



# ETPedia

The educational guide to Exchange Traded Products (ETPs)

The intelligent alternative



ETF Securities believes investors should always understand and fully appreciate the risks involved in their investments. In light of this, we have produced the following guide which aims to provide investors with an unbiased reference to Exchange Traded Products.

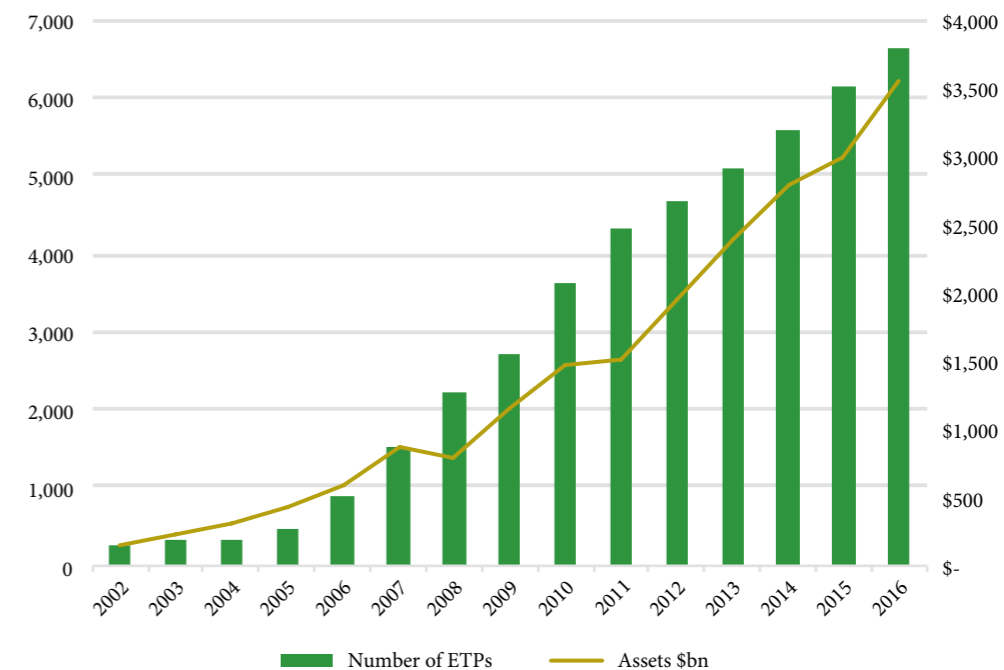
The guide seeks to educate investors on the basics of Exchange Traded Products, covering everything from product types to the outlook for the industry as a whole. We hope you find this guide of value and interest.

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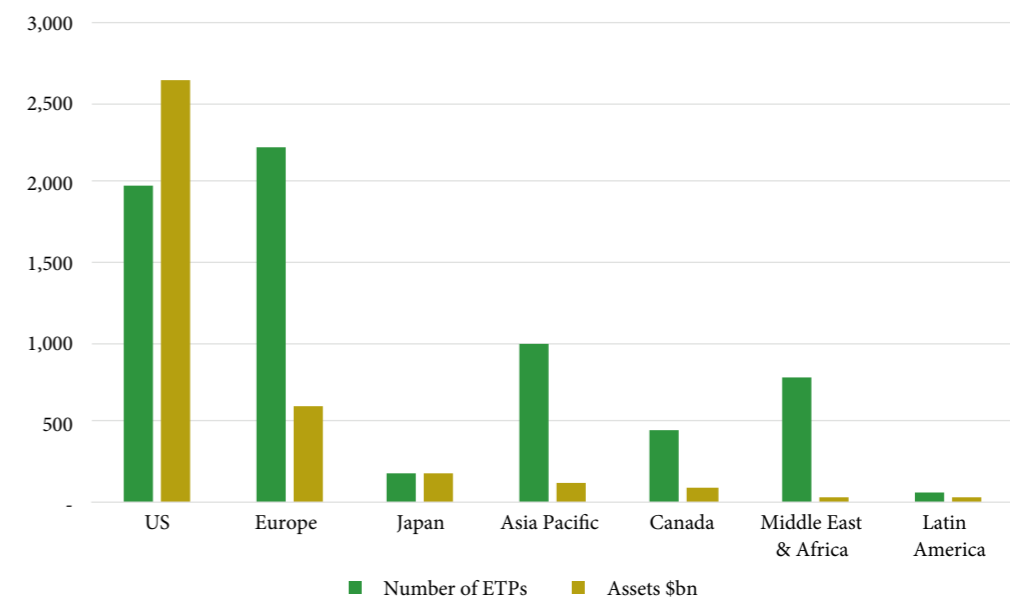
## The ETP industry at a glance

