ETPedia

The ultimate guide to exchange-traded products (ETPs)

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Welcome to ETPedia.

We believe investors should always understand the risks involved in their investments which is why we created ETPedia: the ultimate guide to the exchange-traded universe.

From their origins and current trends to the risks and benefits of ETPs, ETPedia is designed to help you have a better investing experience.

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The ETP industry at a glance

The first **exchange-traded product (ETP)** was launched in 1993

There's currently more than **$11.5 trillion** invested in ETPs globally[1]

Global ETF[2] AUM is expected to exceed **$19.2 trillion** by June 2028[3]

European ETPs reached a record high AUM of **$2.2 trillion** in June 2024, doubling since January 2020[4]

ETPs are **listed on stock exchanges** and can be **bought and sold at any time of the trading day**

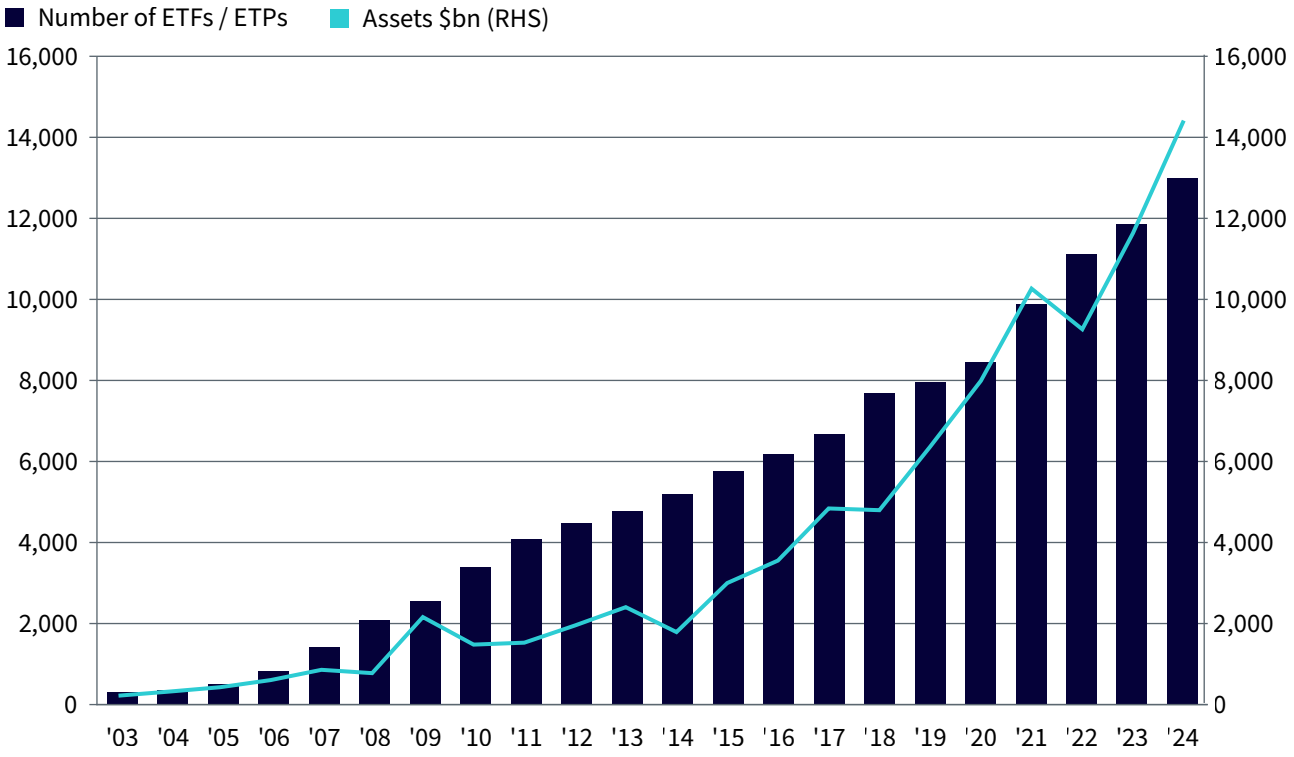
Over **50 issuers** currently list more than **2,200 ETPs** on the **London Stock Exchange** alone[5]

ETPs source liquidity from their underlying assets, such as equities, commodities and currencies

Short and leveraged ETPs don't require borrowing, options trading, or the maintenance of margin accounts

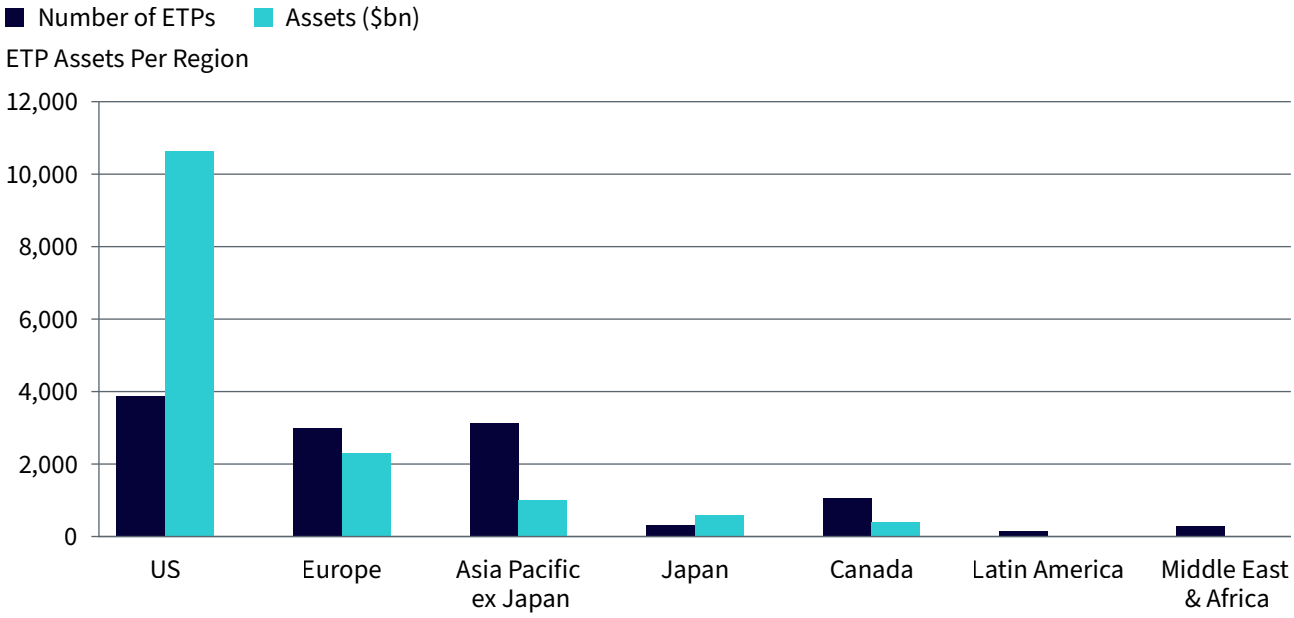
1 PwC, 'ETFs 2028: Shaping the future', March 2024.
2 Exchange-traded fund.
3 PwC, 'ETFs 2028: Shaping the future', March 2024.
4 ETF Stream, European ETPs to obliterate annual flow record, July 2024.
5 London Stock Exchange, June 2024.

Figure 1: Global ETP and asset growth



Source: Morningstar, Bloomberg, and ETFGI, November 2024. **Historical performance is not an indication of future performance and any investment may go down in value.**

Figure 2: ETP assets by region



Source: Morningstar, Bloomberg, data as at 29 November 2024. **Historical performance is not an indication of future performance and any investment may go down in value.**

1.

Introduction to ETPs

In this section

1.1 Active and passive products

1.2 What is an ETP?

1.3 Why use an ETP?

1.4 Different types of ETPs

1.5 ETPs and other vehicles

1.6 Typical ETP structures and exposures

Since the first ETP launched in 1993, the industry has snowballed. Today there are over 10,000 ETPs[6] worldwide which have captured more than $11.5 trillion in AUM.[7]

ETPs were originally created as a smarter way to buy an index of stocks, but over time, their scope has expanded to every asset class, sector and region. Available in hundreds of varieties, they now link investors to many exposures they couldn't access before, such as commodities, carbon allowances and cryptocurrencies.

Their popularity shows no signs of slowing down either. PwC found that global ETF AUM is expected to reach at least $26 trillion in 2029,[8] so now is as good a time as any to see what all the fuss is about.

6 Finimize Modern Investor Pulse report, March 2023.

7 PwC, 'ETFs 2028: Shaping the future', March 2024.

8 PwC, 'ETFs 2029: The path to $30 trillion', March 2025.

1.1 Active and passive products

Active and passive are two opposite investment styles with many potential variations in between.

Active and fundamental-based products aim to outperform their chosen benchmark, while passive products aim to track their benchmark as closely as possible. If you're looking for consistent performance, passive or fundamental-based investment products that you buy and hold may be a suitable option.

The majority of ETPs are passive investments given their aim is to track a benchmark or underlying asset. However, fundamental-based ETPs also represent a significant part of the AUM. A new class of active ETFs and actively managed certificates has been gaining traction in recent years.

Active

Active products invest in selected assets trying to beat the market. The strategy usually relies on a portfolio manager having discretionary control over the stock picking.

The market is represented by benchmark indices such as the S&P 500, FTSE 100, DAX 30, IBEX 35 or FTSE MIB.

Quantitative or fundamental-based (modern alpha)

Quantitative or fundamental-based strategies follow transparent, rule-based strategies, resulting in portfolios that differ from the market (they are not strictly speaking active). They aim to beat the market using recognised strategies grounded in academic research.

Passive

Passive products aim to replicate the market performance (usually a market-cap weighted benchmark) as accurately as possible.

1.2 What is an ETP?

An exchange-traded product (ETP) is a financial instrument which trades on a stock exchange like shares in a publicly traded company. ETPs provide a simple, cost-efficient and secure way to diversify portfolios through exposure to various assets such as equities, commodities or cryptocurrencies.

In Europe, ETPs are typically divided into two categories:

ETFs: Exchange-traded funds

+ Structured as pooled investment funds.
+ Give exposure to equities, fixed income and commodities.
+ Commonly governed by UCITS rules in the European Union which protect investors with safeguards such as minimum diversification requirements.

ETNs: Exchange-traded notes

+ Issued as debt securities.
+ Are not restricted by UCITS diversification rules so can provide exposure to individual commodities and currency pairs, as well as concentrated commodity indices and other asset classes such as crypto or carbon allowances.
+ Commonly governed by the Prospectus Regulation which sets out minimum disclosure requirements and other investor safeguards.

Characteristics of ETPs

Figure 3: ETP characteristics

Characteristic	Benefit
Transparent investment	Transparent way of gaining exposure to a benchmark or specific assets
Track an underlying benchmark or specific asset	Aims to provide the same return as an underlying benchmark or specific asset, with the ability to provide a diversified investment in a single transaction
Open–ended	Shares can be created and cancelled as necessary to meet demand and therefore generally trades without a premium or a discount
Listed on exchange	Shows exactly how your investment is performing with live prices available throughout the trading day
Trade like shares	As simple to buy and sell as shares any time the market is open
Liquid asset	ETPs are as liquid[9] as their underlying assets with narrow bid-ask spreads provided by competitive market makers[10].

9 Liquidity refers to the tradability of a financial asset, whether it's a stock, bond, commodity or otherwise. A liquid asset is in demand and holds its value; it will be easy to buy and sell. If a product has low liquidity, it will be hard to source or offload, and its price will be more volatile.

10 Market makers are trading firms that provide liquidity to markets by quoting bid/ask prices. They buy and sell securities, and their participation helps find the balance between demand and supply.

1.3 Why use an ETP?

Flexible

ETPs can provide access to an entire index of stocks, commodities or alternative asset classes, or to a difficult-to-access individual asset, in a single trade.

Accessible

ETPs can be bought and sold whenever the stock exchange is open with prices quoted throughout the day.

Cost-effective

ETPs provide a cost-effective way to diversify a portfolio by providing exposure to an index of equities, commodities and other assets or by tracking a specific asset class.

Transparent

ETP holdings and NAVs[11] are published daily making it easy to see their value at any given time.

Simple

ETPs are listed and traded in a similar way to shares through the same brokers and platforms.

11 Net asset value (NAV).

1.4 Different types of ETPs

ETFs: Exchange-traded funds

An ETF is a pooled investment fund that trades on exchange as a single security. ETFs are generally designed[12] to track a specific index. These indices can vary widely in their complexity and can be comprised of securities belonging to a single asset class or a blend of exposures within one asset class, such as a diversified commodity index. Sometimes, you can find ETFs that track securities from multiple asset classes, but these are less common. Below we've outlined a few types of assets that are available in the ETF structure.

Figure 4: ETF asset type examples

Equity	Fixed income	Commodities
Global	Government	Diversified indices
Sectors	Corporate	
Single country	Emerging markets	

In the European Union, most ETFs are governed by laws regulating collective investment schemes[13] such as UCITS.[14] UCITS provide several important protections for investors:

+ **Segregated assets** minimise the risk posed to investors should a product provider go bankrupt.
+ **Increased transparency** means important holdings and pricing information, risk and reward information, and transparency in fees and charges are made available to investors.
+ **Diversification limits** protect investments from becoming overconcentrated in a single asset.

These safeguards have helped grow the popularity of ETFs among investors and providers.

ETNs: Exchange-traded notes

ETNs can take many different shapes. In their simplest form, they are debt securities which don't pay any interest. Instead, their 'debt' is linked to, and therefore tracks, the performance of either a single asset or an index of equities, commodities or other assets, just like an ETF.

As UCITS have strict diversification rules and restrict the asset types that can be held by a fund, providers in Europe use a debt security structure to give investors access to individual commodities, cryptocurrencies, and many other exposures which otherwise wouldn't be accessible in ETP format.

12 Some ETFs are active so don't track a reference index.

13 A collective investment scheme is another term for an investment fund. Investment funds pool capital from multiple investors to purchase financial securities.

14 Undertakings for Collective Investment in Transferable Securities (UCITS).

Special types of ETNs include:

- Exchange-traded commodities (or ETCs), which are designed to give exposure to a single commodity or a basket of them.
- Cryptocurrency ETPs which give exposure to a single cryptocurrency or a basket of cryptocurrencies.
- Short and leveraged ETPs which give investors leveraged and/or inverse exposure to the underlying index or asset.
- Currency ETPs provide exposure to the movements of a particular currency pair or other currency indices giving exposure to multiple currencies.

Some market participants use the term ETN in a broader context to include debt securities, which, even though listed on an exchange, are not supported by the robust liquidity mechanisms described above and in Chapter 2 of this guide.

Collateral structure

ETNs can take two fundamentally different structures:

- **Collateralised ETNs** are issued by a special purpose vehicle (SPV) whose assets are separate from the product provider and can't be used to pay debts should the provider go bankrupt. Collateralised ETNs are backed in one of two ways:
  - By physical assets they track, which are held in a segregated account in safe custody, or:
  - By contracts linked to the performance of the underlying asset, also known as a swap agreement. Obligations under such a swap agreement are subject to counterparty risk with whoever the contract is entered into with, usually an investment bank. This counterparty risk is then mitigated by the counterparty posting collateral (usually made up of very liquid assets), which the issuer can use to protect the investor in the event of any default by the counterparty.

Special purpose vehicle (SPV)

A legal entity created for a specific purpose that's completely separate from the organisation that set it up. SPVs are used by a parent company to ringfence financial risk.

Derivatives

A financial contract between two or more parties. Their value is tied to price fluctuations in an underlying asset, such as a stock or commodity.

The most common derivatives are forwards, futures, swaps and options.

+ **Uncollateralised ETNs** are generally issued by banks and hold no assets. As such, ETNs are entirely reliant on the creditworthiness of the issuing bank. A change in that creditworthiness could impact the value of the ETN regardless of the underlying benchmark's performance. In extreme circumstances, an issuer default would leave the investor to claim as an unsecured creditor against them.

Figure 5: Different types of ETPs at a glance

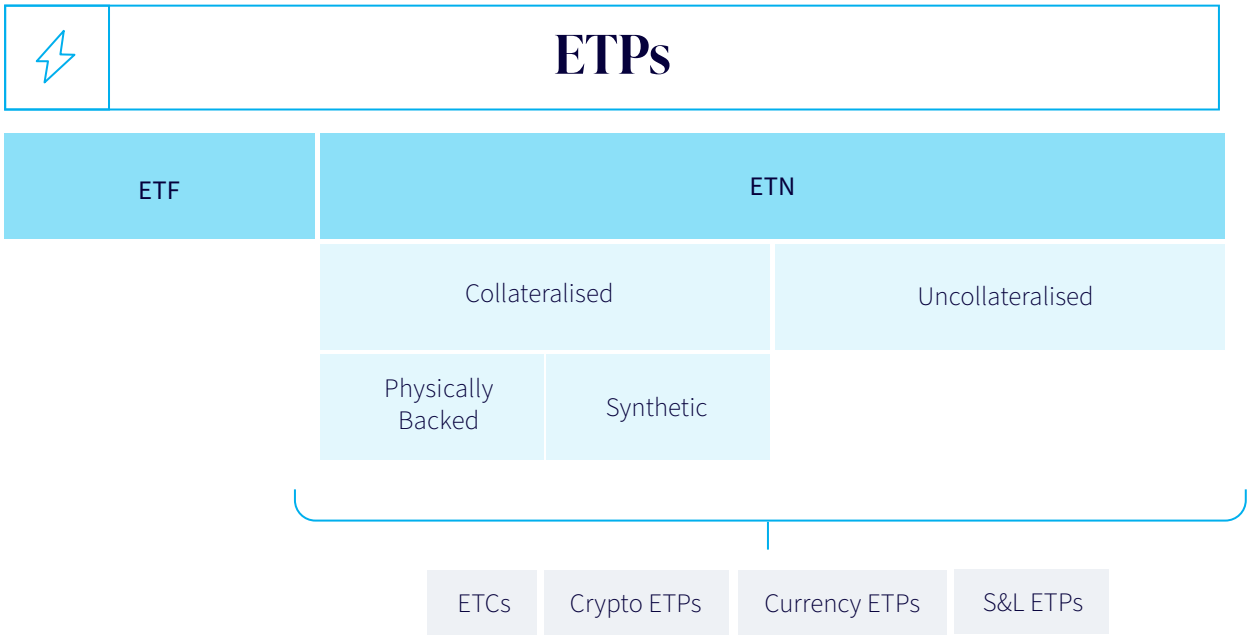


Figure 6: Comparison of different ETPs

	ETF	Collateralised ETN	Uncollateralised ETN
Security type	Collective investment vehicle	Debt security	Debt security
Governed by UCITS	Yes	No	No
Commodity access	Limited[15]	Yes	Yes
Issuer credit risk	No	Limited	Yes
Eligible for investment by UCITS	Yes	Yes	Yes

15 UCITS prohibits ETFs from holding physical commodities and requires a minimum level of diversification. This means that ETFs can only be used to access certain diversified commodity indices.

1.5 ETPs and other vehicles

Investment vehicles come in a number of forms. Understanding their differences will help you determine which is the most suitable for your needs.

Depending on the investment vehicle, access, trading costs and even strategies available will change.

Figure 7: Comparing ETPs and other vehicles

	ETP	Mutual fund	Certificate	Contract for difference	Warrant
Legal structure	Issues equity or debt security	Issues equity	Debt security	Financial contract	Security
Open or close-ended	Open	Open or closed	Closed	Open	Closed
Pricing	Remains very close to NAV through arbitrage	Can be only traded at NAV	Priced by the issuer	Formulaic pay out	Formulaic pay out
Bid/ask spread	Bid/ask spread applies	No bid/ask spread; single price	Bid/ask spread applies	Bid/ask spread applies	Bid/ask spread applies
Trading	During market hours at quoted prices	At most once a day	During market hours at quoted prices	During market hours at quoted prices	During market hours at quoted prices
Access	On–exchange, through brokers	Directly with fund manager	On-exchange, usually through the issuer	Through brokers or trading platforms	On-exchange
Investment method	Passive and fundamentally based (small number of active)	Active (small number of passive and fundamentally based)	Passive (small number of active and fundamentally based)	N/A, financial contract	N/A, financial contract

1.6 Typical ETP structures and exposures

1) ETCs: Exchange-traded commodities

ETCs are a type of ETN which give investors exposure to single commodities such as gold or natural gas, or to diversified commodities indices, such as precious metals benchmarks. While many commodity exposures are difficult for investors to access, with direct commodity investing requiring either derivative management or the possibility to store the commodities physically, ETCs provide the same exposure but with all the benefits of the ETP structure including that they can be traded just like shares on stock exchanges such as the London Stock Exchange (LSE) or Deutsche Börse Xetra (Xetra).

ETCs typically take one of two structures:

+ Physically backed, meaning that the ETC is fully collateralised by the commodity it gives exposure to, or:
+ Synthetically backed, meaning that the ETC replicates the commodity exposure by entering into a swap contract linked to the performance of the underlying asset.

Physically backed ETCs are most common for precious metals such as gold and silver whereas synthetic ETCs are used when the underlying asset is a non-durable commodity, such as wheat and corn, or other materials which are difficult to store, such as oil, gas and industrial metals.

The choice between a physically backed or synthetically backed ETP is also driven by the liquidity of the underlying commodity market. Many commodities are hard to trade in physical form whereas the corresponding futures market may be very liquid.

Figure 8: Commodity asset type examples

Agriculture	Industrial metals	Energy	Precious metals	Diversified	Livestock
Grains	Aluminium	Brent Crude	Gold	All commodities	Lean hogs
Cocoa	Copper	West Texas Intermediate	Silver	Ex–agriculture	Live cattle
Coffee	Lead	Carbon	Platinum	Ex–energy	
Corn	Nickel	Natural gas	Palladium		
Cotton	Tin	Refined products			
Soybeans	Zinc				
Sugar					
Wheat					

2) Cryptocurrency ETPs

Cryptocurrency ETPs are also a type of ETN which give investors exposure to single cryptocurrencies such as bitcoin or ether, or to diversified cryptocurrency indices. Cryptocurrency ETPs are typically physically backed, meaning that the cryptocurrency ETP is fully collateralised by the relevant cryptocurrency.

