U.S. - World Bond

	YTD	3 mo	6 mo	1 yr	3 yrs	5 yrs	10 yrs
Vanguard Total Intl Bd Idx ETF	4.38	1.92	4.02	5.52	—	—	—
Barclays US Agg Bond TR USD	3.63	1.38	3.56	4.72	3.34	4.58	4.83
US ETF World Bond	5.13	2.07	5.48	9.60	3.78	5.26	—

Total Return Percentile Rank in Category



Vanguard Total Intl Bd Idx ETF BNDX

Morningstar Rating™

Morningstar Category	Category Index	Prospectus Benchmark
US ETF World Bond	Barclays US Agg Bond TR USD	Barclays Gbl Agg ex-USD Float TR Hdg USD

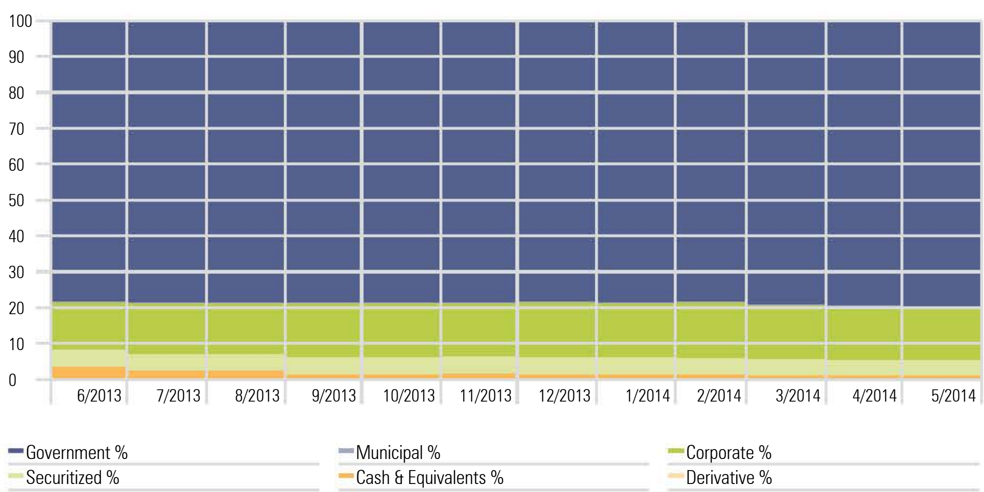
Portfolio Construction

The fund employs representative sampling to track the Barclays Global Aggregate ex-USD Float Adjusted RIC Capped (USD Hedged) Index, which includes investment-grade government (75%), corporate (15%), and securitized fixed-income investments (10%) issued in local currency. The bonds must have at least one year until maturity. The index weights its holdings by float-adjusted market capitalization and rebalances at the end of each month. The top three countries in the fund, Japan, France, and Germany, represent nearly 45% of the portfolio. The portfolio has an average duration of 6.8 years and a yield to maturity of 1.7%.

The fund uses one-month forward currency contracts, which it rebalances every month to hedge currency exposure. The fund attempts to adjust its hedges as assets grow or shrink to help minimize over- and underhedging. Underhedging a currency that has weakened relative to the U.S. dollar or overhedging a currency that has strengthened can hurt the fund's performance. While the fund has 23 different currencies represented in its portfolio, the top five currencies--the pound, euro, yen, Australian dollar, and Canadian dollar--represent more than 90% of the fund's total assets. Because most of the assets are in very liquid currencies, hedging costs are minimal. Since inception, hedging has created only a 0.05% drag to performance.

	ETF	Cat Avg		ETF	Cat Avg
Yield to Maturity %	1.67	3.15	Turnover Ratio %	31.00	39.10
12 Month Yield %	1.45	2.44	% Asset in Top 10	4.92	13.74
SEC Yield %	1.35	—	# of Holdings	2,642	609

Fixed Income Super Sector Breakdown History

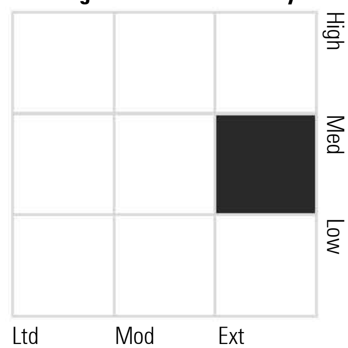


Top 10 Holdings

Portfolio Date: 5/31/2014

	Maturity Date	Portfolio Weighting %
Germany (Federal Republic Of) 2.75%	4/8/2016	0.76
Japan(Govt Of) 1.5%	9/20/2018	0.62
Japan(Govt Of) 0.2%	6/20/2017	0.62
Japan(Govt Of) 0.2%	6/15/2015	0.50
Japan(Govt Of) 0.5%	12/20/2015	0.46
Japan(Govt Of) 0.2%	9/20/2017	0.45
Japan(Govt Of) 0.3%	6/20/2016	0.40
Germany (Federal Republic Of) 5.5%	1/4/2031	0.37
Japan(Govt Of) 0.4%	6/20/2016	0.37
Japan(Govt Of) 0.4%	9/20/2016	0.37

