An introduction to ETFs for Central Banks

Insights
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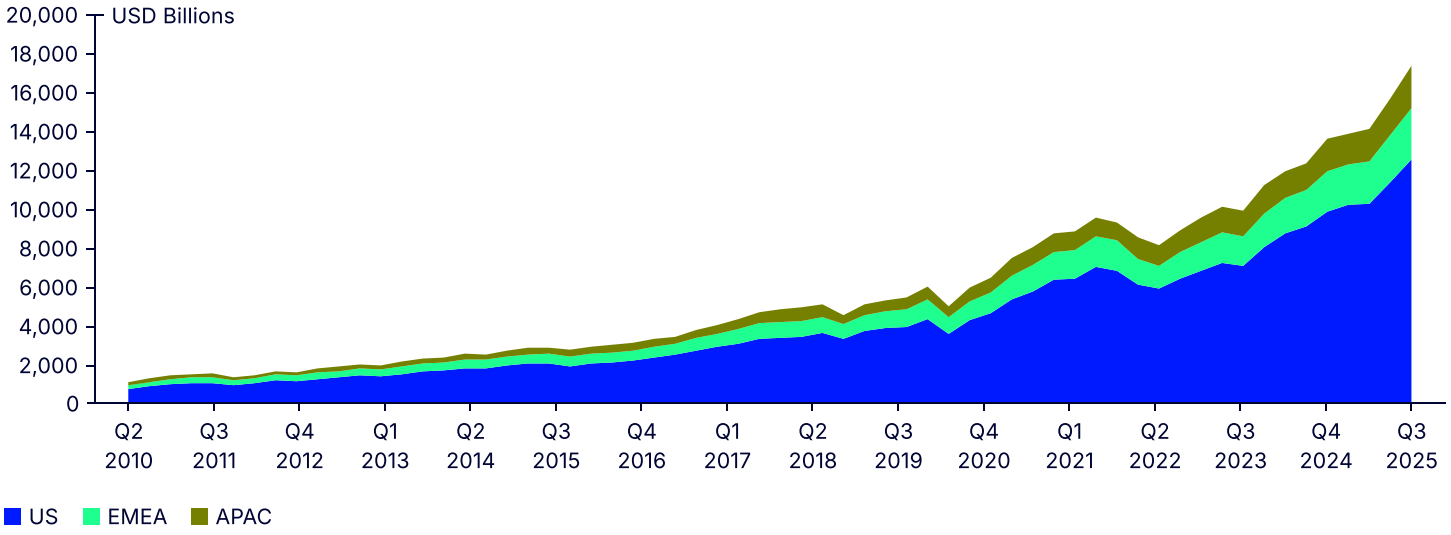
As the ETF industry matures, we have seen central banks and public institutions increase their use of this investment vehicle. Large investors have found that ETFs can help with a variety of challenges, such as access to liquidity, transition management and exposure management. Fixed income ETFs, in particular, have seen rising uptake after withstanding the market turmoil caused by the onset of COVID in 2020.

Introduction: The evolution of the global ETF industry

With assets now comfortably over $15 trillion globally, the global ETF industry has seen a phenomenal rate of growth during the last 10 years. The pace of inflows into these financial instruments continues to gather pace.

