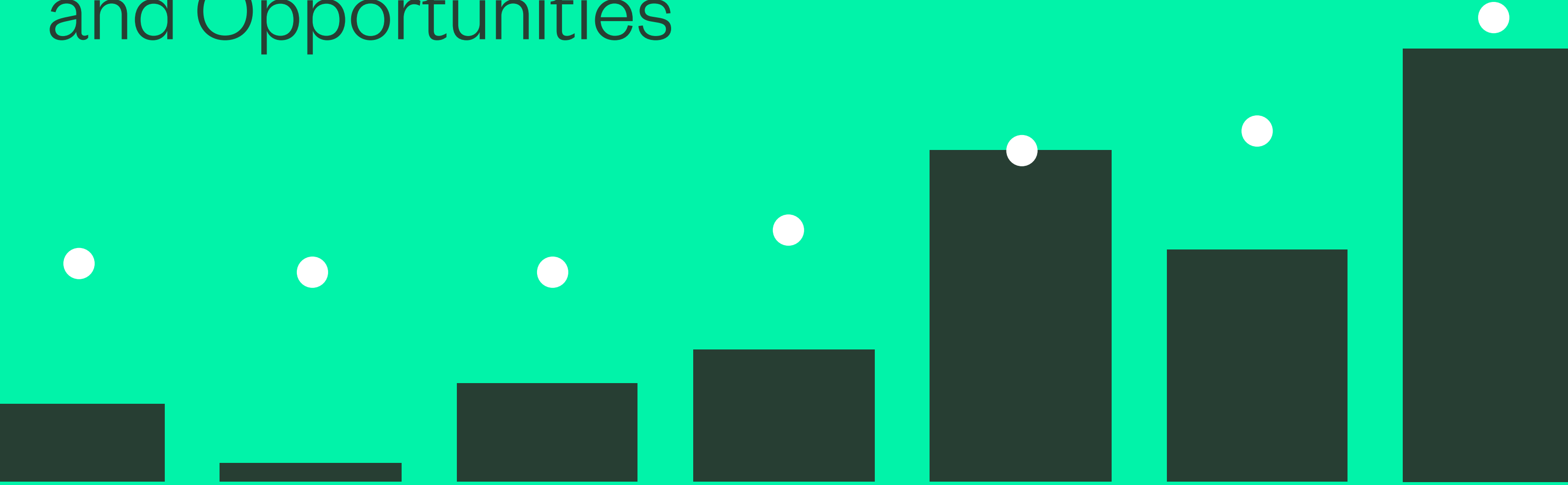


# The ETF Impact Report 2023

## Growth, Trends, and Opportunities



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# To the Valued ETF Investor Community



**Sue Thompson**  
Executive Vice President and  
Head of Americas Distribution, SPDR ETFs,  
State Street Global Advisors

A protracted era of low inflation, rock-bottom interest rates, and relative market peace is now squarely in the rearview. The outbreak of global market turbulence in 2022 has proven it's here to stay in 2023 — giving us good reason to take pause and evaluate whether our portfolios are positioned to weather the storm.

In the 30 years since SPY's launch sparked the ETF industry, ETF adoption has been on a surging growth trajectory that's endured market cycles of all stripes. In three short decades, ETFs have built a resilient track record that demonstrates their ability to deliver value in all kinds of markets — and proving particularly useful in times of volatility.

Today, you may find yourself on unsure footing. This is a familiar feeling to those of us who recall the Great Financial Crisis of 2008. Nonetheless, it's an important reminder that we should always be prepared for the inevitability of boom-and-bust market cycles. It's a moment to sharpen our focus on what works — and what doesn't — in the face of uncertainty.

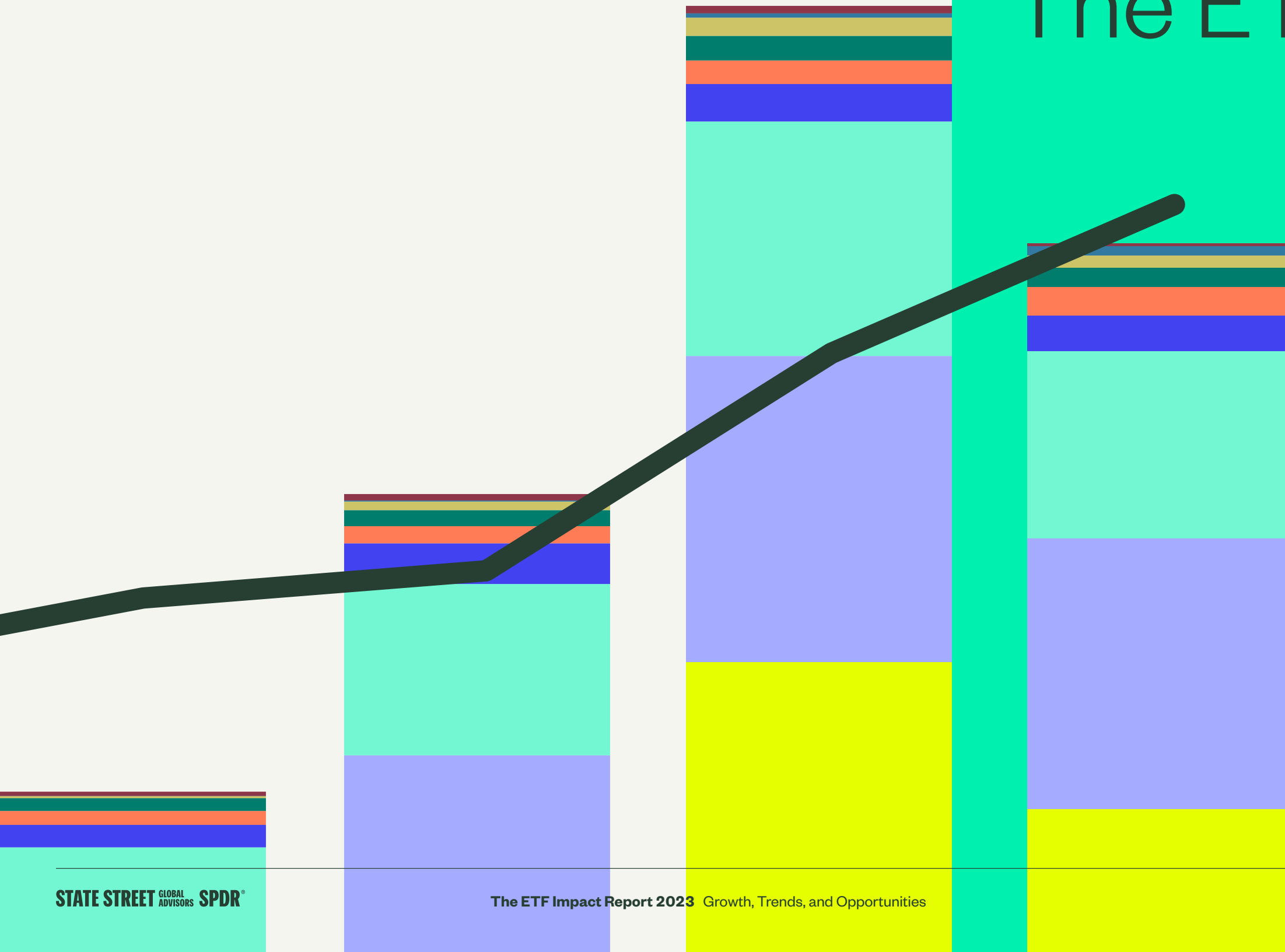
With this in mind, we've designed our ETF Impact Report 2023 to educate you on why the ETF's unique structure and advantages have made it the go-to investment vehicle in turbulent times. This report gives you a window into what's driving the industry's remarkable growth, opportunities now, and top ETF trends we anticipate for the future — arming you with practical ETF knowledge to help make the bumpy road ahead that much smoother.

As we celebrate the ETF's 30th birthday, on behalf of State Street SPDR ETFs, thank you for embracing this revolutionary investment product's potential. I believe its success story also belongs to you. You've brought its promise to life in ways we never could have imagined 30 years ago, and we can't wait to see what investors like you do next.

Sincerely,  
Sue Thompson



# A 90s Trend that Endures The ETF



Fashion trends are cyclical, and the 1990s are back. Gen Z is now embracing baby tees, ripped jeans, and bike shorts just as Gen X did 30 years ago. In the investing world, another trend emerged in the 90s that still endures today: exchange traded funds (ETFs).

# An Investing Era That Continues to Endure

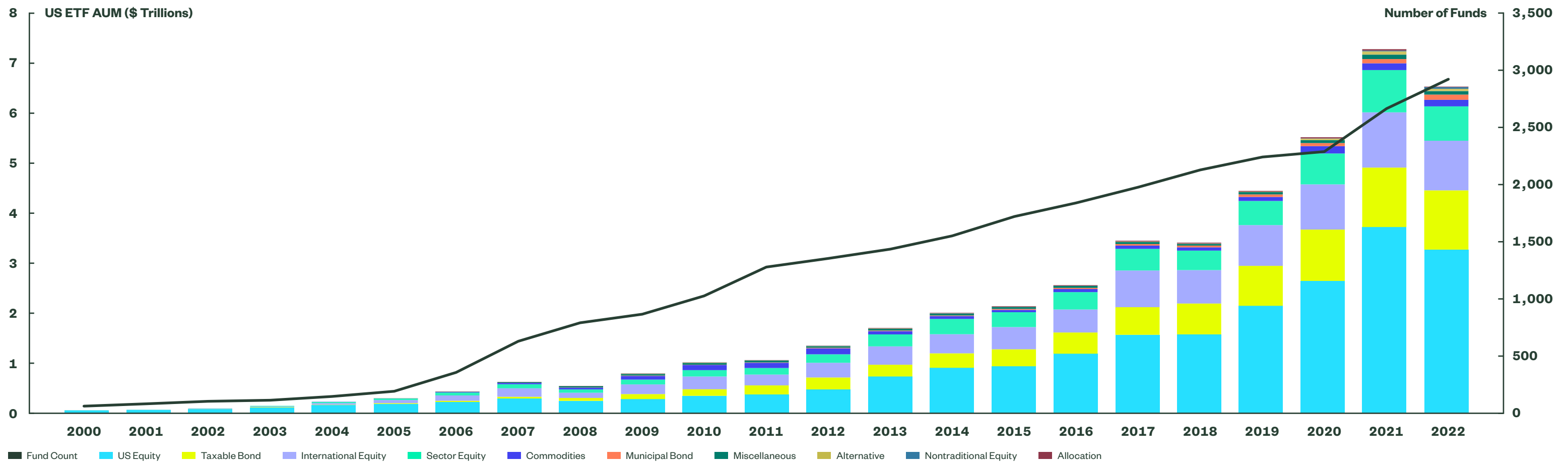
## 30 Years Ago, the ETF Industry Was Born

State Street Global Advisors launched the first US ETF in 1993 in response to the 1987 market crash — infamously known as “Black Monday.” On that day, stock markets plummeted so abruptly that the damage is believed to have been more significant than the Great Depression. After regulators set out to determine what went wrong, SPDR® S&P 500® ETF Trust (SPY) emerged from the rubble as a new type of investment structure that could help avert future disaster.

Born out of crisis, SPY represented the first of its kind — a basket of securities that trades like a single stock — that has since proven it’s built to weather market storms.

Over the past three decades, ETFs have endured periods of market strength and stress. And as volatility returned to global markets in 2022 and continues in 2023, ETFs are again demonstrating their value and resilience.

Figure 1  
The Impressive Growth of the ETF, 2000 to 2022



Source: Morningstar, as of December 31, 2022. Past performance is not a reliable indicator of future performance.

## ETFs Never Went Out of Style

Just like a 90s fashion trend, the present-day popularity of ETFs is hard to miss. But, unlike plaid flannel shirts and combat boots, ETFs didn't go out of vogue only to make a comeback 30 years later. Instead, their popularity has consistently grown over the years.

Since SPY's launch, ETFs have risen to prominence in the index investing landscape and beyond. ETF assets have soared in the US market, reaching \$6.5 trillion in AUM<sup>1</sup> and growing at an annualized rate of 23.8% since 2000.<sup>2</sup> And the number of ETF offerings has risen to 2,988 funds (Figure 1).<sup>3</sup>

## The Impressive Growth of ETFs: A 30-Year Timeline

The ETF market has come a long way since SPY was its sole offering. The path from SPY's launch to \$6.5 trillion in US ETF AUM has been marked by several key industry developments (Figure 2).<sup>4</sup>

As the ETF market has grown and evolved, so too have the ways investors use ETFs. Today, ETFs have become key building blocks when making asset allocation decisions. They've allowed financial advisors to focus on investor outcomes with greater efficiency. And the surging popularity of ETFs has given rise to remarkable liquidity — making them powerful trading tools for investors.

## Rave Reviews from ETF Owners

ETFs wouldn't be trending for three decades if investors didn't find great value in them. Our 2023 ETF Impact Survey, gauging individual investor sentiment in today's market volatility, found that the growing number of investors who have embraced ETFs have not been disappointed.

Nearly three-quarters of the ETF investors we surveyed said that ETFs have improved the overall performance of their portfolio, and more than two-thirds said ETFs have made them a better investor (Figure 3).

Figure 2

### Key Events That Led to the ETF Industry Boom

1990s	<b>1993</b>	SPY, the first US-listed ETF, is created by State Street Global Advisors in partnership with S&P and the American Stock Exchange
	<b>1995</b>	The first mid-cap ETF launches into market
	<b>1996</b>	ETFs offer exposure to global markets with the first international market ETF
	<b>1998</b>	The first family of sector ETFs makes their debut
2000s	<b>2002</b>	The first bond ETF is introduced, giving ETF investors access to fixed income securities
	<b>2004</b>	Investors can access the gold bullion market through physically backed gold ETFs
	<b>2008</b>	The SEC approves actively managed ETFs
	<b>2009</b>	The first convertible securities ETF launches
2010s	<b>2010</b>	ETFs pass \$1 trillion in AUM, with 1,100 US ETFs in market <sup>5</sup>
	<b>2013</b>	The first actively managed senior loan ETF makes its industry debut
	<b>2015</b>	The first factor-based bond ETF takes flight
	<b>2019</b>	ETFs climb to \$4 trillion in AUM, surpassing 2,400 ETFs <sup>6</sup>
2020s	<b>2023</b>	US ETFs grow to top \$6.5 trillion in AUM, with just under 3,000 ETFs in market <sup>7</sup>

Figure 3

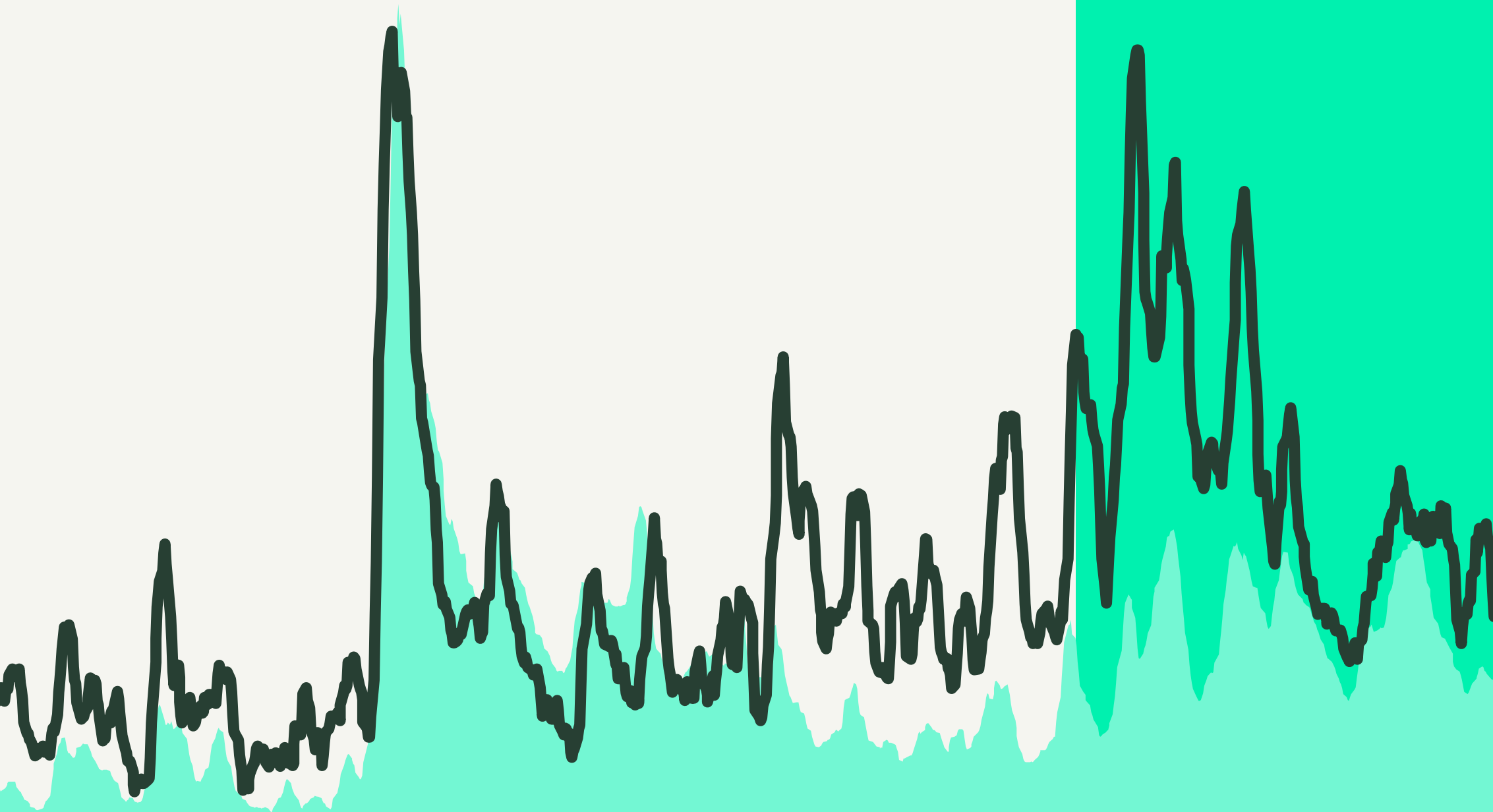
### ETFs Get High Marks from Investors

ETFs have improved the overall performance of my portfolio	73%
ETFs have made me a better investor	67%

Source: State Street Global Advisors, as of December 12, 2022.