<p>First Exchange Traded Product launched in 1993</p>	<p>Now more than US\$3.7 trillion invested in ETPs worldwide<sup>1</sup></p>
<p>Expected industry growth to at least US\$ 6 trn by 2020<sup>2</sup></p>	<p>ETPs can be bought and sold whenever the stock exchanges are open as prices are quoted throughout the day</p>
<p>ETPs are similar to mutual funds, but can be traded intra-day</p>	<p>ETPs are usually eligible for SIPPs and ISAs</p>
<p>ETPs source liquidity from their underlying assets</p>	<p>Short &amp; Leveraged ETPs do not require direct borrowing, options trading or the maintenance of margin accounts</p>

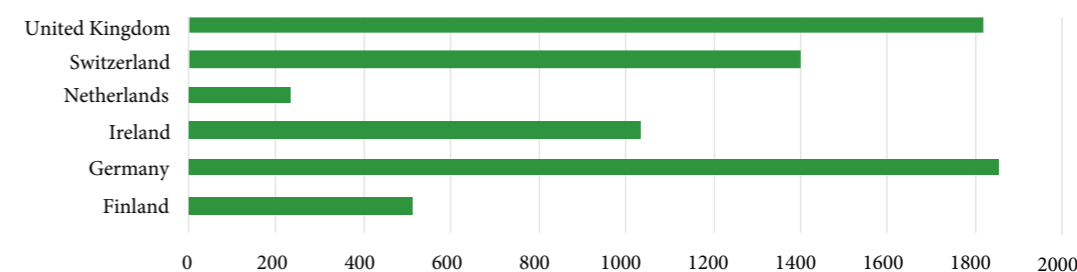
Global ETP & asset growth



ETP assets by region



Total ETP listings in Europe



<sup>1</sup> ETFGI, Global ETF and ETP Industry Insights (January 2017).  
<sup>2</sup> EY, Global ETF Survey (October 2016).

Source: ETFGI Global ETF and ETP Industry Insights (December 2016).

# 01 Introduction to ETPs

## Active and passive investment

There are two investment methodologies for a fund manager: active and passive.

Active fund management	Passive fund management
The active fund manager makes investments in selected assets (whether stocks, bonds, commodities, etc.) with the goal of beating the market (usually a benchmark, like the FTSE 100, DAX 30, IBEX 35, FTSE MIB).	A passively managed fund or investment does not seek to beat the market. Instead, the passive investor tries to replicate the benchmark performance as accurately as possible.

Active managers aim to outperform their benchmark. Passive managers aim to replicate or 'track' their benchmark as accurately as possible. For investors seeking consistent performance, passive investment products held over time may be the more suitable option.

The majority of ETPs are passive investments, since their aim is to track a benchmark or asset.

## What is an ETP?

An Exchange Traded Product (ETP) is a financial instrument traded on a stock exchange, like shares. ETPs provide a cost-efficient and secure way to gain diversification in an investment portfolio by gaining exposure to a benchmark or an asset class. They are passive investments, with generally lower fees than active and index mutual funds, making ETPs a simple way for investors to gain exposure to a wide range of assets.

Originally, ETPs combined the cost-efficient, benchmark replication strategy of equity index funds with the listed, intra-day tradability of shares. As the market has matured, ETPs have expanded to cover exposure to an increasing number of asset classes. Now, along with providing equity benchmark replication, ETPs also offer investors the ability to diversify their portfolio by providing exposure to assets previously difficult to access.