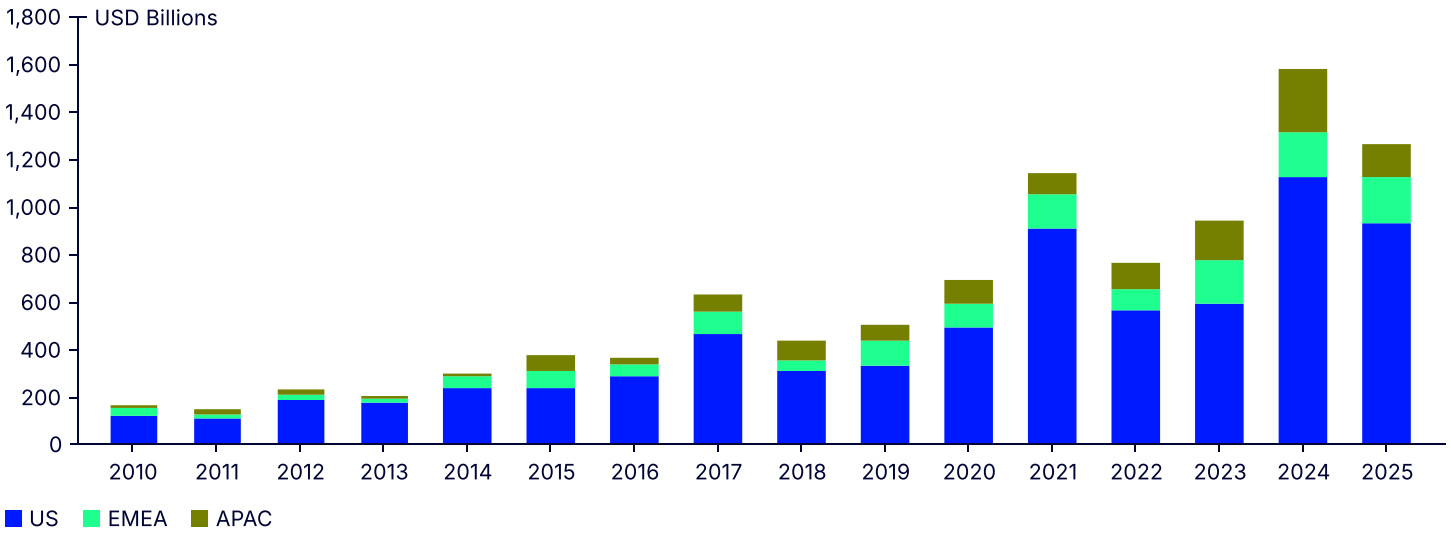
Last year alone saw over $1 trillion of new assets added to the ETF industry. While this growth has largely been driven by US-domiciled products, we are beginning to see an acceleration of flows into Europe and Asia-domiciled ETFs.

Figure 1: Global ETF AUM by region



Source: Bloomberg Finance L.P., as of 30 September 2025.

Figure 2: Global ETF yearly flows by region



Source: Bloomberg Finance L.P., as of 30 September 2025.

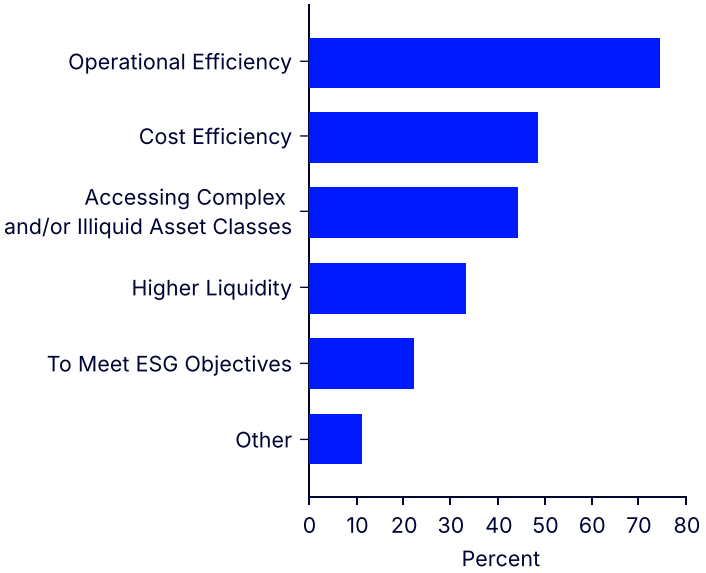
ETFs have, to some extent, often been viewed as more of a "retail" financial product, with personal investors using them as a cost-effective way of building portfolios. However, we have started to see larger and more sophisticated institutions using ETFs for a variety of purposes.

The most well-known institutional ETF investor is perhaps the Bank of Japan (BoJ). The BoJ has used Japanese equity ETFs extensively as a way of influencing monetary policy through a form of quantitative easing. And more recently, the US Federal Reserve (Fed) used ETFs for a period as a way to stabilise the corporate bond market during the start of the COVID crisis in 2020. However, these examples are not the only times when official public Institutions have used ETFs.

