Vanguard

ETF Industry Perspectives Q2 2024

Markets moved higher in Q2, but inflationary uncertainty persists

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In this issue:

After a rocky start in April, equities and fixed income rebounded sharply, particularly in June, amid signs inflation may be abating. A flood of data showed that the U.S. economy—particularly labor markets and consumers—remains resilient. Indeed, strong ETF inflows indicate that investors continue to evaluate their next moves amid signs that the likelihood of Federal Reserve rate cuts may be increasing.

In this quarter's edition, we unfold two ETF spotlights. The first drills into data suggesting that allocating to international equities may be about to start paying off amid strong cash inflows and improving expected returns (page 3).

Our second ETF spotlight unpacks bond ETF performance and yields in the aftermath of rising rates and inflation. We identify the distinctions between metrics such as SEC yields and distribution yields to better understand the potentially growing allure of bond ETFs at this point in the post-COVID-19 recovery (page 4).

We also present sidebars on two trending topics in the ETF industry. The first is an examination of trading metrics for active ETFs (pages 5–6), while the second looks into the expanding world of ETF options and lays out some of the best options trading practices (page 7).

Markets and ETF industry at a glance

The S&P 500 Index moved 4.3% higher in the second quarter as the U.S. economy added more jobs, while the bond markets idled a bit, rising 0.08% amid mixed news on inflation.[1] Additionally, the unemployment rate fell below 4%, while the core Consumer Price Index rose 0.2% month-over-month in May and edged 0.1% higher in June.[2] Still, the Federal Reserve remains committed to delaying a rate cut amid strong labor market conditions, as well as concerns that inflationary pressures may persist.

Regarding flow trends, ETF investors reacted to these market conditions with some consistent behaviors, plus a few new ones. Equity ETF inflows totaled $141.8 billion, with large-blend and large-growth ETFs consistently leading the pack. Meanwhile, foreign large-blend ETFs saw more inflows, a possible reflection of investor preference for greater diversification amid the growing concentration in some large U.S. companies. Fixed income inflows were $68.5 billion, with ultrashort ETFs representing the most popular asset class and intermediate categories generating significant interest as well, in a sign that investors could be recalibrating their duration. High-yield ETF flows rose in May, while corporate bond ETFs saw limited inflows at a time of historically tight spreads.

Asset class returns as of June 30, 2024

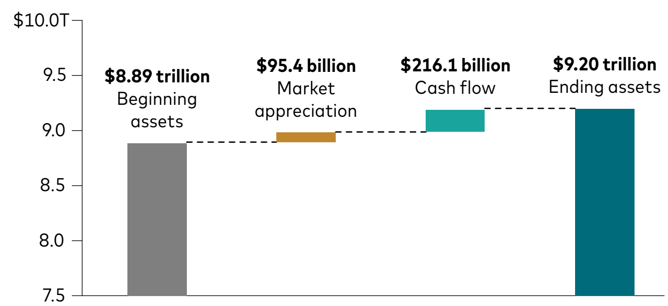
Category	2nd quarter	12 months
U.S. equity	3.25%	23.17%
International equity	0.99%	12.03%
U.S. fixed income	0.08%	2.73%
International fixed income	−0.39%	4.69%

Note: U.S. equity returns are represented by the CRSP US Total Market Index, international equity returns by the FTSE Global All Cap ex US Index, U.S. fixed income returns by the Bloomberg U.S. Aggregate Float Adjusted Index, and international fixed income returns by the Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index (USD Hedged).

Source: Morningstar, Inc., as of June 30, 2024.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Q2 2024 change in ETF industry assets



Sources: Vanguard, based on data from Morningstar, Inc., as of June 30, 2024.