In Europe, ETPs are typically divided into three categories:

### Exchange Traded Funds (ETFs)

Structured as funds

Commonly governed by the UCITS framework in the European Union which provides a number of important safeguards for investors

### Exchange Traded Commodities & Currencies (ETCs)

Issued as debt securities

Are not restricted by UCITS diversification requirements and can therefore provide exposures to individual commodities and currency pairs as well as diversified baskets

### Exchange Traded Notes (ETNs)

Generally issued by banks

Usually entirely reliant on the creditworthiness of the issuing entity

## Characteristics of ETPs

Characteristic	Benefit
Passive investment	<b>Cost-effective</b> and <b>transparent</b> way of gaining exposure to a benchmark or asset as management fees are generally lower than active and index mutual funds
Tracks an underlying	Aims to provide the same return as an underlying benchmark or asset, offering a <b>diversified</b> investment in a single transaction
Open-ended	Shares can be created as necessary to meet demand
Listed on exchange	Investment performance is <b>accessible</b> intraday through the provision of live prices
Trades like shares	As <b>simple</b> to buy and sell as shares are any time the market is open
Liquid asset	<b>Liquid</b> asset that is supported by pool of authorised participants and market makers <sup>3</sup>

ETPs are designed to replicate the return of an underlying benchmark or asset, with the easy access and tradability of a share. Investors can benefit from the broad diversification of an equity benchmark, gaining exposure to hundreds or thousands of individual securities in a single transaction. Additionally, the wide range of asset classes covered by ETPs opens up more exotic investment areas which historically could only be accessed by institutional investors (such as individual commodities or emerging markets). ETPs generally do all this with a lower fee than actively managed funds and therefore compete with traditional index funds on cost.

<sup>3</sup> For more information, see page 33-34 and page 40.

## Why use an ETP?

### 01 Flexible

ETPs can provide access to an entire index, or alternative asset class with a single trade

### 02 Accessible

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

### 03 Cost-effective

ETPs provide a cost-effective way to gain diversification through a benchmark or exposure to assets previously difficult to access

### 04 Transparent

Unlike other investment vehicles, ETP constituents are published on a daily basis - this transparency makes it easier for the investor to see exactly what they own

### 05 Simple

ETPs are listed and trade in a similar way as shares through the same brokers and platforms

## The types of ETP

### Exchange Traded Funds (ETFs)

An ETF is an investment fund that trades on a stock exchange as a single security. It is designed to track an underlying benchmark. Since the first ETF launched in 1993, the range and variety of ETFs have drastically increased. Some examples of the types of exposure ETFs can now provide are outlined below.

#### Examples of asset types

Equity	Fixed income	Money market	Alternatives	Commodities
Global	Government	EONIA	Private equity	Diversified indices
Sectors	Corporate	SONIA	Hedge funds	
Single country	Emerging markets	Federal Reserve funds	Property	

In the European Union, most ETFs are governed by laws regulating collective investment schemes, known as UCITS<sup>4</sup>. UCITS provide a number of important safeguards for investors:

- **Segregated assets:** to minimise risk to investors in the event of bankruptcy by the ETP provider.
- **Increased transparency:** requires that certain information is made available to investors.
- **Diversification limits:** to protect investments becoming concentrated in a single asset.

These safeguards have contributed to the popularity of ETFs among both investors and providers.

#### Money market instruments

Extremely liquid short-term debts and securities (such as Treasury Bills) traded by large financial institutions on decentralised 'money markets'. Maturities range from one day to one year.

<sup>4</sup>Undertakings for Collective Investment in Transferable Securities (UCITS). For further information on UCITS see page 29.

## Exchange Traded Commodities (ETCs)

ETCs are debt securities that pay no interest. They are designed to give exposure to an individual commodity or a basket of commodities.

### Examples of asset types

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					

### Separate Purpose Vehicle (SPV)

A legal entity created for the sole purpose of carrying out a particular function e.g. facilitation of a financial arrangement or creation of a financial instrument.

### Derivatives

A tradeable security which takes the form of a contract between two or more parties, with its value derived from price fluctuations in one or more underlying assets.

Since UCITS mandate a minimum level of diversification for collective investment vehicles and restrict the asset types that can be held, product providers needed an alternative structure to provide investors access to individual commodities. In Europe, the solution was to use a debt security issued by a special purpose vehicle (SPV) with segregated assets:

- **Debt structure:** means ETCs are subject to different regulatory treatment to ETFs and are not restricted by the UCITS diversification requirements. This allows them to offer investors exposure to a single or small number of commodities.
- **SPV:** being issued by an SPV means the product's assets are segregated from the product provider and could not be used to discharge the product provider's liabilities if it were to go bankrupt.
- **Collateralised:** ETCs are often backed by either the physical asset or a derivative that gives exposure to an asset. Obligations under a derivative contract in an ETC are usually collateralised.