Indeed, as a recent Global Public Investor report from the Official Monetary and Financial Institutions Forum (OMFIF) shows, central banks are increasing their use of ETFs, for various reasons. The report found that operational efficiency was the most common reason for using ETFs, with the other reasons shown in the below table.

ETF usage among central banks remains relatively small, with ETFs making up just less than 1% of total portfolios, on average. As the ETF ecosystem becomes more mature, we expect adoption to rise. We have seen increasing usage from central banks in Asia Pacific and EMEA, while other regions have seen slightly lower adoption.

Figure 3: ETF use cases from Central Banks (share of respondents, %)



Source: OMFIF Global Public Investor Survey 2022. The above chart reflects answers to the survey question, "For which of the following purposes do you use ETFs? Select all that apply."

In this paper, we give an overview of the key factors that investors should consider around incorporating ETFs into their portfolios. We also look at both theoretical and actual case studies that illustrate how and why we have seen central banks and other public institutions using ETFs.

Reasons for institutions to consider ETFs

We have seen several contributing factors for the increased adoption of ETFs by large public institutions, both from a strategic asset allocation perspective and from a trading solutions perspective. We have listed some of the most common factors for ETF adoption below.

Trading solutions

1 **Access to liquidity** ETFs offer a wide variety of solutions to efficiently manage cash, tactically position, or rebalance exposures. ETFs have also provided cost stability and transparency relative to derivative alternatives, due to the dual execution channels of primary and secondary markets.

2 **Transition management** ETFs can be used to invest the proceeds of a manager liquidation and track the appropriate benchmark until a new manager has been selected. This can be particularly useful due to the transparency of ETFs, allowing institutions to easily and efficiently select the correct vehicle for the transition and a simplified due diligence process given ETFs are listed securities.

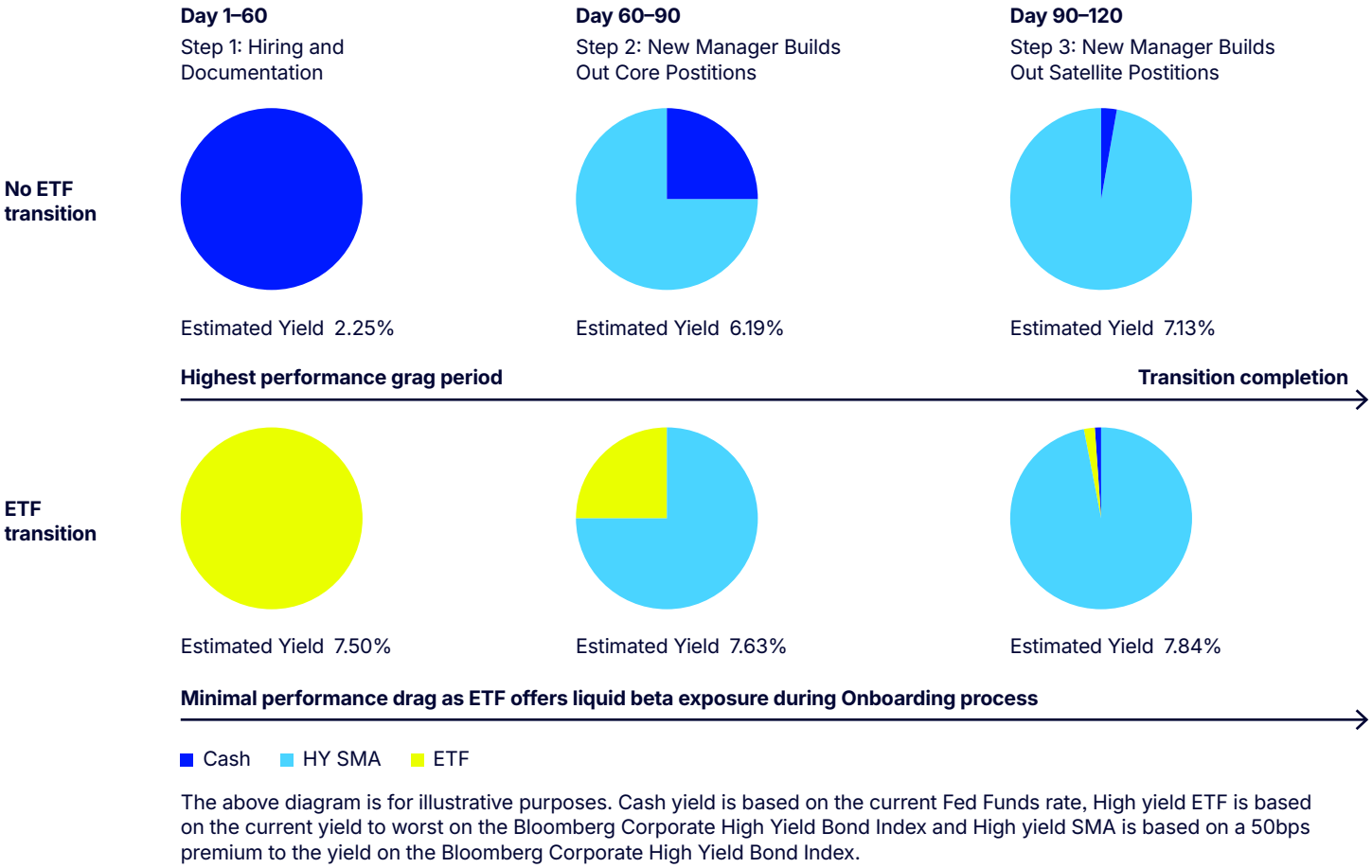
3 **Exposure management** Sector and industry ETFs offer flexible hedging solutions, featuring robust lending and options markets. Fixed income ETFs can allow institutions to nimbly shift the duration, credit quality or yield of a portfolio in a diversified manner.