1 Morningstar, Inc., as of June 30, 2024.

2 U.S. Bureau of Labor Statistics, as of July 11, 2024.

Equities spotlight

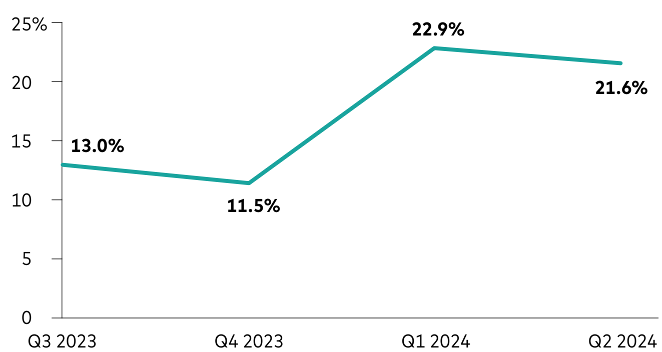
Rising allocations to international equity ETFs

Flows into international equity ETFs appear to be accelerating so far in 2024, suggesting U.S. investors may be growing concerned with the potential risks of home bias and focusing too much on a U.S stock market that has now climbed roughly 2.5 times as high as its COVID-19-era low in March 2020.[3] International equity flows of $57 billion through June of this year, while well short of the $199 billion pulled in by U.S. equity strategies, notably exceed 2023's first-half international equity flows of $52 billion.[4]

With these inflows in mind, it's a good time to take measure of why such diversification may be critical to long-term investing success:

- **Concentration risk:** Focusing too much on one geographic area or investment sector introduces the risk of a bad apple spoiling the barrel. Put another way, diversifying holdings can potentially introduce a buffer into portfolios that can offset losses. In recent years, U.S. equities have become top-heavy with some of the more conspicuous tech names, the so-called "Magnificent 7."[5] Almost 30% of Vanguard Total Stock Market ETF (VTI) consists of these holdings. Lowering VTI exposure to 60% and adding 40% of international exposure in the form of Vanguard Total International Stock ETF (VXUS) would cut this concentration to 17%.
- **Volatility reduction:** Our research of investment portfolios over the past 10 years shows that an allocation to international stocks ranging from 20% to 50% of total equity holdings can reduce portfolio volatility by as much as 5%.
- **Benchmark allocations:** As a reality check, it's worth remembering that many global equity benchmarks, including the FTSE Global All Cap Index on which Vanguard Total World Stock ETF (VT) is based, have about 62% exposure to U.S. stocks.[6] With 76% of equity ETF flows favoring U.S. stocks the past three years, according to Morningstar, Inc., investors could still be well shy of global market allocations. Such benchmark allocations are based on careful research of each region's contributions to global GDP, and the market capitalization of the securities in each of those regions. Deviations from the benchmark may lead to unwanted deviations in performance.

Flows into international equity ETFs as a percentage of all equity ETF inflows



Source: Vanguard, as of June 30, 2024.

3 Standard and Poor's, from March 23, 2020, through July 16, 2024.

4 Morningstar, Inc., as of June 30, 2024.

5 The "Magnificent 7"—those companies at the center of the growth rally in recent years—are Alphabet Inc. (GOOG), Amazon.com, Inc. (AMZN), Apple Inc. (AAPL), Meta Platforms, Inc. (META), Microsoft Corp. (MSFT), NVIDIA Corp. (NVDA), and Tesla, Inc. (TSLA).

6 Vanguard, as of June 30, 2024.

Fixed income spotlight

Reexamining bond ETF metrics post rate hikes

As the market starts to consider a changing environment where yields begin to fall, the topic of "locking in rates" has grown in focus. Ten-year Treasuries are now yielding 4.36%, while 2-year notes now yield 4.71%, compared with 1.52% and 0.73%, respectively, at the end of 2021.[7] In view of these increases, some advisors are considering adding exposure to fixed income ETFs in their portfolios.

Several yield metrics are quoted for bond ETFs, and investors might not always be able to map relevant bond-fund metrics to what they're hearing on CNBC or seeing in *The Wall Street Journal*—as many financial media outlets tend to focus on changes in the federal funds rate, Treasury yields, or 30-year mortgage rates.