A new asset class

Blockchain technology is a revolution in the making. Wherever a transparent, immutable and digital record of information could be useful, which is across many industries, blockchain has the potential to disrupt the status quo. While it's possible to gain exposure through carefully selected companies that develop or use blockchain technology (so-called blockchain equities), investing in digital assets is the main route to access the space's growth potential.

After years of investors sitting on the fence when it comes to digital assets, the institutionalisation of the asset class is now fully underway. Digital asset funds and ETPs are now available in most jurisdictions in the world and the digital asset ecosystem is as big as high yield bonds or emerging market small cap equities.[16]

Digital assets benefit from key characteristics that make their case for inclusion in a portfolio:

+ High growth portfolio
+ High diversification potential (through low correlation to other assets)
+ Asymmetric payoff (higher upside than downside)

Accessing digital assets in a secure way

Digital assets sit outside the traditional financial system, and the infrastructure they are built on is often different from traditional assets. This means that there are many variations between the ways you can access them:

+ Direct exposure like holdings or futures contracts on crypto exchanges suffer from security issues. Exchange account holders have historically suffered significant losses due to cybersecurity attacks on the exchange or because of default events on the exchange (such as the Mt. Gox or FTX incidents).
+ Derivative-based exposure being directly or through an investment wrapper suffer from significant performance drags due to high funding rates and large negative carry trades. This can lead to suboptimal performance.
+ Closed-end funds are usually expensive fee-wise and suffer from illiquidity which leads to potentially high transaction costs when entering or leaving the funds (through the form of a premium or discount to the NAV).

Physical exposure through physically-backed ETPs, though, is a turnkey solution that combines an easy operational setup and trading with security and efficient tracking. This is why such products have attracted large investments in the last few years both in Europe and in the US.

16 Bloomberg, WisdomTree. Data as of 31 December 2024.

Physically backed crypto ETPs

Cryptocurrency ETPs provide exposure to digital assets with all the benefits and characteristics of the ETP structure and they can be traded like shares on stock exchanges such as the LSE or Xetra. Additionally, well-constructed physically backed crypto ETPs can offer all the following advantages to investors:

+ **Security**
  + Safe storage of private keys in a secured physical location (cold storage)
  + Geographic and human redundancies to allow secured and constant access
  + A robust approval process for moving the assets with multi-approval technology
+ **Low cost of ownership**
  + While fees on crypto ETPs can vary significantly, some issuers offer very attractive, transparent pricing.
+ **Yield generation**
  + While being one way to generate yield, lending digital assets which underlie a physically backed crypto ETP is a very risky activity as it creates risks that are difficult to manage and often unknown to the end investor.
  + Staking[17] digital assets underlying a physically backed crypto ETP is a good way to generate yield but is only available for proof-of-stake blockchains such as Ethereum or Solana. An important consideration for investors is the proportion of the staking yield that's passed to the investor versus the proportion kept by the issuer (increasing the cost of ownership of the ETP).

Physically backed crypto ETPs offer a wide range of exposure to investors, from ETPs that track single digital assets such as bitcoin, ether and Solana, to ETPs that track a diversified, evolving portfolio or basket of digital assets.

Figure 9: Crypto asset type examples

Single trackers	Diversified indices
Bitcoin	Mega caps
Ether	Whole market
Solana	Altcoins
XRP	
Polkadot	
Cardano	

17 Staking is a feature in proof-of-stake blockchains where cryptocurrency holders can earn a reward by delegating or 'staking' their cryptocurrency to secure the blockchain network and participate in the validation of transactions.

3) Short and leveraged ETPs

You can gain short and leveraged exposure to a variety of asset classes through the use of short and leveraged ETPs. More information about them is available on our website.

Unlike traditional short and leveraged positions in shares, these positions in an ETP don't involve borrowing and associated margin requirements. Short and leveraged ETPs are structured as shares or debt securities, meaning that you can't lose more than you initially invested.

Long position

A position that profits if an asset's value rises.

If an investor buys company shares which rise in value, they can be sold for profit.

Short position

A short position in a security, such as shares, means that the holder of the position will profit if the value of the security goes down.

Short positions can be used to protect against or profit from declining asset prices, making a profit on the difference.

Leveraged position

A leveraged (or geared) position multiplies both the positive and negative returns of an investment. Both long and short positions can be leveraged. The potential returns and losses from a leveraged position will be greater than from the equivalent unleveraged position.

Leveraged positions can be used to achieve a certain level of exposure to the market for less upfront cash, using the surplus for alternative investments or for cash reserves. Alternatively, an investor may wish to pursue a more aggressive strategy and use leverage to gain increased exposure, expecting to gain additional profits.

Preserve capital

Leveraged positions require less cash to achieve a target level of exposure — leaving surplus for alternative investments, and reducing the upfront cash risked.

Magnify exposure

With leveraged positions, investors can get additional exposure using the same cash as an unleveraged investment.

Profit from market decline

Short positions provide investors with a mechanism to profit when the market falls.

Hedge market risk

Short positions can be used to offset potential losses/gains that may be incurred by a long position — providing more certainty about future prices, regardless of market conditions.

Employ sophisticated trading strategies

For example, a long/short strategy that involves a long position on shares expected to rise in value and a short position on other shares expected to fall in value.

Compounding and volatility

Short and leveraged ETPs generate their return for a stated period, such as daily or monthly. If you hold short and leveraged ETPs for longer periods, the effects of compounding and volatility can change the expected return, especially in a volatile market. More information on compounding and volatility is available in Chapter 6 of our guide to short and leveraged ETPs.

4) Currency hedged ETPs

Investors often worry whether the value of their investments will fall but rarely consider the impact of fluctuating exchange rates.

When you invest in assets denominated in a currency other than your own, you are exposed to fluctuations in exchange rates known as currency risk. Currency risk can have a significant impact on returns and should be a central consideration when investing in a foreign asset. Unless intended, leaving it unmanaged leaves investments open to movements in the underlying exchange rate.

Currency fluctuations can amplify or erode the gains from an underlying asset in a foreign investment. The following table shows how a US investor in US equities would have received a positive return of 9.36% over a year to December with an appreciating US dollar. As a result of the euro depreciating 14.6% over this period against the US dollar, a European investor would have experienced a 23.96% return for the same equity investment.

Figure 10: Currency impact on equity returns

	US equities (MSCI US)	Local USD returns	EUR/USD	Currency returns (unhedged)	Total return
31 Dec	2,261	2.79%	1.0456	1.36%	4.15%
30 Nov	2,199	3.36%	1.0599	3.38%	6.74%
31 Oct	2,126	–1.96%	1.0963	2.45%	0.49%
30 Sep	2,168	–0.12%	1.1235	–0.69%	–0.81%
31 Aug	2,171	–0.12%	1.1158	0.14%	0.02%
31 Jul	2,174	3.50%	1.1174	–0.91%	2.59%
30 Jun	2,099	0.09%	1.1073	0.59%	0.68%
31 May	2,097	1.52%	1.1139	2.76%	4.28%
30 Apr	2,065	0.27%	1.1451	–0.61%	–0.34%
31 Mar	2,060	5.58%	1.1381	–4.01%	1.57%
28 Feb	1,948	0.40%	1.0934	–0.95%	–0.54%
31 Jan	1,940	–5.94%	1.0831	11.08%	5.14%
Total		**9.36%**		**14.60%**	**23.96%**

Source: Bloomberg, WisdomTree. January 2016–December 2016. **Historical performance is not an indication of future performance and any investments may go down in value.**

Even investments available in your domestic market can be subject to currency fluctuations if those assets are denominated in a foreign currency. For example, commodities are typically priced in US dollars.

One way to mitigate the impact of currency fluctuations on foreign investment returns is to use a currency hedge. A currency hedged ETP provides exposure to the underlying asset with an inbuilt currency hedge, so investors can focus on assessing the underlying asset based on its fundamentals, without having to worry about the currency risk.

An ETP can implement a currency hedge in several ways. The most straightforward is when the ETP tracks an index which incorporates a currency hedge. The Bloomberg family of commodity indices provide several currency hedged versions which apply this daily hedge to the index. An ETP tracking one of these currency hedged indices is more likely to generate a return close to the main Bloomberg Commodity Index in the investor's local currency. Other index providers, such as MSCI, S&P and FTSE, also produce currency hedged versions of their indices.

Currency hedged ETP equation

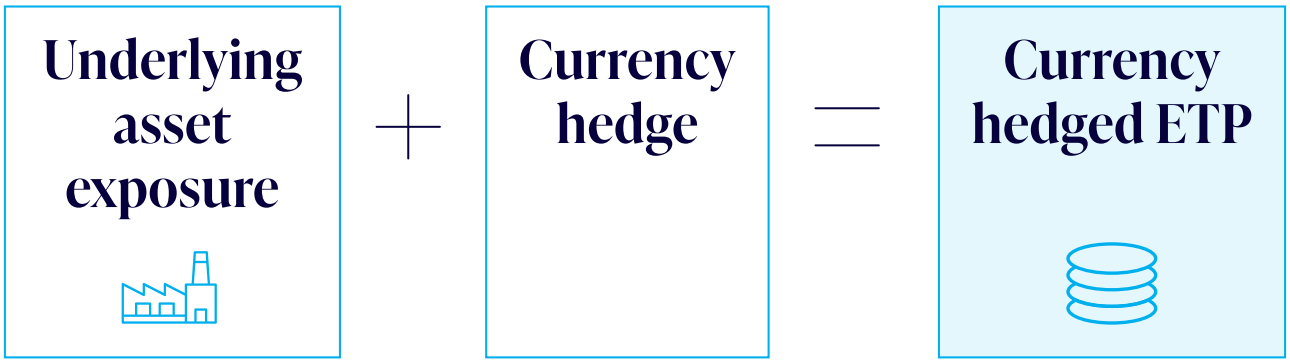
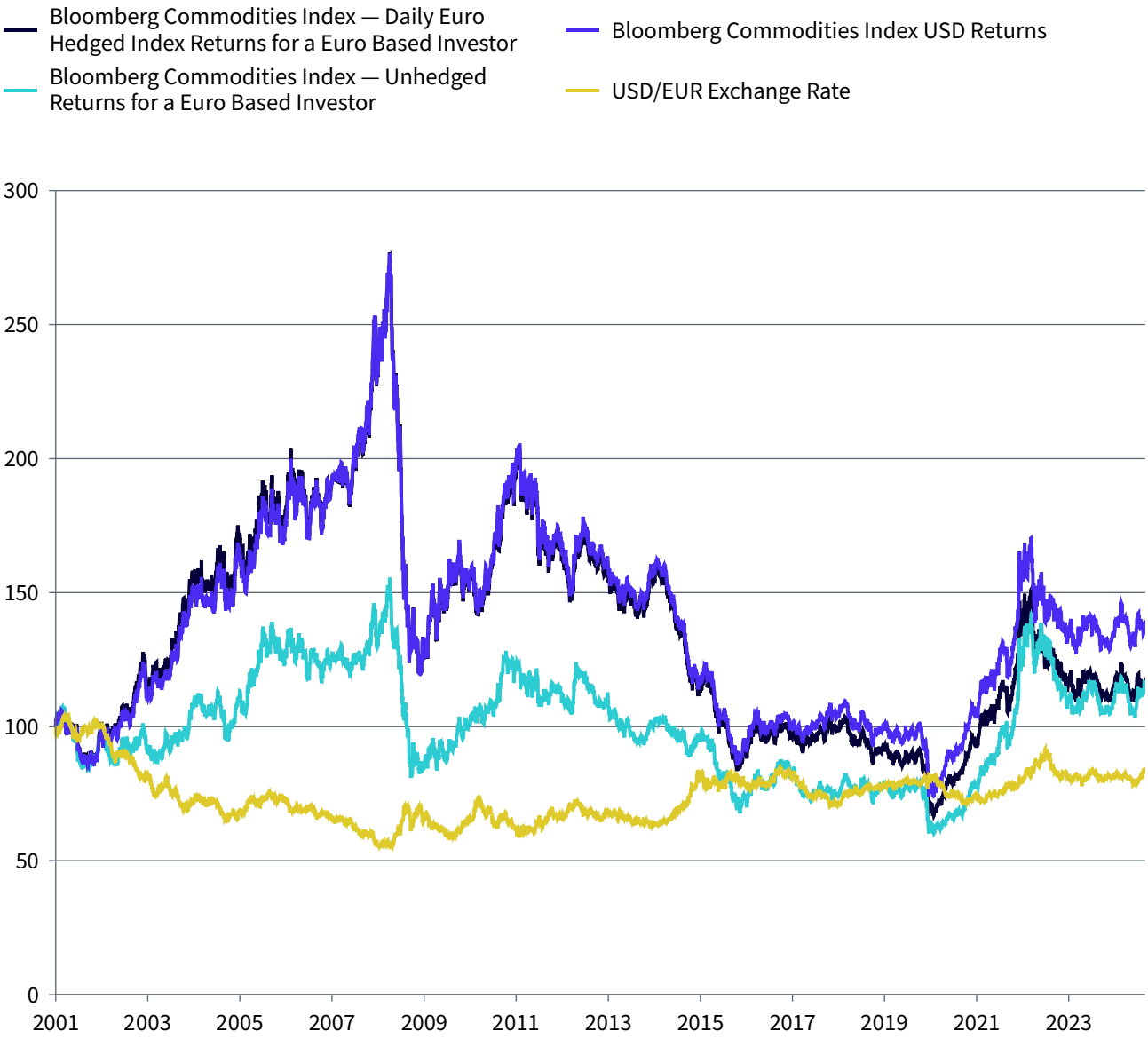


Figure 11: Currency hedged vs. unhedged commodity returns for a euro-based investor



Source: Morningstar, Bloomberg, 02/04/2001–29/11/2024. **Historical performance is not an indication of future performance and any investments may go down in value.**

Currency hedges can be implemented in different ways. Often currency hedged indices or ETPs use so-called FX forwards to mitigate currency risk. FX forwards are financial contracts which exchange a certain currency pair at a date in the future at an exchange rate which is fixed today.

5) Currency ETPs

Currency ETPs provide exposure to the movements of a particular currency pair or other currency indices giving exposure to multiple currencies via a single investment. Using currency ETPs, investors can make strategic trades on foreign exchange markets, hedge currency risk, or trade tactically (place short-term trades) around macroeconomic events.

The 4 major traded FX currency pairs:

Euro: EUR/USD
(Euro/US dollar)

Gopher: USD/JPY
(US dollar/Japanese yen)

Cable: GBP/USD
(Pound sterling/US dollar)

Swissie: USD/CHF
(US dollar/Swiss franc)

The 3 less popular pairs:

Aussie: AUD/USD (Australian dollar/US dollar)

Loonie: USD/CAD
(US dollar/Canadian dollar)

Kiwi: NZD/USD
(New Zealand dollar/US dollar)

2.

ETP structure

In this section

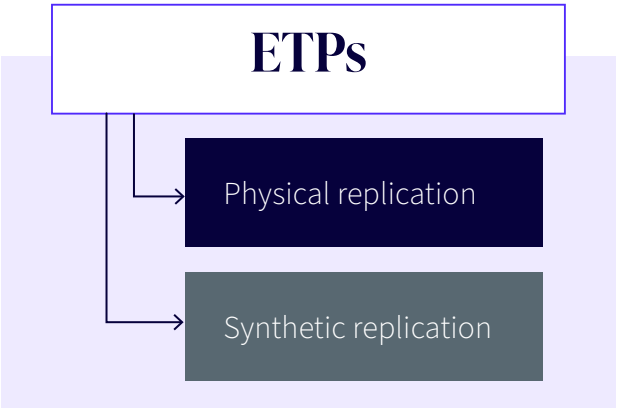
2.1 Replication methods
2.2 Physical replication
2.3 Synthetic replication
2.4 UCITS and ETPs

In this chapter, we look at the different product structures available in the exchange-traded universe.

2.1 Replication methods

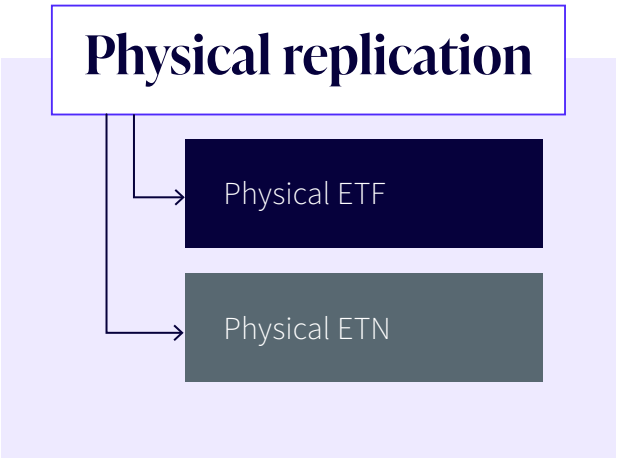
As a passive investment,[18] ETPs replicate the return of an underlying benchmark or asset. ETPs can be structured in two ways to achieve this: physically or synthetically.

A product's structure is an important part of an investment decision in an ETP because it impacts risks, costs and how accurately it tracks the underlying benchmark or asset.



2.2 Physical replication

Physical replication is where the ETP buys the underlying assets it's designed to track. Physical replication differs slightly between products that track a benchmark (usually ETFs) or ones that track a single asset such as a commodity or cryptocurrency (ETCs or crypto ETPs).



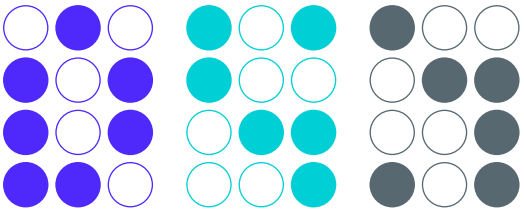
18 More recently, a wave of active ETPs have been introduced to market, but the general structure is largely the same. Both can be physically or synthetically backed.

Physically backed ETFs

A physically replicating ETF either owns all or a sample of the assets that comprise the underlying benchmark. Equities and fixed income are most often replicated this way. Physical ETFs are known as ‘full replication’ and ‘sampling replication’.

Full replication

All the underlying assets are held in the same proportion as their weighting in the index being replicated. This method is used if the underlying assets are readily available, reasonably small in number, and don’t significantly alter. The 100 shares listed on the FTSE 100 are reviewed quarterly, so these are fully replicated in many ETFs that track this index.



Sample replication

Instead of holding all assets that constitute an index, the ETP holds a sample of the index constituents. This approach might be used if the benchmark holds many assets which change frequently, such as the MSCI World Index which has over 1,600 constituents, sometimes changing over 300 shares annually, or if some constituents suffer from low liquidity.

A key benefit of full replication is that the ETP should track the index very accurately because it holds the same assets. The downside is the potential for high transaction costs if the index frequently changes its constituents.

Transaction costs are lower with sampling replication but the ETP's return may differ from the index return because the holdings aren't the same.

There can also be counterparty risk in physical replication if the product engages in securities lending.

Physically backed ETNs

Physically backed ETNs are backed by a quantity of the asset they track. Physically backed ETCs are backed by the relevant commodity whereas physically backed crypto ETPs are backed by the relevant cryptocurrency. Physical holding is only really possible for assets such as cryptocurrencies and precious and certain industrial metals which may be stored easily for long periods.

Securities lending

Where the owner of an asset lends it to a borrower in return for a fee. The borrower may have to post collateral to protect their obligations under the loan.

While the fee from securities lending can reduce the cost of an ETP, it creates counterparty risk because you might lose the loaned securities if the borrower can't make the repayments. In such an event, the product could be left holding assets unrelated to those it's meant to track.

The value of a physically backed ETN comprises:

Physically backed ETN = [Asset entitlement] × [Spot price]

The quantity of the underlying asset that backs each security.

Example: a metal entitlement of 0.1 means there is 0.1oz of bullion held by the custodian for each security.

The price at which the asset can currently be bought or sold for.

The most prominent examples of physically backed ETNs are physical precious metal ETCs and physically backed crypto ETPs.
Physical precious metal ETCs are backed by the corresponding amount of bullion deposited in a vault. This bullion is reserved for the product and separated from the general stock of metal stored in that vault.
A few organisations regulate the trade of precious and industrial metals, such as the London Bullion Market Association (LBMA), the London Platinum and Palladium Market (LPPM) and the London Metal Exchange (LME). These bodies ensure a standardised market for trading metals by ensuring quality and inspecting storage. Precious metals are stored in vaults in London, Zurich or Singapore.

Physical cryptocurrency ETPs are backed by the corresponding amount of cryptocurrency, such as bitcoin, which is held on behalf of the issuer in institutional grade custody accounts.

The most significant benefit of physically backed ETNs is that they provide exposure to spot price movements of the underlying asset, as well as an entitlement to the asset without the need to store or directly handle it. As the relevant ETNs are traded on regulated exchanges, their price formation is more transparent than for the underlying asset which often has liquidity spread across unregulated trading venues (if a cryptocurrency) or whose markets are not easily accessible to many investors (if a commodity or precious metal).

2.3 Synthetic replication

Unlike physical replication, a synthetic ETP doesn't hold the underlying assets the product is designed to track. Instead, the ETP issuer enters into a swap agreement with a counterparty who agrees to provide the return of the underlying assets.

An ETP provider might use a swap structure for a number of reasons:

+ **Accuracy:** As the return of a synthetic ETP is guaranteed by a counterparty, it can match the underlying asset return accurately.
+ **Cost-effective:** A synthetic ETP has limited transaction costs relating to buying and selling the underlying assets.
+ **Access:** Some asset classes including non-metal commodities can only be accessed this way because of the difficulties of storing them.
+ **Variety:** Synthetic ETP structures can offer products which can't be offered physically, including certain short and leveraged products as well as risk premia strategies and volatility.