Figure 4: Example of how an institution can use ETFs for efficient transition management

Reserve & surplus—practical example of transition

Challenge A central bank makes an allocation to a new high yield active bond manager, but incurs a performance drag through the implementation process, which often takes up to around 120 days.

Solution Use an ETF for high yield beta exposure during new manager onboarding to reduce performance drag during the process.



The above diagram is for illustrative purposes. Cash yield is based on the current Fed Funds rate, High yield ETF is based on the current yield to worst on the Bloomberg Corporate High Yield Bond Index and High yield SMA is based on a 50bps premium to the yield on the Bloomberg Corporate High Yield Bond Index.

Investment solutions

Beta building blocks ETFs offer cost-effective beta exposure, rivaling traditional institutional investment vehicles. The democratised nature of the product also means that the expense ratio can be achieved for any investment size.

State Street Investment Management Case Study: Broad Market Equity ETF

Challenge A central bank wanted to invest a portion of its return-seeking assets into overseas equities to potentially improve returns. The bank had experience with institutional commingled funds but wanted the most cost-effective implementation.

Solution An equity ETF provided the most cost-effective exposure to the desired equity allocation.

State Street Investment Management Case Study: US Large Cap Equity ETF Solution

Challenge A central bank wanted to diversify a portion of its FX reserves from traditional fixed income asset classes to large cap equities to potentially improve the returns of its overall reserve portfolio. It did not have in-house expertise in managing equity portfolios.

Solution The central bank purchased a US large cap equity ETF as a long-term holding.

Alpha overlay ETFs allow investors to gain exposure to niche market segments, seeking marginal alpha through a single trade to complement the overall portfolio.

State Street Investment Management Case Study: Factor/Smart Beta Equity ETFs

Challenge A central bank identified higher yielding dividend equities as a potential tactical investment for one of its portfolios. The bank was familiar with both index and active management strategies, as well as separately managed accounts, commingled funds and ETFs.

Solution The central bank selected a dividend equity ETF, utilising a high yield income equity index, as a tactical addition to its portfolio.

Market access ETFs can provide liquid exposure to difficult-to-reach asset classes. The creation and redemption mechanism unique to ETFs also allows ETFs to track indices that can be challenging for more traditional investment vehicles due to liquidity constraints.