SEC yield versus distribution yield

Two of the most commonly consulted metrics for bond ETFs are:

- **SEC yield:** Reflects the average yield to maturity experienced in a portfolio over the past 30 days.
- **Distribution yield:** Refers to the actual income that the fund distributes.

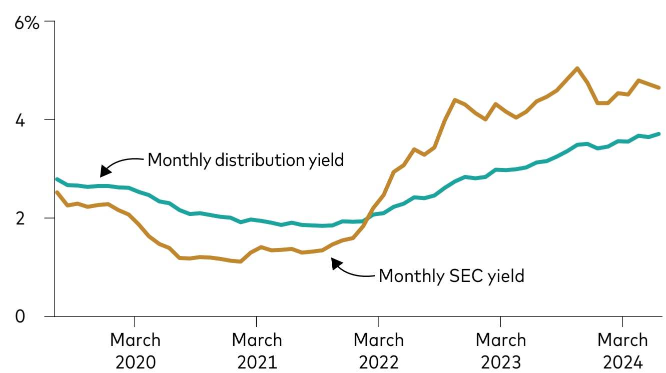
Due to the relatively recent 30-day time frame, SEC yields adjust quickly to changes in market rates and can be a timely representation for the yield to maturity on the underlying portfolio of bonds. On the other hand, distribution yield is based on the yield of a specific security at the time the fund purchased the bond. Because ETFs can hold bonds for many years, the distribution yield can be slow to adjust to benchmark yield changes.

With any bond ETF, it's important to remember that income and price both play a part in the return. So an investor isn't necessarily missing out on return if an ETF has a low distribution yield relative to its SEC yield, because more return may come from rising bond prices.

As illustrated in the chart below, the SEC yield for "ETF A" was quick to adjust to the sharp rise in interest rates beginning in late 2021 and continuing through early 2023, while the distribution yield has increased more gradually. When trying to understand how quickly these two metrics will converge for an ETF, it's important to consider portfolio turnover. Higher portfolio turnover means that bonds with updated yields get recycled into the portfolio more quickly, which causes distribution yield to adjust more rapidly. Should rates fall, SEC yields will decline more quickly than distribution yields because it will take time for bonds to cycle out of the portfolio.

So how does this relate to locking in rates? When you buy an ETF, you are buying a slice of the underlying bonds in the portfolio at a particular yield and price point. While yields can move from there, the SEC yield at your entry point can be a strong predicter for an ETF's total return over its duration. The actual income payments on a product will move gradually over time, but investors who allocate today are essentially "locking in" the total return profile of current interest rates.

SEC yields and distribution yields for "ETF A" from July 31, 2019, to June 30, 2024



Note: This figure shows the relationship between distribution yield (green) and SEC yield (gold).
Source: Vanguard.

7 Two-year real yield and 10-year real yield from U.S. Treasury's Federal Reserve Economic Data online database, as of June 30, 2024.

ETF industry trends

Total costs of active ETF ownership

While our recent examination of the total costs of ETF ownership focused on index ETFs, accelerating interest in active ETFs compels us to provide a similar perspective on them. Active ETFs, like index ETFs, have been on a trajectory of declining costs as their popularity has expanded. If index ETFs have "become adults" after more than 30 years of existence, active ETFs might be considered more like teens full of potential for growth.

Expense ratios

Active ETFs have different costs than index ETFs. For instance, the cost of active managers—who can possibly deploy a strategy that's difficult to replicate or develop the secret sauce for a given ETF to outperform a related benchmark—will always fetch a premium over an index ETF targeting a similar slice of the investment universe. Also, active managers who execute more frequent trades would require larger teams, resulting in added costs.

But ETF investors are still cost-conscious, and active ETFs with lower expense ratios have generated the most interest. As a result, the average asset-weighted expense ratio for active ETFs has fallen from about 50 basis points (bps) in 2019 to less than 40 bps today. In 2009, when index ETFs were about 15 years old—the same age as active ETFs today—their average asset-weighted expense ratio was 57 bps. Today, they're also less than 40 bps.[8] This suggests that as use of active ETFs increases, their average expense ratio may continue to decline as well.