The ETC structure has also been used to offer investors access to currencies, whether as individual currency pairs (leveraged and unleveraged) or a currency basket.

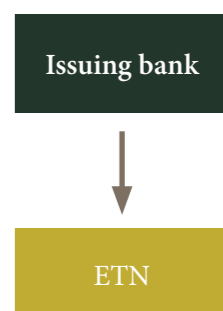
## Exchange Traded Notes (ETNs)

Like ETCs, ETNs are non-interest bearing debt securities that are designed to track the return of an underlying benchmark or asset. However, while ETCs are issued by SPVs with segregated assets, ETNs are generally issued by banks, hold no assets and are not collateralised. Although their yield references an underlying benchmark or asset, ETNs are similar to unsecured, listed bonds.

As such, ETNs are entirely reliant on the creditworthiness of the issuing entity. A change in that creditworthiness might negatively impact the value of the ETN, irrespective of the performance of the underlying benchmark or asset. In extreme circumstances, default by the issuer would leave the investor to claim as an unsecured creditor against the issuing entity.

The primary appeal of ETNs is that they guarantee exposure to a benchmark or an asset's return (minus fees) even when the underlying markets or sectors suffer from liquidity shortages. The return is guaranteed by the issuing entity and not reliant on the access (direct or via a directive) to the underlying assets.

It should be noted that since ETNs hold no assets and are generally not collateralised, they operate very differently to ETFs and ETCs. **As such, much of what is said about ETPs in this guide only applies to ETFs and ETCs and not ETNs.**



### ETPs at a glance

	ETF	ETC	ETN
<b>Security type</b>	Collective investment vehicle	Debt security	Debt security
<b>Governed by UCITS</b>	Yes	No	No
<b>Issuer credit risk</b>	Limited*	Limited	Yes
<b>Eligible by UCITS</b>	Yes	Yes	Yes

\*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.

## ETPs vs. other passive investment vehicles

Investment vehicles come in a number of forms in the UK, of which ETPs are one. Understanding the differences between the vehicles will help an investor to determine which is the most suitable for their needs.

ETP	Investment Trust	Open-Ended Investment Company (OEIC)	Unit Trust
(including ETFs, ETCs, and ETNs)	<p>Public listed companies that raise money by selling a fixed number of shares to investors. This money is pooled to make investments. The trust is managed by a professional fund manager.</p> <p>Since they are listed on a stock exchange, they can be traded throughout the day, just like an ETP or listed company. Investment trusts are closed-ended: they have a fixed number of shares. The value of each share will change depending on supply and demand, as well as the underlying net asset value (NAV). Therefore, the price of an investment trust can trade away from its NAV.</p>	<p>A company established to pool investors' money and make investments on their behalf. Like an investment trust, OEICs issue shares, but they differ in one important way; they are not listed nor tradable on the stock exchange.</p> <p>An OEIC is open-ended: shares can be created or redeemed according to demand. This means the value of each share is directly related to the NAV of the OEIC.</p>	<p>Very similar to an OEIC, a collective investment vehicle that pools money to make investments. A unit trust is also open-ended, and as such the value of each unit will be directly related to the NAV of the trust.</p> <p>The main difference between unit trusts and OEICs is that a unit trust is constituted as a trust and not as a company. Thus, instead of issuing shares, the trust issues units instead.</p>

### Summary

	ETP	Investment Trust	OEIC	Unit Trust
Legal structure	Issues equity or debt security	Issues equity	Issues equity	Trust
Open or closed-ended	Open	Closed	Open	Open
Pricing	Remains very close to NAV through arbitrage	Indirectly linked to NAV, driven by demand	Directly linked to NAV	Directly linked to NAV
Bid / ask spread	Bid / ask spread applies	Bid / ask spread applies	No bid / ask spread; single price	Bid / ask spread applies
Trading	During market hours at quoted prices	During market hours at quoted prices	At most, once a day	At most, once a day
Access	On-exchange, through brokers	On-exchange, through brokers	Directly with fund manager	Directly with fund manager
Investment method	Passive (small number of active)	Active (small number of passive)	Active or passive	Active or passive

## Short and leveraged ETPs

An investor can gain both short and leveraged exposure to a variety of different asset classes through tactical use of short and leveraged ETPs.