State Street Investment Management Case Study: US Agency Mortgage-Backed Securities

Challenge A central bank wanted to diversify its USD investments into agency MBS. With no in-house expertise in this asset class, it looked for external managers with proven track records. Its internal reporting requirements meant that separately managed accounts for the asset class proved difficult.

Solution The central bank diversified into agency MBS via an ETF. The single holding, versus multiple securities in a separately managed account, simplified the operational burden and allowed for the potential improvement in returns offered by investing in the new asset class.

Increased adoption of Fixed Income ETFs

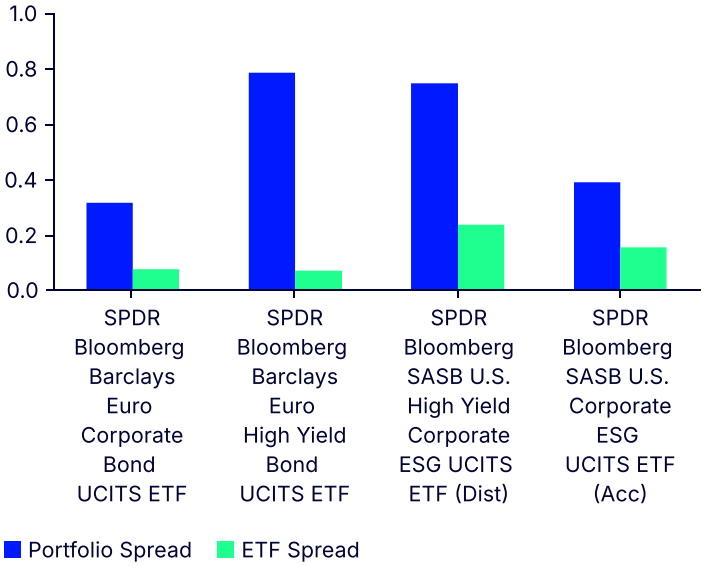
In recent years, fixed income ETFs have seen a surge in assets, as investors become more comfortable with using these instruments. Many viewed the COVID-induced market turmoil of 2020 as a real test for how these products would function during stressed markets, as liquidity evaporated in many corners of the fixed income market.

The common consensus is that ETFs passed the COVID stress test with flying colours, with no major issues in meeting creation and redemption demands. Many also pointed to the fact that ETFs could actually be used as a better price discovery tool than the underlying cash bond market during this period, due to the stale prices on bonds that had ceased to trade.

We have seen multiple other reasons for the continued adoption of fixed income ETFs as an asset class, which include:

- **Access** Through buying a single equity instrument, an investor gets exposure to hundreds or even thousands of bonds. The bond market is harder for investors to access efficiently.
- **Liquidity** The cost of trading in and out of bonds can be expensive. The ETF vehicle helps create efficiencies in the cost to trade portfolios of bonds. Index design can concentrate on more liquid bonds. ETF shares can create an extra layer of liquidity by concentrating market participants in a single security rather than the underlying constituents. Figure 5 illustrates this, by demonstrating the difference between the portfolio spread (the weighted average spread of the underlying bonds in the index) versus the on-exchange spread of the ETF.
- **Transparency** Fixed income ETFs help to demystify the bond market. The index clearly shows investors the risks a fund will aim to take. The ETF itself provides a real-time view of liquidity and provides transparency on performance and tracking error, as the portfolio of bonds is available on a daily basis.
- **Focus** By not having to spend time finding and trading bonds, clients can focus on getting the top-down allocation right. And using an indexed approach to a fixed income allocation can reduce style drift and active performance uncertainty. This freedom allows investors to focus on their allocations and not have to worry about how active style can impact the tracking of their allocation.

Figure 5: Example of indicative spreads (%)



Source: Bloomberg Finance L.P., as of 30 September 2025. Spreads are as of the date indicated, are subject to change, and should not be relied upon as current there after.

State Street Investment Management Case Study: US Corporate Bonds ETF Solution

Challenge A central bank wanted to improve the potential returns of its FX reserves by diversifying into US corporate bonds. The central bank wanted a simplified implementation and considered both traditional commingled funds and ETFs.