# ETF Benefits

## What's Behind the Industry Boom



In the financial market, ETFs are like skyscrapers in a real estate boom — ascending to new heights and casting shadows of opportunity on investors. With their sturdy foundations of diversification, liquidity, and transparency, ETFs have reshaped the investment landscape with their innovative design.

# Traits That Make ETFs Unique

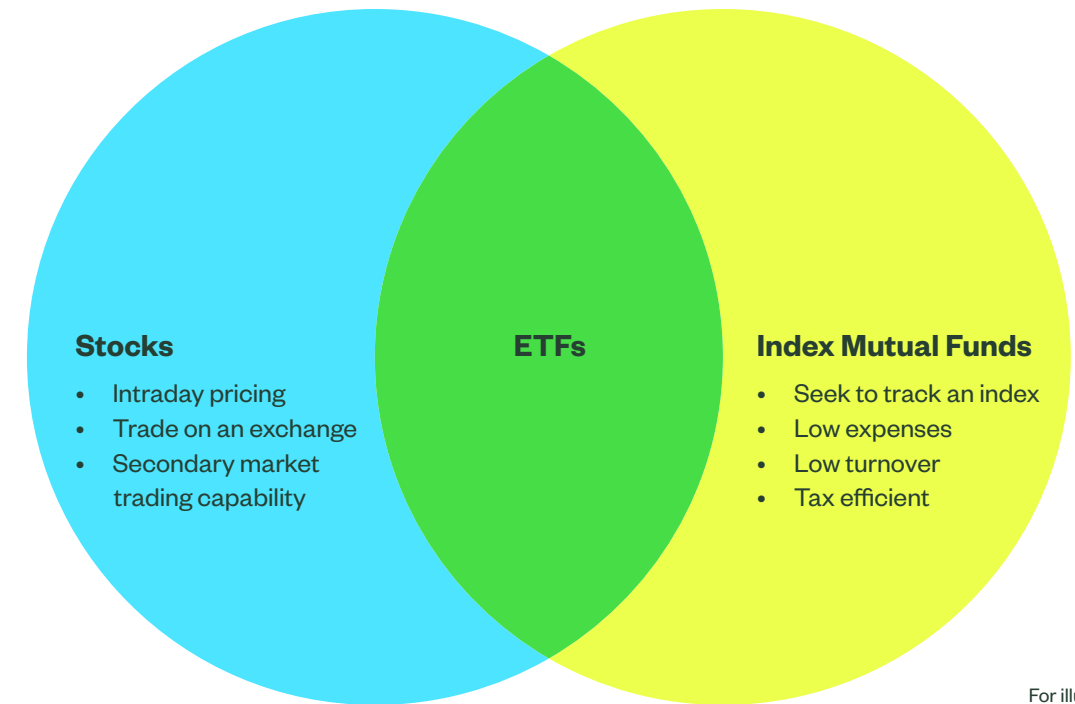
## A Best-of-Both-Worlds Structure

When the first smartphone was unveiled, it revolutionized modern technology. But its design wasn't built on a single novel idea — instead, it was an invention that brought the best of several worlds together: a phone, an MP3 player, the internet, and more.

ETFs are a similarly revolutionary mashup invention: they're funds that trade like stocks while offering the diversification benefits of mutual funds. An ETF is a basket of securities that seeks to provide exposure to a broad or specific market segment. But unlike mutual funds, ETFs can be bought and sold in a single trade on an exchange throughout the day — just like stocks.

ETFs generally track the performance of an index and typically charge lower fees than mutual funds. In one trade, they offer diversified, low-cost, transparent, and tax-efficient exposure to a basket of securities.

Figure 4  
ETFs Can Offer the Best of Both Worlds



For illustrative purposes only.

## How ETFs Compare to Mutual Funds and Individual Stocks

	ETFs	Index Mutual Funds	Individual Stocks
<b>Track an Index</b>	Yes	Yes	No
<b>Provide Diversification</b>	Yes	Yes	No
<b>Average Net Expense Ratio</b>	0.57%	0.84%	N/A
<b>Pricing</b>	Market Price	Closing Net Asset Value (NAV)	Market Price
<b>Intraday Trading</b>	Yes	No	Yes
<b>Minimum Investment</b>	No minimum required	Some require minimums	No minimum required*
<b>Tax Treatment</b>	Low impact on shareholder's level	High impact on shareholder's level	Impact on individual level only

Source: Morningstar Direct. Data as of March 7, 2023. Oldest share class of mutual fund used.

\* The brokerage through which you purchase individual stocks may have a minimum account requirement.



## ETF Advantages Fueling Growth

For any invention to be defined as revolutionary, it needs to offer a unique combination of features that differentiate it from products that existed before. ETFs offer several such attributes, like the ability to easily access precise and diversified exposure in a single trade. They're also cost effective, transparent, and tax efficient due to their unique creation and redemption mechanism.

While each of these advantages make ETFs attractive investment vehicles, the liquidity they offer is especially useful amid today's market volatility.

Figure 5

### ETFs Have Several Key Advantages

<p><b>Diversification</b> Exposure to broad or specific market segments</p>	<p><b>Transparency</b> Daily disclosure of underlying portfolio holdings and intraday pricing</p>	<p><b>Cost and Tax Efficiency</b> Structure leads to low management fees/operating expenses — and the creation and redemption process helps with tax efficiency</p>
<p><b>Flexibility</b> Trading techniques can include limit orders, stop-loss orders, and buying on margin</p>	<p><b>Precision</b> Allows investors to target exposures to match changing portfolio goals and economic environments</p>	<p><b>Liquidity</b> Easy to buy and sell, and can also support large institutional trades</p>

Certain securities may trade in limited volume or may not have an active trading market. Therefore, there is the risk that it may not be possible to sell the investment at a particular time for an acceptable price. Diversification does not ensure a profit or guarantee against loss. There can be no assurance that a liquid market will be maintained for ETF shares.

## The Unique Structure Behind ETF Liquidity

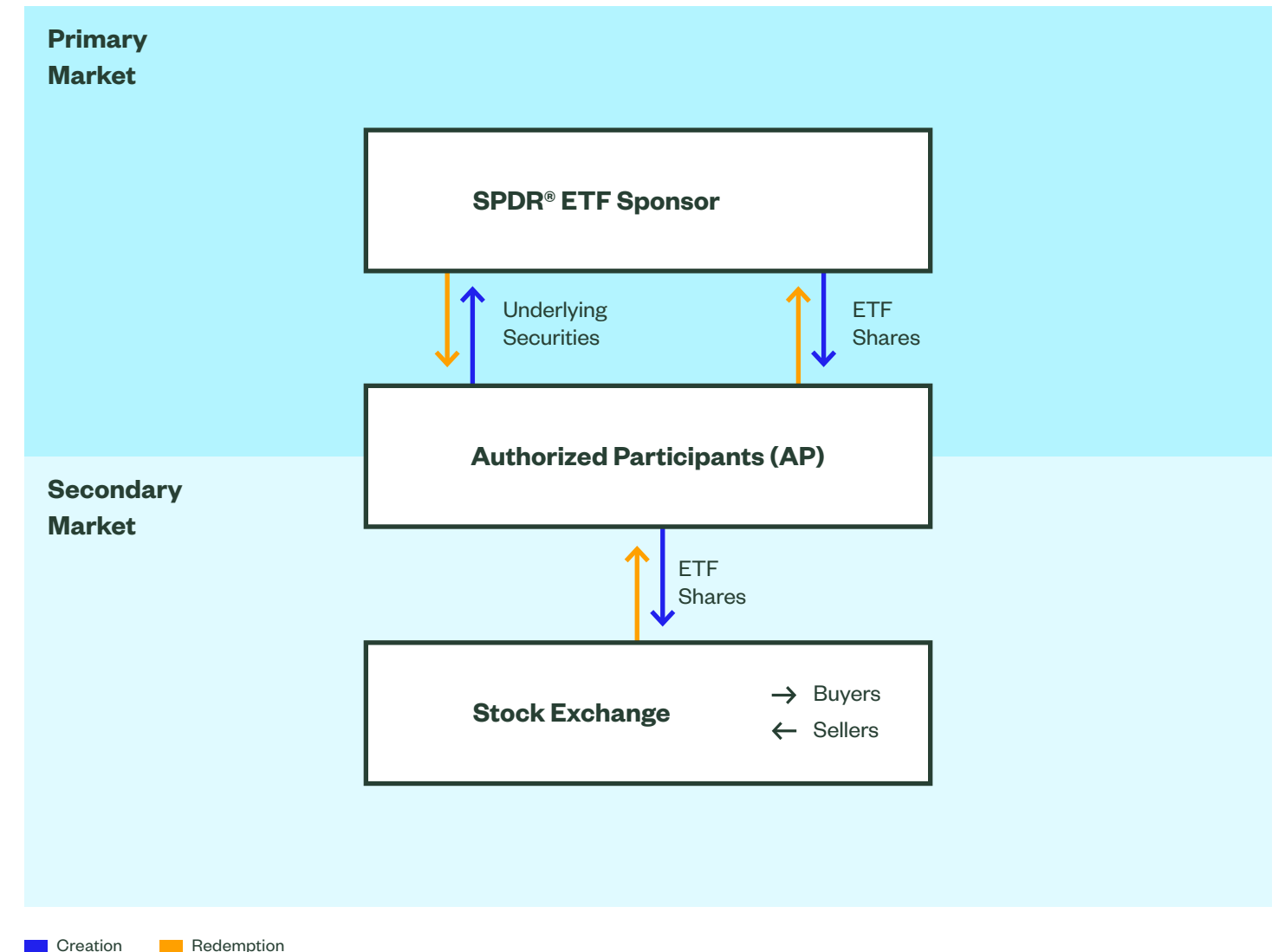
Combining the diversification benefits of a mutual fund and the liquidity of stocks into one product was anything but straightforward — it required a new and innovative vehicle structure.

What makes ETFs unique — and especially relevant now — is that they're structured in a way that supports their liquidity via two trading markets: the primary and the secondary market.

In the secondary market, ETF liquidity is provided by the buying and selling of ETFs on the exchange. This can be enhanced by the primary market liquidity of the ETF's underlying securities, which is sometimes even greater than an ETF's secondary market liquidity.

These two layers of ETF liquidity stem from the creation and redemption mechanism, where ETF shares are created or redeemed in the primary market in exchange for the underlying securities. When demand increases, more ETF shares can be created. When demand decreases, ETF shares can be redeemed by reversing this process.

Figure 6  
How the Creation and Redemption Process Works



Source: State Street Global Advisors. For illustrative purposes only.

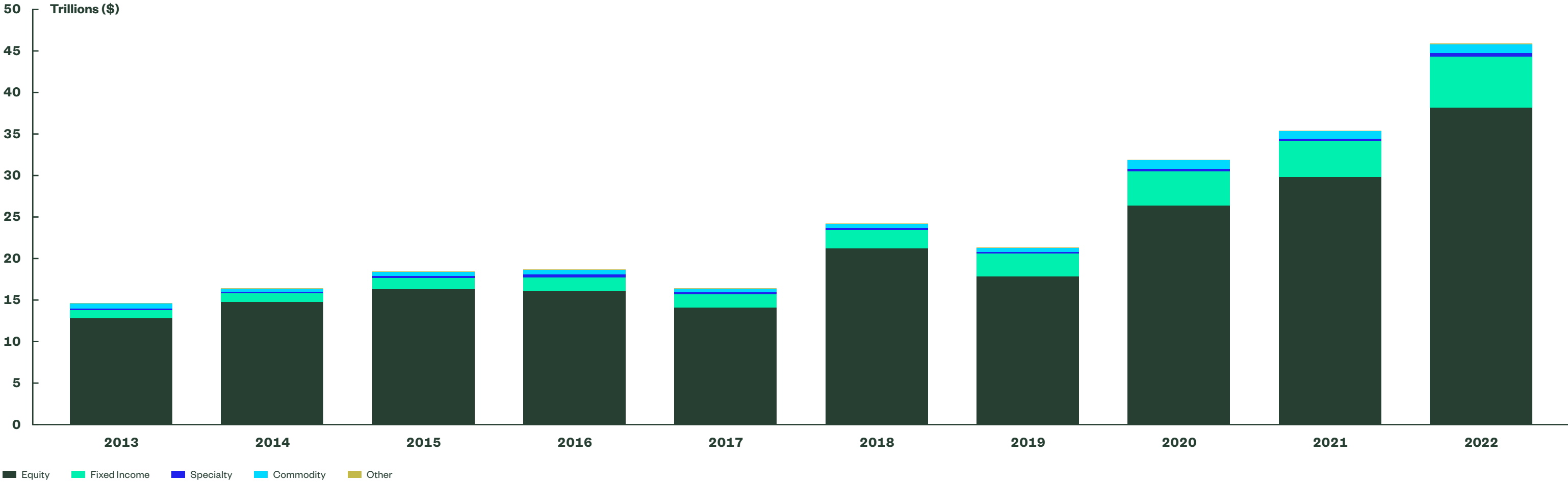
# ETF Liquidity Continues to Grow

ETF trading volumes demonstrate how they've become a go-to liquidity vehicle in the secondary market. ETFs represented 32% of trading volume on US exchanges in 2022<sup>8</sup> — a figure that's risen steadily over the past four years.

**Did You Know?** As a liquidity leader, SPDR ETFs accounted for 35.8% of all notional trading volume of US-listed ETFs in 2022.

Source: Bloomberg Finance L.P., as of January 6, 2023.

Figure 7  
ETF Trading Volumes Increase Year Over Year



Source: Bloomberg Finance, L.P., as of December 31, 2022, calculations per SPDR Americas Research.

# Investors Turn to ETF Liquidity for Market Stress Management

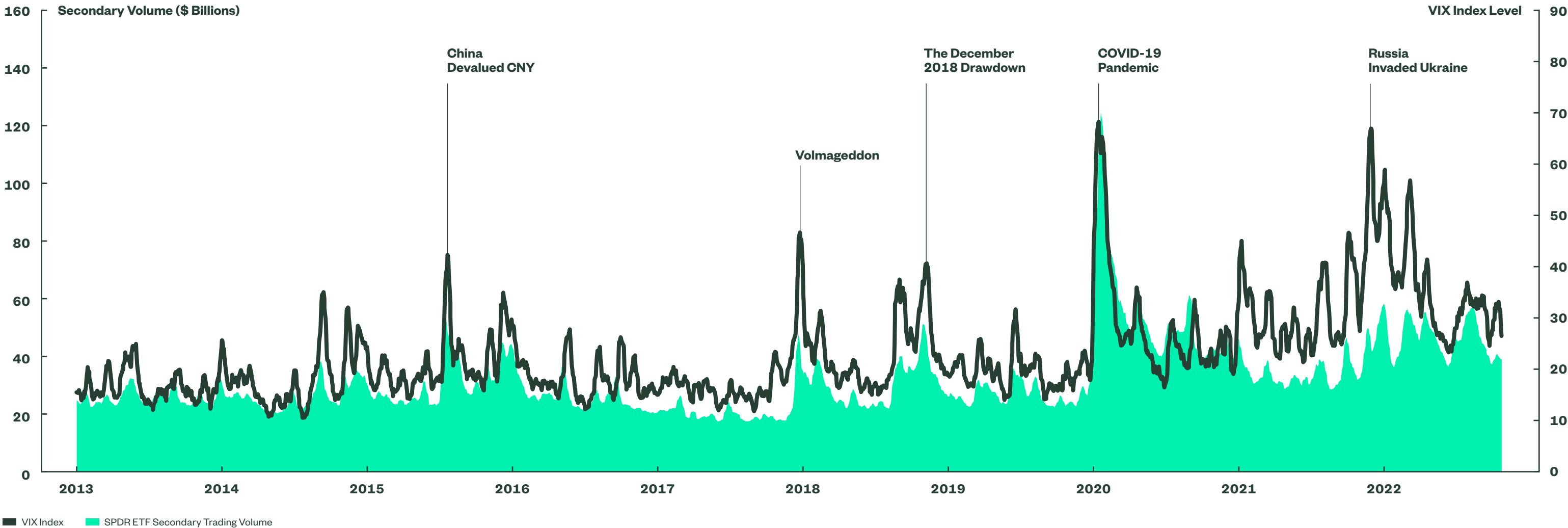
When it comes to managing stress, everyone has a go-to strategy. For some it's meditation, yoga, or a soothing cup of tea. Others find that a hike outdoors or a high-intensity workout can help them feel better equipped to navigate stressful times.