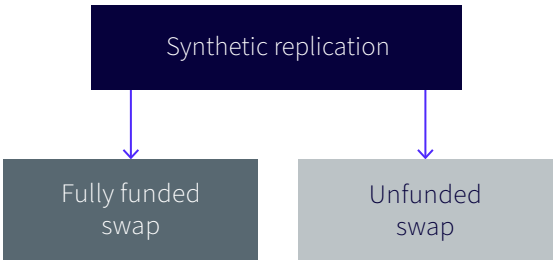
The most significant additional risk of synthetic ETPs compared to physical ETPs is counterparty default. If a counterparty can't make payments to the ETP issuer, the end clients could lose money.

To minimise the impact of a default, most synthetic ETPs are collateralised.

Swap

An agreement where two parties swap the return (cash flow) of one investment for another, or alternatively, where one party pays a fee for the return of a particular investment.

For example, an ETP may agree to pay a fee for the performance of the FTSE 100. If the FTSE rises by 1%, the counterparty will pay this to the ETP. If it falls by 1%, the ETP will pay the difference to the counterparty.



Synthetic replication comes in two main forms depending on the type of swap used: fully funded or unfunded.

Collateral

The asset that a borrower offers as security for a debt.

This usually refers to assets supplied by swap providers to secure their payment obligations under a swap agreement.

Haircut

A discount on the market value of an asset used for collateral.

Haircuts provide a cushion which protects the ETP issuer in case the market value of the collateral falls.

Fully funded swap structure

In a fully funded swap, an investor's money is transferred to the swap counterparty. In exchange, the counterparty will provide the relevant exposure to the underlying asset and deposit collateral equal to or greater than that amount with a third-party custodian. Under a fully funded swap, the collateral may be owned by the counterparty or the ETP depending on how the ETP has been structured. If the counterparty defaults under either structure, the ETP will be entitled to the collateral which it can sell to recover losses for investors.

Under UCITS rules collateral put aside for an ETF must meet certain requirements around asset type, liquidity and diversification. Appropriate haircuts (discounts) will also be applied to the collateral to protect the ETP issuer from any price fluctuations. The level of haircut depends on the asset type and laws where the product is based. The collateral is marked-to-market[19] daily.

19 An accounting method which records an asset's value based on its current market price, also known as the spot price.

How a fully funded swap works

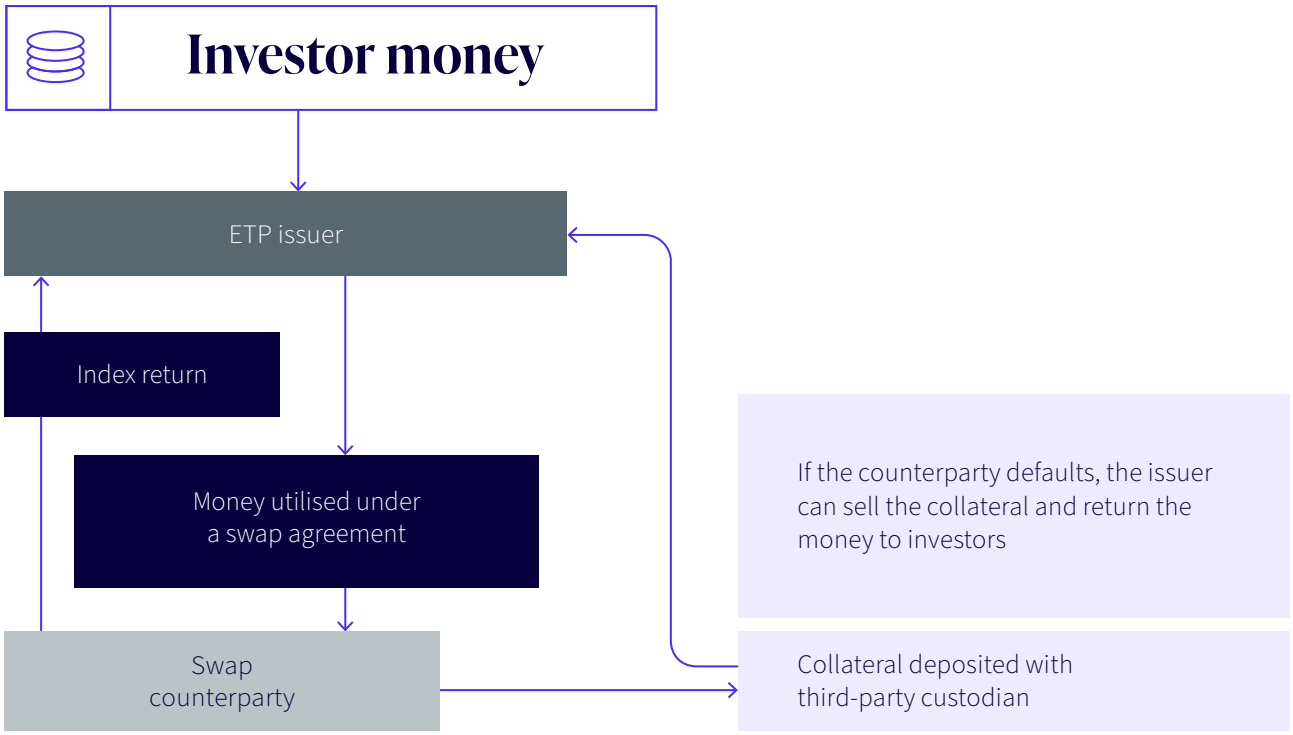


Figure 12: How a fully funded swap works

Fully funded swap	Day 1	Day 2		Day 3	
Index value	100	105		105	
Swap value	100	105		105	
		Before haircut	After haircut	Before haircut	After haircut
Collateral value	111	111	117	108	117
Explanation	Assuming an index level of 100, initial investment of 100, and the haircut applied is 10%. The counterparty must post 111 of collateral (100 / 90% = 111).	The index rises by 5. To maintain sufficient collateral after the haircut, the counterparty must deposit more collateral. The counterparty must deposit enough collateral to bring its value up to 117 (105 / 90% = 117).		Although the index value is unchanged, the value of the collateral has fallen. The counterparty must, again, deposit additional collateral.	

Source: WisdomTree, hypothetical example.

Unfunded swap structure

In an unfunded swap, investor money is not directly transferred to the swap counterparty. Instead, some of the money pays the swap fee and the rest is managed by the ETP issuer. Over time, the issuer pays a small portion of the ETP's performance to the counterparty for access to the underlying benchmark or asset. ETP issuers can manage investors' money in a few ways:

+ **Reference basket:** In an unfunded swap, most providers use investors' cash to buy a basket of assets unrelated to those being tracked, such as Treasuries, which earn interest on the amount invested. That return is then exchanged with the counterparty for the return of the assets the ETP is designed to track.
+ **Repurchase agreement:** Some issuers invest the money with a counterparty in a reverse repo to generate an interest return which is then exchanged with the swap counterparty for the return of the assets the ETP is designed to track.

No matter how investor money is managed in an unfunded swap, any counterparty exposure will usually be collateralised.

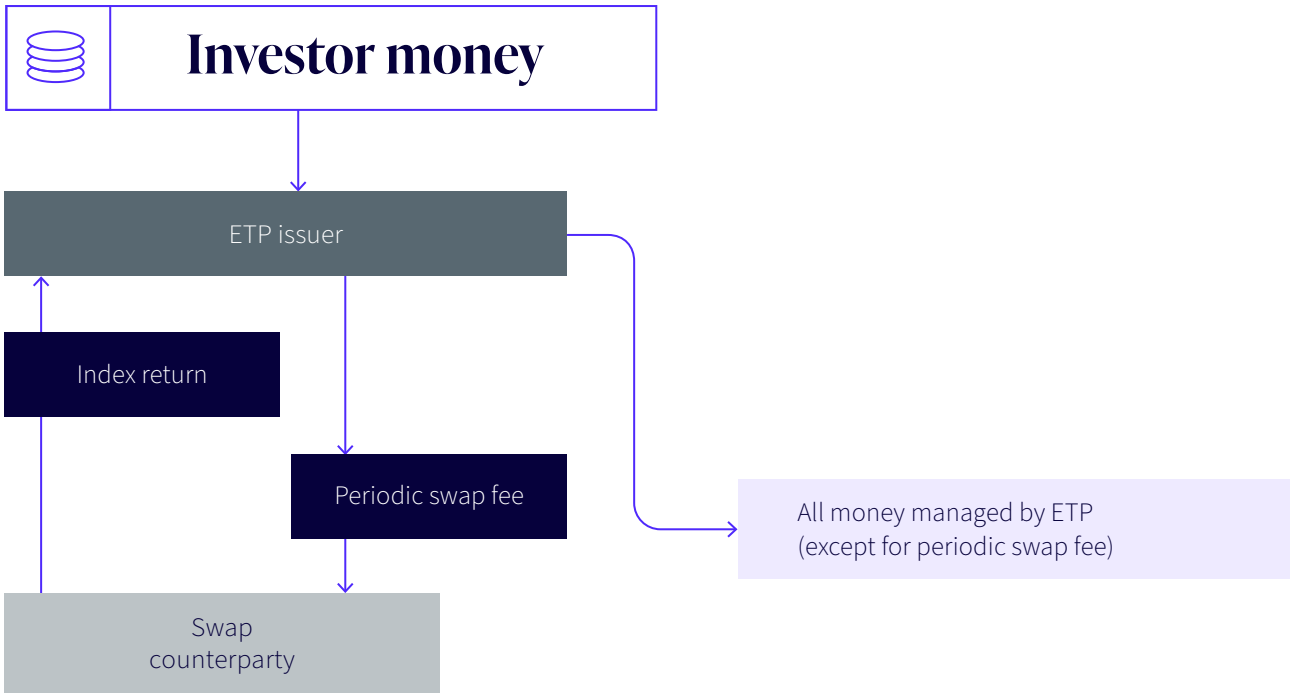
Repurchase agreement (REPO)

An agreement where one party agrees to sell an asset temporarily and repurchase it in the future.

Reverse REPO

The same agreement, but from the perspective of the party purchasing the asset and selling it in the future.

How an unfunded swap works



2.4 UCITS and ETPs

UCITS, or 'Undertakings for Collective Investments in Transferable Securities' are a class of highly regulated investment products. The underlying UCITS rules apply to investment schemes throughout the European Union.

+ The UCITS rules have been embraced by ETP providers because they allow easy and cost-effective distribution of UCITS products throughout Europe via registration in an EU country.
+ UCITS diversification criteria ensure a fund is not overly exposed to the risk of a single holding.
+ The UCITS rules ban ETFs from holding physical commodities and require a minimum level of diversification. This means that ETFs can only be used to access certain diversified commodity indices.

Figure 13: Comparison of UCITS ETFs and non-UCITS ETPs

	UCITS	Non-UCITS ETPs
Regulated vehicle	Yes	No
Must be diversified	Yes	No
Leverage	Maximum 2x	No limitation
Exposure to equities	Yes	Yes
Exposure to fixed income and credit	Yes	Yes
Exposure to commodities	Only diversified and non-physical	Yes
Exposure to crypto	Limited (and only in certain jurisdictions)	Yes

UCITS benefits for investors

Liquidity

UCITS funds typically offer daily liquidity, allowing investors to buy or redeem their investments with ease. UCITS ETFs can be created in exchange for cash or the underlying assets, meaning they source liquidity from the underlying assets being tracked.

As ETFs are open-ended, their securities are created on demand and priced on the value of the underlying asset they track. To ensure they don't trade away from their NAV for an extended period of time, market makers use arbitrage to bring them back in line with the value of the underlying asset.

Investor protection

Strict regulatory oversight ensures a high level of investor protection, with rules on risk management, transparency and diversification.

Segregated assets

The assets of a UCITS fund must be placed with an independent custodian for safekeeping, segregated from the assets of that custodian, and the company that issued the UCITS. In addition, these assets can't be used to clear the debts of either the custodian or the fund issuer in the event of a bankruptcy.

Diversification

To be UCITS compliant, the index an ETF tracks must be sufficiently diversified. That means for a fully replicating ETF, an individual security can't exceed 20% of a fund's NAV. This figure can be increased to 35% under certain market circumstances.

For ETFs using sampling techniques to track an index, the UCITS 5/10/40 rule applies. This rule limits investments so that no more than 5% of the fund's NAV can be invested in securities from a single issuer.

This limit can be increased to 10%, provided the total value of such holdings (above 5%) does not exceed 40% of the fund's NAV.

Transparency

Clear and standardised reporting provides investors with detailed information on performance, fees and holdings.

Limited counterparty risk

If an ETF uses swaps to provide the return of the underlying assets, UCITS requires it to limit its exposure to a single counterparty to 5% or 10% of its NAV, depending on the type of counterparty.

UCITS regulations also mean the fund must reduce its exposure to any counterparties in case they default on their obligations under swap contracts. One way of doing this is to post collateral which must be valued on at least a daily basis. Assets with high price volatility shouldn't be accepted unless conservative haircuts have been applied.

Disclosure

UCITS ETFs publish a number of documents detailing the nature of the product, such as (i) the prospectus, (ii) the supplement, (iii) the Key Investor Information Document (KIID), (iv) the Key Information Document (KID), (v) annual and semi-annual reports and (vi) sustainability-related information under the EU Sustainable Finance Disclosure Regulation (SFDR) (where relevant).

The supplement (or in some instances, the prospectus) must include a description of the index being tracked, the method of tracking and a description of factors that contribute to the ETF's performance. The information required in the supplement will vary according to the type of ETF.

UCITS, ETCs and ETNs

As ETNs are issued as debt securities, they aren't governed by UCITS regulations which apply to ETFs that issue shares. However, while ETNs aren't UCITS compliant, they may be UCITS eligible which means they could be a holding within a UCITS ETF.

As prospectuses and supplements can be extremely long and dense documents, the KID and KIID are intended to be plain and comparable summaries of the important facts about the ETF. But as the KIID does leave out certain details, investors should always read the prospectus and relevant supplement in full.

The annual and semi-annual reports will provide details of the investments and their performance and include commentary from the fund issuer about developments over the financial year.

3.

ETP risks

In this section

3.1 General ETP risks

3.2 Additional risks

All investments come with risks, so it's important to be aware of them before investing in an ETP.

3.1 General ETP risks

Market risk

ETPs replicate the price movements of their underlying benchmark or asset, so their performance is affected by the volatility of the underlying markets.

Tracking error

The structure and replication method of an ETP means it may not track its underlying benchmark or asset exactly.

Tax

ETPs are usually subject to tax. All investors should obtain independent tax advice to see how they're affected.

Costs

All ETPs incur costs, whether internal costs related to the product, or external costs incurred trading it.

Currency

Any investment involving a foreign currency will be affected by exchange rate fluctuations, unless the product incorporates a currency hedge.

3.2 Additional risks

Physical ETFs

Securities lending: Physical ETFs that engage in securities lending can reduce the cost of the product, but this does introduce counterparty risk.

Sampling: Physical ETFs that engage in sampling replication may reduce transaction costs but may not track their underlying asset as accurately as synthetic or fully replicated physical ETFs.

Synthetic ETPs

Counterparty risk: Synthetic ETPs rely on swaps to track their underlying exposure. If the counterparty defaults, it's likely that the return won't be provided by the counterparty. To minimise the impact of this possibility, synthetic ETPs are collateralised.

Uncollateralised ETNs

Credit risk: Uncollateralised ETNs are affected by the credit rating of their issuer because they have no segregated assets and aren't usually collateralised.

Figure 14: Risks across different types of ETPs

	Physical ETFs	Synthetic ETFs	Physical ETPs	Synthetic ETPs	Uncollateralised ETNs
Market risk	Yes	Yes	Yes	Yes	Yes
Tracking difference	Yes	Yes	Yes	Yes	Yes
Tax	Yes	Yes	Yes	Yes	Yes
Costs	Yes	Yes	Yes	Yes	Yes
Currency	Yes	Yes	Yes	Yes	Yes
Securities lending	Maybe	No	No	No	No
Sampling	Maybe	No	No	No	No
Counterparty risk	Maybe*	Yes	No	Yes	Yes
Credit risk	No	No	No	No	Yes

*Counterparty risk is only relevant for ETFs which engage in securities lending, or which use derivatives.

4.

Trading and pricing

In this section

4.1 Creation and redemption
4.2 Pricing and NAV
4.3 Arbitrage
4.4 Liquidity of the underlying asset
4.5 Buying an ETP
4.6 Understanding order types
4.7 ETP names explained

ETP liquidity is often judged by the volumes traded on exchange. But there are actually two sources of ETP liquidity:

1. The liquidity of the underlying asset
2. The volume traded on exchange

ETP securities[20] can be created in exchange for cash or the underlying assets, meaning they source liquidity from the underlying assets being tracked.

As ETPs are open-ended, their securities are created on demand and priced on the value of the underlying asset they track. To ensure they don't trade away from their NAV for an extended period of time, market makers use arbitrage to bring them back in line with the value of the underlying asset.

Understanding how ETPs are created and redeemed, and the role of arbitrageurs, will help you appreciate the mechanics of ETP pricing and how best to trade them.

4.1 Creation and redemption

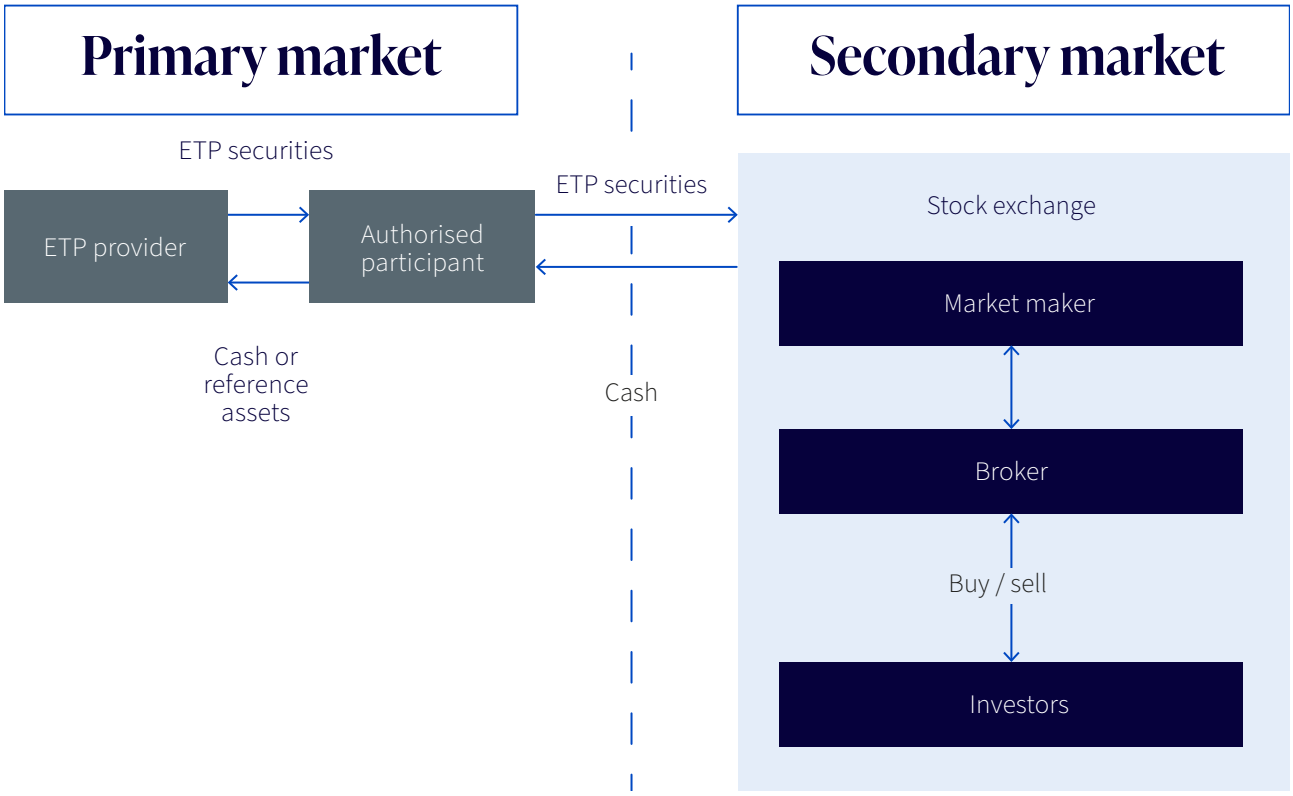
Investors in ETPs purchase and sell securities on a stock exchange, also known as the secondary market. Most interactions retail investors have with ETPs will take place here. But there's also a primary market which is reserved for authorised participants (APs) who deal directly with the ETP issuer. We take a closer look at this process below.

Creation

The creation process

1. the AP applies to the ETP issuer to purchase or 'create' securities.
2. The AP then delivers the underlying reference asset or the cash equivalent to the ETP provider. For example, if the ETP is tracking the FTSE 100 Index, the AP will deliver the FTSE 100 shares according to their weighting in the index or the cash value of those shares.
3. In exchange, the ETP provider transfers the same value in ETP securities to the AP.
4. The AP then sells the ETP securities to intermediaries and investors via the stock exchange.

20 ETP securities are shares.



Redemption

The redemption process is the opposite of the creation process. When investors sell securities in an ETP, the AP will either hold them to sell on again or redeem them with the ETP provider.

The redemption process

1. the AP applies to the ETP provider to return or 'redeem' securities.
2. The ETP provider then delivers the underlying reference asset or the cash equivalent to the AP.
3. In exchange, the ETP provider cancels the same value in ETP securities.

Authorised Participant (AP)

APs are financial institutions that source the underlying assets or cash needed to create the ETP securities.

Only APs can create or redeem ETPs, and they are typically investment banks or specialist market maker firms.