Solution Working closely with State Street Investment Management to assess various fund options, the central bank selected an ETF as its desired fund wrapper.

Jane Street Case Study: Zipper Trades—Utilising Existing Cash Bonds to Create ETFs

One way for investors to transition some of their bond holdings into ETF positions, while leveraging the deep liquidity available in the ETF market, is a "zipper trade." In this type of transaction, investors work with a specialised market maker that is active in both fixed income ETFs and the corresponding cash bond market to pair these trades (selling bonds and purchasing ETF shares), thus creating efficiencies that are passed through to the investor.

By way of background, market makers, like Jane Street, and Authorized Participants (APs)[1] commonly use the in-kind creation/redemption mechanism to efficiently transfer risk and facilitate liquidity in ETFs. For instance, when there are large inflows into fixed income ETFs, Jane Street would use bonds already in its inventory as well as bonds acquired in the market to build creation baskets, which can be delivered to issuers via the in-kind creation process. The actual price quoted to the investor looking to buy a block of a fixed income ETF would naturally be a function of those price efficiencies.

As a natural extension of their regular operations, market makers can work with clients who may be looking to transfer a portion of their cash bond holdings into shares of an ETF. It is perhaps easiest to think about it as a market maker augmenting its own bond positions and bond trading by taking the client portfolio into consideration. When pricing an individual trade, a market maker will typically need to price in some level of uncertainty around how the asset is going to move after execution. By pricing both sides of the transaction, they are able to pass along cost savings due to the overlapping risk exposure of the cash bonds and the ETF, making it much more risk-neutral.

The degree to which the investor's basket matches that of the ETF affects the overall risk of the transition. For example, if the investor wants to deliver a perfectly representative basket in exchange for ETF shares, then there is close to zero market risk for the market maker. As the investor seeks to transact in a more bespoke set of bonds, there will be increasing residual risk that needs to be priced, though still to a lesser degree than an outright buy or sell of the individual components. Lastly, by pairing the legs as a contingent transaction, there isn't a need to cross bid-ask spreads in the secondary market for the components of the trade, creating additional cost savings opportunities. Benefits of a zipper trade can include:

- **Price improvement**—realised by pairing the trades as a contingent transaction, reducing overall risk of the transaction.
- **Flexibility in bond selection**—the investor can choose which bonds to sell, instead of being restricted to offering bonds that are representative of the ETF's basket, as they would in an agency in-kind creation.
- **Trade size flexibility**—since the market maker is also committing capital to the trade, the investor is not limited to transaction sizes that correspond to the multiples of a creation unit of the ETF.

Zipper Trade in Practice—An Institution Transitions Investment Grade Bonds in its Portfolio into an ETF

An institution held a portfolio of high credit quality US investment grade bonds and wanted to transition some of these holdings into a broad-based US investment grade ETF in order to have a more liquid, single-line instrument in its portfolio.
The bonds the institution wanted to sell were not fully representative of the selected ETF's creation basket, but by utilising a zipper trade, the client was able to work with a market maker that could combine the client's bonds, its own inventories, and bonds traded in the market to facilitate the trade. The client realised time savings and price improvement, as they were able to complete the two legs of the transaction simultaneously as opposed to selling the individual bonds prior to purchasing the ETF. Some of the residual risk of the transaction was reduced due to the overlapping exposure in the client's portfolio and the ETF, translating to cost savings for the client.

1 Some market makers are also APs, though a market maker does not necessarily need to be an AP in order to provide liquidity, as they can simply contract with a third-party AP to facilitate a creation or redemption.

Comparing ETFs to similar investment vehicles

ETFs are commonly compared against mutual funds, due to the similarities between these investment vehicles. While in many ways these vehicles are indeed similar, there are a few key differences.

The most important difference is the fact that ETFs are traded on-exchange, meaning that investors can adjust their allocation to ETFs at any point during market hours, rather than being forced to buy or sell their position at the end of the trading day. A thorough accounting of the similarities and differences is provided in Figure 6 below.