Unlike traditional short and leveraged positions in shares, these positions do not involve borrowing but use derivatives to deliver their returns. Furthermore, because ETPs are usually structured as shares or debt securities, losses cannot exceed the initial amount invested.

Long position	Short position	Leveraged position
<p><b>A position that profits if an asset's value rises.</b></p> <p>For example, an investor buys a company's shares. If the shares rise in value, they can be sold for profit.</p>	<p><b>A position that profits if an asset's value falls.</b></p> <p>For example, an investor borrows shares from a broker to sell, which eventually must be returned. If the shares fall in value after being sold, the investor can buy them back, in order to return them, for less than the amount received from their sale.</p>	<p><b>A position that uses financial instruments or borrowing money to increase the potential return of an investment. Both short and long positions can be leveraged.</b></p> <p>For example, an investor invests £500 in a company's shares: £250 from their own account and £250 borrowed interest-free from a broker.</p> <p>If those shares increase by 20%, the investor has £600. Returning the borrowed £250 leaves the investor with £350: a gain of £100. Investing only with the investor's own money would have yielded only £50 (a gain of 20% from £250 to £300).</p> <p>If those shares decrease by 20%, the investor has £400. Returning the borrowed £250 leaves the investor with £150: a loss of £100. Investing only with the investor's own money would have yielded a loss of £50.</p>

## Compounding and volatility

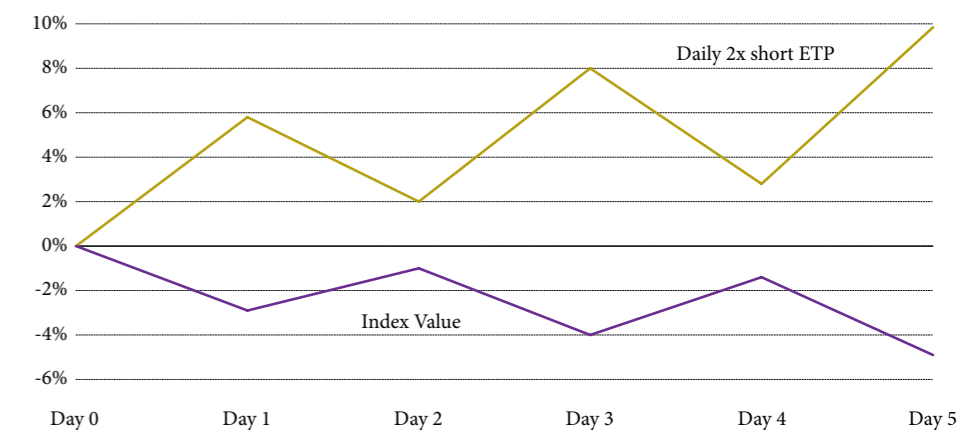
Short and leveraged ETPs generate their offered return for a stated period (e.g. daily or monthly) only. If you hold short and leveraged ETPs for longer periods, compounding and volatility can distort the expected return. This is most noticeable in a volatile market.

To illustrate this, the example to the right shows £100 invested in a daily 2x (leveraged) short ETP tracking a volatile index. After 5 days the index has declined 5%, so the investor might expect the value of the ETP to have increased by 10%. However, let's consider the performance of the ETP and the underlying index for each stated period. We are using a daily compounding ETP in this example so we will consider the value of the ETP and the index at the end of each day.

## Short and leveraged compounding - a numerical example

Day	Index value	Daily variation	2x short ETP value
0	100		100
1	97.10	-2.9%	105.80
2	98.94	1.9%	101.78
3	95.98	-3.0%	107.89
4	98.47	2.6%	102.28
5	95.00	-3.5%	109.48
Performance	-5.00%		9.48%

Source: ETF Securities, hypothetical example.



Source: ETF Securities, hypothetical example.

By the end of day 1 the index value has declined by 2.9% to 97.10. The 2x short factor is applied to the daily index movement to give the corresponding value of the ETP. In this example the 2x daily short ETP will increase in value by 5.8% to 105.80 (2 x 2.9% = 5.8%). During day 2 the index value increases by 1.9%, rising from 97.10 to 98.94, and the ETP value declines by 3.8% (2 x 1.9% = 3.8%), falling from 105.80 to 101.78. The 2x short factor is applied for the index movements of each day, and then re-applied for the movements of the next day and so on – an example of a compounding ETP. By the end of day 5 the value of the ETP has increased by 9.48%, even though the index has declined by 5%. The 5 day performance of the index should not be multiplied by -2 as a means of estimating the 2x short ETP return. Due to the potential for volatility of any exposure, short and / or leveraged ETPs should be actively monitored.