Volumes and spreads

As assets in active ETFs have increased, liquidity has also increased and bid-ask spreads have tightened. The higher assets climb, the more that will translate into greater liquidity and tighter bid-ask spreads, as was the case for index ETFs. With some of the top active ETFs trading more in the secondary market, their spreads have trended down—with the median spread moving from 0.40% a decade ago to 0.18% at the end of 2024's second quarter.[9]

As active ETFs keep growing, the extent to which spreads continue to tighten will depend largely on how much an active ETF differs from its index, or how well market makers can create a hedging portfolio on an active ETF's basket that has less transparency. But as volume continues to grow, and as market makers hold ETF shares in their inventory for less time, the lower spreads are likely to go.

8 Morningstar, Inc., as of May 31, 2024.

9 Bloomberg, as of May 31, 2024.

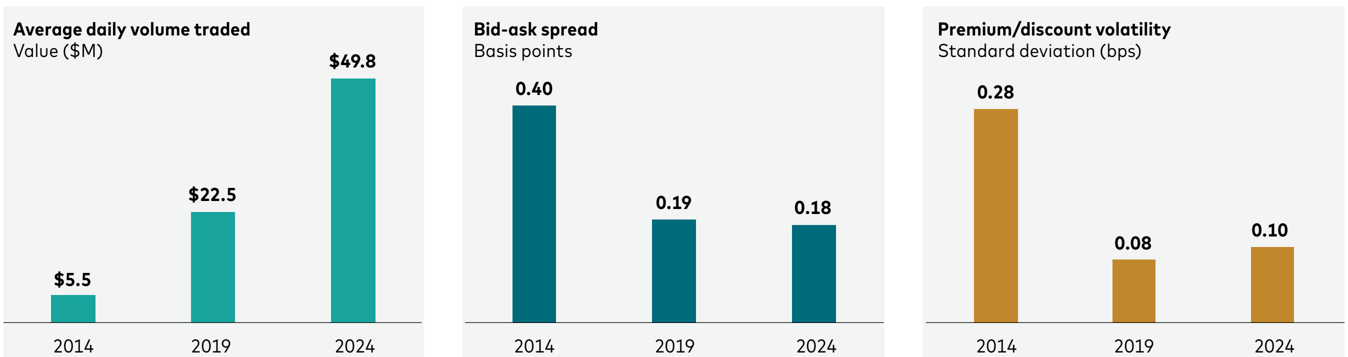
Premium and discount volatility

Another significant consideration is the volatility of active ETF premiums and discounts. While the same factors influence price for both active and index ETFs, active ETFs will likely be more impacted by supply-and-demand dynamics based on strategy, manager, or market trends.

Fair value of the ETF's holdings is an important factor as well. Assuming active ETFs have more concentrated holdings, one holding could have an outsized impact on an ETF's premium or discount. Thus, each ETF should be evaluated separately on this dynamic. But the trend is positive for active ETFs as adoption increases, with volatility decreasing from 28 bps to 10 bps in the past 10 years.

The data are clear that the total costs of active ETF ownership are trending down as interest in active ETFs expands. It remains important for advisors to evaluate active ETFs on these parameters, but with different expectations compared to those regarding index ETFs. As always with active strategies, it's paramount to assess each active ETF based on its potential to outperform a particular market segment or deliver a specialized strategy.

Asset-weighted averages of all active ETFs



Sources: Morningstar, Inc., and Bloomberg. Data for 2014 and 2019 are as of year-end in the respective years. Data for 2024 are as of May 31, 2024.