Figure 6: ETFs vs. Mutual funds

	ETFs	Index Mutual Funds	Active Mutual Funds
Provide index exposure	Yes	Yes	No
Provide diversification	Yes	Yes	Yes/No
Low fees	Yes	Yes	No
Traded on regulated exchanges	Yes	No	No
Bought and sold on fund platforms	No	Yes	Yes
Investors transact directly with manager of fund	No	Yes	Yes
Trading can take place throughout the day	Yes	No	No
Trading takes place once a day	No	Yes	Yes
Minimum investment of 1 share	Yes	No	No

ETFs vs. other types of Delta One instruments

ETFs are also regularly compared to Delta One instruments, such as futures and total return swaps. Although many investors treat these different types of instruments as similar, there are several important differences that should influence investors' decisions on which instrument they should choose for their allocation.

Figures 7 and 8 offer a look at some of the main differences between these types of instruments, and also insights into some of the ways investors can most efficiently navigate switching between the different instruments.

Figure 7: Comparing ETFs to other Delta One instruments

	ETFs Funded	Futures Unfunded	Swaps Unfunded
Explicit costs	Commissions Bid/offer spreads Management fees	Commissions Bid/offer spreads	Commissions Bid/offer spread Documentation (legal)
Best suited to	Fully funded investors Multi asset exposures Index exposures (non-core)	Shorter duration Popular benchmarks Quick exposure	Longer-term trades Large portfolios Low turnover Custom exposures
Considerations	Tracking error Total expense ratio Lack of leverage	More limited exposures Roll risks Fewer benchmarks	ISDA documentation Counterparty risks OTC nature
Advantages	Ease of use Variety of offering Multiple trading counterparties Competitive pricing (RFQs)	Leverage factor Low commissions Liquidity (some benchmarks) Clearing and settlement	Leverage Customisation Lower funding costs Confidentiality

Figure 8: Different ways to switch from futures to ETFs

Trade Type	Time of Day	Risks	Comments
Exchange for Physical ("EFP")	Market on close	None	1. An EFP allows an investor to exchange a basket of physical stocks for a listed instrument such as a future or an ETF 2. A price for a futures to ETF EFP is quoted by the AP in basis versus index level and basis points versus NAV for ETF (ESA Index -3.5 index points versus SPY5 + 1bps versus NAV) 3. There is no market risk as trade is executed at market on close auction 4. Possible to execute imperfect EFPs where perfect baskets are not exchanged, trade levels likely to be wider for imperfect EFPs
Exchange Delivery Settlement Price ("EDSP")	Futures expiry	Low	1. The EDSP is calculated using the underlying security values at the contract's expiration day and time, so S&P 500 expires at Special Opening Quotations ("SOQ") of every quarterly expiry period 2. Where the client is looking to switch from a future into an ETF for long exposure they can use the AP to expire their future and use the delta for an in specie ETF creation 3. This method is popular for more illiquid futures (sectors, FTSE-250)
Risk/Principal	Intraday risk or principal	High	1. Intraday risk trades can also be executed, AP and client will agree levels 2. In risk trades, there will be no exchange of deltas and risk/cost of executing the hedge so spreads will be wider than both EFP and EDSP as there will be market risk 3. This is a more risky execution option and this will be reflected in the quoted price intraday

Appendix 1: Introduction to the ETF trading ecosystem

In order to fully understand the ETF Ecosystem, it is first useful to understand the mechanism by which ETFs trade, which is fairly different to other securities due to the unique creation/redemption mechanism that underpins ETF share transactions. Although there are certain nuances and differences when trading ETFs across different regions, largely the mechanism by which ETFs are traded tends to be reasonably similar across the board.

Appendix 2: Understanding the mechanics of ETF trading

Becoming familiar with the ETF creation/redemption process is key to understanding the true extent of an ETF's overall liquidity and achieving more efficient execution from a wider selection of funds.

Creation is the process by which APs introduce additional shares to the secondary market. During this process, APs deliver the underlying securities to the fund sponsor in return for ETF shares. For redemptions, APs deliver ETF shares to the fund sponsor in return for the underlying securities.

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