Morningstar Fixed Income Style Box™



Fixed Income Portfolio Statistics

	ETF	Cat Avg
Average Eff Duration (yrs)	6.71	4.41
Average Eff Maturity (yrs)	8.30	5.88
Average Coupon %	3.16	4.16
Average Price	—	106.57
Average Credit Quality	A	BBB

Current Fixed Income Sub Sector Breakdown

	ETF	Cat Avg
Government %	67.09	44.29
Government Related %	4.36	0.08
Municipal Taxable %	0.22	0.28
Municipal Tax-Exempt %	0.00	0.09
Bank Loan %	0.00	0.04
Convertible %	0.00	0.05
Corporate Bond %	13.02	25.89
Preferred Stock %	0.00	0.17
Agency Mortgage-Backed %	0.02	2.15
Non-Agency Residential MBS %	0.76	2.30
Commercial Mortgage-Backed %	0.10	0.35
Covered Bond %	2.69	0.11
Asset-Backed %	0.23	1.50
Cash & Equivalents %	1.09	19.75

Bond Maturity Breakdown

	ETF	Cat Avg
1 to 3 Years %	22.51	11.33
3 to 5 Years %	19.42	23.45
5 to 7 Years %	13.72	8.91
7 to 10 Years %	16.78	13.91
10 to 15 Years %	8.52	4.81
15 to 20 Years %	5.66	3.86
20 to 30 Years %	7.72	8.70
30+ Years %	2.31	3.44

Vanguard Total Intl Bd Idx ETF BNDX

Morningstar Rating™

Morningstar Category	Category Index	Prospectus Benchmark
US ETF World Bond	Barclays US Agg Bond TR USD	Barclays Gbl Agg ex-USD Float TR Hdg USD

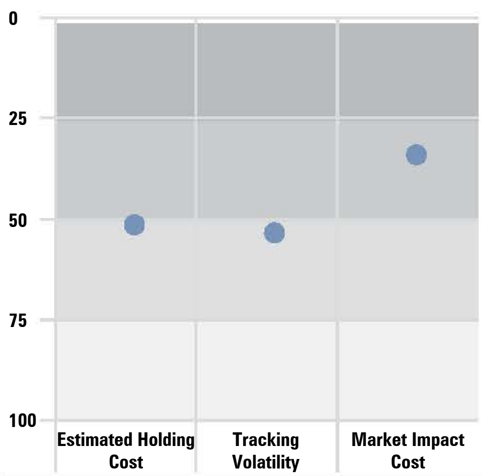
Fees

The fund levies a 0.20% expense ratio, which is the lowest for an international fixed-income ETF. Since the fund's inception (May 31, 2013), it has lagged its index by 0.13%, less than the amount of its expense ratio.

Expenses

	ETF	Cat Avg
Net Expense Ratio %	0.20	0.47
Expense Waiver	—	—
Expense Waiver Expiration Date	—	—
Expense Waiver Type	—	—
Prospectus Date	2/27/2014	—

Percentile Rank Relative to ETF Universe



Total Cost Analysis Data Points

Estimated Holding Cost %	0.35
Tracking Volatility %	0.25
Market Impact Cost %	0.01

Estimated Holding Cost is essentially the difference between the ETF return and the benchmark return and represents the realized cost of replicating the benchmark. Lower costs indicate that the ETF is doing a better job of matching its benchmark while minimizing costs.

Tracking Volatility measures the uncertainty with which an ETF tracks a benchmark. A higher tracking error indicates a wider confidence interval for expected performance around the benchmark. Lower numbers and ranks are better.

Market Impact Cost represents the liquidity of the ETF and is based on the average market price movement in percent caused by a $100,000 trade in the ETF. Calculated as the residual volatility unexplained by movements in NAV and the previous day's premium or discount, scaled by average dollar volume traded. Lower numbers and ranks are better.

Alternatives

For investors that do not want hedged currency, State Street offers a foreign government-bond fund, SPDR Barclays International Treasury Bond BWX, which charges 0.50%. IShares offers a similar fund, iShares S&P/ Citigroup International Treasury Bond IGOV, which charges 0.35%. In contrast to BNDX, BWX and IGOV exclude corporate debt.

SPDR DB International Government Inflation-Protected Bond WIP may be suitable for investors who are concerned about inflation. It offers an international portfolio of Treasury Inflation-Protected Securities for a 0.50% expense ratio. WIP does not hedge its currency exposure and only invests in government debt.

Investors with more than $5 million to invest could consider the Vanguard Total International Bond Index VTIFX Institutional share class. This mutual fund provides the same exposure as the ETF but charges a very low 0.12%.

Management

Longest Tenured Manager	Multiple
Manager Tenure (Longest)	1.17
Manager Tenure (Average)	1.17
Exchange	NASDAQ
Web Address	www.vanguard.com

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