In the investing world, investors have made it clear that ETFs are a particularly useful strategy in times of market stress.

One need look no further than past bouts of market turbulence to see the value of ETF liquidity in volatile markets. Volatility levels have spiked on several occasions since the Great Financial Crisis (GFC) of 2008, and SPDR ETF secondary trading volume has skyrocketed in lockstep.

These historical trading volumes show how investors have tended to turn to ETFs as valuable liquidity tools during times of market stress.

Figure 8  
ETF Trading Volumes Spike with Market Volatility



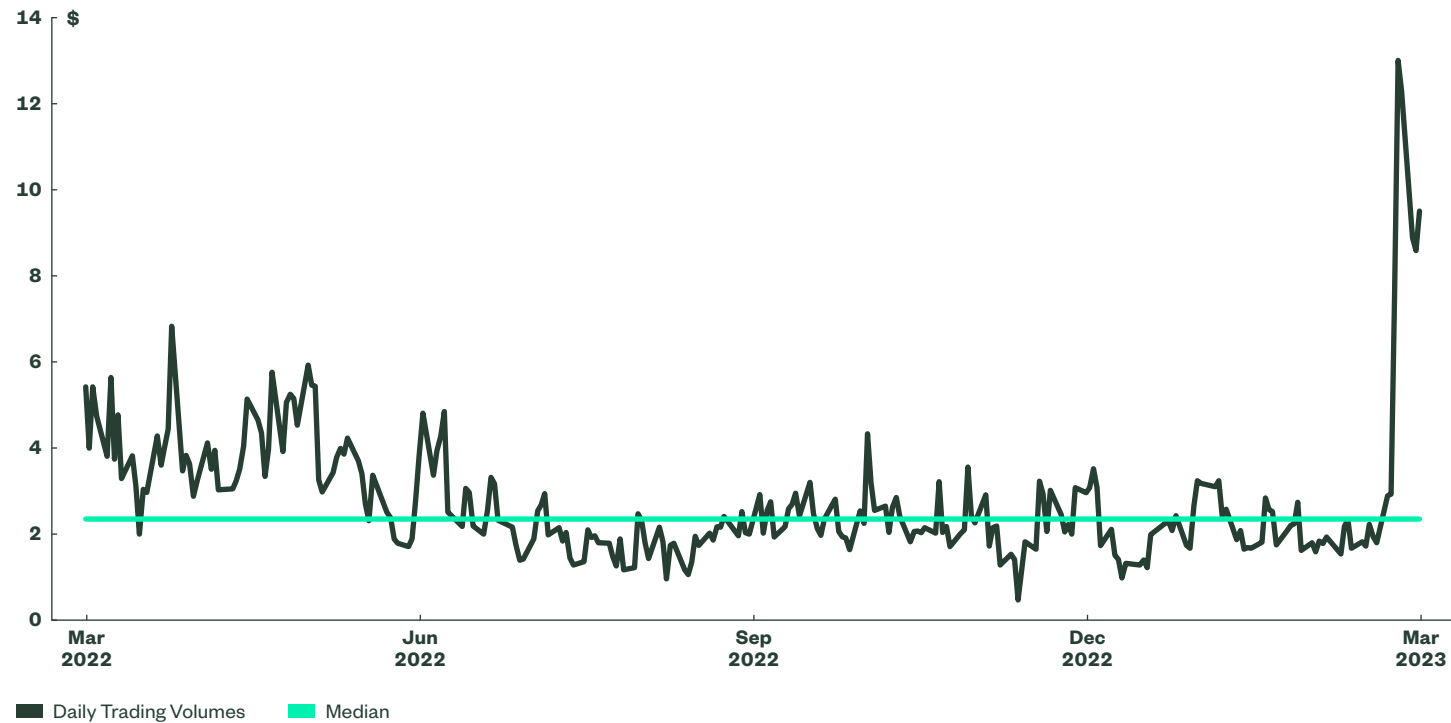
Source: Bloomberg Finance, L.P., as of December 31, 2022, calculations per SPDR Americas Research.

## How ETFs Passed the Banking Crisis Test

The March 2023 banking crisis offers a recent example of how investors have relied on ETFs in volatile markets. From March 8–16, financial sector ETF trading volumes were significantly above average, soaring beyond \$13 billion on March 13. The only other time trading volumes were this elevated was during the GFC, when volumes spiked higher than \$30 billion (Figure 9).<sup>9</sup>

Figure 9

### Financial Sector ETF Volumes Surge to Levels Not Seen Since the GFC



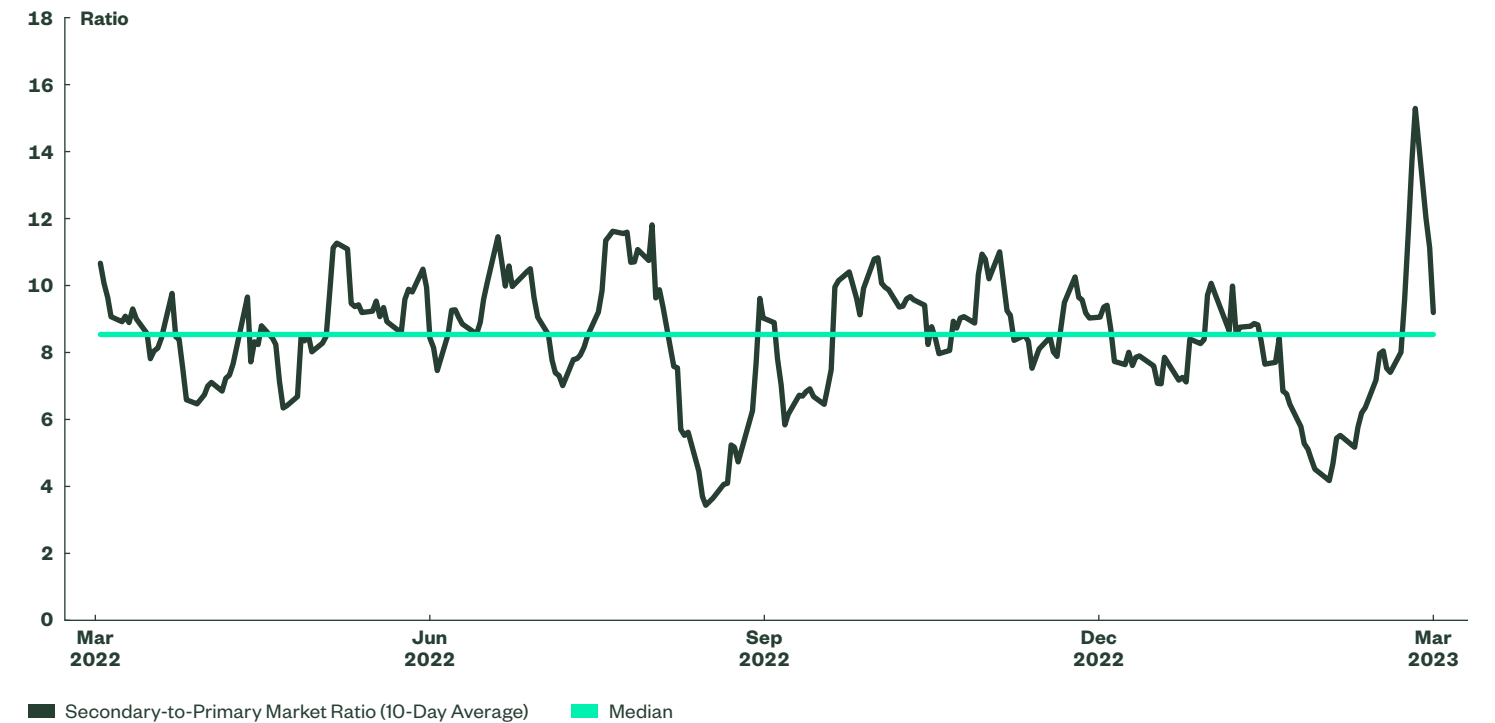
Source: Bloomberg Finance L.P., as of March 17, 2023, based on SPDR Americas Research calculations based on US-listed ETFs with the sector classification of Financials. **Past performance is not a reliable indicator of future performance.**

The banking crisis also highlights how ETFs can provide additive liquidity to the underlying market during volatile times. This is because they're traded in the secondary market between willing buyers and sellers at a fair market price that doesn't always require touching the underlying portfolio.

This additive liquidity can be measured by comparing secondary market trading volumes to primary market transactions. As the banking crisis unfolded, secondary financial sector ETF trading spiked relative to primary activity, signaling that investors were able to effectively "meet on exchange" and transact, even as the underlying securities were facing extreme uncertainty (Figure 10).

Figure 10

### Financial Sector ETFs Provide Additive Liquidity to Underlying Market



Source: Bloomberg Finance L.P., as of March 17, 2023, based on SPDR Americas Research calculations based on US-listed ETFs with the sector classification of Financials. **Past performance is not a reliable indicator of future performance.**

# The ETF Market Today

A dynamic and transformative force, ETFs have captivated seasoned investors and newcomers alike. And with new ETF trends emerging amid today's macro and market challenges, investors are turning to these products to weather the volatility.

# A Landscape That Continues to Evolve

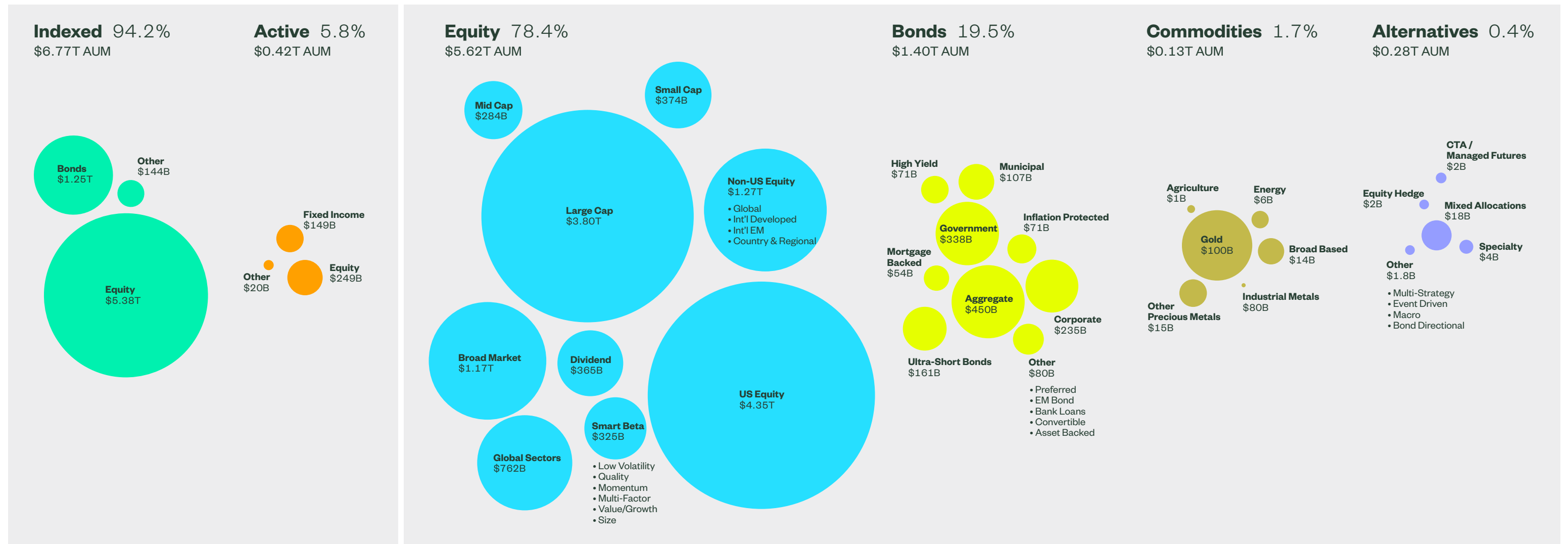
## A Snapshot of Today's ETF Market

No two investors are identical in their needs and objectives, and designing bespoke portfolios requires as many tools as possible to target precise outcomes. So, when it comes to ETFs, there's no such thing as too many options. And every day, the ETF market continues to reach new heights in terms of its breadth and size.

Through both active and passive management, ETFs can offer cost-effective exposure to nearly every asset class, from core broad US equities to complex emerging market debt. As a result of this democratization, a wide range of investors can now access hard-to-reach markets once only available to the largest institutions.

Figure 11

### ETFs Have Wide Investment Reach



Source: Bloomberg Finance L.P. as of June 12, 2023 based on SPDR Americas Research Calculations. The information contained above is for illustrative purposes only.

## ETF Flows: Defensive Swings After a 2022 Home Run

Although both stocks and bonds had double digit negative returns, 2022 was a home run for ETF flows. With over \$615 billion of inflows, 2022 marked the second-best year for ETF flows ever. In fact, seven market segments had record-setting inflows in 2022, with many reflecting how investors were positioning their portfolios for volatile markets and a rising rate environment.

However, as choppy markets continued into 2023, investors largely left their bats on their shoulders, too afraid to swing amid the volatility. In Q1 2023, ETF inflows were 6% below their historical average — primarily driven by US equity outflows.

When investors did swing, it was a defensive slap at the ball, as bond funds, led by ultra-short government bond exposures, dominated flow totals. But a hit is still a hit. Bond ETFs took in \$53 billion, 114% above their historical 10-year average for a first quarter. Meanwhile, equity ETFs posted flows 47% below their typical Q1 figure, led by outflows in US equity exposures.

As US equities struck out, non-US equities fared better as momentum toward overseas allocations has been gathering steam since late 2022. The strong quarterly inflows were led by multiple non-US geographical regions, as all areas, except for global funds, had inflows. In fact, regional funds, led by ETFs focused on Europe, posted their ninth-best flows for any three-month period ever this quarter.

**\$53B**

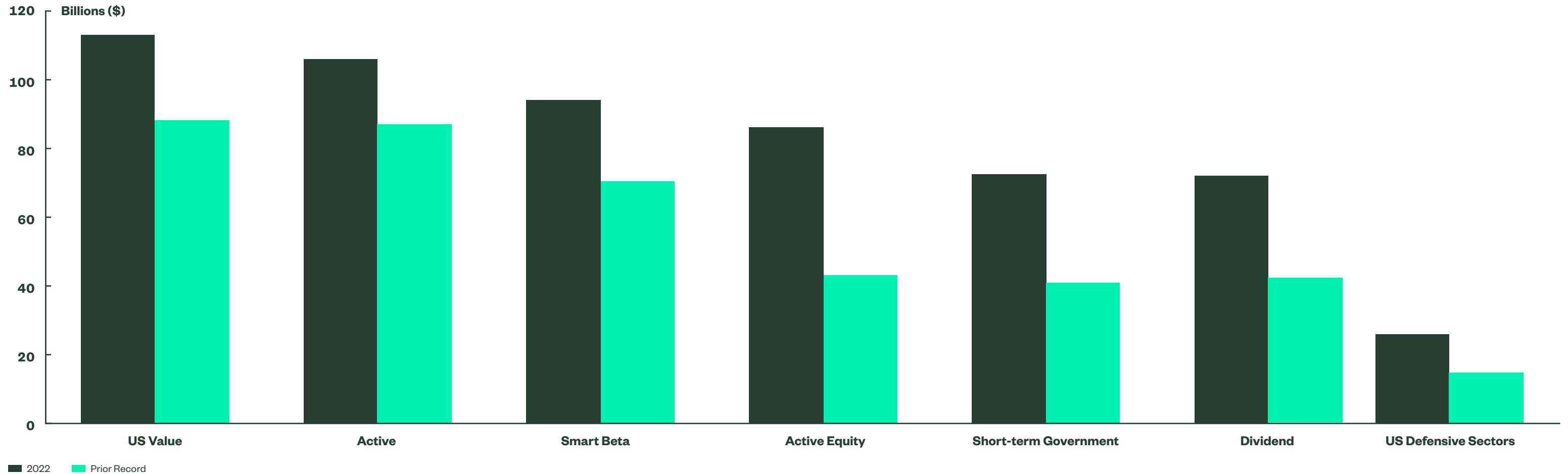
The amount of bond ETF inflows in Q1 2023

**114%**

Above bond ETFs' historical 10-year Q1 average

Source: State Street Global Advisors, as of March 31, 2023, based on calculations per SPDR Americas Research.

Figure 12  
Record Category Annual ETF Flows



Source: Bloomberg Finance, L.P., State Street Global Advisors, as of December 31, 2022. Past performance is not a reliable indicator of future performance.