Taking measure of ETF options

ETFs with option overlays have been around for more than 15 years. And as the U.S. market continues to evolve, use of ETF options is increasing in multiple ways. One component is an increase in the options contracts traded on ETFs, with ETF options volume rising 265% over the past five years.[10] Additionally, we're seeing increasing options use directly in ETFs, with nearly 17% of all active ETF inflows this year using options overlay strategies, including defined-outcome funds such as buffered products, and derivative income strategies.[11]

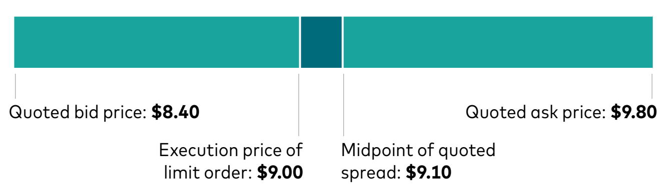
While ETFs custom-built with options strategies are growing, so too are options on ETFs, in general, as advisors look to generate additional income through covered calls or the use of protective puts for downside protection. Currently, 90% of Vanguard ETFs have options trading capabilities for ETF investors who are looking for that flexibility.

In fact, most ETFs have options chains available, and the longer a particular ETF has been around, the more likely it is to have options attached. It's no surprise that the most liquid options chains are attached to the most popular indexes, including the S&P 500, the Nasdaq-100, and the Russell 2000.

The presence of ETF options contributes to overall liquidity of the underlying ETFs. Given the rising activity in the space, here are a few points we'd urge advisors to keep in mind:

- Many of the core holdings that already exist in client portfolios likely have a direct option seeking to generate income through a covered call, or to hedge that exposure with a protective put. Only the newest Vanguard ETFs lack options. And over time, options chains may become available on the products that don't yet have options. Additionally, weekly options are starting to emerge on some ETFs, providing more customizable strategies to tailor the duration of a hedge.
- Options are complex instruments that can entail significant risk if used without a proper understanding of the investment. For advisors considering more conservative options strategies such as covered calls, protective puts, and collars, these can often be deployed at a fraction of the cost by trading the options directly versus using a structured product.[12] As obvious as this may be, ETFs with options overlays have considerably higher expense ratios than the underlying ETFs on which they are based.
- Advisors keen to initiate an options overlay on top of Vanguard S&P 500 ETF (VOO), for example, may be hesitant to do so because of wider quoted spreads in the options contracts. It's important to understand that an options quoted spread is often much wider than the effective spread where market makers may be willing to provide liquidity. By using a limit order within the quoted spread when trading options, investors can often minimize transaction costs, as shown in the trade example below.

Highlighting the difference between an options quoted spread and the effective spread



Notes: This figure illustrates a VOO options trade occurring on June 13, 2024. The quoted spread references the provided bid and ask prices. The effective spread (dark teal) references the execution price of the limit order and the midpoint of the quoted spread.

Source: Bloomberg, as of June 13, 2024.

10 Bloomberg, and Morningstar, Inc., from January 2, 2019, through December 31, 2023.

11 Morningstar, Inc., as of June 30, 2024.

12 A collar is a multiple-option strategy involving the sale of a call option and the purchase of a put option. The strategy is meant for long-term holders of a security aiming to potentially profit from near-term volatility.

ETF industry snapshot

Product strategy

	Assets	Q2 cash flow
Index	$8.5T	$151.2B
Active	$680B	$64.9B

Source: Morningstar, Inc., as of June 30, 2024.

Investment categories

	Assets	Q2 cash flow
Equity	$7.2T	$141.8B
Fixed income	$1.6T	$68.5B
Other	$393B	$5.9B

Source: Morningstar, Inc., as of June 30, 2024.

Cash flows into broad equity categories ($B)

	Q2 cash flow
U.S.	$104.7
International	$28.9
Sector	$0.4
Nontraditional	$7.9

Source: Morningstar, Inc., as of June 30, 2024.

Cash flows into broad fixed income categories ($B)

	Q2 cash flow
U.S. taxable	$59.5
International	$6.1
Municipal	$2.9

Source: Morningstar, Inc., as of June 30, 2024.

U.S. equity Q2 cash flows by style ($B)

	Value	Blend	Growth
Large-cap	$5.5	$56.4	$29.5
Mid-cap	$1.9	$8.7	$2.3
Small-cap	$1.5	–$1.1	—

Source: Morningstar, Inc., as of June 30, 2024.