## Currency & currency hedged ETPs

Investors often worry whether the value of their investments will fall but rarely consider the impact of a rise or fall in exchange rates.

International investors that allocate funds to assets denominated in a currency other than their own are exposed to fluctuations in exchange rates, or currency risk. Currency risk is often overlooked but can have a significant impact on returns and should be a central consideration when investing in any foreign asset. Unless intended, leaving currency risk unmanaged causes investments to be subject to movements and volatility in the underlying relevant exchange rate.

### Currency impact on equity returns

Currency fluctuations can assist or negate the gains from an underlying asset for a foreign investor. As can be seen in the table, a US investor in US equities would have received a positive return of 9.36% over the year to December 2016. As a result of the Euro depreciating 14.6% over the period against the US Dollar, a European investor would have experienced a 23.96% for the same equity investment.

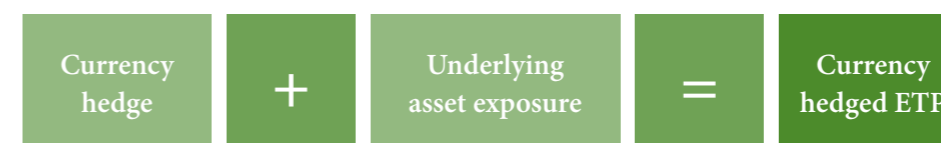
	US equities (MSCI US)	Local USD returns	EUR/USD	Currency returns (unhedged)	Total return
31 Dec 2016	2,261	2.79%	1.0456	1.36%	4.15%
30 Nov	2,199	3.36%	1.0599	3.38%	6.74%
31 Oct	2,126	-1.96%	1.0963	2.45%	0.49%
30 Sep	2,168	-0.12%	1.1235	-0.69%	-0.81%
31 Aug	2,171	-0.12%	1.1158	0.14%	0.02%
31 Jul	2,174	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 2016	1,940	-5.94%	1.0831	11.08%	5.14%
<b>Total</b>		<b>9.36%</b>		<b>14.60%</b>	<b>23.96%</b>

Source: Bloomberg, ETF Securities (January 2016 - December 2016).

Even investments available in an investor's home market can be subject to currency fluctuations if those assets are denominated in a foreign currency (e.g. commodities are typically priced in US Dollars).

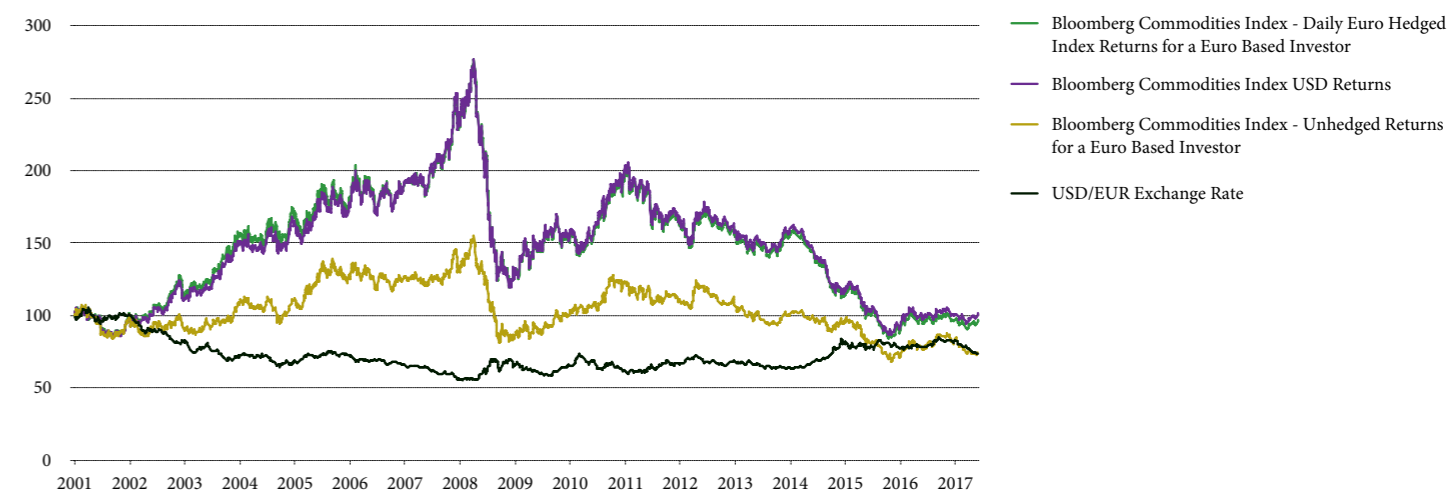
A currency hedge can be used to mitigate the impact of currency fluctuations on foreign asset returns. Historically, such strategies required significant expertise and infrastructure to execute meaning they could only be implemented by institutional investors. However, a currency hedged ETP not only provides exposure to the underlying asset but also includes an inbuilt currency hedge. This allows investors to focus on assessing the underlying asset based on its fundamentals without having to worry about the currency risk.