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## What's Trending in ETFs

Five major ETF themes are emerging from today's uncertain macroeconomic backdrop.

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### 1

#### Low-Cost ETFs

In the face of uncertainty, investors are more sensitive than ever to fund costs. This has spurred continued growth in low-cost ETF assets, with more investors using them as efficient, liquid, and diversified building blocks for the core of their portfolios.

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### 2

#### Active ETFs

Offering both the potential benefit of active security selection and ETF tax efficiency, active ETF assets have grown to \$394 billion — and the majority of ETF issuers report plans to develop active ETFs in 2023.<sup>10</sup>

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### 3

#### Fixed Income ETFs

Aggressive rate hikes from the Federal Reserve (Fed) and other global central banks have reset rates, dislodging the bond market from a low-rate, near-zero yield era. With negative yielding debt falling from \$15 trillion at the start of 2022 to \$0,<sup>11</sup> bond investors now have plenty of new yield opportunities. In response to rising demand, the bond ETF market has grown to 577 funds,<sup>12</sup> giving investors a broad selection of exposures.

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### 4

#### Dividends

Balancing today's market turbulence with the potential for future upside requires an investment strategy that plays both defense and offense. This has more investors turning to dividend payers, as they consistently return value to shareholders but aren't as heavily allocated to defensive market segments as low volatility strategies.

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### 5

#### ETF Model Portfolios

More advisors are taking advantage of ETF model portfolios — asset allocation strategies aimed at providing a full or complementary portfolio solution comprised of several funds — to give their clients tax-efficient access to institutional-caliber investment management.



# ETFs in Action

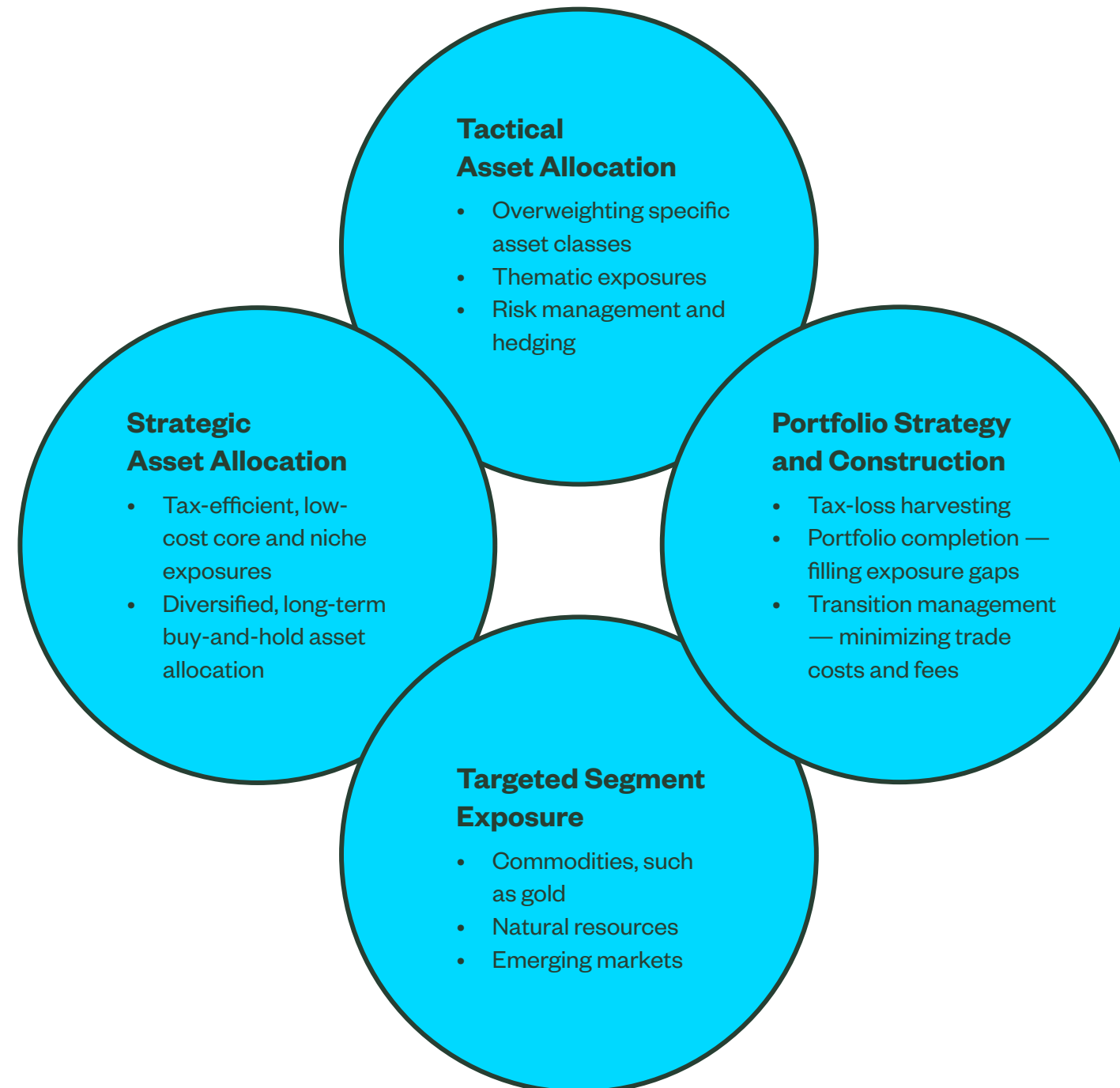
## Use Cases for Investors

From strategic asset allocation to risk management to securities lending, ETFs offer a myriad of use cases that can help investors achieve their investment objectives — showcasing the versatility and effectiveness of these investment vehicles.

# Traditional Investor Use Cases

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## ETFs Meet a Wide Range of Investor Needs



ETFs revolutionized investing by proving useful to investors in a variety of ways. ETF liquidity and transparency, along with cost, trading, and tax efficiencies, have given rise to several common use cases.

Source: State Street Global Advisors. For illustrative purposes only.

# Strategic Asset Allocation

## The Challenge: Mutual Funds Can Erode Returns

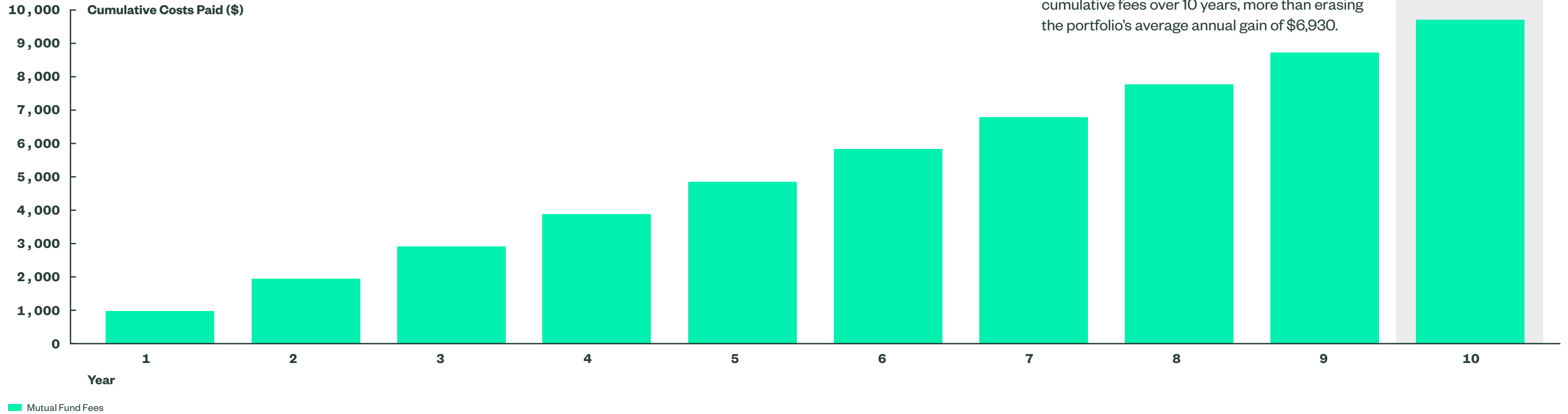
A strategic core comprised of mutual funds can incur management fees that significantly erode portfolio returns over time. For example, consider that the expense ratio of the median US-listed mutual fund is 0.97% a year.<sup>13</sup>

While that may not seem like much, over a period of 10 years, assuming an industry standard return target of 6.93%<sup>14</sup> was met each year, investors using mutual funds to gain core exposures would end up paying cumulative fees of 9.7% of their starting principal. That's more than 2% higher than one year of portfolio returns.

## The ETF Solution: Low-Cost Strategic Core Portfolio

Investors can reduce management fees and still build a diversified and tax efficient strategic core allocation by using low-cost ETFs. For example, SPDR® Portfolio ETFs™ have an average expense ratio of just 5 basis points — that's 94% lower than the average US-listed mutual fund.<sup>15</sup>

Figure 13  
The Impact of Fees Over a Decade



\* Median US-listed mutual fund TER = 0.97%.  
Source: Morningstar, State Street Global Advisors, as of March 31, 2023. Actual fees paid by an investor will differ.

## Tactical Asset Allocation

### The Challenge: Positioning Portfolios for Emerging Opportunities

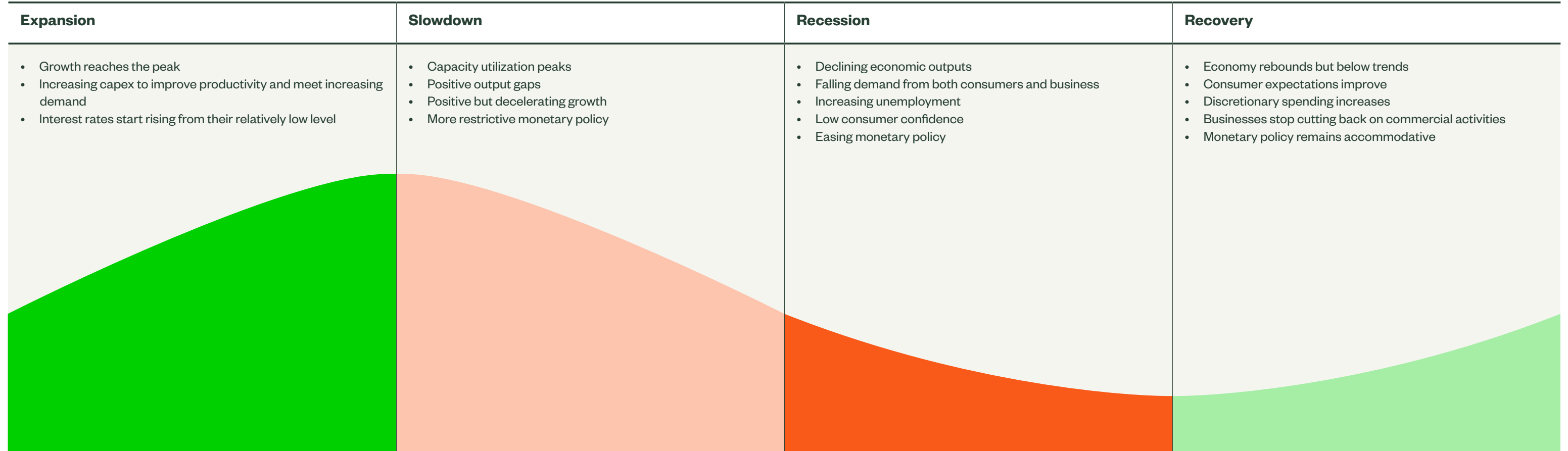
Positioning portfolios for ever-shifting business cycles can be challenging — and static allocations can result in missed tactical opportunities, potentially impacting portfolio returns.

### The ETF Solution: Tactical Asset Allocation with Sector ETFs

Investors can use sector ETFs to position their portfolios to capture opportunities amid changing business cycles. As sector performance varies in each phase of the business cycle, investors may tactically overweight industries that tend to benefit from the current economic environment.

Figure 14

### Sector ETFs for Tactically Navigating Business Cycles



Source: State Street Global Advisors. For illustrative purposes only.

## Transparent Access to Non-Traditional Exposures

### The Challenge: Accessing Hard-to-Reach Markets

Certain areas of the market have historically been difficult to access for all but the largest institutional investors — presenting challenges for investors seeking targeted exposures.

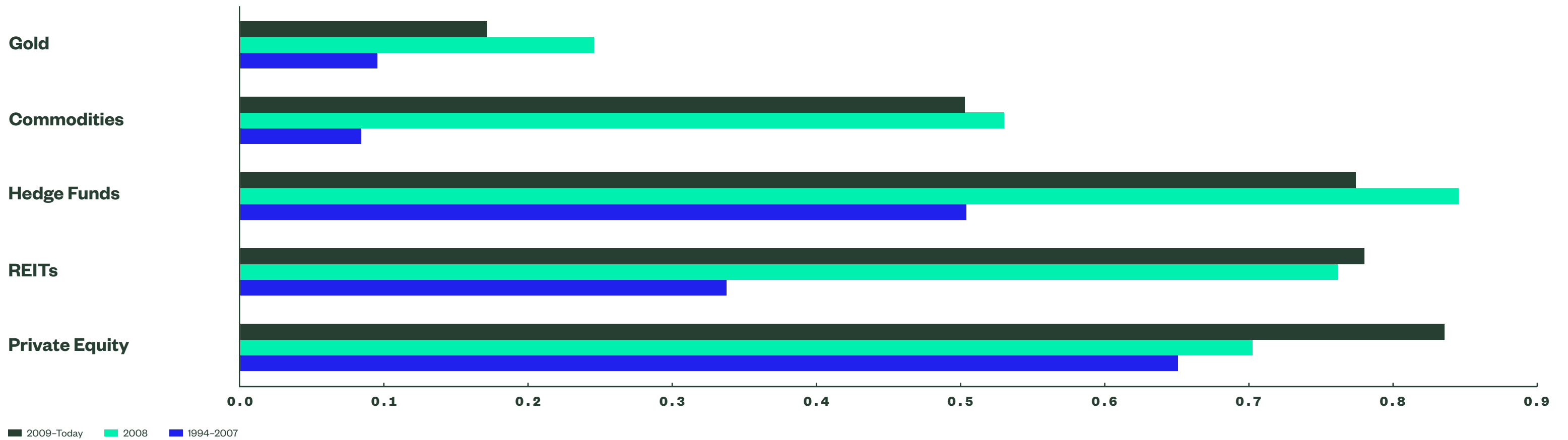
### The ETF Solution: Targeted Exposure to a Once Hard-to-Reach Market

ETFs can be a transparent, easy-to-access solution for investors seeking targeted exposures to hard-to-reach markets such as commodities, emerging market debt, and senior loans. Many of these exposures can offer diversification benefits as strategic allocations or can be effective tools for tactical strategies.

For example, with gold’s historically low correlation to many traditional markets, it can be a long-term strategic allocation for its potential diversification benefits.

In today’s macroeconomic environment, gold can also be a tactical allocation — implemented to position for a weaker dollar, inflation surprises, or increased macro risks. Gold was once difficult to access without cost, transaction, and storage challenges. But in 2004, State Street Global Advisors launched the first physically backed gold ETF. This type of ETF offers investors a transparent, low-cost, and liquid vehicle for both tactical and strategic allocations to gold.

Figure 15  
Gold Exhibits Low Correlation to Global Equity Markets



Source: Bloomberg Finance, L.P., State Street Global Advisors. Data from December 31, 1993 to December 31, 2022. Gold = gold spot price. Commodities = S&P GSCI Total Return Index. Hedge Funds = Hedge Fund Research HFRI FOF Diversified Index. REITs = FTSE NAREIT All Equity REITS Total Return Index. Private Equity = LPX50 Listed Private Equity Index Total Return. **Past performance is not a reliable indicator of future performance.**

## Rebuilding Your Fixed Income Core

### The Challenge: Core Bond Duration Exposure Amid Rising Rates

The Bloomberg US Aggregate Index (Agg) has traditionally provided an off-the-shelf core bond exposure, but its market cap-weighted scheme results in a heavy bias toward Treasuries, thereby reducing the index's yield while extending its duration. In today's rising rate environment, investors are seeking shorter-term fixed income exposures.

### The ETF Solution: Rebuild the Fixed Income Core to Lower Duration and Boost Yield

To better position bond portfolios for the rising rate environment, investors can use ETFs to adjust the Agg sector weights and optimize yield per unit of duration while still complying with risk constraints.

With 40% less duration alongside a higher yield, the example illustrated below improves the Agg's risk/return tradeoff by 72% while maintaining the targeted sector exposure.