4.2 Pricing and NAV

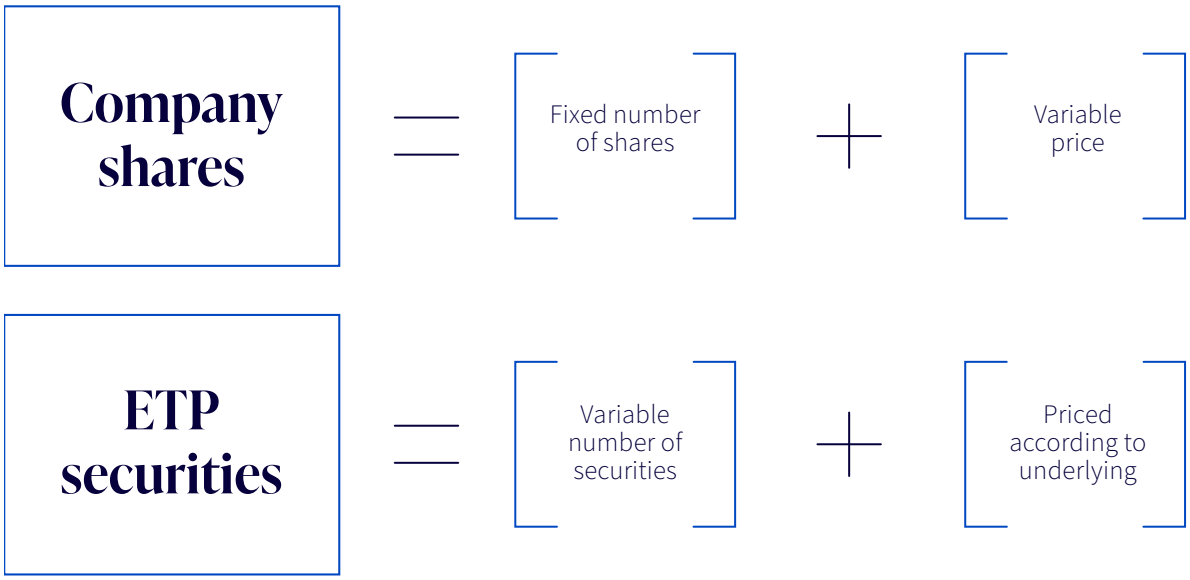
ETPs can be created and redeemed according to demand, which means the number of ETP units isn't fixed.

When companies issue shares, it's a fixed number[21] which trade at a variable price based on supply and demand. This is important because the purpose of an ETP is to track an underlying benchmark or asset. If the price of an ETP fluctuated because of supply and demand, it would no longer track its underlying accurately.

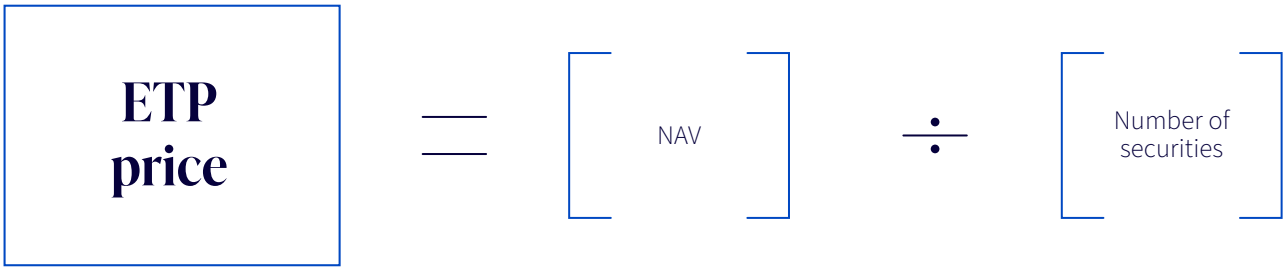
Metal entitlement

The amount of metal that each share of a physical ETC is backed by.

For example, a metal entitlement of 0.1 for a Gold ETC means that each debt security of that ETC is backed by and gives entitlement to 0.1 fine troy ounces of gold bullion.



21 Unless the company issues additional shares.



In theory, the price of an ETP should be based on its NAV divided by the number of securities. The NAV will fluctuate depending on the price movements of the underlying assets, which in turn alter the price of each ETP security.

Coin entitlement

The quantity of digital currency which backs one share of a physically backed crypto ETP.

For example, a coin entitlement of 0.0003 BTC for a physical bitcoin ETP means that each share is backed by 0.0003 bitcoin.

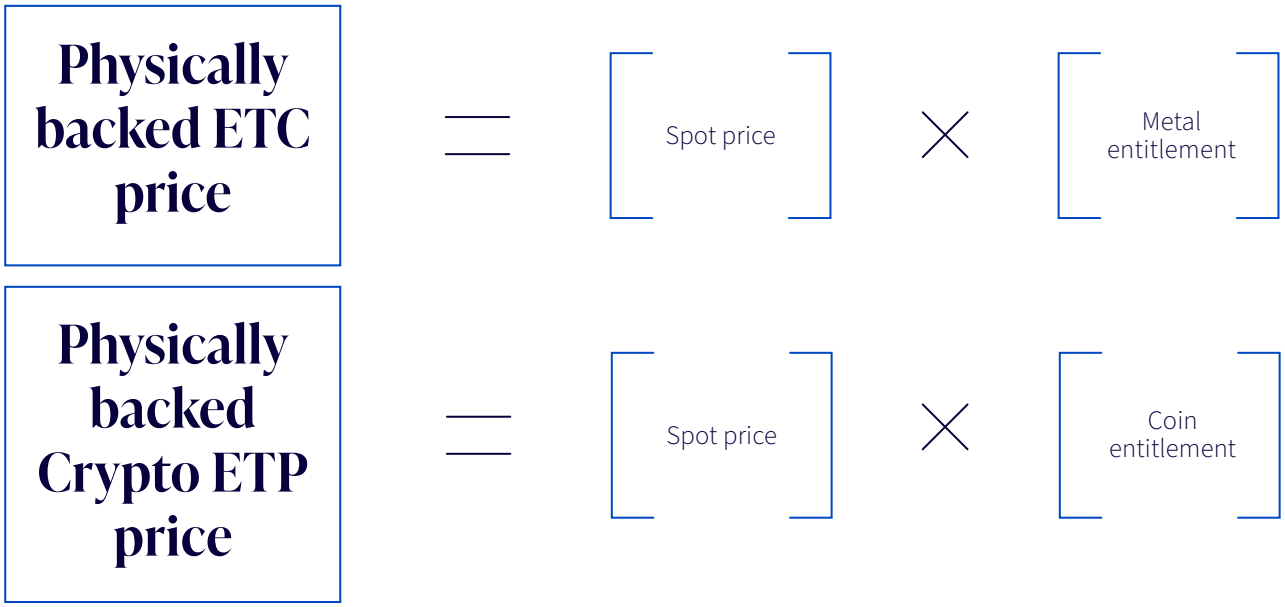
NAV or Net Asset Value

NAV generally refers to the value of an entity's assets minus its liabilities.

In the context of ETFs, NAV is calculated as the value of assets held by the ETF — whether the assets are equities, bonds, swaps, cash, etc., — minus its liabilities.

ETNs are valued according to their price because their securities are issued as debt and not as shares. That price is calculated by a formula that references the underlying asset. The price of an ETN is sometimes referred to as its NAV for convenience purposes.

Although the price of an ETN is sometimes referred to as its NAV for convenience purposes, physically backed ETCs and ETPs technically don't have a NAV because they aren't settled in cash. Instead, their price is determined by the metal entitlement, in the case of ETCs, or coin entitlement, in the case of crypto ETPs, multiplied by the spot price of that metal or cryptocurrency.



4.3 Arbitrage

Arbitrage takes place when an ETP is trading above or below its fair value. Arbitrage is only risk-free profit once all transaction costs have been settled.

The creation and redemption processes for ETPs allow arbitrage to take place. The AP can continue the arbitrage until there's no price difference between the ETP and the underlying assets, so no longer an opportunity to profit. This means that ETPs only trade away from their NAV for short periods.

Arbitrage

This is the purchase and sale of an asset to exploit a price difference.

For example, bread costs £2 in London but £1 in Manchester. It costs 50p to transport the bread from Manchester to London, so there's an opportunity to buy bread in Manchester and sell it in London for a 50p profit.

ETP price > underlying assets

The AP buys the underlying assets and exchanges them for ETP securities. These securities can then be sold to intermediaries and investors. Since the ETP securities are worth more than the underlying assets, the AP makes a profit.

ETP price < underlying assets

The AP buys ETP securities and exchanges them for the underlying assets. These assets can then be sold to intermediaries and investors. Since the underlying assets are worth more than the ETP securities, the AP makes a profit.

The arbitrage process

Imagine a physical FTSE 100 ETP trades for £20 and the underlying assets that constitute the ETP are worth £25. The AP can buy the ETP on exchange and redeem it for the underlying assets. By selling them, the AP makes a profit of £5.

As this process buys the ETP and sells the underlying assets, which in this case are equities in the FTSE 100, it reduces the price difference between them.

Eventually, the prices converge, and the arbitrage will no longer be profitable. Through this process, the AP has returned the ETP to its NAV.

4.4 Liquidity of the underlying asset

As ETPs can take advantage of the underlying asset's liquidity, large transactions can be made without a significant impact on costs.

The average daily volume of all LSE listed ETPs that track the FTSE 100 is approximately £49 million. Looking at this metric alone, you might conclude that there's limited liquidity in these products. However, the liquidity available to FTSE 100 ETPs is actually much larger because the average daily volume of FTSE 100 shares is over £3.2 billion. ETP volume represents only 1.5% of the underlying asset volume.

On this basis, investors thinking about an investment in ETPs should look at underlying asset liquidity as a more accurate measure of an ETP's liquidity and not just on-exchange volumes as the ETP is simply an investment wrapper that's at least as liquid as its underlying constituents.

Figure 15: Average daily traded volume of FTSE 100 ETPs

	FTSE 100 ETPs	FTSE 100 shares	ETP volume as % of underlying
Daily volume (£)	48,696,745	3,242,800,411	1.50

Source: WisdomTree, Bloomberg. Average daily volume, 16 May 2024 – 18 November 2024. **Historical performance is not an indication of future performance and any investments may go down in value.**

4.5 Buying an ETP

ETPs can be bought and sold on exchange in the same way as company shares and can be traded through an online platform or via a broker. By providing access to a wide range of asset classes and markets, they are the perfect building blocks for an investment portfolio.

4.6 Understanding order types

When trading ETPs it's important to understand the different order types available. These let you control how and when your trade is executed. For example, a market order ensures your trade is executed immediately at the best available price, while a limit order gives you more control by allowing you to set a specific price. Choosing the right order type can help align your investment strategy with market conditions.

While the order types above cover the basics, they are not exhaustive. Different brokerage platforms may offer additional options, such as trailing stop orders or Good 'Til Cancelled (GTC) orders, each with its own specific uses and considerations. Investors should carefully review the features and order types available on their chosen platform to ensure they're making informed decisions that align with their investment goals and strategies.

Figure 16: Main ETP order types

Order type	What is it?	Typical use case	Pros	Cons
Market order	An order to execute immediately, at the best available price	When it's more important to trade quickly than achieve a specific price	Immediate execution	No control over the executed price (might be higher or lower than expected in volatile markets)
Limit order	An order to trade only at a specified price or better. Limit orders are cancelled after a set time, usually at the end of the day, but can be set to last for a longer period. Limit orders can be amended or cancelled if they have not already been executed	Buying when waiting for a specific price or selling when targeting a higher profit price.	Allows control over the maximum execution price when buying or minimum execution price when selling	May not be executed at all if the market does not reach the price that was set
Stop loss order	Automatically sells at the best price available once the price falls below a preset level to limit losses	Protecting against significant losses when holding a volatile stock or investment	Triggering an automatic sale to limit losses when prices drop	No execution control, could execute at a low price in fast moving markets
Stop limit order	Combines a stop loss with a limit price, ensuring the trade only executes within a specified price range	Managing risk while retaining control over the minimum price you're willing to accept	Combines risk management with some control over execution price	May not execute if the market price falls below the limit price

4.7 ETP names explained

At first glance, ETP names can look quite complicated. In this section, we break down the general naming convention behind them. Each product provider will choose their own language but the inclusion of 'UCITS ETF' is required by regulation for ETFs.

Examples

Issuer name	S&P 500	GBP DAILY HEDGED	UCITS	ETF
Issuer name	PHYSICAL	GOLD	ETC	
Issuer name	FTSE 100	2x Daily Leveraged	UCITS	ETF
Issuer name	EURO STOXX 50	UCITS	ETF	(DIST)

Issuer name
Usually, the ETP provider's name will come first.

Underlying index or asset
The underlying index or asset which the ETP aims to track comes next. For example, the S&P 500, FTSE 100 or Gold.

Currency hedge
If the ETP incorporates a currency hedge, either at the product level or as part of the index itself, then this will be displayed in a similar way to the 'GBP daily hedged' example. For instance, when investing in a USD based ETP, such as the S&P 500 or gold, a non-US based investor will earn the return of the US index because the hedge cancels out the currency fluctuations between their local currency and the US dollar. 'Daily' simply refers to the frequency of the hedge.

Regulatory information
Any regulatory classification is normally shown. For example, the UCITS classification means that the ETP is subject to European regulations designed to protect private investors. Safeguards include diversification rules to ensure limited exposure to a single asset.

ETP type
There are no official rules when it comes to the naming convention of ETPs, so these can differ between issuers. That said, 'UCITS ETF' is a regulatory requirement in an ETF name.

Replication type
Although not always included within the product name, this refers to how the ETP replicates its underlying index or asset. This can be either physical or synthetic.

Short/leveraged factor
Some ETPs are designed to provide a leveraged short (bearish) or leveraged long (bullish) exposure to the performance of the underlying index or asset. These products are only intended for investors who understand the risks of investing in a product which amplifies exposure and who intend to invest on a short-term basis.

Use of income
This section relates to the way the ETF handles dividend income. 'Dist', 'Dis', or 'D' stands for 'distributing', which means that any dividend income is paid to your brokerage account. Alternatively, dividend income can be reinvested or 'accumulated' to increase your position (shown as 'Acc', or 'C').

5. Costs

In this section

5.1 Ongoing costs

5.2 External costs

5.3 Beyond TER

5.4 Tracking error or tracking difference

While performance is difficult to predict, costs are not and they're one of the most important factors to consider when making an investment.

Unfortunately, ETP costs are not always clear. The most widely reported cost figure, the total expense ratio (TER), also known as the ongoing charge figure (OCF), is often incomplete and can exclude several expenses, including transaction costs, swap spreads and bid/ask spreads on exchange.

In this chapter we outline the most common components of an ETP's total costs, dividing them between internal costs related to the product, and external costs incurred trading it.

5.1 Ongoing costs

The Key Information Document (KID) provides a comprehensive disclosure of transaction costs, their impact on investment returns and a detailed breakdown of the different cost types.

There are three factors that contribute to the ongoing costs of an ETP:

+ The Total Expense Ratio (TER)
+ Any transaction costs
+ Any swap fee

Total expense ratio

The TER is the annual cost of managing the product, shown as a percentage. The TER also sometimes gets called the ongoing charge figure (OCF) within the industry.

The costs included within the TER can vary among providers, but usually include:

+ Management expense ratio (MER)
+ Administrative costs
+ Index license fee
+ Custody fees and storage costs for physically backed ETNs

Transaction cost

This is the cost incurred by physical ETFs when they buy and sell securities.

An example of these transaction costs would be when the underlying index rebalances and changes its constituents, the ETF must do the same. Transaction costs depend on how many and how often the index constituents change: the greater the number and frequency, the more expensive the rebalancing costs.

Swap fee/spread

The fee paid by the ETP provider to the swap counterparties for the swap agreements.

The swap fee is negotiated between the provider and the counterparty, considering commercial factors such as the cost of the counterparty hedging its swap exposure, the cost of collateral, its credit rating, and its own profit margin. Generally speaking, more illiquid or exotic exposures have more expensive swap spreads.

Sometimes the swap spread is incorporated into the TER of ETPs.

Securities lending

This is where the owner of an asset lends it to a borrower in exchange for a fee. The borrower may have to post collateral to protect their obligations under the loan. While the fee from securities lending can reduce the cost of an ETP, it creates counterparty risk because you might lose the loaned securities if the borrower can't make the repayments. In such an event, the product could be left holding assets unrelated to those it's meant to track.

The borrower is obliged to return the securities on demand or at the end of a pre-agreed term. Both the legal title and ownership of the securities is transferred to the borrower for the period of time before its return.

Market Marker (MM)

MMs are firms that provide liquidity to markets by quoting bid/ask prices. They buy and sell securities, and their participation helps find the balance between demand and supply by setting optimal prices.

Their profit comes from buying an asset at a low price and selling it on for more. The MM wants to hold the asset for as little time as possible, ideally buying and selling simultaneously.

For example, for ETP 1, they may quote an ask price of £100 and a bid price of £99. If you sell your shares of ETP 1 at £99, the MM can go on to sell them to another buyer at £100, making a £1 profit.

Bid

The price at which a buyer is willing to buy an asset.

Ask

The price at which a seller is willing to sell an asset.

Bid/ask spread

The difference between the bid and ask price.

5.2 External costs

Bid/ask spread

As with trading any asset on exchange, there is a spread of prices at which an ETP can be bought or sold.

Bid/ask prices are quoted by market makers (MMs) who ensure there's always a price at which an asset can be bought and sold for. MMs compete for customers by offering the most competitive prices. For an ETP, the costs that MMs consider include the creation/redemption fee in the primary market, the cost to trade the underlying constituents of the ETP, and the cost to hedge the ETP exposure.

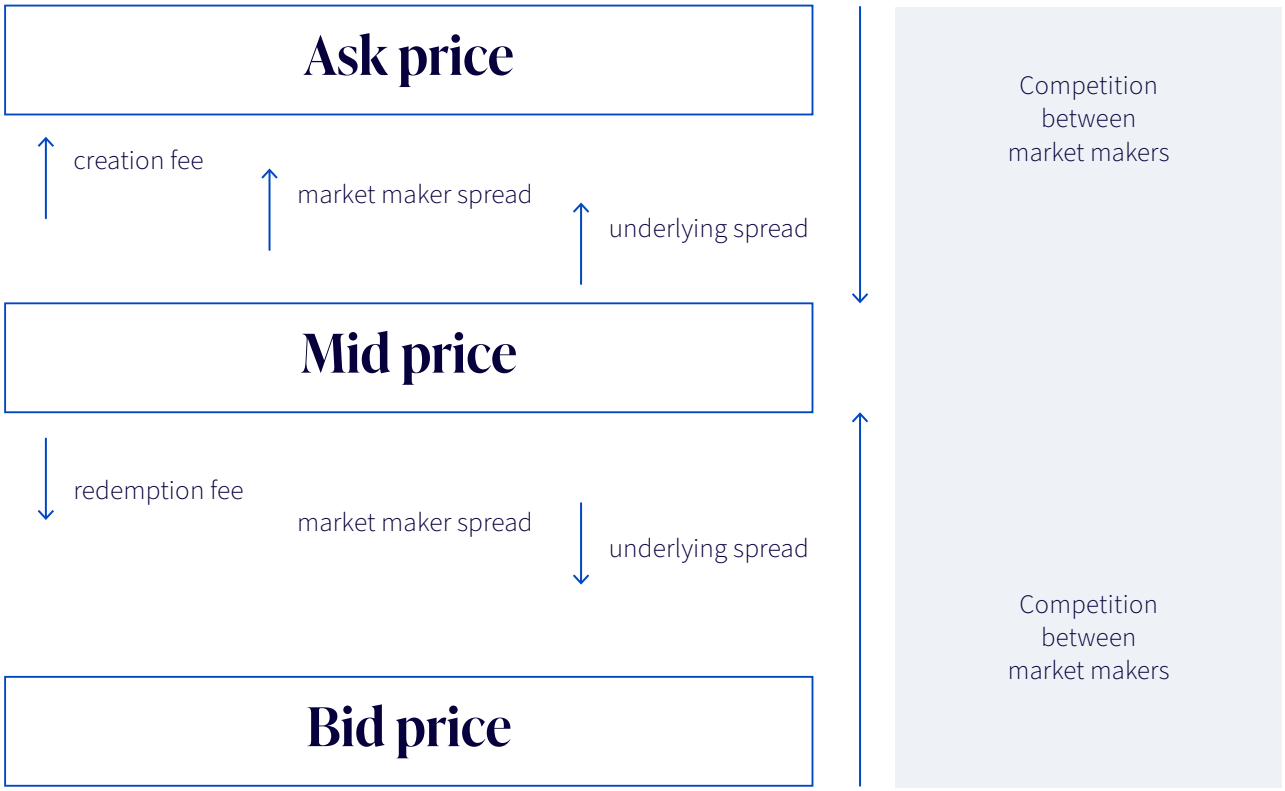
Creation/redemption fee

The fees the ETP provider charges to create or redeem shares.

Market maker spread

MMs don't attempt to profit from changes in an asset's price; what most investors consider investment exposure is actually risk to the MM.

Instead, they attempt to buy and sell simultaneously. This is not always possible, so the MM will hedge against the price fluctuation of an asset. The cost of doing so is the market maker spread which is passed on to the investor.



If any of these three costs rise, the MM will widen the bid/ask spread to try to make a profit.

Typically, the more MMs offering bid/ask spreads on an ETP, the tighter the bid/ask spread. ETPs with more MMs will generally trade at a price closer to the underlying asset they are designed to track. This means the investor pays less to buy the product and receives more on its sale.

Brokerage and platform fees

Cost paid by the investor to a broker to buy or sell an ETP.