U.S. taxable fixed income Q2 cash flows ($B)

	Short	Intermediate	Long
Government	$6.0	$7.3	$9.1
Investment-grade	$9.6	$14.1	$1.5
High-yield		$3.6	
Other		$8.3	

Notes: Data based on U.S.-listed issues only, not including exchange-traded notes. "Other" includes ETFs in Morningstar's Preferred Stock, Bank Loan, Multisector Bond, Nontraditional Bond, and Target Maturity categories.

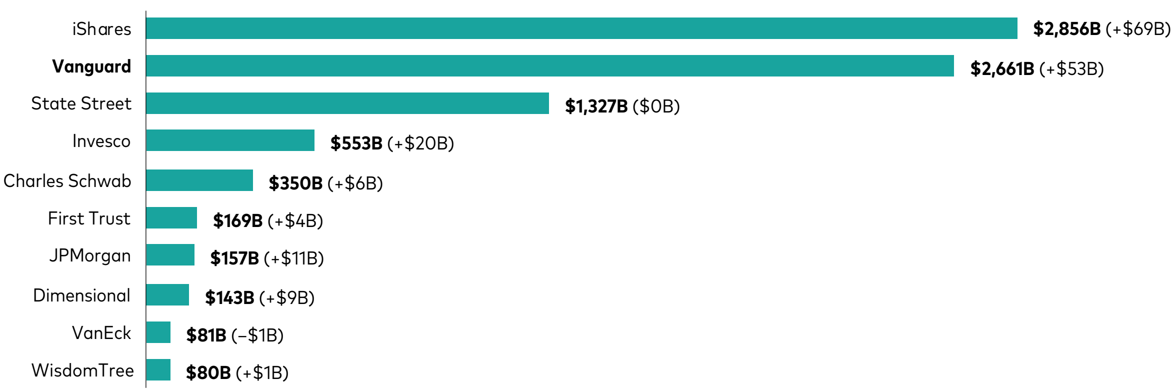
Source: Morningstar, Inc., as of June 30, 2024.

Number of ETFs available

	Number
ETF launches in Q2 2024	151
ETF closures in Q2 2024	21
Total U.S. ETFs	3,527

Source: Morningstar, Inc., as of June 30, 2024.

Issuer assets and Q2 cash flows



Source: Morningstar, Inc., as of June 30, 2024.

Vanguard ETFs®

Equity

Large-cap	Ticker	Expense ratio
Total Stock Market	VTI	0.03%
Russell 3000	VTHR	0.10%
Mega Cap	MGC	0.07%
Mega Cap Growth	MGK	0.07%
Mega Cap Value	MGV	0.07%
S&P 500	VOO	0.03%
S&P 500 Growth	VOOG	0.10%
S&P 500 Value	VOOV	0.10%
Russell 1000	VONE	0.08%
Russell 1000 Growth	VONG	0.08%
Russell 1000 Value	VONV	0.08%
Large-Cap	VV	0.04%
Growth	VUG	0.04%
Value	VTV	0.04%

Mid-cap	Ticker	Expense ratio
Extended Market	VXF	0.06%
Mid-Cap	VO	0.04%
Mid-Cap Growth	VOT	0.07%
Mid-Cap Value	VOE	0.07%
S&P Mid-Cap 400	IVOO	0.10%
S&P Mid-Cap 400 Growth	IVOG	0.15%
S&P Mid-Cap 400 Value	IVOV	0.15%

Small-cap	Ticker	Expense ratio
Small-Cap	VB	0.05%
Small-Cap Growth	VBK	0.07%
Small-Cap Value	VBR	0.07%
S&P Small-Cap 600	VIOO	0.10%
S&P Small-Cap 600 Growth	VIOG	0.15%
S&P Small-Cap 600 Value	VIOV	0.15%
Russell 2000	VTWO	0.10%
Russell 2000 Growth	VTWG	0.15%
Russell 2000 Value	VTWV	0.15%