Figure 16

#### Optimized Core Agg Sector Weights and Constraints

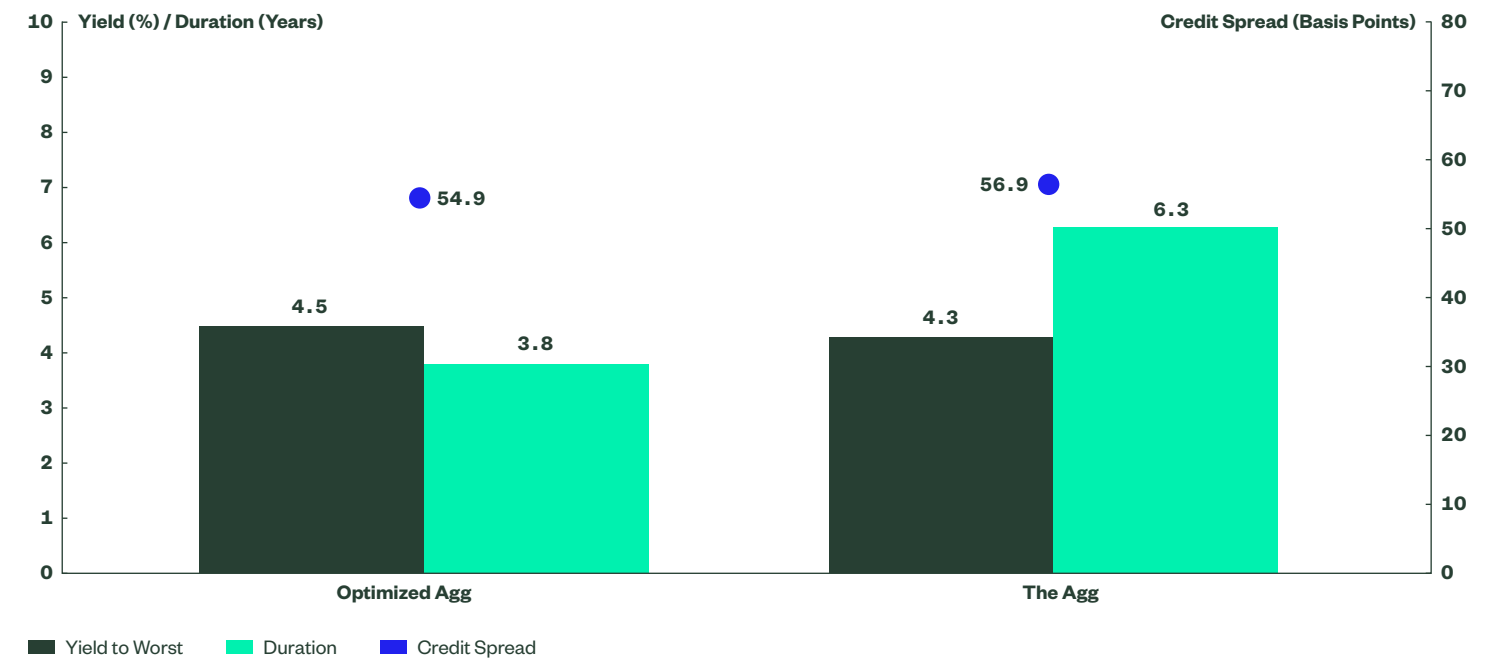
Portfolio Weights	Percent
<b>Treasuries</b>	
Short Term	30
Intermediate	7
Long Term	3
<b>Corporates</b>	
Short Term	30
Intermediate	7
Long Term	3
<b>Mortgages</b>	20

Weights are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

Constraints
Agg sector weight cannot exceed 40% or be less than 20%
Each duration bucket weight must be between 3% and 30%
Portfolio option adjusted spread cannot exceed the Agg by 20%

Figure 17

#### Optimized Agg Portfolio Profile versus the Agg



Source: Bloomberg Finance L.P., as of April 23, 2023. Characteristics are as of the date indicated and may be subject to change.

## Portfolio Completion

### The Challenge: Filling Exposure Gaps

As investors seek to position portfolios against an ever-shifting macroeconomic backdrop, they can often identify gaps in exposures — but filling these holes with a single security can compromise portfolio diversification.

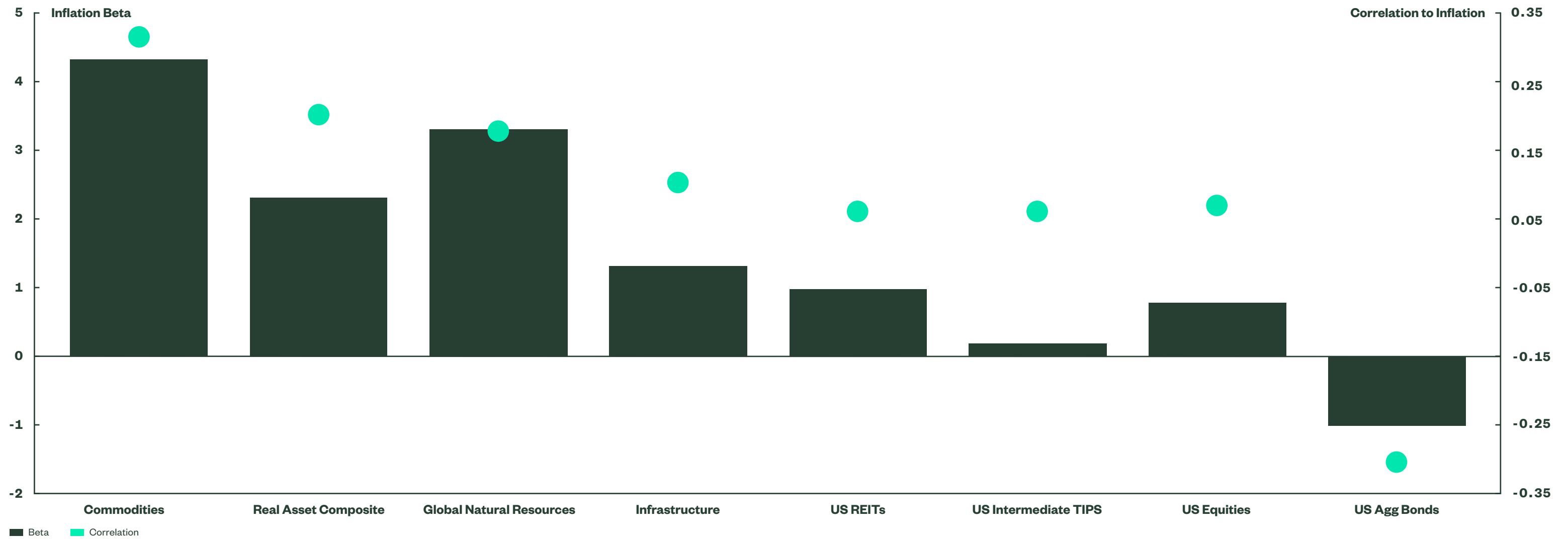
### The ETF Solution: Gain Diversified Exposure in a Single Trade

ETFs offer diversified exposures in a single trade, making them an easy solution for completing portfolio gaps. For example, amid today's inflationary pressures many investors have found they've under-allocated to exposures that can serve as inflation hedges.

With a history of high sensitivity to inflation, real assets can protect portfolios from rising inflation — and a real asset ETF can offer diversified exposure to the asset class.

Figure 18

### Portfolio Completion with Real Assets to Hedge Against Inflation



Source: State Street Global Advisors, FactSet, December 31, 2006–2022. “Real Asset Composite” comprises 25% Bloomberg Roll Select Commodity Index, 25% S&P® Global LargeMidCap Commodity and Resources Index, 20% S&P® Global Infrastructure Index, 20% Bloomberg US Government Inflation-Linked 1-10 Year Bond Index, and 10% Dow Jones US Select REIT Index. The “Traditional 60% US Equity-40% US FI Mix” comprises 60% S&P® 500 and 40% Bloomberg US Aggregate Bond Index.



# Institutional Investor Use Cases

Because institutional investors often execute large trades, the most common institutional uses of ETFs stem from their potential liquidity benefits.

## Dynamic Hedging

### The Challenge: Finding the Right Shorting Vehicle

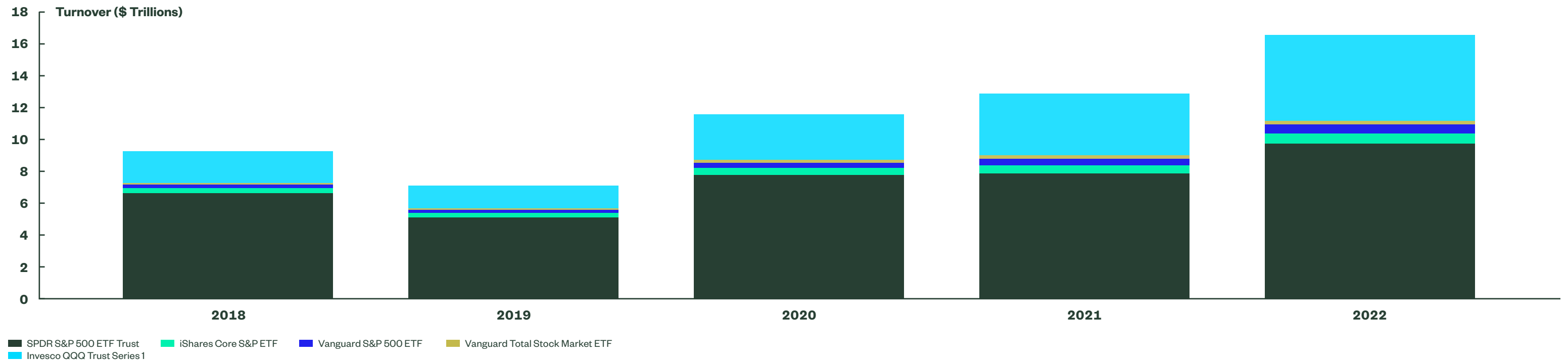
Shorting securities is one way investors express market views — but it requires a liquid, transparent vehicle.

### The ETF Solution: ETFs as a Hedging Tool

The liquidity ETFs offer makes them one option for implementing short positions. Investors can use ETFs to temporarily reduce exposure to an asset class based on a short-term view or neutralize exposures to isolate alpha opportunities.

For example, SPY is the most heavily traded equity security in the world<sup>16</sup> and has maintained a leading share of turnover among ETFs — making it an exceptionally liquid hedging tool for institutions.

Figure 19  
**SPY Historical Turnover versus the Next Top Four ETFs**



Source: Bloomberg Finance L.P., as of December 31, 2022. Top ETF defined by the sorted AUM of all US-Listed Active ETFs as of the date indicated. **Past performance is not a reliable indicator of future performance.**

## Securities Lending

ETF total cost of ownership isn't just about costs — it can also be about generating income from securities lending. Some ETFs have the potential to earn income from both “inside” lending of the underlying constituents and “outside” lending of the ETF itself. In some cases, “outside” lending can serve as a more relevant driver of returns, with the potential to earn lending returns that offset the fees of the fund.

Securities lending, or the exercise of loaning securities to other investors, is a key aspect of capital markets activity that facilitates settlement, injects liquidity, and fosters confidence for risk taking.

Securities borrowers are on the other side of the lending equation — typically hedge fund managers, investment managers, options traders, or market makers that are seeking to:

- Hedge
- Cover pending settlements
- Create arbitrage opportunities

As securities lending is the mechanism that enables short selling, it's important to identify the ETFs most frequently used as shorting vehicles when seeking lending income opportunities. As the world's largest and most actively traded ETF,<sup>17</sup> SPY securities lending is an important contributor to the overall efficiency of secondary market trading.

In 2022, SPY represented an estimated average of 95.8% of S&P 500® ETF notional short interest and 27.4% of total ETF notional short interest from among nearly 3,000 US-listed funds.<sup>18</sup>

As the go-to shorting vehicle for the S&P 500®, SPY offers the potential to generate income to institutional investors who choose to lend out the ETF. This underscores how essential it is for institutional investors to look beyond a fund's expense ratio and consider factors like securities lending potential and transaction costs when selecting the right ETF.

Figure 20

### SPY's High Short Interest Can Present Lending Income Opportunities

Estimated S&P 500 ETF Notional Short Interest



Source: Bloomberg LP, as of December 30, 2022. Data accessed May 9, 2023.

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## Transfer of Assets

### The Challenge: Illiquid Bonds on the Balance Sheet

Institutional fixed income asset managers can face challenges when they accumulate bonds on their balance sheets that may be too costly or time consuming to sell in the over-the-counter (OTC) market.

### The ETF Solution: Consolidate Positions Through a Transfer of Assets Transaction

The unique ETF creation and redemption mechanism can facilitate a *Transfer of Assets* — a term coined by State Street Global Advisors to describe the transaction involving the movement of underlying bonds into an ETF. By transferring bonds to create fixed income ETF shares, institutional asset managers can effectively consolidate line items on their balance sheets from many CUSIPs to one ETF.

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## Liquidity Overlay

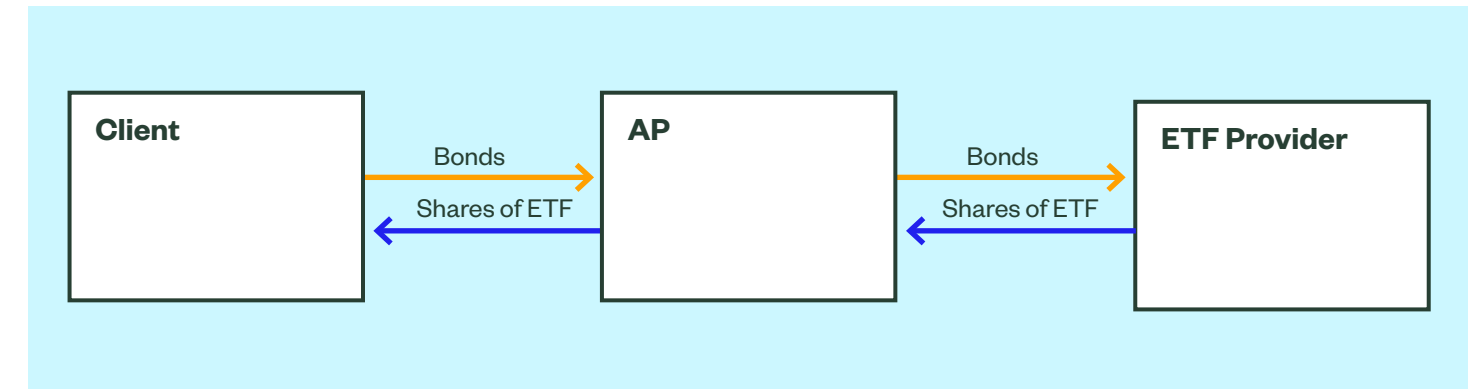
### The Challenge: Meeting Liquidity Needs Without Performance Drag

Investors often have short-term liquidity needs — but excess allocations to cash can drag on portfolio performance.

### The ETF Solution: Liquidity Overlay

Investors can supplement each allocation in their portfolios with an ETF representing the same asset class, so that they can meet liquidity needs while staying fully invested in their policy's asset allocation.

Figure 21  
Transfer of Assets Trade



Source: State Street Global Advisors. For illustrative purposes only.

# ETFs in the Spotlight Client Case Studies

If all the investing world's a stage, ETFs are the budding actor who inspires curiosity and increasingly steals the show. Through the lens of two State Street SPDR clients, discover the transformative power of ETFs, their ability to adapt to different investment objectives, and the role they can play for investors.

# How ETF Model Portfolios Can Be a Win-Win for Advisors and Clients

## A Client Case Study

An ETF model portfolio is a globally diversified investment approach that targets a particular balance of return and risk. Models are designed to address a variety of unique investor needs and can be a low-cost, tax efficient way to give individual investors access to institutional investment management.

We spoke with Tim Sachs, a financial advisor at Tempus Financial Group, LLC through Park Avenue Securities, LLC, to learn more about how he's using ETF model portfolios to help his clients reach their goals — and to grow his advisory business.

### A Bespoke Client Solution

ETF model portfolios aren't a 'one-size-fits-all' solution. Selecting the right model and provider requires a comprehensive understanding of each investor's unique objectives.

Sachs introduces ETF model portfolios to his clients after several conversations where he learns about their objectives and provides basic investment education.

“After I develop an understanding of cash flow needs and assets, I present an ETF strategic asset allocation as an investment solution.”

### An Easy Point of Entry That Checks All the Boxes

Why ETF model portfolios? Sachs notes that State Street ETF model portfolios align with his advisory firm's fundamental investment philosophy.

“Our approach involves targeting the right amount of risk for each client, diversifying across asset classes, and selecting a strategy that's managed and rebalanced on an ongoing basis. State Street's models check all three of these boxes.”

The client conversation isn't typically a difficult one. “I don't believe in overcomplicating things, and ETF model portfolios are a low cost, easy point of entry into the market,” says Sachs, who also makes it clear to his clients that his approach isn't about stock picking.

### State Street ETF Model Portfolios: A Win-Win for Clients and Advisors

When it comes to selecting the right model provider, low turnover during volatile markets is one of the reasons Sachs chooses State Street ETF Models for his clients.

“When the market correction started in January 2022, clients had their 2021 gains erased but also felt the tax consequences of ETF model portfolios that had higher turnover, which wasn't a fun conversation,” says Sachs. “State Street's strategic models had much lower turnover, which made them a more tax efficient choice.”

Sachs also favors SPDR models for the confidence the brand instills. “State Street is a household name that makes people feel comfortable, and they're a firm that has the due diligence and scale to offer these solutions at a very low cost,” notes Sachs.