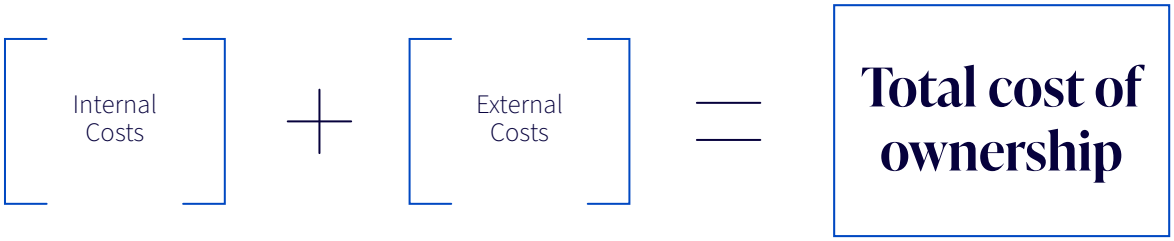
Tax

ETPs will incur different taxes depending on the product itself, where it's domiciled, and the circumstances of the individual investor. Investors are advised to contact tax experts in their own jurisdiction to clarify what charges will apply.

Underlying spread

The cost of buying the underlying assets, which also have bid/ask spreads, needed to create the physically backed ETP. This cost is greater for illiquid assets than liquid ones.

Total cost of ownership equation



5.3 Beyond TER

A product's TER is only one aspect of a product's total ownership cost. Plus, a lower TER doesn't necessarily guarantee the cheapest investment.

In the following simplified example (a physically replicated equity ETF), ETP 1 has a cheaper TER by 15 basis points. However, when all the costs of ownership are tallied up, they become cost equal. Investors should resist the impulse to judge an ETP by TER alone and adopt a more holistic view about ETP costs.

Figure 17: Comparing ETP ownership costs

	TER (bps)	Transaction costs (bps)	Bid/ask spread (bps)	Total cost (bps)
ETP 1	25	15	10	50
ETP 2	40	5	5	50

Source: WisdomTree, hypothetical example.

5.4 Tracking error or tracking difference

The two most common methods of defining how well an ETP tracks its benchmark are tracking error and tracking difference, but which is more important?

For long-term investments that generate returns, tracking difference is a more useful metric because these investors want to maximise return while minimising cost. Tracking error may be more useful if the investment is for hedging purposes or generating profit from short-term fluctuations since precision will be more important than the overall return.

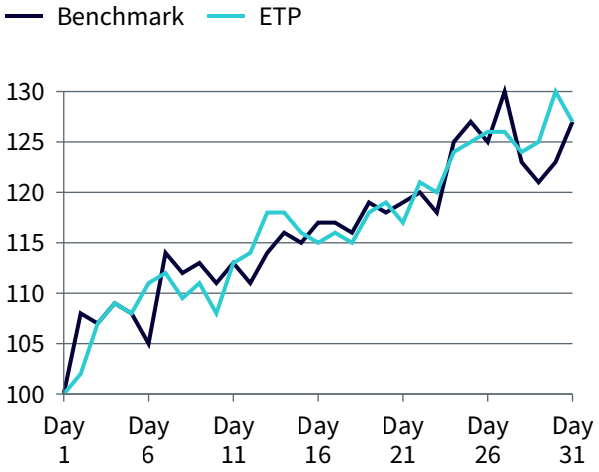
In the chart below, the difference in returns between the product and benchmark is causing a tracking error. If measured between day 1 and day 36, there isn't a tracking difference because both the product and benchmark returned the same amount over 36 days. Nevertheless, if we were going to measure returns across a different time frame, such as over 20 days rather than 36, there would have been tracking difference.

Tracking error

The volatility of the difference of returns between a product and its benchmark/asset. Tracking error is a measure of accuracy.

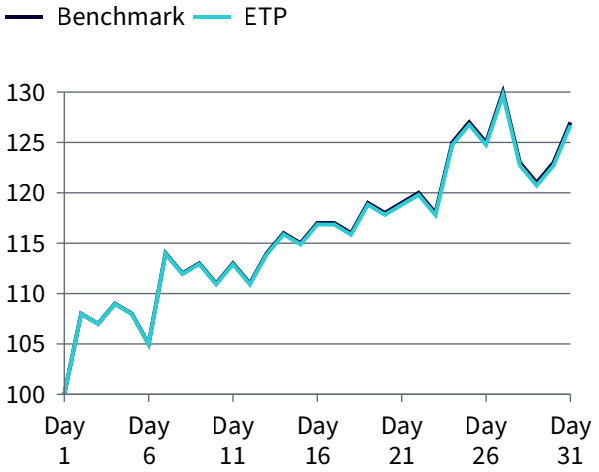
Tracking error is calculated as the standard deviation of a product's returns against its benchmark. It shows how consistent the ETP has been in replicating its benchmark/asset.

Figure 18: Tracking error



Source: WisdomTree, hypothetical example.

Figure 19: Tracking difference



Source: WisdomTree, hypothetical example.

Tracking difference tends to vary over time so is sensitive to the period selected. As a result, tracking error does not necessarily impact the magnitude of tracking difference over a given time period.

While tracking difference is easily calculable, tracking error is much more complex because there are numerous methodologies that providers use to calculate it.

Tracking error inconsistency can arise from:

+ Frequency of data used (daily, weekly, monthly)
+ Time period (one year, three years, five years)
+ Issues around rounding
+ Issues posed by holidays

There's no standard methodology for calculating tracking error which means the figures supplied by ETP providers may not be a like-for-like comparison.

Tracking difference

The difference between a product's return and that of its benchmark/asset over a specific period. Tracking difference is a measure of cost.

Tracking difference is calculated by assessing the difference between the return of a benchmark/asset and the return of the ETP designed to track it, showing the magnitude of underperformance. There will always be an element of tracking difference because of fees.

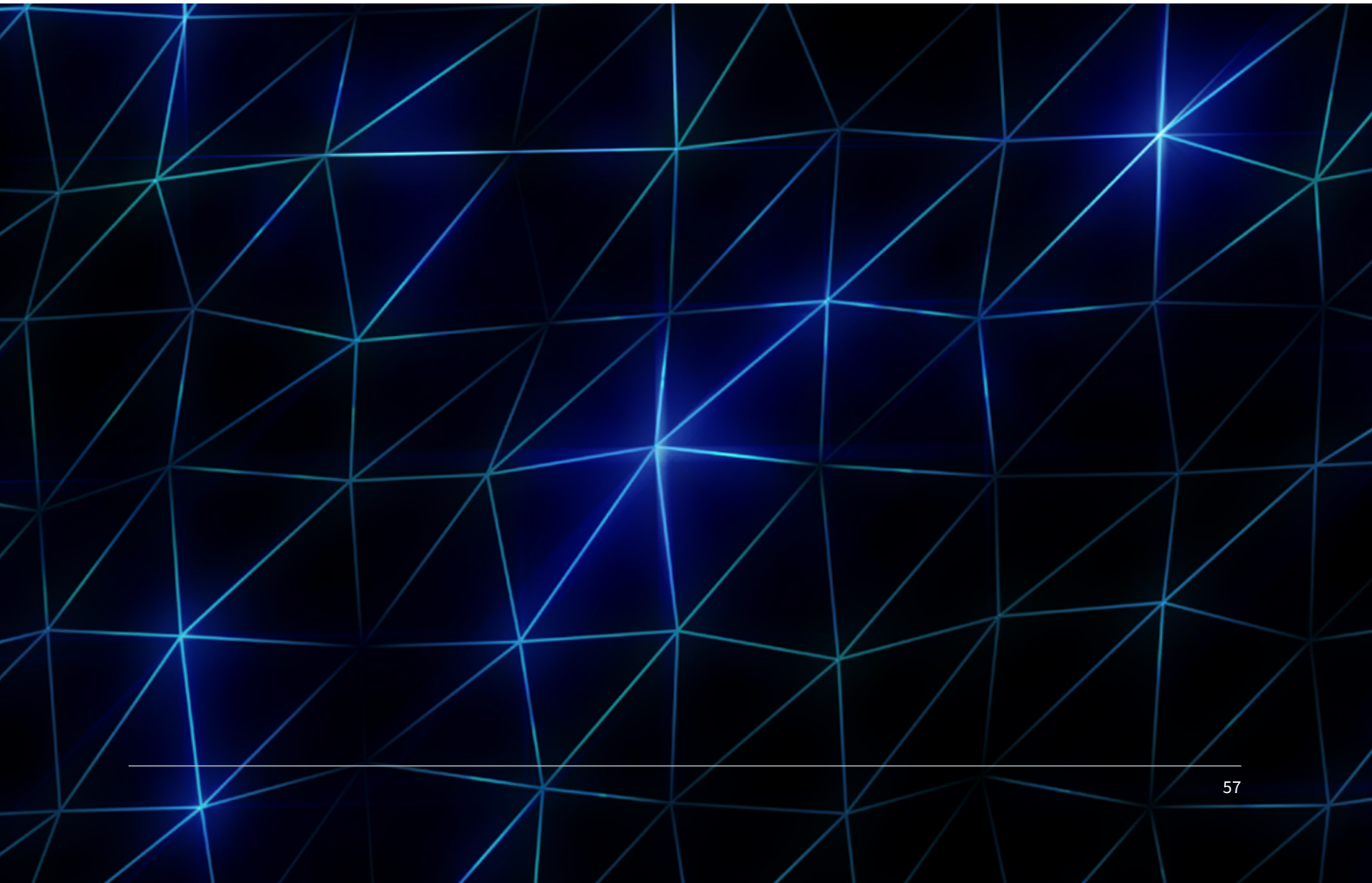
Tracking difference is usually negative, meaning that the ETP underperforms its benchmark. However, sampling replication and revenue from securities lending can cause physically backed ETFs to have a positive tracking difference, in which case the ETF outperforms its benchmark.

Causes of tracking error and tracking difference

Cost is one of the largest sources of tracking error and tracking difference. Given that the total holding cost includes fixed elements (TER) and variable elements (bid/ask spreads), such costs can contribute to the absolute difference between a product and its benchmark's return (tracking difference), as well as the volatility of that difference (tracking error). But there are several causes of tracking error and tracking difference that are not covered by costs.

Figure 20: Factors that impact tracking

Cost factors that impact tracking	Non–cost factors that impact tracking
TER	Dividend reinvestment
Transaction/rebalancing costs	Withholding taxes
Swap fee/spread	Sampling
Tax	Securities lending
	Interest accruals and cash drag
	Currency hedging
	Price fixings used in NAV vs. the reference index



Dividend reinvestment

For physical ETFs which track equity benchmarks, differences in how dividends are reinvested between the benchmark and the ETF itself can impact tracking.

Some indices assume immediate reinvestment of dividend proceeds on the ex–dividend date, but a product must wait to receive the dividend before it can reinvest. During this period, there will be a difference between the performance of the ETF and its benchmark.

Withholding taxes

Taxes applied on dividend or interest payments from an investment in an underlying index can impact tracking.

While these taxes are factored into the index calculation, they may not apply to all investors. You should always consult an independent tax adviser to understand how tax implications will affect your investment.

Sampling

Physically replicated ETPs that use sampling techniques to replicate their benchmark usually have greater tracking error and difference compared to fully replicating or synthetic ETPs because their constituents don't match those of the benchmark.

Securities lending

Revenue from securities lending can reduce the cost of an ETP and in some cases completely offset the product's internal costs. A full definition of securities lending is available on page 27.

Interest accruals and cash drag

Sometimes an ETP can't be fully invested in its reference asset for technical reasons. In that case the ETP would hold cash which may generate interest. On the other hand, if the ETP is underinvested, it will not be fully exposed to the asset or index it intends to track.

Currency hedging

Currency hedged ETPs or ETFs may use a hedging strategy to mitigate FX risk (foreign exchange risk), usually using rolling FX forwards. A more frequent roll generally provides better tracking but exposes the ETP to higher costs.

Price fixing

When comparing the performance of an ETP relative to its index, you need to make sure you're using the same price fixings for the comparison.

Sometimes tracking error and tracking difference calculations differ even for the same product. Reasons for such difference are often related to the following pitfalls:

+ Daily vs. weekly returns
+ Using NAVs rather than exchange prices
+ FX fixings

6. Performance

In this section

6.1 Understanding equity indices
6.2 Understanding commodity indices
6.3 Understanding currency indices
6.4 Understanding digital assets and cryptocurrency indices

To assess the performance of an ETP you need to understand its objectives and how it's designed to behave.

This chapter examines the factors that could have an impact on performance, including different types of indices, market volatility and futures contracts.

6.1 Understanding equity indices

There are two main types of equity indices:

Total Return Index (TR)

An index in which any cash distributions from the underlying assets (such as dividends or coupons) are reinvested. For instance, the MSCI World Total Return index (Bloomberg code: M2WO).

Total return indices for bonds and commodities are calculated in a slightly different way.

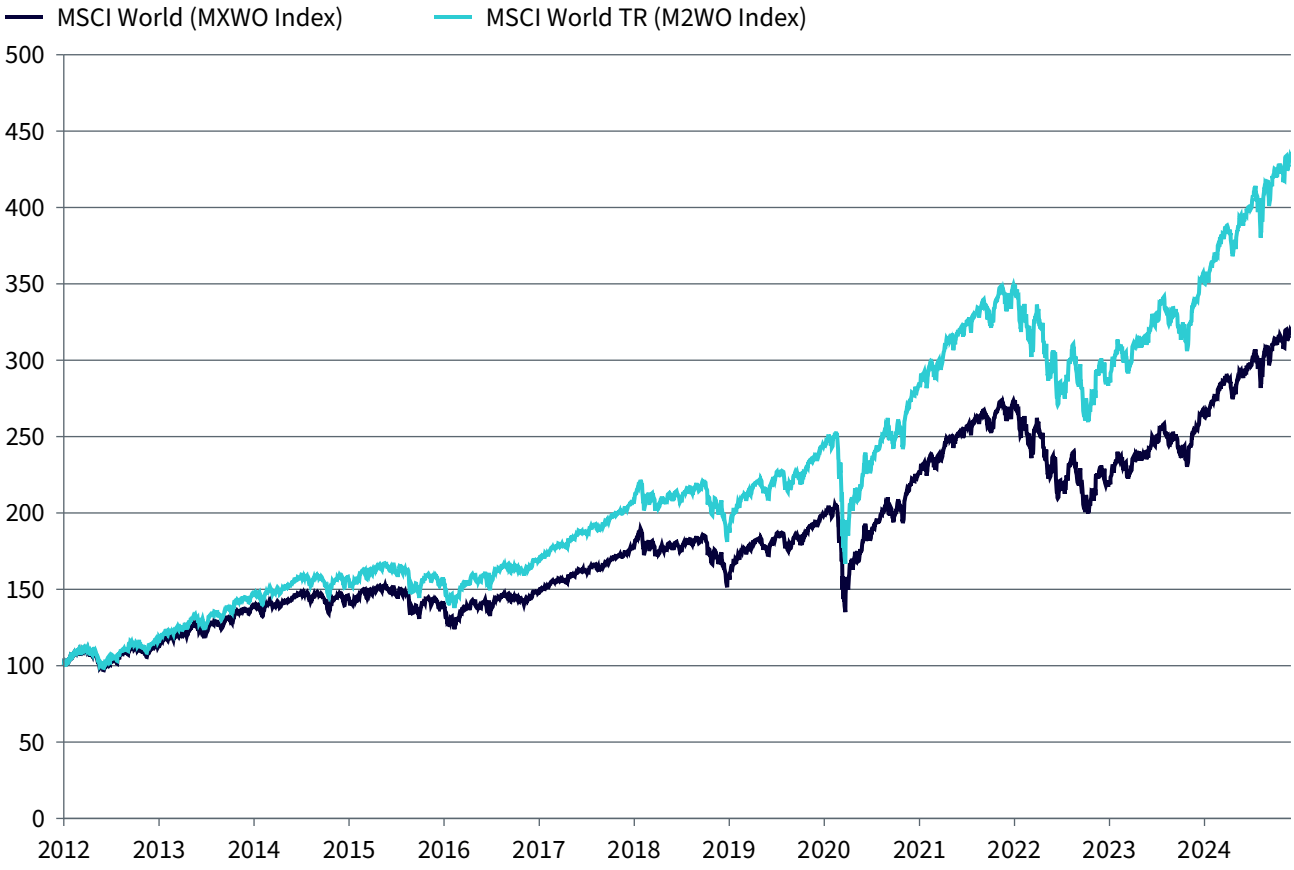
See page 66 for an example of a total return commodities index.

Price Return Index (PR)

An index which only tracks the price movements of the underlying assets and does not reinvest cash distributions (dividends or coupons).

For instance, the MSCI World Price Return Index (Bloomberg code: MXWO).

Figure 21: MSCI World total return index (TR) vs. MSCI World price return index (PR) from January 2012 to November 2024



Source: Morningstar, Bloomberg, 02/01/2012–29/11/2024. **Historical performance is not an indication of future performance and any investments may go down in value.**

This distinction is important because whenever cash dividends are made PR indices will fall, but TR indices will not be affected by distributions. Hence, if a number of MSCI World companies pay out dividends on a particular day, the MSCI World PR index (MXWO) would drop as a result of the dividends, but the MSCI World TR index (M2WO) would not be affected by them.

As such, M2WO outperformed MXWO by 2.6% over the year 2023, and by 7.5% over the period between 2021 and 2023. As the media almost exclusively quote PR indices, this can cause confusion among investors who have invested in an ETP that tracks a TR index. This is why you need to know which version of an index (PR or TR) an ETP tracks.

6.2 Understanding commodity indices

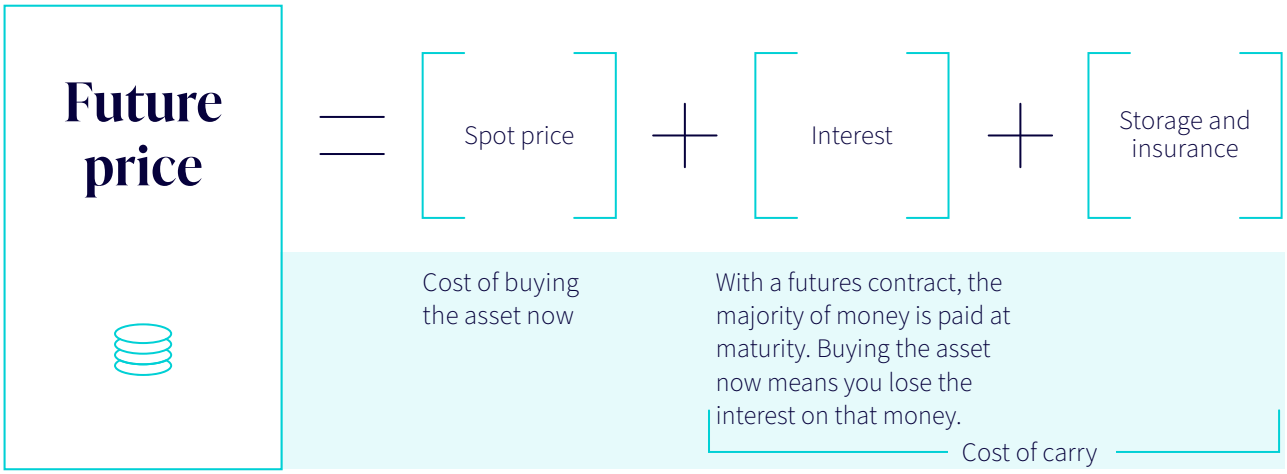
Futures, contango and backwardation

ETPs have brought broad commodity exposure to the masses. As most commodities can't be traded physically due to storage challenges (think energy or agricultural products), investors gain exposure to them through derivatives. This is how a commodity ETF and a synthetically backed ETC work.

Those ETPs track an index of commodity futures to gain commodity exposure but there are certain costs and benefits when trading futures that investors should be aware of, such as the impact of roll yield.

Futures

The price of a commodity futures contract is linked to the cost of purchasing the underlying asset and holding it for the term of the agreement. If an investor wants to receive 1,000 barrels of oil in three months' time, they could either buy the appropriate futures now or buy 1,000 barrels of oil and store them for three months. Buying the underlying commodity for use in the future incurs interest, storage and insurance costs. These are collectively known as the 'cost of carry' and form a key component of a commodity futures price.



Rolling futures strategies

Unlike futures contracts that have a fixed term, an index of commodity futures contracts is designed to offer continuous exposure to commodity futures with a particular maturity. To achieve that constant exposure, futures positions need to be closed out before expiry and transferred to a new, longer dated (further out) contract. This process is known as 'rolling' and is a feature of investable commodity strategies.

Rolling futures strategies

Through the passage of time, a futures contract becomes closer to the spot and eventually matures. This process has an impact on the return of the strategy and that impact can be positive or negative depending on the shape of the futures curve. The gains or losses from this process is known as the 'roll yield'.

The roll yield is continuously generated: it does not just happen on the day (or days) of the contract roll described above, as the futures contract is constantly moving closer to the spot.

Contango

'Contango' describes market conditions when the price of a longer dated contract is higher than the price of a nearer future, or the spot price. This is an upward sloping curve.

Amongst other things, the difference in the price of the two contracts reflects the cost of carry (storing the underlying asset) and can cause a negative roll yield. If we assume the shape of the curve does not change,

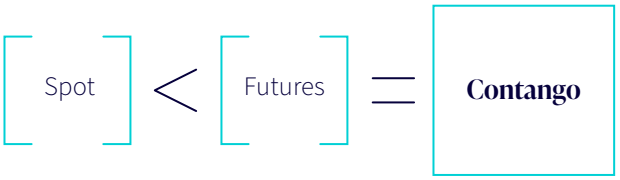
Futures (contracts)

An agreement where one party will buy and the other party will sell an asset at a future date and predetermined price.

Futures contracts are standardised so they will stipulate an amount and quality of the asset in the contract. For example, 5,000 bushels at #1 soft red winter grade are the set requirements for wheat futures on the New York Mercantile Exchange (NYMEX). This makes establishing a liquid market easy because buyers and sellers know exactly what they're getting.