International/global	Ticker	Expense ratio
Total World Stock	VT	0.07%
Total International Stock	VXUS	0.08%
FTSE All-World ex-US	VEU	0.07%
FTSE All-World ex-US Small-Cap	VSS	0.08%
Global ex-U.S. Real Estate	VNQI	0.12%
FTSE Developed Markets	VEA	0.06%
FTSE Europe	VGK	0.09%
FTSE Pacific	VPL	0.08%
FTSE Emerging Markets	VWO	0.08%

ESG	Ticker	Expense ratio
ESG U.S. Stock	ESGV	0.09%
ESG International Stock	VSGX	0.12%

Sector	Ticker	Expense ratio
Consumer Discretionary	VCR	0.10%
Consumer Staples	VDC	0.10%
Energy	VDE	0.10%
Financials	VFH	0.10%
Health Care	VHT	0.10%
Industrials	VIS	0.10%
Information Technology	VGT	0.10%
Materials	VAW	0.10%
Real Estate	VNQ	0.13%
Communication Services	VOX	0.10%
Utilities	VPU	0.10%

Dividend	Ticker	Expense ratio
Dividend Appreciation	VIG	0.06%
International Dividend Appreciation	VIGI	0.15%
High Dividend Yield	VYM	0.06%
International High Dividend Yield	VYMI	0.22%

Factor (actively managed)	Ticker	Expense ratio
U.S. Minimum Volatility	VFMV	0.13%
U.S. Momentum Factor	VFMO	0.13%
U.S. Multifactor	VFMF	0.18%
U.S. Quality Factor	VFQY	0.13%
U.S. Value Factor	VFVA	0.13%

Note: Expense ratios are as of each ETF's most recent prospectus.
Source: Vanguard, as of June 30, 2024.

Vanguard ETFs

Fixed income

Broad market	Ticker	Expense ratio
Total Bond Market	BND	0.03%
Core Bond ETF	VCRB	0.10%
Core-Plus Bond ETF	VPLS	0.20%
Short-Term Bond	BSV	0.04%
Intermediate-Term Bond	BIV	0.04%
Long-Term Bond	BLV	0.04%

Treasury/agency	Ticker	Expense ratio
Short-Term Treasury	VGSH	0.04%
Intermediate-Term Treasury	VGIT	0.04%
Long-Term Treasury	VGLT	0.04%
Extended Duration Treasury	EDV	0.06%
Short-Term Inflation-Protected Securities	VTIP	0.04%
Mortgage-Backed Securities	VMBS	0.04%

Investment-grade	Ticker	Expense ratio
Short-Term Corporate Bond	VCSH	0.04%
Intermediate-Term Corporate Bond	VCIT	0.04%
Long-Term Corporate Bond	VCLT	0.04%
Total Corporate Bond	VTC	0.04%
Ultra-Short Bond ETF	VUSB	0.10%

International/global	Ticker	Expense ratio
Total International Bond	BNDX	0.07%
Total World Bond	BNDW	0.05%
Emerging Markets Government Bond	VWOB	0.20%

Municipal	Ticker	Expense ratio
Tax-Exempt Bond	VTEB	0.05%
Short-Term Tax-Exempt Bond	VTES	0.07%
Intermediate-Term Tax-Exempt Bond	VTEI	0.08%
California Tax-Exempt Bond	VTEC	0.08%

ESG	Ticker	Expense ratio
ESG U.S. Corporate Bond	VCEB	0.12%

Note: Expense ratios are as of each ETF's most recent prospectus.

Source: Vanguard, as of June 30, 2024.

Important information

For more information about Vanguard funds or ETF Shares, contact your financial advisor to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF Shares are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

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All investing is subject to risk, including the possible loss of the money you invest.

Investments in bonds are subject to interest rate, credit, and inflation risk.

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Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets.

Funds that concentrate on a relatively narrow market sector face the risk of higher share-price volatility.

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