“Clients then become confident in the strategy and continue to put more money into these models, where their balances increase, and our assets grow — it's a win on both sides.”

# Why ETFs for Fixed Income

## A Client Case Study

Fixed income ETFs can offer liquid access to otherwise highly illiquid bond markets — a benefit that’s driving their growing adoption among active investment managers.

We spoke with Michael Contopoulos, Director of Fixed Income at Richard Bernstein Advisors (RBA), to learn more about the firm’s unique investment approach — and why they’ve chosen ETFs for their fixed income strategies.

### A Top-Down Macro Investment Approach

RBA takes a top-down approach to active fixed income investing, seeking to capture macro variables such as duration and credit quality, and tactically over- or underweight them. “All of our research over time suggests that what drives returns — and alpha — are macro variables,” explains Contopoulos.

Three pillars comprise the firm’s research analysis: profits, liquidity, and sentiment. RBA believes that profit and liquidity cycles are strong determinants of market performance — and that identifying inflection points in these cycles can inform desired credit risk and interest rate risk exposures. They also use sentiment indicators to identify capital scarcities and excesses, as their research shows returns are greatest when capital is scarce.

The outcome of this process is a clear vision on portfolio characteristics and objectives.

“The investment committee comes up with a conclusion on what the fixed income portfolio should look like and how we want it to behave over the next 12-24 months,” says Contopoulos. “Through an X-Raying process where they take a comprehensive look at ETF underlying holdings, the implementation team then finds the ETF — or multiple ETFs — that best represent those views.”

### Why ETFs for implementation?

“ETFs can offer liquidity many times greater than that of the underlying bonds — giving us the ability to express our investment committee’s views in a liquid, low-cost way while retaining the principles of active management.”

### The Dawn of a New Fixed Income Management Era

In RBA’s view, we’re at a pivotal moment in fixed income investing — and having the ability to nimbly express tactical macro views has never been more important.

For the past 40 years, interest rates were falling 75% of the time and rising just 25% of the time, making for a straightforward fixed income investing process. “Fixed income management was essentially a passive strategy during this time,” observes Contopoulos. “All fixed income PMs had to do was strategically overweight interest rate risk to outperform 75% of the time, and overweight high yield bonds to outperform when interest rates were rising.”

With this era now likely behind us, the pattern will kick into reverse over the next several years, where interest rates rise the majority of the time. As a result, fixed income investors seeking outperformance will need to take a different approach. “We believe investors will need an active strategy that can turn on a dime with interest rate risk and credit allocations,” says Contopoulos.

RBA sees fixed income ETFs as the best match for this strategy, as they can offer the liquidity to quickly implement tactical views.

“With ETFs, we can hedge interest rate risks, express a view on interest rate volatility or the yield curve, or go from a 2-year duration portfolio to one that has 8-year duration in a single day — all because of ETF liquidity.”

While RBA views fixed income ETFs’ ability to offer significantly more liquidity than the underlying bonds as a key advantage, some have flagged it as a potential risk. RBA believes more education on ETF structure can address these concerns.

### Fixed Income ETF Liquidity: Dispelling the Myths

While RBA views fixed income ETFs’ ability to offer significantly more liquidity than the underlying bonds as a key advantage, some have flagged it as a potential risk. RBA believes more education on ETF structure can address these concerns.

“Walking skeptics through ETF mechanics, and how they offer two layers of liquidity — the primary market creation and redemption process, and the secondary market on-exchange trading — can be enlightening,” notes Contopoulos. In essence, ETFs’ additional layer of liquidity is a structural innovation that sets them apart from individual bond portfolios and mutual funds, where trading illiquid bonds can be costly and time-consuming.

“I can’t overstate the importance of liquidity enough. In our view, there’s an opportunity to reimagine fixed income management. The old way of managing fixed income through individual bonds and mutual funds is on its way out — and we’ll see the new way of using ETFs for bond exposures take over the space.”

# The Future of ETFs

## 5 Emerging Trends

As the ETF industry continues to evolve, it stands poised on the brink of the next great frontier, where innovation and opportunity collide. Explore what's on the horizon for ETF investors — and what trends we predict will chart new paths in this next era of ETF investing.

# Signs of Growth on the Road Ahead

Despite their remarkable growth to date, ETFs still only represent about 9% of investable assets.<sup>19</sup> And, while passive investing has grown in lockstep with ETFs, global passive equity only comprises 12% of the market<sup>20</sup> — which means there’s still plenty of room for passive ETFs to grow (Figure 22).

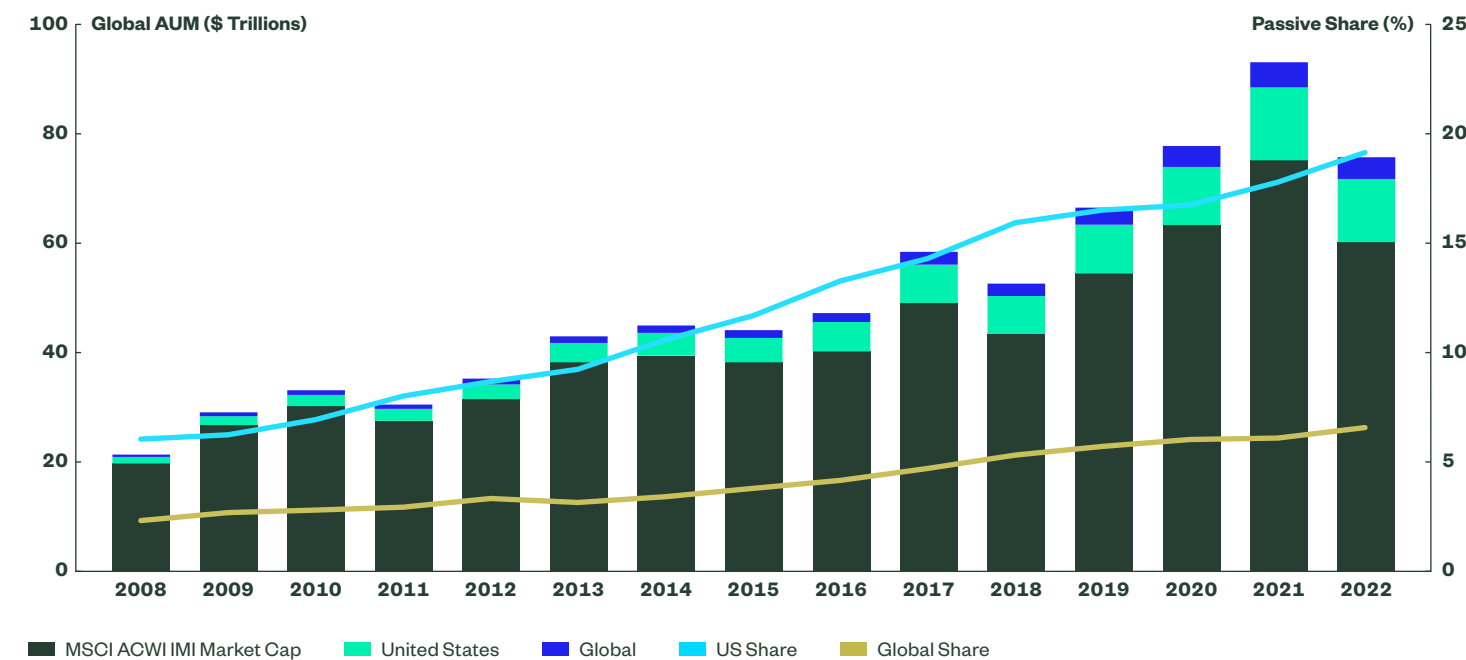
The potential for passive asset growth extends beyond just equities — it’s a trend we’re also observing in fixed income. Over the past few years, we’ve canvassed the views of institutional investors across the globe to better understand where the fixed income market is and where it’s heading.

Our 2022 survey and report on the [future of fixed income](#) found that while active strategies have traditionally prevailed in fixed income, and continue to dominate portfolios, the early shifts we’ve seen in prior surveys<sup>21</sup> are continuing.

Now, over one-third (37%) of respondents say that more than 20% of their portfolio is allocated to index strategies. For 7% of respondents, more than 30% of their portfolio is allocated to index strategies (Figure 23).

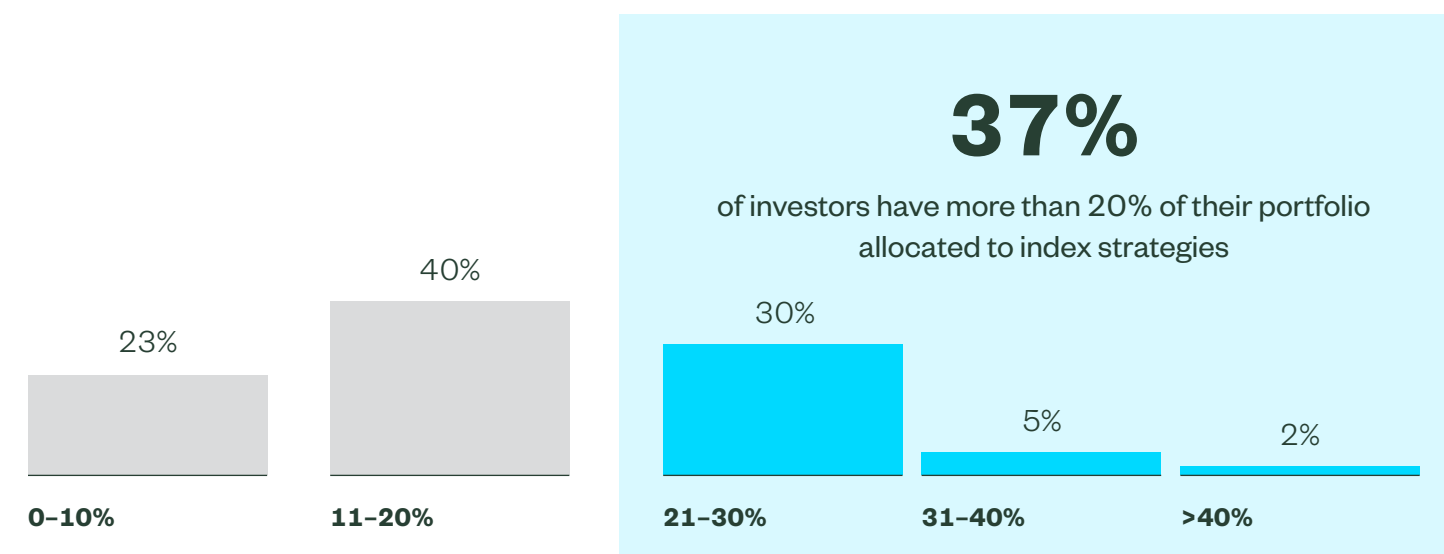
As we look to the year ahead and beyond, we anticipate continued industry growth and expect several trends to unfold in the ETF landscape.

**Figure 22**  
**Passive Assets Still Have Room to Grow**



Source: Bloomberg Finance L.P., and Morningstar as of December 31, 2022. Calculations per SPDR Americas Research.

**Figure 23**  
**Investors Show Sustained Interest in Indexed Approaches to Fixed Income**



Source: State Street Global Advisors, as of May 2022. Percentage of respondents. Note: Fixed income index strategy is defined as 'A portfolio of fixed income securities that seeks to track the performance of a market index, such as the Bloomberg Barclays US Aggregate Bond Index. Index strategies may seek to precisely replicate a market index, or to build a representative sample of an index.' Respondents were allowed to select one answer. n=643



# 1. Active ETFs Join the Chat

We're also seeing room for growth in active ETFs — a trend that's evident in ETF issuer product development plans for the year ahead. When surveyed by Cerulli Associates in 2022, 75% of ETF issuers reported either currently developing or planning to develop transparent active ETFs (Figure 24).

With active ETFs at the forefront of product development, it should perhaps come as no surprise that the majority of ETF issuers also said they expect "significant flows" into transparent active ETFs in 2023<sup>22</sup> — and it appears this is already materializing.

In 2022, active strategies took in a record amount of assets, registering \$106 billion of total inflows on the year. This was 22% more than the 2021 record of \$87 billion — and was fueled by active equity ETFs. Those funds amassed \$86 billion in 2022, a 100% increase from their prior record total in 2021 of \$43 billion.<sup>23</sup>

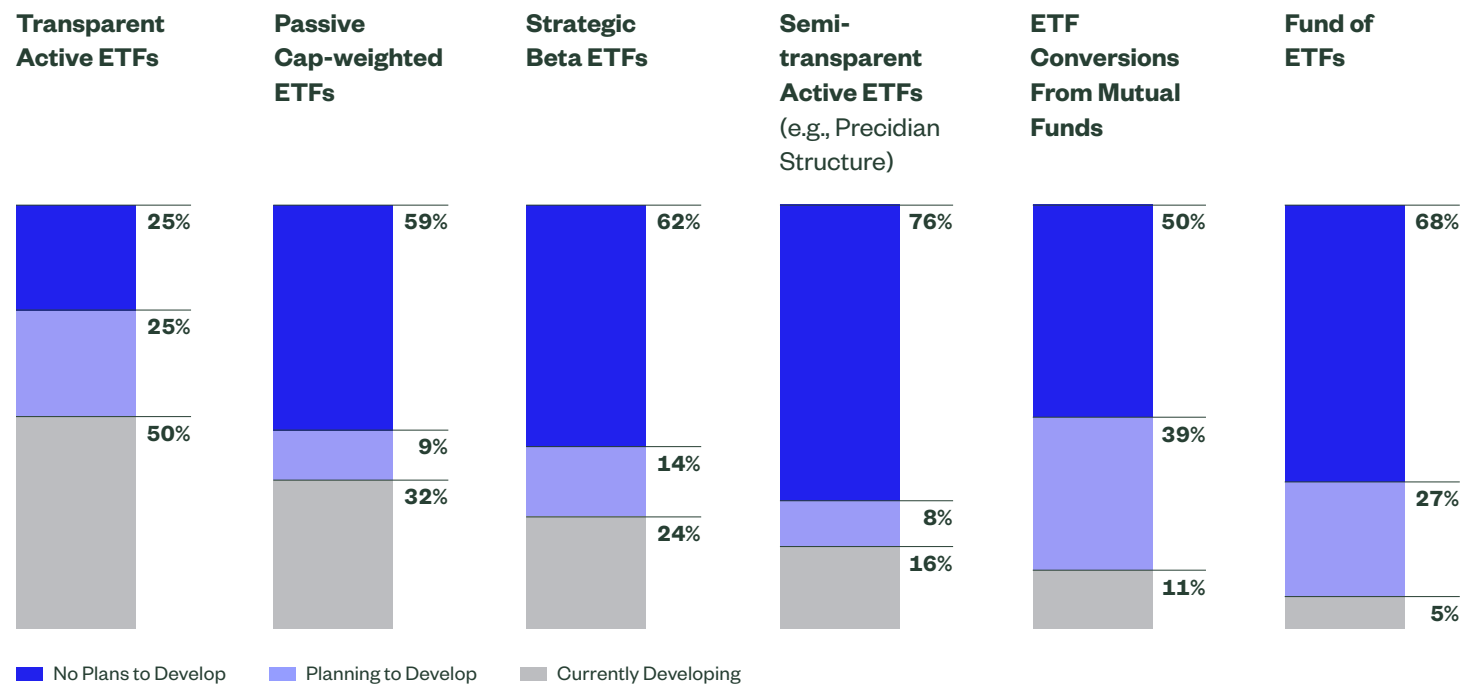
Strong flows into active ETFs overall have continued into 2023, taking in \$33 billion through just the first four months of the year (Figure 25). Once again, active equity ETFs have been driving the flows — taking in \$28 billion versus \$5 billion for active fixed income ETFs. In fact, active equity funds have had inflows each month so far this year, extending a record-setting streak of 41 consecutive months of inflows.

Various active strategies were behind these record-setting flows. Some came from ETFs previously converted from mutual funds, with an embedded buying base and existing assets. Other inflows went to strategies that deliver defined outcomes (e.g., buffer funds) using options, or to those targeting specific investor goals (e.g., income) as opposed to pure alpha. While the latter two could be considered alternative strategies, the flows nonetheless represent elevated usage of active strategies within an ETF wrapper.

These trends have pushed total active ETF assets to \$394 billion.<sup>24</sup> And if asset gathering continues at 2022's pace, assets could surpass \$450 billion by the end of the year.