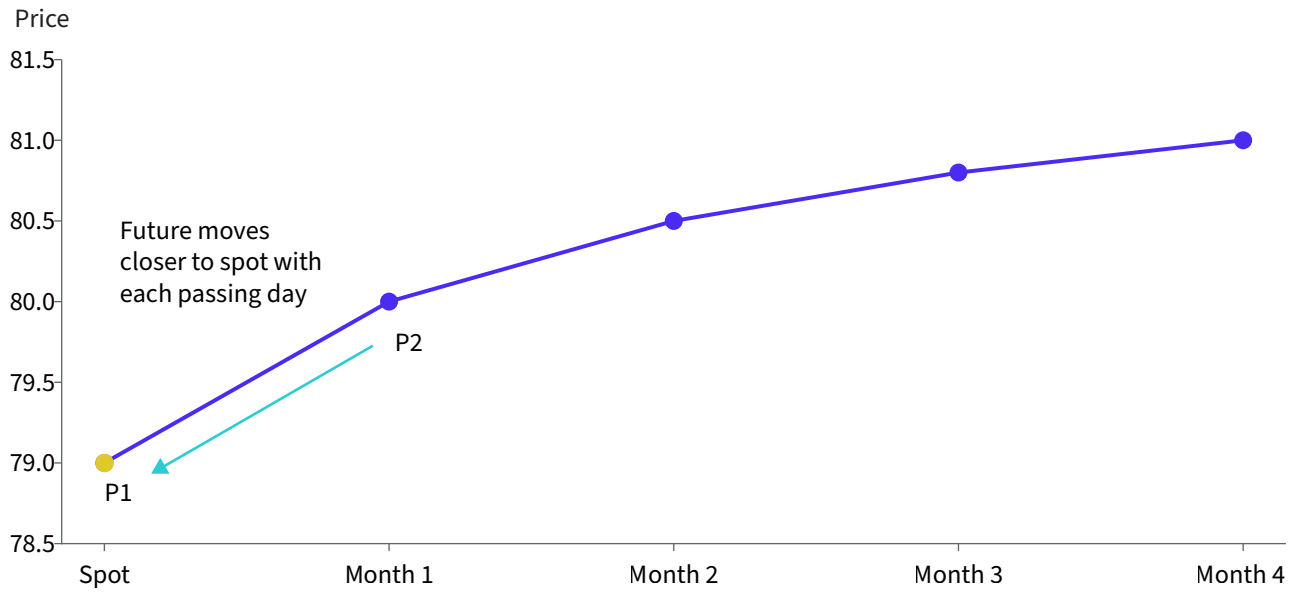
Futures have a variety of maturities, some as short as next-day while others span many years. However, certain maturities will be more liquid than others. Which contract is the most liquid will depend on the commodity in question, but very often it's one of the contracts near the front of the futures curve.

the approach of the futures towards the spot indicates a decline in price in an upward sloping futures curve. This represents a drag on performance.



For example, if the oil spot price is $60 per barrel today and was $50 one year ago, that doesn't mean the return from a rolling futures strategy over the one-year period is simply 12% ($60 / $50 – 1), because the negative roll yield described above may have eroded some of that gain.

Figure 22: Oil futures curve in contango (US$/barrel)



Source: WisdomTree, hypothetical example.

Backwardation

Conversely, the longer dated contracts may be cheaper than the spot price which is represented by a downward sloping curve. This is a market state known as 'backwardation'. When the market is in backwardation, an investor can earn a positive roll yield. Once again, through the passage of time (assuming no change in the shape of the curve), as the future approaches the spot in a downward sloping curve, its price rises.

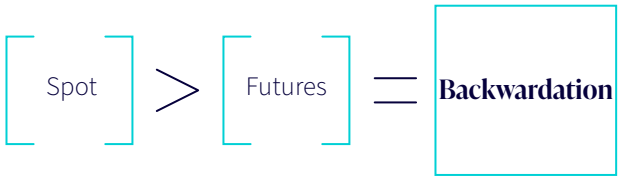
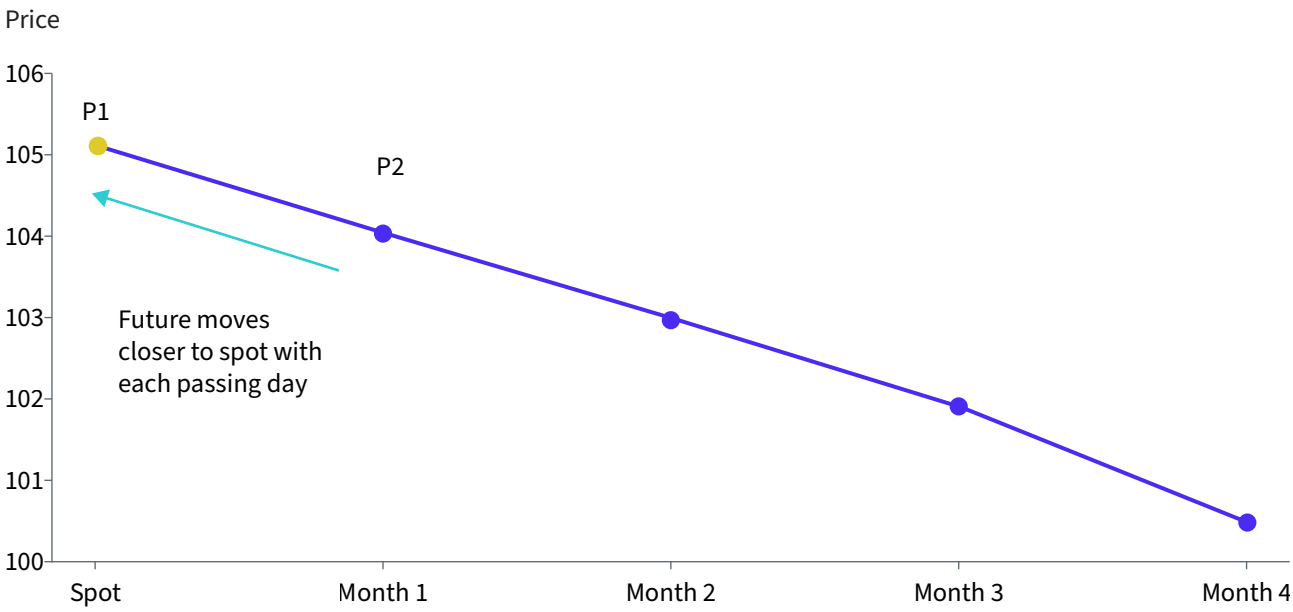


Figure 23: Oil futures curve in backwardation (US$/barrel)



Source: WisdomTree, hypothetical example.

Collateral yield

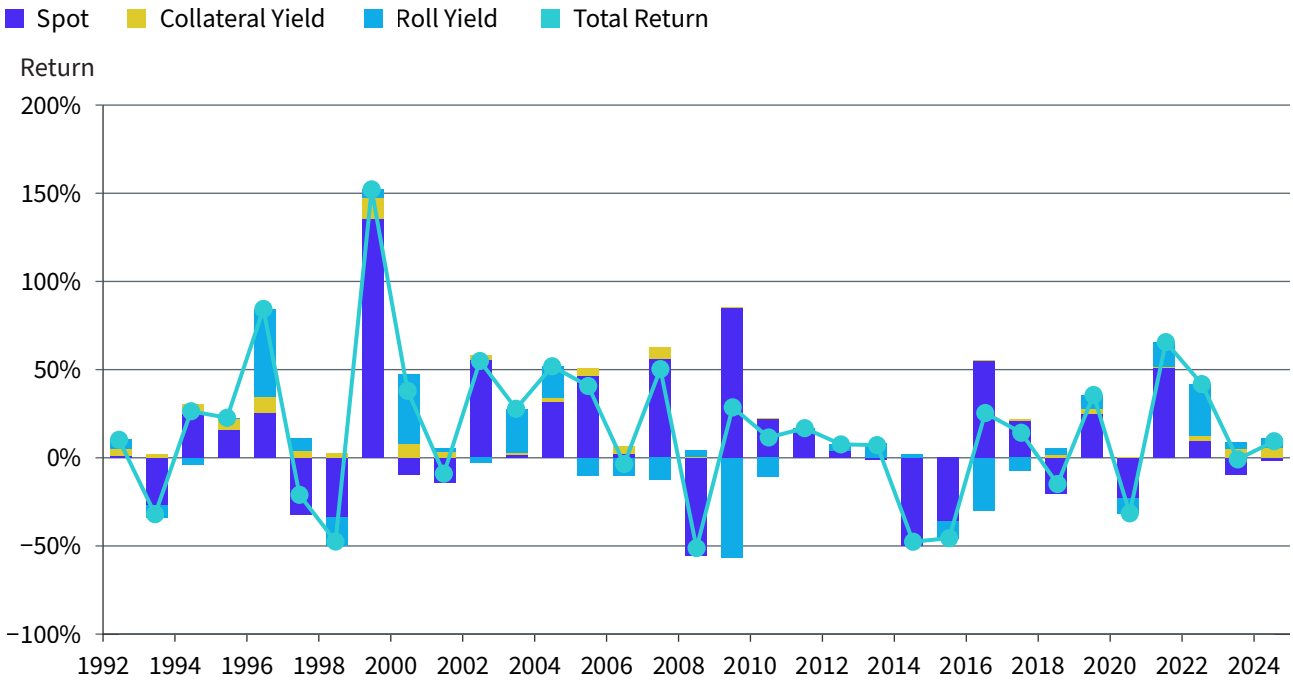
When you invest in a futures contract, most of the money owed for the underlying commodity is held back until the maturity date. Most investors never pay this because they don't want to receive the physical commodity. This means that whatever isn't paid up front for a future can be invested elsewhere in an interest-bearing asset, such as a bond. For this reason, commodity futures indices include a source of return called 'collateral yield' to match the performance you would have received from a bond to more closely simulate a rolling futures exposure.

Total return index

A futures-based index is composed of three elements: the spot index return, the roll yield and the collateral yield. A commodities index that incorporates all three elements is known as a total return index.

As non–precious metal ETPs and ETCs track futures indices, the return of these products is made up of three elements: spot return, roll yield and collateral yield. As shown in the graph below, the roll yield is often the primary reason why a rolling futures commodity index return will deviate from its spot index return. As such, the impact of contango and backwardation on commodity ETP returns shouldn't be underestimated.

Figure 24: Compostion of returns — Bloomberg Brent Crude Oil Subindex, annual return from 1992–2024



Source: WisdomTree, Bloomberg. 1992-2024. Spot proxied by 'Dated Brent' physical market contracts. Total Return is Bloomberg Commodity Total Return Brent Subindex. Collateral Yield proxied using the difference between Bloomberg Commodity Total Return Brent Subindex and Bloomberg Commodity Excess Return Brent Subindex.

Some ETPs track excess return indices. These are indices which omit the collateral yield.

Short dated vs. longer-dated commodity futures

Commodity ETPs tracking shorter-dated futures indices benefit from higher sensitivity to short-term or spot market movements but are exposed to the most extreme degrees of contango or backwardation. While driven by cost of carry considerations, the price of longer-dated futures tends to be driven more by structural supply/demand considerations.

The pricing of shorter-dated and longer-dated futures broadly aligns with short-term and long-term price drivers. Below are examples of such drivers.

Mitigating the impact of contango and backwardation

While short-dated futures are the most price sensitive to market events and therefore used to gain exposure to short-term spot market moves, rolling futures strategies aligned to shorter-dated futures are most exposed to contango or backwardation. In the chart below, the 'short dated' line illustrates such a strategy. Over long periods of time, there's a wide gap between spot market performance and rolling futures based on short-dated contracts.

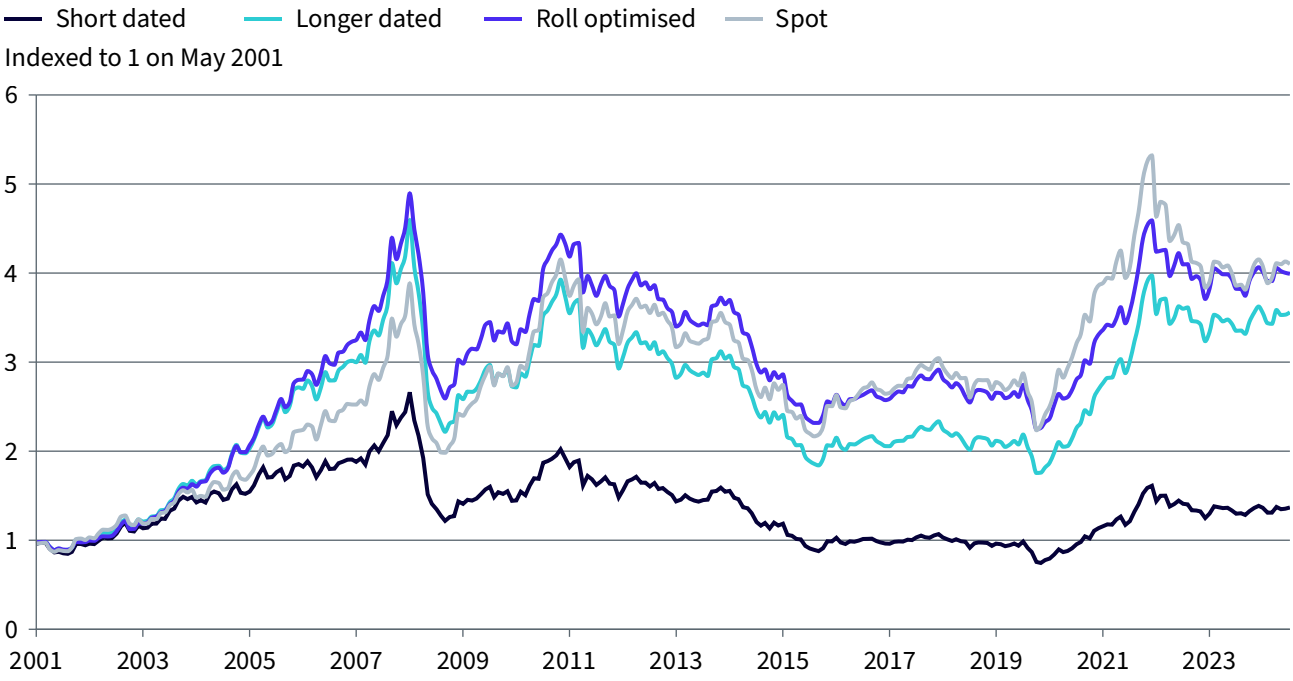
Short-term drivers	Long-term drivers
Immediate supply/demand concerns affected by: + Natural disasters + Infrastructure + Current inventories	Structural supply/demand concern affected by: + Emerging markets demand + Remaining resources

One way of mitigating the impact of roll yield is to maintain an exposure to longer contracts which reduces the impact of contango and backwardation. This is shown in the chart below as 'longer dated'. Over long periods of time, this adjustment alone takes away a lot of drag from contango, however, these strategies tend to benefit less from periods of backwardation.

There are also commodity ETPs which track indices that adjust the target maturity of the futures contract to optimise the impact of roll yield. An example of this strategy is shown in the chart below as 'Roll optimised'. This strategy would allocate to shorter-dated contracts in periods of backwardation and longer-dated contracts in periods of contango. Over long periods of time, optimised strategies tend to provide stronger returns as the impact of contango is minimised and the impact of backwardation is maximised.

Ultimately, investors need to consider their investment aims. If you were seeking to profit from temporary supply and demand imbalances, an ETP that tracks a shorter-dated futures index may be suitable. If you were looking to benefit from structural discrepancies, a longer-dated ETP may be worth exploring instead.

Figure 25: Comparing different rolling strategies



Source: WisdomTree, Bloomberg. May 2001 to December 2024. Spot = Bloomberg Commodity Spot Index (which is not an investable index), Short dated = Bloomberg Commodity Index Total Return (which is focused on contracts around the front month), Longer dated = Bloomberg Commodity Index 3 Month Forward Total Return (which is focused on contracts around the third month); Roll Optimised = Optimised Roll Commodity Total Return Index (which has the same target weights as Bloomberg Commodity Index series, but optimises positioning), this index was live in July 2013 and has a backtest to May 2001.

6.3 Understanding currency indices

Before looking at the various elements of currency ETP returns, it's important to understand how they are structured and how they are designed to perform.

As explained in chapter one, currency ETPs offer investors access to individual currency pairs and other currency indices giving exposure to multiple currencies via a single investment. They are structured as exchange-traded currencies (ETCs) and are designed to track currency indices that reflect the performance of one currency versus another, such as EUR/USD or USD/GBP, or one currency against a selection of currencies.

Currency indices achieve this by continuously buying and selling currency forward contracts (a process also known as 'rolling') to maintain a constant exposure to the underlying currencies. They are usually denominated in either US dollars, euros or pound sterling.

Currency indices, which are underpinned by currency forwards, are composed of three elements: daily spot price movement, interest rate differential and collateral yield.

Daily spot price movement

A spot price is an asset's live price. A UK holidaymaker travelling to Spain could benefit from spot price movement if the euro fell by 5% against the pound because they could buy more euros with their pounds.

Interest rate differential

An interest rate differential is simply the difference in interest rate between two currencies. For example, if the pound has an interest rate of 3% and the euro has an interest rate of 2%, there is a 1% interest rate differential.

If a UK investor takes out a loan from a German bank (denominated in euros), they can take advantage of the differential by borrowing at 2%, placing it in a UK bank to earn 3%, and making a profit of 1%.

The difference in short-term interest rates between currency pairs is typically factored into the price of currency forwards. A constant position in these forwards (achieved by rolling) would capture this interest rate differential which can boost or diminish returns.

Collateral yield

With currency forward contracts the full amount of cash is not handed over immediately – it's settled on a future date. The collateral yield is simply a return that reflects the hypothetical interest rate an investor would have received on cash that's equal to the value of the underlying currency forward contracts. This is commonly referred to as the 'risk-free rate of return'.

6.4 Understanding digital assets and cryptocurrency indices

As one of the newest asset classes, digital assets have brought new challenges for building benchmark indices and for investors to understand the underlying assets' performance.

24/7 trading

Unlike traditional financial markets, crypto markets operate 24/7, requiring continuous monitoring and updates to the cryptocurrency indices. This requires robust infrastructure and automated systems to handle data collection and processing around the clock. The cryptocurrency market is highly volatile, with prices fluctuating significantly at any time. The high volatility also adds difficulty to maintain accurate and stable index values.

Currency forwards

Currency forwards are legally binding contracts in the foreign exchange market that lock in the exchange rate for the purchase or sale of a particular currency on a future date. Unlike standardised futures contracts, they can be tailored to reflect a specific amount and delivery period.

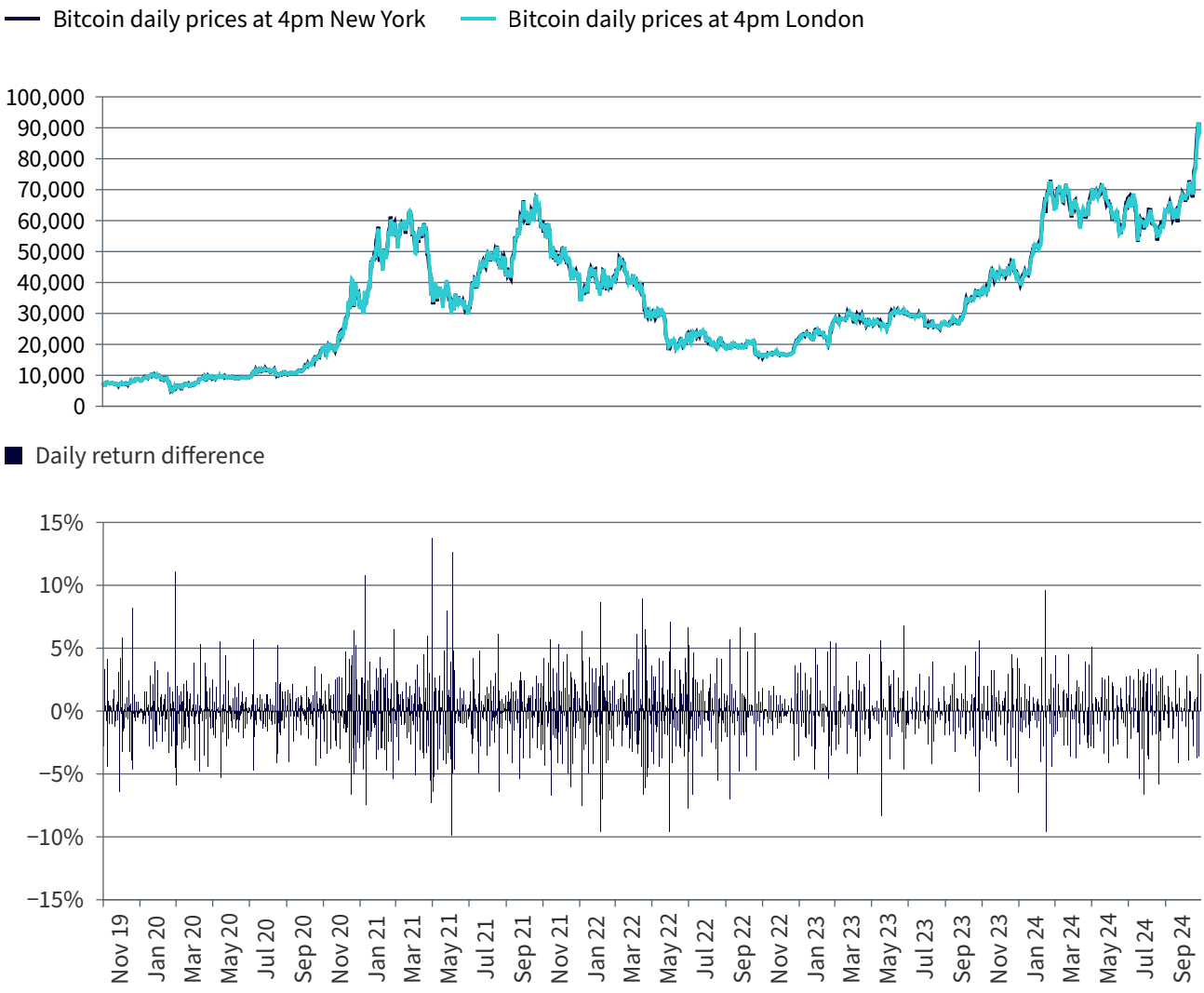
For example, a UK–based GBP investor who wants to guarantee that they will receive 1,000 US dollars in three months' time would purchase a currency forward contract with a delivery date three months in the future.