Figure 24

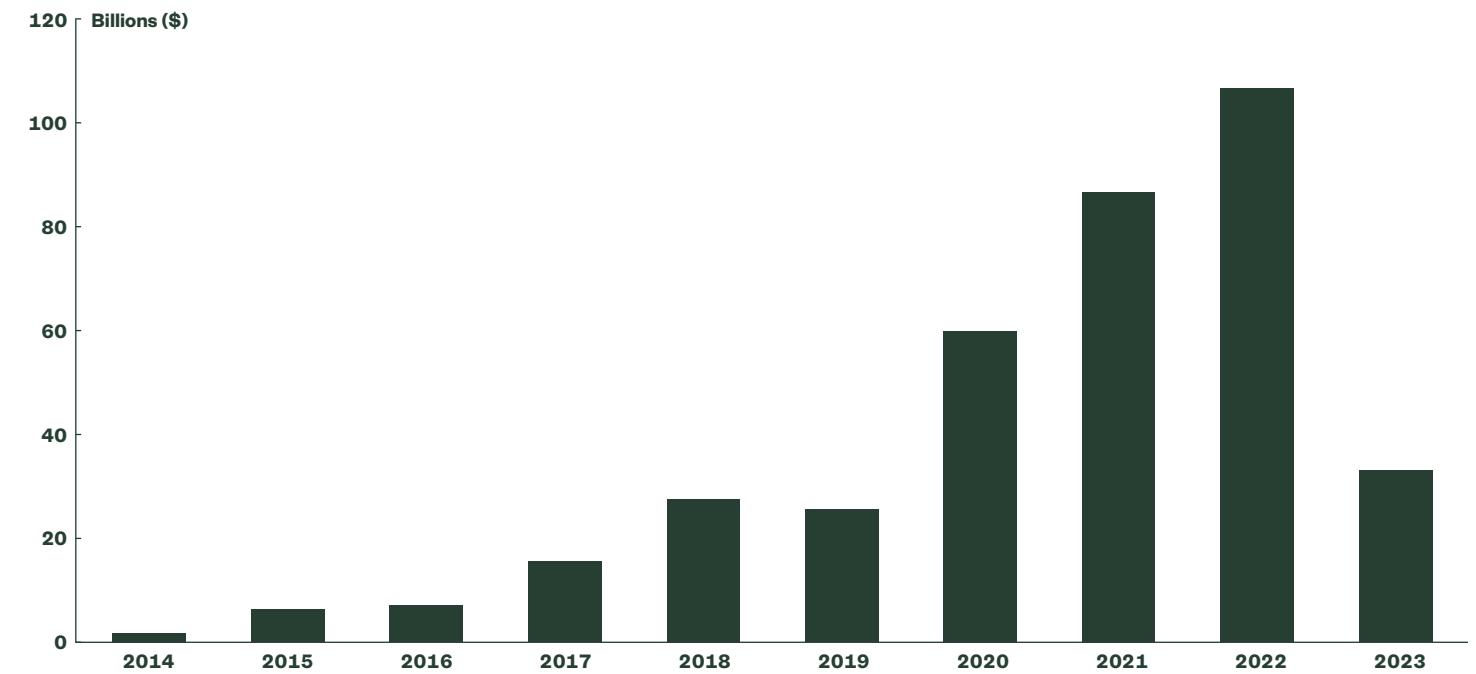
## ETF Issuers' Plans to Develop Exchange Traded Vehicles by Type, 2022



Source: Cerulli Associates.  
Analyst note: "ETF conversions from mutual funds" was a new choice added to this year's survey.

Figure 25

## The Rapid Acceleration of Active ETF Flows



Source: Bloomberg Finance, as of May 15, 2023. **Past performance is not a reliable indicator of future performance.**

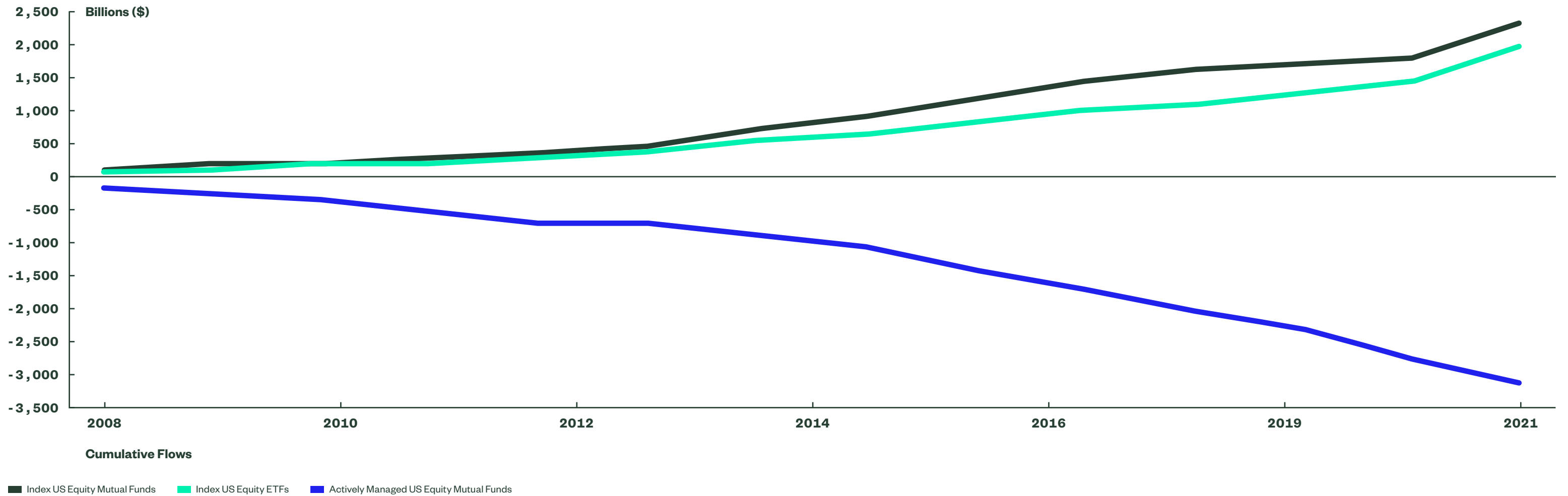
## 2. Continued Flows from Mutual Funds to ETFs

The cost, trading, and tax efficiency advantages ETFs offer versus active mutual funds have in part fueled their astounding growth. Over the past decade, US equity ETF inflows have largely been at the expense of active mutual funds.

We expect this trend to continue, as we're seeing a growing number of asset managers enter the ETF business for the first time. And as more ETF providers and products enter the market, we anticipate a continued focus on ETF liquidity and market quality — making for an optimal trading experience for ETF buyers and sellers.

Figure 26

**Investors Flock from Active Mutual Funds to ETFs: US Equity Flows** 2008–2021 Cumulative Flows\*



Source: 2022 Investment Company Fact Book, Broadridge, Morningstar US Fund Fee Study 2021.  
\* ETF mutual fund data include net new cash flow and reinvested dividends.

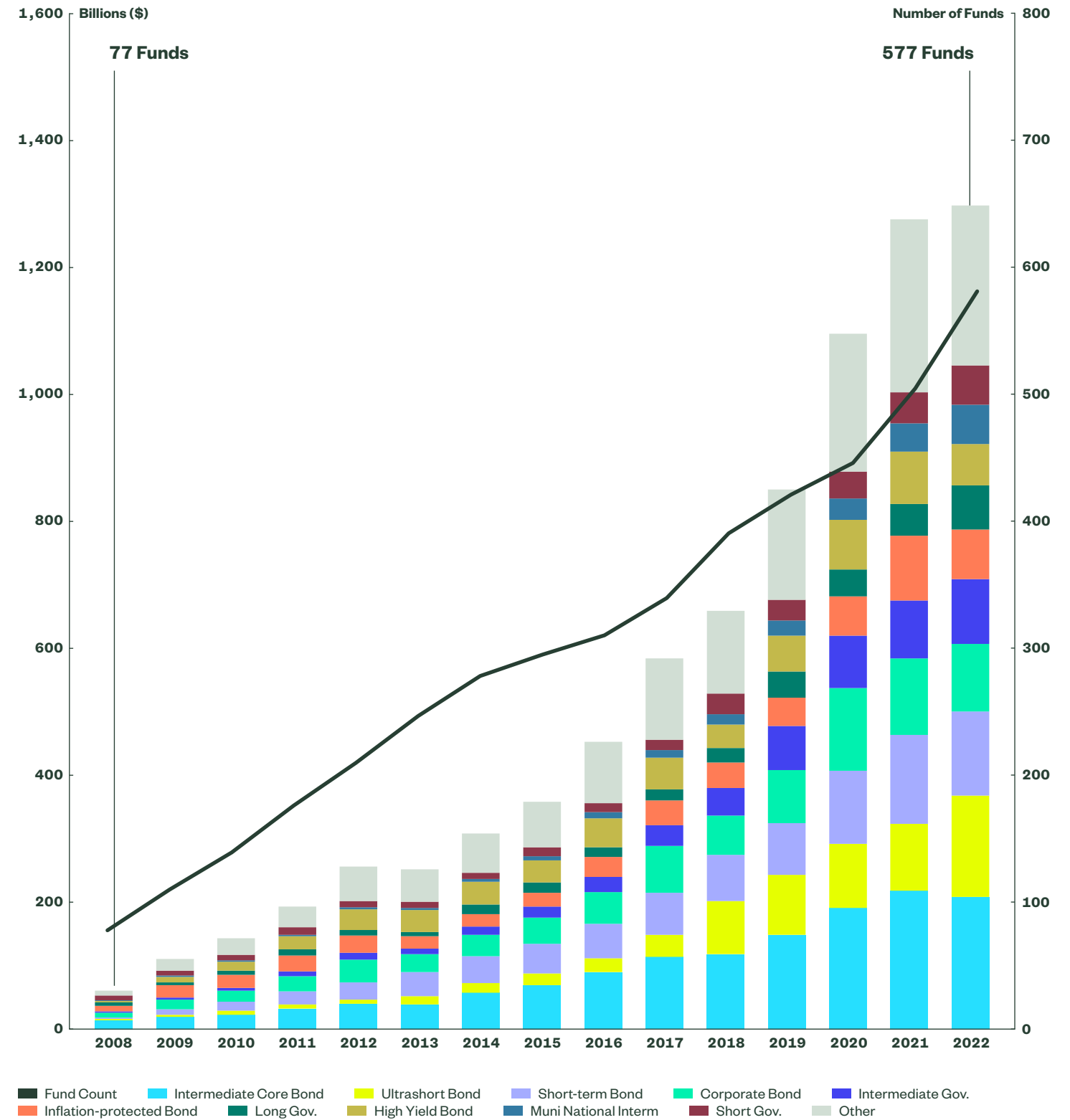
### 3. The Fixed Income ETF Moment Isn't Over

Bond ETFs took in nearly \$200 billion in 2022, led by a record \$125 billion of inflows into government funds. As investors sought higher yielding short duration sectors amid rising rates, ultra-short government bond ETFs comprised more than a third of bond ETF inflows.

Looking ahead, we expect fixed income ETF flows will continue to gather steam. And as the fixed income ETF universe has expanded and evolved, investors have the choice to look at shorter-duration segments beyond government bonds.

Today's extensive breadth of choice in the fixed income ETF market gives investors the ability to strategically design bond exposures for what lies ahead — and slice and dice the bond market to target outcomes with precision.

Figure 27  
Fixed Income ETFs Offer More Choice for Investors



Source: Morningstar, as of December 31, 2022. Other includes Asset Allocation, Commodity, and Alternative Funds.

## 4. Investors Turn to Dividend Payers for Offense and Defense

Equity investors faced wild market swings in 2022. High inflation, rising rates, increased geopolitical tensions, and weakening growth drove returns on the market's down days — and hope that economic conditions would improve drove the upside.

In 2023, positioning portfolios for this fundamental weakness, while acknowledging the potential for future strength, means combining offense with defense.

Dividend payers have a consistent track record of returning value to shareholders but aren't as heavily allocated to defensive market segments as volatility strategies (Figure 29). This mix of offensive and defensive characteristics may make dividend ETFs an effective strategy for positioning portfolios through the rest of 2023 and beyond.

## 5. More Investors Want to Pay Less for Core Exposure

As market volatility and low return expectations extend into 2023, we anticipate investors will continue to take a closer look at total cost of ownership for their core portfolio holdings, further driving flows into low-cost ETFs.

Because costs can accumulate over time and erode portfolio returns (Figure 29), building a low-cost, diversified core is even more important today amid the market's murky future.

Figure 28

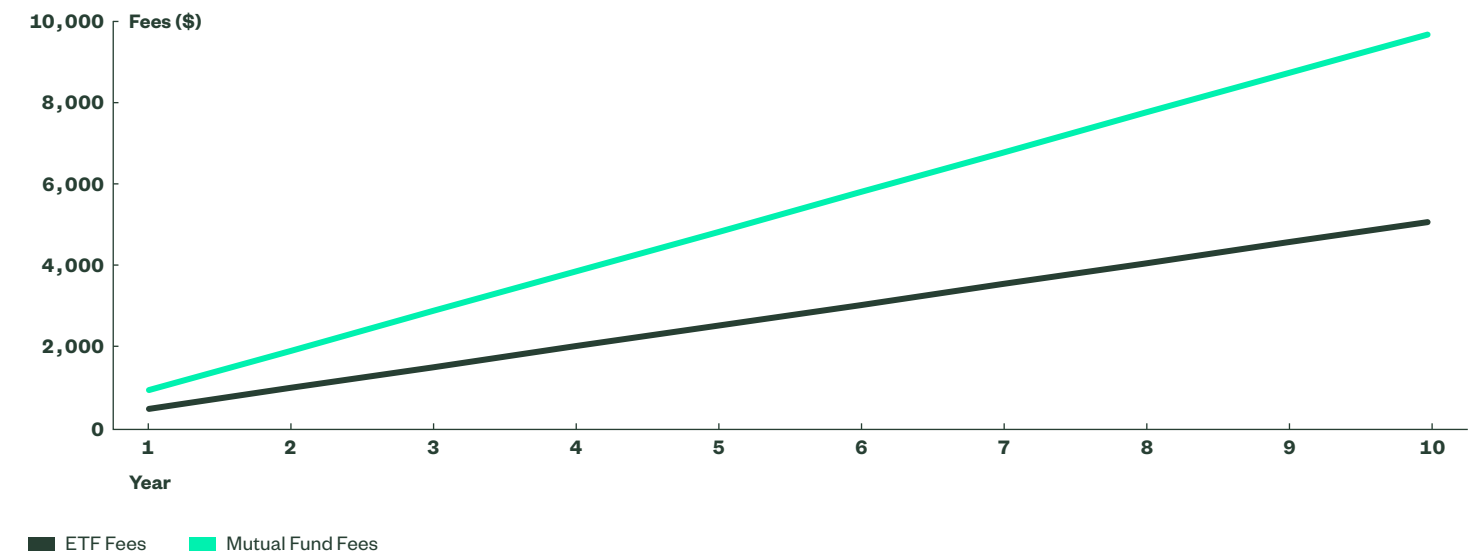
### Dividends Play Better Offense Than Low Volatility Percentage of Defensive Sector Exposure



Source: FactSet, as of October 31, 2022. Defensive sectors are the ones with low 1-year beta to the broad market, including Consumer Staples, Utilities, Health Care, and Energy.

Figure 29

### The Impact of Fees Over a Decade



\* Median US-listed mutual fund TER = 0.97%.

Source: Morningstar, State Street Global Advisors, as of March 31, 2023. Actual fees paid by an investor will differ.

## Where Will Growth Come From?

### Expected Growth Drivers Are Consistent Across Regions

ETF adoption is growing across all regions, although some at a faster pace than others. While the US ETF market is still the largest in AUM, growth in Europe, Asia-Pacific, and Canada ETF markets has outstripped US ETF growth over the past several years (Figure 30).<sup>25</sup>

Trends such as fixed income and thematic ETFs are expected to drive growth in the US and overseas alike. In a 2021 PwC Global ETF Survey, the majority of respondents across all regions anticipated the most demand for fixed income and thematic ETFs over the next two or three years.

Figure 30

#### Asset Classes of Investment Strategies Ranked By Anticipated Demand Over the Next 2-3 Years

	US (%)	Europe (%)	Asia-Pacific (%)	Canada (%)
Thematic ETF	71	82	92	73
	50	68	38	53
Fixed Income	89	76	77	73
	73	82	63	60
Domestic Equity	64	47	62	40
	93	92	86	60
Global Equity	57	82	62	53
	38	59	50	73
Fully Transparent	46	12	17	40
	0	0	0	0
Semi Transparent	21	5	17	13
	0	0	0	0
Smart Beta	21	12	27	20
	38	18	25	7

■ 2021 — Expect "Most Demand" ■ 2020 — Expect "Most Demand"

Source: PwC 2021 Global ETF Survey.