Global exchanges

Cryptocurrencies are traded on thousands of exchanges worldwide with varying levels of liquidity. To ensure the index reflects true market conditions, a cryptocurrency index requires robust calculation methodologies to select and integrate data from these exchanges.

Cryptocurrency indices typically pick a fixing time as the daily market close point to calculate the index close values. Two popular fixings are '4pm New York' and '4pm London', which are in line with the equity markets' closing time in the US and Europe. In the above bitcoin reference prices chart, the 4pm New York and 4pm London will perform very closely to each other over the long term but could see as much as +/-15% daily return differences due to the different fixings times.

Figure 26: Bitcoin daily spot prices at 4pm New York and 4pm London



Source: Bloomberg, WisdomTree, data available as of close 19 November 2024. Bitcoin daily prices at 4pm New York is the CME CF BTC-USD Reference Rate – 4pm NY Index. Bitcoin daily prices at 4pm London is the CME CF BTC-USD Reference Rate – 4pm LN Index.
Historical performance is not an indication of future performance, and any investment may go down in value.

7.

Active, passive and everything in between

In this section

7.1 Comparing product costs

7.2 Comparing investment strategies

7.3 Understanding the concept of core satellite investing

The strategies behind investment funds can be active, passive or anything in between. In the last chapter, we look at the factors you should consider when making this choice.

7.1 Comparing product costs

Passively managed ETPs are typically cheaper than fundamentally based ETPs which are themselves typically cheaper than actively managed funds, a difference that's generally reflected in the cost passed on to end investors. Ongoing charges must be disclosed by all European UCITS funds, and although not representative of the total cost of ownership, this is a good starting point for investors comparing product costs.

Below we compare the hypothetical costs associated with an actively managed fund and a passively managed ETP. Imagine £10,000 is invested in both an active fund and an ETP, neither of which generate any return. The active fund charges 2% whereas the ETP charges only 0.5% in fees. The table below shows how much money the funds would make over various time horizons.

Over a 20-year time frame, the actively managed fund has cost almost £2,500 more than the ETP in fees. This is an extreme example as neither of the funds generate any return. In reality, there will be a number of factors affecting the overall performance of a given fund and investors should consider all of them. That being said, investing in ETPs versus active funds can provide investors with significant savings even over shorter periods.

Figure 27: Cost comparison over time — active fund vs. an ETP

	1 year	3 years	5 years	10 years	20 years
Active fund (2% charge)	£9,800	£9,411.92	£9,039.21	£8,170.73	£6,676.08
ETP (0.5% charge)	£9,950	£9,850.75	£9,752.49	£9,511.10	£9,046.10

Source: WisdomTree, hypothetical example.

7.2 Comparing investment strategies

Passive strategies aim to track the market. For equities, this is usually defined as a market cap-weighted index in the relevant geography, such as the S&P 500, the FTSE 100 or the MSCI World. For commodities, it would be a diversified commodity future strategy index such as the Bloomberg Commodity Index. These strategies offer exposure to an asset or an asset class performance without any expectation of outperformance. The cost is usually kept low compared to other strategies investing in the same asset/asset class, as this is a market access strategy.

Quantitative or fundamental-based strategies, sometimes called smart-beta strategies, aim to outperform the market by using transparent, systematic investment rules that are grounded in decades-old academic research. These strategies construct portfolios based on measurable factors such as value, quality, momentum, or size and aim to harness risk premia that will lead to outperformance. These strategies tend to be slightly more expensive than passive strategies.

Active strategies, or in other words, discretionary, stock-picking strategies, areat the other end of the spectrum compared to passive strategies. Their aim is to outperform their market, and they tend to charge higher TER for that. Historically, these strategies have been criticised for their opacity and their chronic incapacity to generate outperformance that would justify their high fees. The SPIVA[22] report shows that:

+ Over the last 10 or 15-year period, only 13% of US active strategies have outperformed the S&P 500.
+ Over the last 10-year period, only 8% of European active strategies have outperformed the S&P Europe 350.

Passive investment management has its own risks.

Index distortion

Investing in a passive index fund offers the benefit of owning a broad range of assets. However, owning an index does not always guarantee diversification: indices can become particularly concentrated in one sector. In July 2007, the height of the pre-crisis boom, financial services constituted 24.5% of the FTSE 100. Over the next two years, financial services shrank to 12.5% of the FTSE, losing £30 billion in market capitalisation and contributing to a 48% decline in the FTSE for that period.

A diligent active manager may have been able to mitigate their losses by reducing their financial services exposure in a way that a passive investor could not. However, many index methodologies will cap sector and single company exposures to mitigate this risk.

22 https://www.spglobal.com/spdji/en/research-insights/spiva/

Tracking inaccuracy

ETPs attempt to replicate indices as closely as possible but they are not perfect.

In practice, there will usually be tracking difference between the benchmark and the product. For most liquid markets, these differences are limited, but tracking difference can be much more significant for individual ETPs in less liquid market segments. An ETP that significantly underperforms its benchmark may return less than an active fund.

7.3 Understanding the concept of core satellite investing

Understanding the fundamentals of asset allocation will help you understand the core satellite structure of a portfolio.

What is asset allocation?

Asset allocation refers to the process of investing your money across a variety of asset classes to achieve your objectives. Historically there were three main asset classes: stocks, bonds and cash equivalents, but these days most professional investors also allocate to commodities, cryptocurrencies and other alternative exposures.

For investors interested in steady growth over the long term, a diversified asset allocation is an ideal strategy and consistently outperforms an active stock picking approach of trying to buy low and sell high.

Core satellite portfolios

At its most basic level, core satellite investing is a strategy that combines a core of long-term investments with a selection of more specialist or shorter-term investments (the satellite exposures). These portfolios have become popular due to their low cost and flexibility whilst maintaining the potential to outperform the market. Investors can spread risk across various asset classes, sectors and strategies, and reduce the cost of constant rebalancing and maintaining a portfolio.

Core: long-term portfolio foundation

Traditional asset allocation models mainly invest in equities and fixed income to provide the core building blocks of a portfolio.

Satellite: specialist or short-term

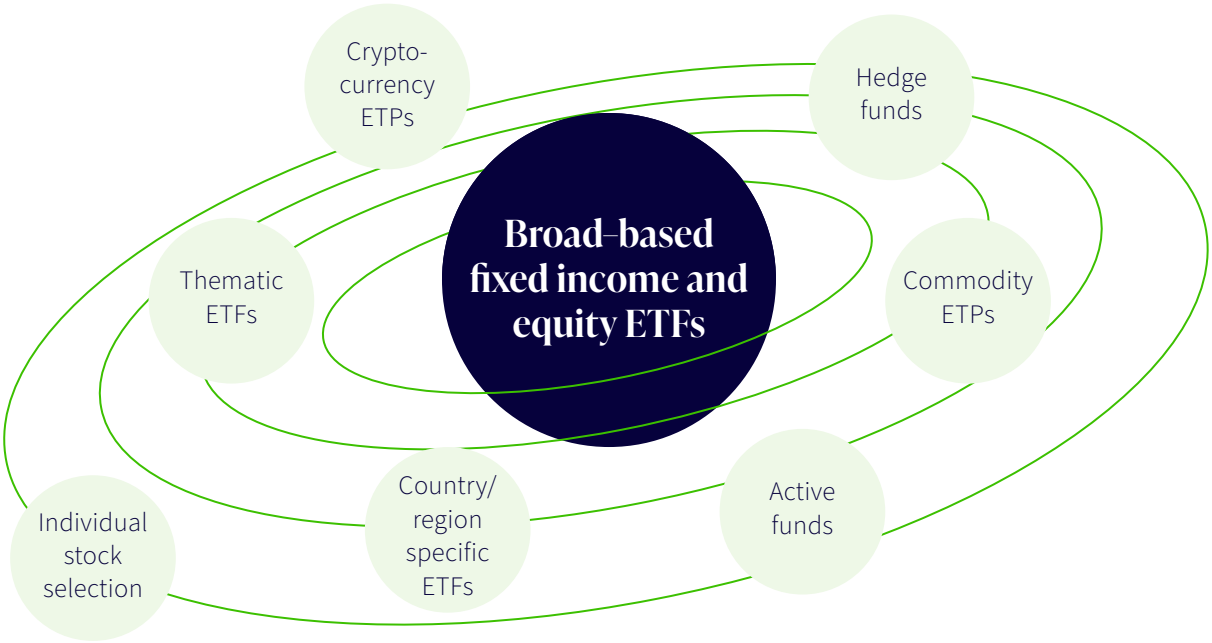
Satellite investments are used in conjunction with a core allocation and can give investors the chance to express their views, achieve personal investment objectives, or further diversify their portfolios using a range of alternative asset classes. Satellites can be passive or active investments.

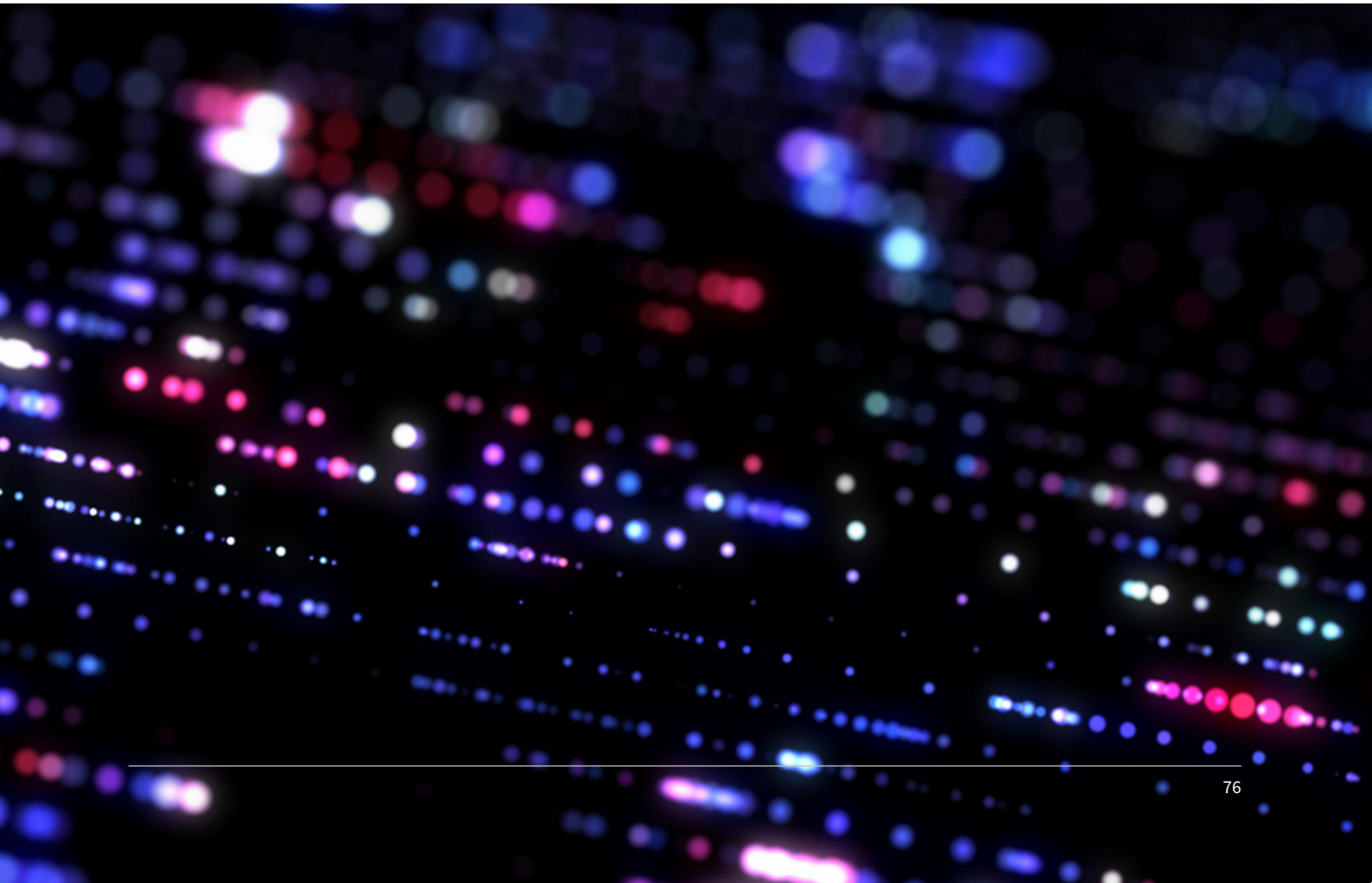
How can ETPs be used in a portfolio?

The majority of European ETPs give exposure to equities and fixed income assets in line with the traditional core model. But as ETPs can provide exposure to pretty much any asset class going, they are changing the way investors approach portfolio construction and can be used for core or satellite positions.

ETPs can be used as building blocks in an investment portfolio, making up core and/or satellite exposures to help minimise overall costs and volatility.

Figure 28: Combining strategic and tactical investments





8.

Glossary

A

Active investment

Active investment strategies aim to beat the market by hand picking assets in a portfolio rather than replicating a benchmark. A benchmark often refers to an index. The fund manager's selection process can be based on research, a strategy or individual judgement.

Allocated account

An allocated account refers to metal owned by an investor which is stored on their behalf by a custodian (usually an investment bank). Metal in an allocated account is held in a vault separate from other metal held by the custodian.

Alpha

An investment's alpha is a measure of its ability to outperform the benchmark index. Alpha is also what's meant by 'excess return'.

Arbitrage

A strategy where investors take advantage of price differences in a market. Think of these investors as bargain hunters, selling something on for more than they paid. In the context of ETPs, the arbitrage process ensures that ETP intraday prices track their underlying benchmark or asset closely.

For example, a loaf of bread costs £2 in London and £1 in Manchester. The cost to transport the bread from Manchester to London is 50p so there's an opportunity to buy bread in Manchester, transport it to London for 50p, and sell it in London for £2, making a profit of 50p.

Arbitrageur

A person or market making firm that engages in marketplace arbitrage.

Ask price

The price at which a seller is willing to sell a security, also known as an asset. This is the opposite of a bid price.

Asset allocation

The process of allocating your portfolio (money) between asset classes, sectors and/or regions. Asset allocation will depend on the goals, risk appetite and investment horizon of the portfolio manager.

Asset class

The different types of assets you can invest in, such as equities, fixed income, cash, commodities, currencies, cryptocurrencies, property, etc.

Authorised participant (AP)

APs can be investment banks or market making firms who act as middlemen between ETP issuers and investors. APs create and redeem securities directly with the issuer and buy and sell them from/to investors directly or via stock exchanges quoting bid and ask prices.

B

Backwardation

A commodity is in backwardation when the price of a distant futures contract is lower than the spot price (current price) or a nearer future. In stretches of backwardation, an investor will earn a positive roll yield by investing in commodity future strategies.

Bankruptcy

When a person or institution (known as a debtor) can't pay their debts, they face bankruptcy. Once a debtor has been declared bankrupt, they are relieved of paying back their debts.

Basis point (bp)

A basis point is one hundredth of a percentage point, so 1 basis point = 0.01%. Basis points are used to measure interest rates linked to financial products and their fees.

Benchmark

An investment fund, ETP or portfolio may aim to provide returns equal to an index. This index is that product or portfolio's benchmark, and its performance will be measured in comparison.

Bid price

The price at which a buyer is willing to buy a security, also known as an asset. The opposite of an ask price.

Bid/ask spread

This is the difference between the asking and selling price of a security. Typically spreads are quoted as a percentage, so if the bid price for ETP A is 100p and the ask price is 102p, the bid/ask spread will be 2p, or 0.02%. The most liquid (in-demand) products will have narrower spreads reflecting more buying and selling of that security by market makers.

Blockchain

A digital ledger that securely stores records across a network of computers. Each block contains data, and blocks are linked in a chronological chain. A blockchain can be centralized or decentralized.

Brent crude

One of three main crude oil benchmarks. Brent crude is sourced from the North Sea and serves as a reference price for buyers and sellers of crude oil around the world.

Broker

Brokers place buy and sell orders (trades) for investors in exchange for a fee.

Brokerage fees

Fees that brokers charge their clients to place trades.

C

Coin entitlement

The quantity of digital currency which backs one share of a physically backed crypto ETP.

Cold storage

The practice of keeping digital assets in an offline environment to protect them from unauthorised access, hacking, and other vulnerabilities associated with online storage.

Collateral

Collateral is a valuable asset that backs up the promise to repay a loan. A lender can seize collateral deposited by a borrower if they fail to repay a loan.

In the context of ETPs, collateral refers to the assets deposited by swap providers (investment banks) to secure their payment obligations to the ETP provider for the performance of an index. These terms are tied up in a swap agreement.

Collateralised

If an investment is collateralised, a borrower has deposited a valuable asset with a custodian to secure their promise to repay a loan. If that borrower defaults on their repayments, the lender is entitled to the collateral to recover any losses. In short, collateral is put aside like a form of insurance to protect investors.

Collateral yield

This is the hypothetical interest that would be earned on the cash value of an investment were it not tied up in a non-interest-bearing asset. Collateral yield is included in the performance of commodity and currency indices allowing investors to benefit from interest income in addition to price movements in the underlying assets.

Collective investment scheme

This is another term for an investment fund, the most popular types being mutual funds or ETFs. They are pooled investment vehicles which means the funds are made up of assets (money) from multiple investors. These can be actively or passively managed and offer benefits such as reduced trading fees and enhanced diversification.

Commodity

A commodity is a raw material that's traded on exchange. Commodity markets span primary products in agriculture, energy and metals which have to meet minimum standards to ensure liquid, fair markets where buyers and sellers know exactly what they're getting.

Commodity currency

Currencies of countries that depend on the export of raw materials, such as the Australian dollar, Canadian dollar, New Zealand dollar and Norwegian krone.

Compounding

(i) When the returns of an asset are reinvested to generate their own returns.

(ii) In the context of short and leveraged ETPs, the effect of the price adjustments over periods longer than a day that tend to distort expected returns. For instance, imagine a reference index starts at £100, rises by £5 on day 1, then declines by £5 on day 2. The average return is 0%. A 2x leveraged ETP tracking this index, however, would have increased to £110 on day 1, then declined to £99.52 on day 2. The two-day compound ETP return is –0.48.

Consensus mechanism

A process used in blockchain networks to achieve agreement on the state of the distributed ledger. It ensures all participants agree on the validity of transactions, enabling the secure addition of new blocks. Both Proof of Work (PoW) and Proof of Stake (PoS) are examples of consensus mechanism.

Contango

A commodity is in contango when the price of a distant futures contract is higher than the spot price (current price) or a nearer future. In stretches of contango, an investor will suffer a negative roll yield by investing in commodity future strategies.

Core and satellite investing

This investment strategy combines a core of long-term investments with a selection of more specialist or shorter-term investments (the satellite exposures). These portfolios have become popular due to their low cost and flexibility whilst maintaining the potential to outperform the market. Investors can spread risk across various asset classes, sectors and strategies, and reduce the cost of constant rebalancing and maintaining a portfolio.

Correlation

This is a statistical measure of how the prices of two securities move in relation to one another. It's often measured as a coefficient ranging between –1 and +1. A correlation of +1 means the prices of two securities move in sync. A relationship of –1 means the securities move in the same proportion but in opposite directions.

Counterparty risk

Any ETP that relies on a counterparty to achieve its objective will be exposed to counterparty risk.

An example of this is if a swap provider failed to make payments to an ETP issuer for the return of an index. To mitigate this risk, ETPs backed by swaps are usually collateralised.

Cost of carry

This refers to the cost of holding a physical commodity, such as oil or gas, and is factored into the price of futures contracts.

The cost of storing and insuring an asset is used to calculate the cost of carry alongside any interest costs associated with buying the underlying commodity for use in the future.

Creation

This is the first stage in the lifecycle of an ETP share. An AP will apply to the ETP issuer to create securities which they receive in exchange for supplying the underlying reference asset or equivalent sum in cash.

Credit rating

This is the evaluation of the creditworthiness of a financial institution or security. This analysis is undertaken by a credit rating agency. The three leading agencies are Moody's, Standard & Poor's, and Fitch.

Creditworthiness

The likelihood that a borrower can repay their debt. Creditworthiness is expressed as a credit rating.

Credit risk

Whenever there are payment obligations in an investment, there will be an element of credit risk. Credit risk describes the risk of a borrower failing to pay their debt.

Cryptocurrency

A digital currency in which transactions are verified and records maintained by a decentralized system using cryptography, rather than by a centralised authority.

Cryptography

The study and practice of secure communication, using encryption to protect data from unauthorised access and ensure confidentiality, integrity, and authenticity. It is essential for blockchain security.

Crypto exchanges

Platforms that allow customers to trade cryptocurrencies or digital currencies for other assets, such as conventional fiat money or other digital currencies. Crypto exchanges can be centralized (CEX) or decentralized (DEX).

Currency hedge

A mechanism that attempts to protect an investment from the effect of currency fluctuations which can erode your purchasing power or cause a current investment to lose value.

Currency risk

The risk of fluctuations in the exchange rate between two currencies.

For example, a UK investor buys ETP 1 which is denominated in euros. ETP 1 appreciates by 10% in a year, but the euro also rises 10% against the pound in the same period. As a result, the currency movement has completely offset any gains.

Custodian

A custodian, usually an investment bank, stores assets on behalf of investors. This could be collateral which secures the value of a loan, or assets backing a physical precious metal ETC. A few well-known custodians include HSBC, Bank of New York Mellon and JP Morgan Chase.

D

Debt security

A financial instrument where the issuer makes a promise to pay the investor a defined amount on or by a specified date (the maturity), with or without interest. Issuers can be governments and public or private companies.

Delivery

In the context of commodities, delivery is the due date that physical commodities purchased under a futures contract need to be supplied to the buyer.

Derivative

A financial contract (a type of security) whose value is based on the performance of an underlying asset.

The most common derivatives are forwards, futures, options and swaps, and they provide exposures to all kinds of assets, such as equities, fixed income or commodities.

Digital asset

Anything created and stored digitally that has or provides value. Digital assets include cryptocurrencies.

Diversification

A strategy of investing in different assets and/or asset classes to spread your risk. A diverse investment approach increases the chance that losses from one asset will be offset by gains in another.

Dividend reinvestment

This arrangement means shareholders in a company can use their dividends to buy more shares in that company rather than being paid in cash.

Domicile

Domicile refers to the country that someone treats as their real or permanent home. An individual's 'country of domicile' status may affect the taxes they need to pay in a given country.

E

Emerging market

An emerging market is a country in a phase of significant economic growth that's on track to become a developed nation. Some of the top emerging markets around the world include China, India and Brazil. Index providers often use different definitions of emerging markets when choosing constituents of an index.

Exchange-traded commodity (ETC)

An ETC provides exposure to commodity prices without the need to accept delivery of the underlying raw material. Shares in ETCs are structured as exchange-traded notes (debt securities issued by a special issuing entity) rather than equity and can be backed physically (precious metals) or synthetically (swaps).

Exchange-traded fund (ETF)

An ETF is a pooled investment vehicle that trades on exchange and aims to provide exposure to a wide range of investment strategies, from passive to active and fundamentally based approaches. ETFs in Europe are usually governed by laws regulating collective investment schemes known as UCITS. In the United States, ETFs are generally governed by the Investment Company Act 1940.

Exchange-traded note (ETN)

An ETN is a non–interest bearing debt security that tracks the performance of either a single asset or an index of equities, commodities or other assets. ETNs are usually issued either by banks in which case the investor needs to consider the credit worthiness of the issuing bank or by a special issuing entity which mitigates credit risk through posting collateral.

Special types of ETNs include ETCs or cryptocurrency ETPs.

Exchange-traded product (ETP)

ETP is the parent term for ETFs, ETCs and ETNs as they are all products which trade on exchange. ETPs are pooled investment vehicles meaning they gather funds from multiple investors to buy financial securities. They are popular for providing the same investing experience to all kinds of investors. ETPs can be active or passive or fundamentally based. Passive ETPs are designed to track the performance of an underlying benchmark index or asset. Active ETPs invest in a portfolio chosen by a manager.

ETP issuer

A company that issues exchange-traded products.

Exchange volume

The total amount or value of an asset traded on exchange in a specified period. Exchange volume is a measure of exchange activity.

Execution slippage

This is the difference between the expected price of a trade and the actual price achieved. Slippage typically happens during times of market volatility.

F

Fixed income

A debt security that makes fixed payments during its lifetime plus the principal (face value) on its maturity date. The most common fixed income investments are bonds which earn the investor interest which is also known as the bond's coupon.

Front month

Front month futures have the closest delivery date available to buy in the futures market. The expiration date of front month futures contracts will be imminent, often in the same month they are purchased.

Full replication

A physical replication method where the ETF holds all the underlying securities in the same proportion as their weighting in the index being tracked. This method is used if the underlying assets are readily available, reasonably small in number, and don't change often.

Fully funded swap

In a fully funded swap, the money investors pay to buy an ETP is transferred to the swap counterparty who uses it to obtain the relevant exposure to the underlying asset and deposit collateral equal to or greater than the investment with a third-party custodian. The ETP issuer would be entitled to that collateral in the event of a counterparty default, so they could recover losses for investors.

Fundamental-based investment

Fundamental-based or quantitative investment strategies aim to beat the market by selecting stocks based on objective measures such as value, size or momentum. The process is usually backed by decades of academic research.

Futures

A popular derivative (financial contract) where one party agrees to buy and the other party agrees to sell an asset at a set price in the future. Futures contracts are standardised, so buyers and sellers know exactly what they're getting. A future price is speculative, whereas the spot price of a commodity is the current price.

Futures index

An index which replicates the return of a continuous futures exposure, either in a single commodity or a number of different commodities.

G

Good Delivery

Good Delivery is a set of standards established by the London Bullion Market Association (LBMA) which regulates the trade of silver and gold bullion. Good Delivery rules ensure that these metals comply with a certain standard.

H

Haircut

A haircut is the discount applied to the market value of an asset used for collateral or as part of a portfolio to mitigate the risk of it losing value.

Hedge fund

An unregulated collective investment scheme that aims to generate positive returns in all market environments. Hedge funds use a variety of sophisticated and high-risk trading strategies which aren't subject to many investment restrictions. As private investment partnerships, investors must meet certain income or net worth criteria to participate in these funds.

Hedging

An advanced risk management strategy that aims to offset potential losses on one investment by taking the opposite position in a related asset. Hedging can be thought of as a form of insurance, so the impact of a loss in one investment is offset by the gain in another.

High yield bonds

Also known as junk bonds, high yield bonds have a lower credit rating than investment grade bonds so pay a higher interest rate to investors for the risk they're taking.

High yield bonds have credit ratings below BBB from Standard & Poor's and below Baa from Moody's. Bonds with credit ratings at or above this level are considered investment grade.

I

Index fund

Also known as a tracker fund, an index fund is an investment vehicle that aims to replicate the performance of a benchmark index or asset.

Index license fee

This is the fee a product issuer (such as an ETP issuer or mutual fund) pays to an index provider to use their index.

Industrial metal

Any type of base metal used for industrial purposes such as aluminum, copper, lead, nickel and zinc.

Institutional investors

Commercial organisations that pool large sums of money to invest for themselves or on behalf of other investors. Institutional investors include pension funds, hedge funds, asset managers, insurance companies and private equity firms.

Interest–bearing investments

These are investments that accrue interest and pay it to investors, such as deposit accounts and bonds.

Intermediaries

In the context of ETPs, intermediaries provide trading services for investors, financial advisers and asset managers. Intermediaries include brokers and trading platforms.

Intraday trading

Intraday trading is also known as day trading. In the context of ETPs, intraday refers to trades that take place between the hours the issuer publishes the formal NAV.

Investment fund

Another term for a collective investment scheme that pools money from multiple investors to purchase securities with a specific investment objective.

K

Key Information Document (KID)

A document which must be available for investors in PRIIPs. The KID is a short summary containing the most important facts about an investment product.

Key Investor Information Document (KIID)

A document which must be available to investors in UCITS regulated funds, including the majority of European ETFs. The KIID is a short summary containing the most important facts about a fund.

L

Leverage

This is borrowed money that's used to make investments where gains and losses are amplified.

In the context of ETPs, leverage refers to the expected return from a benchmark. For example, a 2x leveraged ETP will aim to provide a return that multiplies the daily performance of the underlying benchmark by two.

Limit order

A trade order that tells a broker the maximum price an investor is willing to buy at or the minimum they are willing to take on a sale. Limit orders mean investors don't pay more or get less than they want to for a security.

Liquidity

Liquidity refers to the tradability of an asset, whether it's a stock, bond, commodity or otherwise. A liquid asset is in demand and holds its value; it will be easy to buy and easy to sell. If a product has low liquidity, it will be hard to source or offload and its price will be more volatile.

The liquidity of an asset can be measured by how often it's bought and sold, also known as its volume. Cash is the most liquid asset while property is an example of an illiquid asset.

Listed security

A financial security that's for sale (listed) on a stock exchange; a trading venue that's open to the general public. Listed securities are approved for public offering by the regulator in a European Union member state.

London Bullion Market Association (LMBA)

An international trade association which regulates the trade of silver and gold bullion. The membership encompasses banks, dealers, fabricators, refiners, shippers and brokers.

London Metal Exchange (LME)

A physical and futures exchange in London with the world's largest market in derivatives contracts for base metals. The LME also inspects storage centres for industrial metals.

London Platinum and Palladium Market (LPPM)

The trade association which regulates platinum and palladium markets and an over-the-counter trading venue for these metals. Over-the-counter means that derivatives are agreed as custom deals between brokers and traders rather than through an exchange which offers standardised contracts. The membership encompasses banks and producers as well as ETP providers.

Long

A long position in a security means that you own it and profit if its value rises.

M

Management fee

In the world of investing, the management fee is what investors are charged by a product provider. It's also known as the management expense ratio (MER) and is expressed as a percentage or in basis points. This fee lowers the investment return for every year an investor's money remains in that fund.

In the context of ETPs, the MER is the amount charged by an ETP issuer to manage the fund.

Market makers

Firms that provide liquidity to markets by quoting bid/ask prices for a security. They buy and sell securities, and their participation helps find the balance between demand and supply by setting optimal prices.

Their profit comes from the bid/ask spread.

Market maker spread

The market maker spread is the difference between the buy (bid) and sell (ask) price they set for a security. This is how they profit on trades.

Market order

A trade order that tells a broker to place a trade at the best available price in the current market.

Mark to market

An accounting method which records an asset's value based on its current market price rather than its book cost or net asset value.

In the context of ETPs, it refers to the periodic valuation of assets and liabilities to reflect its current market price based on the latest market conditions.

Maturity

In the context of a loan or debt instrument, maturity is the date by which all the interest on that debt must be repaid plus the principal amount.

Metal entitlement

The amount of metal that each share of a physical commodity ETC is backed by.

For example, a metal entitlement of 0.1 for a Gold ETC means that each debt security of that Gold ETC is backed by and gives entitlement to 0.1 fine troy ounces of bullion.

Money market

The money market refers to trading extremely liquid, short–term debt securities, such as Treasury bills, cash and cash equivalents. Money market investments are considered very low risk and aim to give a slightly higher return than cash. They're traded by large financial institutions on decentralised money markets, and their maturities range from one day to one year.

N

Net asset value (NAV)

NAV refers to the value of a product's assets minus its liabilities.

In the context of ETFs, NAV is the value of assets held by the product whether equities, bonds, swaps, cash, minus its liabilities, such as the management or swap fee.

New York Mercantile Exchange (NYMEX)

A large commodity futures exchange owned and operated by CME Group of Chicago, the world's largest operator of financial derivatives exchanges.

Non–local currency

A currency that's not the investor's base currency.

For example, the local currency of an investor in the United Kingdom is pound sterling. All other currencies are considered non–local.

O

Ongoing charge figure (OCF)

The OCF is the annual cost of managing an investment product, expressed as a percentage. It's sometimes referred to as the total expense ratio (TER) and the costs included can vary among providers, but usually include:

+ Management expense ratio (MER)
+ Administrative costs
+ Index license fee
+ Custody fees and storage costs (for physically backed ETNs/ETCs).

Open–ended

In the context of an investment vehicle, open-ended means there's no limit on the number of shares that can be created or redeemed.

Order book

An electronic list of orders that a trading venue such as the London Stock Exchange uses to record trades, as well as the best bid and ask price for all market makers quoting a particular security. Data collected in the order book is used to match both sides of a trade to determine which orders can be completed.

Order types

Trading instructions that investors give to a broker. There are four key order types in trading: market order, limit order, stop loss and stop limit order.

P

Passive investment

Passive investment management aims to replicate their benchmark's performance as closely as possible.

Passporting

This is when a prospectus (a legal document) that's been approved by a financial regulator within the European Union can automatically be approved for use in other EU countries, avoiding a second approval process.

Physical replication

An ETP structure where the product actually holds the underlying securities it's designed to track. Physical replication can either be 'full' or 'sampling'.

Physically backed

Physically backed ETCs hold the underlying asset that the product is tracking. Precious metals are the only commodities that can be physically stored in an ETC, and these are held by a custodian to give investors an added level of security. Physically backed crypto ETPs are backed by the relevant cryptocurrency.

Platform

These are online brokers or trading platforms which host a range of different products that can be accessed by financial advisers and retail investors.

Portfolio

A collection of investments owned by an individual or institution. These can be overseen by a fund manager or product provider offering active and passive management.

Precious metal

A rare and naturally occurring metal that's high in value and well known for its use as currency, in jewellery or industrial processes.

Precious metals traded as financial securities include gold, silver, platinum, palladium, rhodium and iridium.

Packaged retail and insurance-based investment products (PRIIPs)

An investment where the amount repayable to the retail investors is subject to fluctuations because of exposure to reference values or the performance of one or more assets that are not directly purchased by the retail investors.

Price return index (PR)

An index that only tracks the price movements of the underlying assets. Price return indices ignore any income generated by an underlying asset, such as interest or dividends, meaning they won't be part of the product's return.

Primary market

This is where authorised participants deal directly with product providers, exchanging securities or cash for ETP securities through the creation or redemption process.

Private key

A secret cryptographic key held by the wallet owner, used to create digital signatures that authenticate transactions and enable the transfer of value from a digital wallet. It is essential for securing access to cryptocurrency holdings.

Prospectus

A prospectus is a legal document containing all the important facts and risks of an investment. Within the European Union, a prospectus must be provided for any security to be offered for sale to the public or listed on certain stock exchanges, and it has to be approved by the financial regulator in an EU country.

Proof of Stake

A blockchain consensus mechanism for processing transactions and creating new blocks. Validators are chosen based on the number of staked coins they have.

Proof of Work

A blockchain consensus mechanism where miners solve complex puzzles to validate transactions and create new blocks. The first miner to solve the puzzle adds a new block to the blockchain and is rewarded with cryptocurrency.

R

Rebalancing

This is the process when an index updates its constituents and/or the weighting that each stock represents within it.

For example, the FTSE 100 comprises the 100 largest companies by market cap (value) listed on the London Stock Exchange. It rebalances quarterly, so if a company makes it into the top 90 companies in the FTSE 100, it would be added to the index at the next rebalancing. The companies with the smallest market cap on the LSE would be removed to keep the number of constituents constant at 100.

In the context of a portfolio, rebalancing is the process of buying and selling assets to return the portfolio to its strategic asset allocation.

Rebalancing cost

In the context of physical ETFs, this is the cost of buying and selling securities in order to realign the product's holdings with its underlying benchmark.

Redemption

The process when an AP returns ETP securities to the issuer who cancels them in exchange for the underlying assets (in the case of physical ETPs) or cash equivalent to the value of the securities being returned (in the case of synthetic ETPs).

Reference basket

In an unfunded swap, a reference basket of assets can be purchased to provide a return that the ETP provider will exchange for the return of the actual securities the product is designed to track.

Register

This is a list of holders of a financial instrument which may include shareholders or members. Every company is required by law to keep a register of its members.

Repurchase agreement (repo)

A repo agreement is where one party agrees to sell an asset to repurchase in the future at a specified time and price. The seller will generally pay an interest rate, the 'repo rate,' when repurchasing the assets.

Reset (swap)

In the context of swaps, a reset is when the amount owed under a swap is settled to reduce it to zero.

Retail investors

Individual, non–professional investors who buy and sell securities through a personal brokerage account.

Reverse repo

The opposite of a repo agreement, a reverse repo is made from the perspective of the party purchasing the asset and selling it at a set date and price in the future.

Risk spread

This is the risk market makers take when they buy an asset because its price could fall before they sell it.

Roll yield

This is a source of return in commodity ETFs. The roll yield return can either be positive or negative depending on the shape of the futures curve. As the future approaches the spot, in an upward sloping curve (contango), the futures price declines (assuming no changes in the shape of the curve). Alternatively, with a downward sloping curve (backwardation) the futures price increases (assuming no changes in the shape of the curve).

Rolling

The process of selling a futures contract with an imminent expiry date and reinvesting the proceeds in another future whose expiry date is further out to maintain a continuous exposure.

S

Sampling replication

This is the backing a physical ETF adopts when it holds a selection of securities from the underlying index it tracks rather than all of them, which would be 'full replication.'

Secondary market

The secondary market is what most people mean when they talk about financial markets. In the context of ETPs, this is where shares are traded between professional investors and market makers. Retail investors would place trades in secondary markets through their broker or an online account.

Securities lending

This is where the owner of an asset lends it to a borrower in exchange for a fee. The borrower may have to post collateral to protect their obligations under the loan. While the fee from securities lending can reduce the cost of an ETP, it creates counterparty risk because you might lose the loaned securities if the borrower can't make the repayments. In such an event, the product could be left holding assets unrelated to those it's meant to track.

Short

A short position in a security means that you have sold a borrowed position with the expectation that it will fall in value.

A short ETP is a product which gives an investor -1 times the (daily) performance of the security.

Special purpose vehicle (SPV)

A legal entity created for a specific purpose that's completely separate from the organisation that set it up. SPVs are used by a parent company to ringfence financial risk.

Spot price

The spot price is the current market price at which a security, such as a commodity, or currency, can be bought or sold for immediate delivery.

Spot return

In the context of ETCs, these are movements in the spot price of that commodity.

Staking

A feature in proof-of-stake blockchains where cryptocurrency holders can earn a reward by delegating or 'staking' their cryptocurrency to secure the blockchain network and participate in the validation of transactions.

Standard deviation

This is a measure of the average dispersion of a dataset in relation to the average return. In the context of financial markets, it's a mathematical measure of an investment's volatility.

Stock

A stock, also known as equity, is a financial security that represents company ownership and a right to a slice of their profits. Although 'stock' and 'share' get used interchangeably, officially shares refer to units of ownership within one company whereas stock can indicate ownership of one or multiple companies.

Subindex

This is a specialised version of a more general index. It will specialise in a certain component of the main index, whether it tracks the performance of just one constituent or uses a different currency, geography or investment methodology.

Swap

One of the most common derivative contracts where two parties swap the return of one investment for another, or alternatively, where one party pays a fee for the return of a particular investment.

Swap fee

This is the fee paid to a swap counterparty for the return of an investment or benchmark.

Swap provider

This is the swap counterparty which provides the swap.

In the context of ETPs, swap counterparties are usually investment banks.

Swap value

Value of a financial contract between two parties where the value is linked to price fluctuations in an underlying asset.

Synthetic replication

An ETP structure where the product doesn't hold the underlying securities it is designed to track but instead enters into a swap agreement with a counterparty who agrees to provide the benchmark return in exchange for a fee.

T

Total return index (TR)

An index that calculates the total return of the underlying securities it tracks. This includes cash payments such as dividends and interest, plus any gains or losses from a change in the market value of the underlying securities.

Total cost of ownership

This is the total cost owning an investment, comprising management, trading and tax costs.

It's a more holistic measure of an ETP's costs because it includes TER, tracking difference, bid/ask spread, and any other fees.

Tracking difference

One of the most common methods for defining how well an ETP tracks its benchmark, this is the difference between a product's return and that of its benchmark over a specific period. Tracking difference is a measure of under/overperformance.

Tracking error

The other most common method for defining how well an ETP tracks its benchmark, this is the volatility of the difference in returns between an ETP and its benchmark. Tracking error is a measure of the consistency of performance of an ETP relative to its benchmark.

Trustee

A trustee is an independent entity which holds the rights over all investor assets in custody for the benefit of the investors.

U

Undertakings for Collective Investment in Transferable Securities (UCITS)

A class of highly regulated investment products. UCITS rules apply to investment schemes throughout the European Union. ETPs that are not regulated by UCITS, such as ETCs, can still be UCITS eligible, so could be held as an investment by a UCITS ETF.

UK reporting fund status

A tax status for ETPs based offshore such as in Jersey, Dublin or Luxembourg. This ensures that any gains from them will be taxed as capital gains, not as income.

Unallocated account

In the context of metal storage, an unallocated account is where metal doesn't belong to a particular client. Instead, the client's entitlement is backed by the general stock of metal held by that custodian.

Uncollateralised

This describes an ETN that isn't backed by assets. In the event that the issuer of the ETN can't pay the return it promises, investors would be left with a claim as an unsecured creditor against the issuer.

Underlying

In the context of ETPs, underlying refers to the asset or benchmark that the ETP is designed to replicate. An underlying asset usually means the product is tracking the performance of a single product, whereas benchmark usually describes an index which is a collection of securities from a given asset class.

Underlying spread

This is the cost of buying the underlying assets needed to create the physically backed ETP.

Unfunded swap

This type of swap is where cash isn't transferred up front to the swap counterparty on the swap's creation. An investor's cash will instead be retained by the ETP and invested for cash management purposes, such as in a portfolio of US Treasury bills. Over time, the issuer pays a small portion of the ETP's performance to the counterparty for access to the underlying benchmark or asset.

V

Volatility

In finance, volatility is a mathematical measure of price fluctuation in an asset or market and refers to times of uncertainty which lead to major short-term price moves.

Volatility can be measured using standard deviation.

Volatility is also an equity risk factor which is a driver of return for stocks. Many ETPs are based on factor investing strategies.

Volatility index

This is an index designed to measure the market's expectations of future volatility in equities. Popular examples include the Chicago Board Options Exchange's CBOE Volatility Index (VIX) and EURO STOXX 50 Volatility Index (IVSTOXX).

W

West Texas Intermediate (WTI)

One of three main crude oil benchmarks. WTI is a classification of crude oil that's produced in Texas and southern Oklahoma and is the reference price for buyers of US crude oil.

Withholding tax

Tax that is paid directly to the government rather than being part of income that's paid to an individual or entity.

In the context of securities, withholding tax often applies to dividends and interest. The individual responsible for withholding tax is called the 'withholding agent'.

Rates for withholding tax vary and are usually governed by the tax laws where the payment is made. They are also influenced by the agreements between jurisdictions (double taxation agreements).

Y

Yield

This is the return on investment or income you receive for holding a financial security. Yield can come in the form of interest or dividends received from an ETP.

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