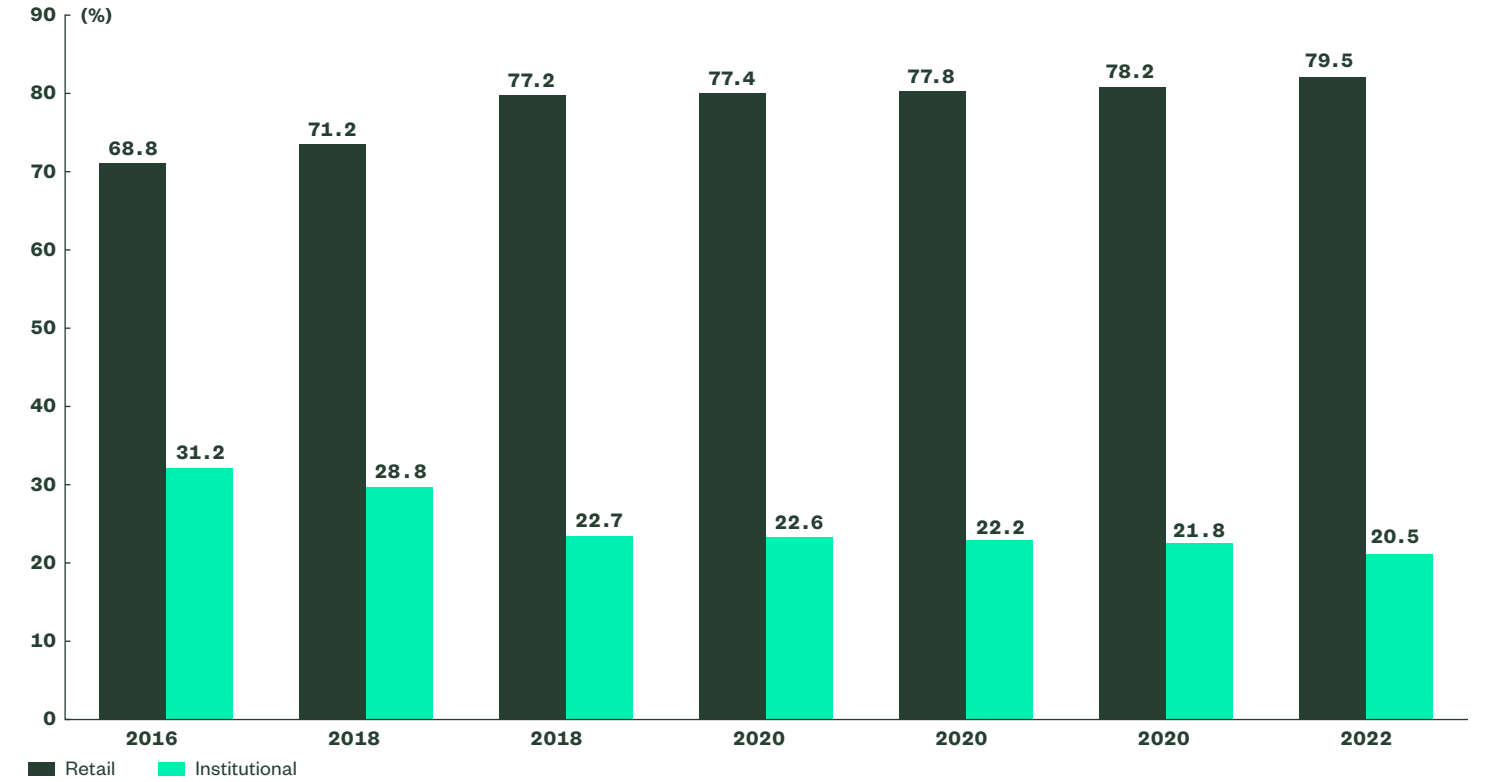
### The Retail Market Should Continue to Propel ETF Growth

With respect to investor type, ETF adoption rates have held relatively steady across retail and institutional segments over the past six years (Figure 31). Strong retail adoption has been consistent — advisors continue to seek ETFs as efficient building blocks for a low-cost core, while institutions continue to use ETFs primarily for their liquidity benefits, particularly in today's volatile markets.

We expect the retail market to continue driving ETF market growth. Over the next 12 months, 53% of ETF issuers cited that advisors are increasing existing ETF allocations as a major growth driver, compared with 44% who cited increased institutional adoption.<sup>26</sup>

Figure 31

#### ETF Issuers: Retail and Institutional Asset Segmentation, 2016-2022



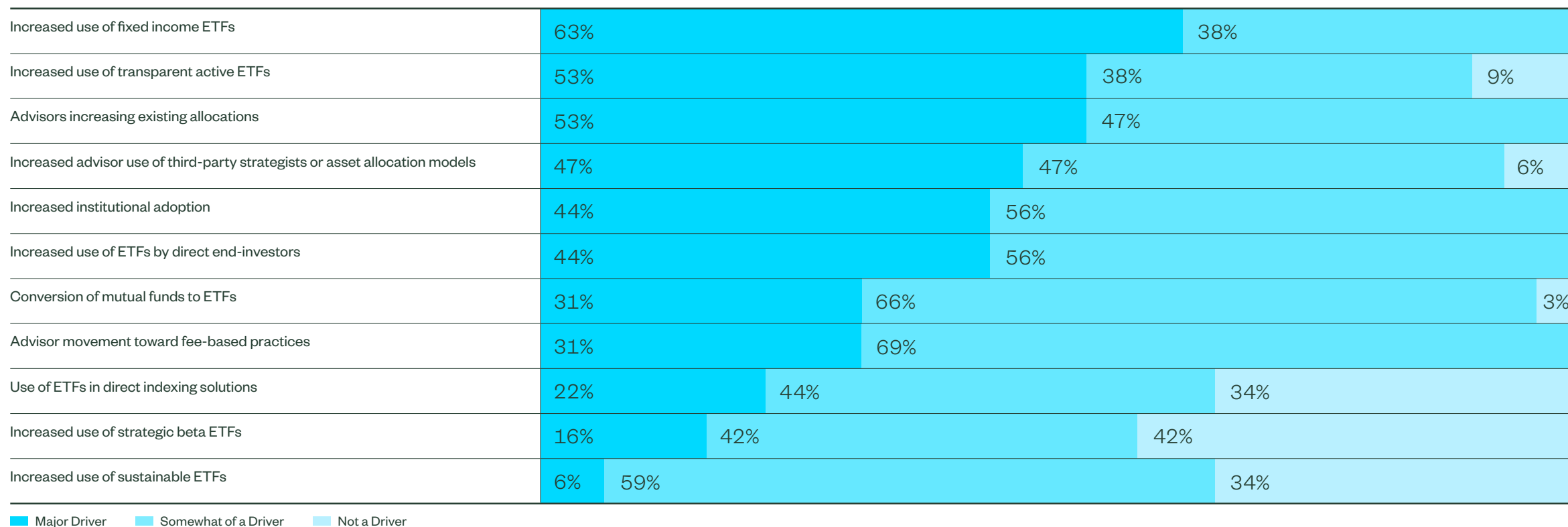
Source: Cerulli Associates. Analyst Note: Responses are asset-weighted based on 2Q 2022 assets.

## ETF Issuers Are Aligned on Growth Drivers and Challenges

ETF providers can also offer unique insight into future growth drivers, and State Street Global Advisors SPDR isn't alone among ETF issuers in the areas where we anticipate growth. When surveyed by Cerulli, ETF issuers noted several of the trends we've identified — like the increased use of fixed income and active ETFs — as major drivers of growth (Figure 32).

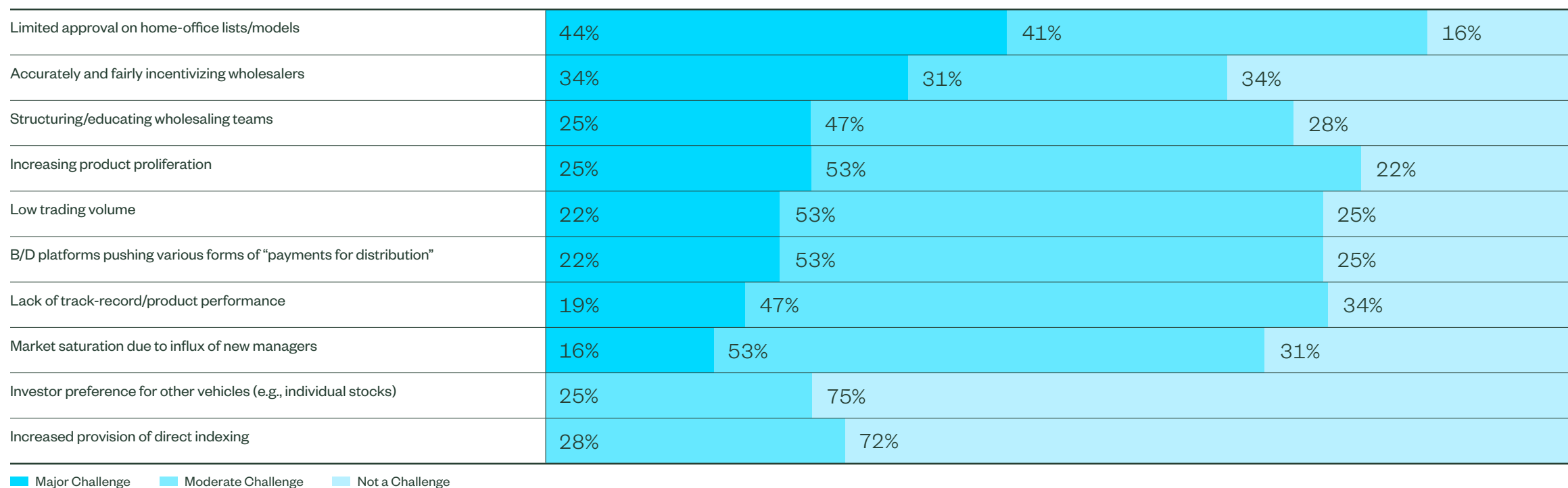
While ETF issuers expect continued industry growth, they don't see it coming without potential challenges. They view limited approval on home office lists/models and payment for distribution as significant barriers to ETF growth (Figure 33).

**Figure 32**  
**ETF Issuers: Drivers of Growth of ETF Assets, 2022**



Source: Cerulli Associates. Analyst Note: ETF issuers were asked which factors will drive ETF asset growth over the next 12 months.

**Figure 33**  
**ETF Issuers: Challenges to Growth of ETF Assets, 2022**



Source: Cerulli Associates.

## More Growth in ETF Model Portfolio Adoption

Model portfolio assets have grown more than 18% annually over the past five years and assets are expected to increase 16% over the next five years — reaching \$10.3 trillion.<sup>27</sup>

And so, we anticipate that they'll be another key source of ETF industry growth, as more advisors seek a low-cost, efficient way to access a broad range of asset classes and institutional investment management for their clients.

Implementing model portfolios can help financial advisors' bottom line, enabling them to spend less time on portfolio management and more time with clients, which is highly correlated to increased client satisfaction and wallet-share growth.<sup>28</sup>

When it comes to selecting the right model portfolio, advisors are increasingly prioritizing tax efficiency. In fact, based on advisor demand, model providers cited "making models more tax-efficient for taxable client segments" as their most important product development initiative.

Given the ETF's inherently tax efficient structure, the rising importance of tax efficiency has the potential to make ETF model portfolios particularly attractive for advisors and their clients.

Figure 34

### Model Providers: Most Important Asset Allocation Model Product Development Initiatives, 2022

Making models more tax-efficient for taxable client segments	50%
Blending active and index strategies to create lower-cost models	43%
Incorporating ESG factors/criteria into models	37%
Incorporating different investment vehicle wrapper options (e.g., separate accounts) into model offerings	37%
Expanding customization potential (e.g., ticker swaps) of firm's models	33%
Expanding the asset class/sub-asset-class exposure offered in firm's models	33%
Removing or reducing the asset allocation fee (exclusive of investment product cost)	20%
Incorporating nonproprietary investment options within firm models	17%
Digital-asset-related initiatives	10%

Source: Cerulli Associates. Analyst Note: Respondents could select up to three initiatives. 2022 is the first year when digital-asset-related initiatives were included as a choice.

# Investor Resources For the Turbulent Times Ahead



The 30th anniversary of **SPY** — and the ETF industry as a whole — comes at a time of considerable market uncertainty. In 2022, high inflation, rising interest rates, and geopolitical tensions roiled global markets. The US banking crisis and policy uncertainty have extended the turmoil into 2023. As the ETF industry has evolved, ETFs' unique advantages have made them powerful tools for pursuing investing goals at all times — and especially during stressful periods like this.



# We Can Help You Navigate Today's Volatile Markets

## Lean on a Trusted ETF Leader

### About SPDR Exchange Traded Funds

SPDR ETFs are designed to be portfolio building blocks, span an array of asset classes, and provide investors with the flexibility to select investments that align with their investment strategy. The comprehensive family of SPDR ETFs is sponsored by affiliates of State Street Global Advisors.

### About State Street Global Advisors

For four decades, State Street Global Advisors has served the world's governments, institutions, and financial advisors. With a rigorous, risk-aware approach built on research, analysis, and market-tested experience, we build from a breadth of index and active strategies to create cost-effective solutions. And, as pioneers in index and ETF investing, we are always inventing new ways to invest.

**1st**

Creator of the World's First ETFs<sup>29</sup>

**\$3.3T**

AUM Managed Globally<sup>30</sup>

**40 yrs**

Indexing and Portfolio Experience<sup>31</sup>

**29**

offices around the world

## Unlock More of Our ETF Resources

We expect market volatility to persist for some time, leading to a bumpy journey ahead. But just as they have in the past, we believe that ETFs will continue to prove they're built to weather these storms.

And as investors again turn to ETFs in turbulent times, we're here to help you better understand the unique attributes of these funds and how to use them, so that you can make the best possible investment decisions.



### ETF Market Trends

The latest market commentary, macroeconomic perspectives, and ETF flows data.



### ETF Education

Everything you need to know about ETFs.



### More ETF Insights

The latest research and timely insights from SPDR ETFs.

## Endnotes

- 1 Bloomberg Finance, L.P., as of December 31, 2022.
- 2 Bloomberg Finance, L.P. and Morningstar, as of December 31, 2022.
- 3 Bloomberg Finance, L.P., as of December 31, 2022.
- 4 Bloomberg Finance, L.P., as of December 31, 2022.
- 5 Bloomberg Finance L.P., as of December 16, 2022.
- 6 Bloomberg Finance L.P., as of December 16, 2022.
- 7 Bloomberg Finance, L.P., as of December 31, 2022.
- 8 Bloomberg Finance, L.P., as of December 31, 2022, calculations per SPDR Americas Research.
- 9 Bloomberg Finance L.P., as of March 17, 2023, based on US-listed ETFs with the sector classification of Financials.
- 10 The Cerulli Report: U.S. Exchange-Traded Fund Markets 2022.
- 11 Bloomberg Finance, L.P., as of January 5, 2023, based on the Bloomberg Global Aggregate Bond Index.
- 12 Morningstar as of December 31, 2022.
- 13 Morningstar, as March 31, 2023. Median net expense ratio for all US listed MF by oldest share class.
- 14 NASRA, Public Pension Plan Investment Return Assumption, March 2023.
- 15 State Street Global Advisors per Morningstar, as of November 17, 2022.
- 16 Bloomberg Finance L.P., as of December 12, 2022.
- 17 Bloomberg Finance L.P., as of December 16, 2022.
- 18 Bloomberg Finance L.P., as of December 30, 2022.

- 19 State Street Global Advisors, as of March 31, 2023, based on calculations per the SPDR Americas Research.
- 20 State Street Global Advisors, as of March 31, 2023, based on calculations per the SPDR Americas Research.
- 21 See, for example, Fixed Income: Preparing for the Big Shift, State Street Global Advisors, 2021.
- 22 The Cerulli Report: U.S. Exchange-Traded Fund Markets 2022.
- 23 State Street Global Advisors, as of March 31, 2023, based on calculations per the SPDR Americas Research.
- 24 State Street Global Advisors, as of March 31, 2023, based on calculations per the SPDR Americas Research.
- 25 PwC Global AWM Market Research Centre, Refinitiv Lipper, 2021.
- 26 The Cerulli Report: U.S. Exchange-Traded Fund Markets 2022.
- 27 Broadridge Trends in Distribution, 2023.
- 28 Cerulli Associates, The Cerulli Report, U.S. Retail Investor Advice Relationships, 2019.
- 29 ETFs managed by State Street Global Advisors have the oldest inception dates within the US, Australia, Hong Kong, and Singapore. State Street Global Advisors launched the first ETF in the US on January 22, 1993; launched the first ETF in Hong Kong on November 11, 1999; launched the first ETF in Australia on August 24, 2001; and launched the first ETF in Singapore on April 11, 2002.
- 30 State Street Corporation, as of September 30, 2022.
- 31 State Street Corporation, as of September 30, 2022.

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Volatility management techniques may result in periods of loss and underperformance may limit the Fund's ability to participate in rising markets and may increase transaction costs. The value style of investing that emphasizes undervalued companies with characteristics for improved valuations, which may never improve and may actually have lower returns than other styles of investing or the overall stock market.

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Passively managed funds invest by sampling the index, holding a range of securities that, in the aggregate, approximates the full Index in terms of key risk factors and other characteristics. This may cause the fund to experience tracking errors relative to performance of the index.

A Smart Beta strategy does not seek to replicate the performance of a specified cap-weighted index and as such may underperform such an index. The factors to which a Smart Beta strategy seeks to deliver exposure may themselves undergo cyclical performance. As such, a Smart Beta strategy may underperform the market or other Smart Beta strategies exposed to similar or other targeted factors. In fact, we believe that factor premia accrue over the long term (5-10 years), and investors must keep that long time horizon in mind when investing.

The ETFs listed above have historically paid dividends to investors and/or invest in the securities of dividend paying issuers; however, there is no guarantee that these ETFs will consistently pay dividends to investors in the future or will appreciate in value. Investors could lose money by investing in ETFs.

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