### Currency hedged ETP equation



An ETP can implement a currency hedge in a number of ways. The most straightforward being for the ETP to track an index which itself incorporates a currency hedge. For instance, the Bloomberg family of commodity indices provide a number of currency hedged equivalent versions, calculated by applying a daily currency hedge to the index. Therefore, an ETP tracking one of these currency hedged indices will be 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 vs. unhedged commodity returns for a Euro-based investor



Source: Bloomberg, Daily data, (2001 - 2017).

Currency hedges are rebalanced periodically, typically on a daily or monthly basis. The more frequent the rebalancing, the more closely the ETP correlates with the price movement of the underlying benchmark.

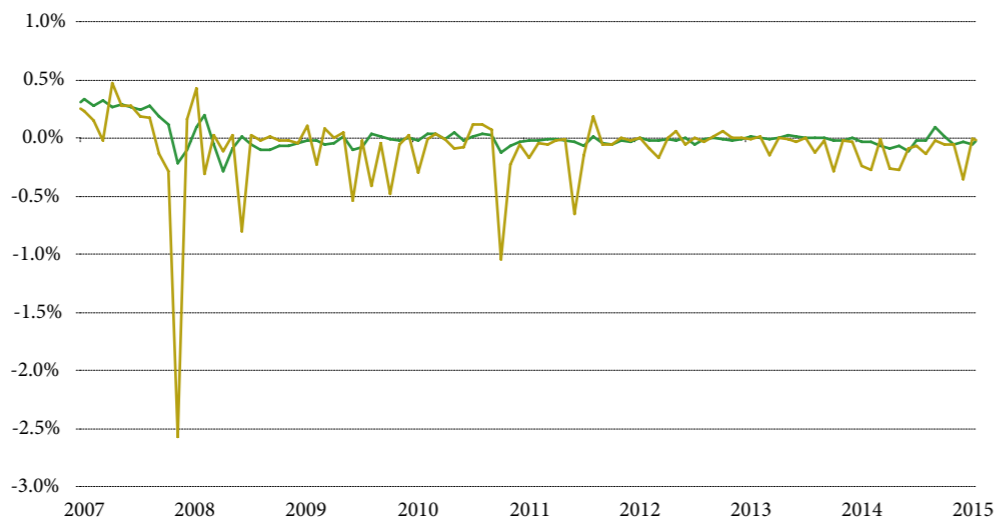
Over the last 7 years, the tracking difference between the Euro daily hedged version of the Bloomberg Commodity Index and the main USD-denominated index was far smaller than the monthly hedged alternative (particularly during the turbulent currency conditions of November 2008).

For more information on tracking difference, please read the 'Tracking error and tracking difference' section on page 42.

### Tracking difference of daily vs. monthly hedged commodity indices

— Tracking Error of Daily Hedged  
 — Tracking Error of Monthly Hedged

\*Difference between Bloomberg Daily and Monthly EUR Hedged All Commodities Monthly Index Returns and Bloomberg Commodities Monthly Index US dollar returns.



Source: Bloomberg, monthly data (November 2007 - November 2015).

### Currency ETPs

Currency ETPs differ to currency hedged ETPs in that they offer exposure to movements of a particular currency pair (or basket of currency pairs) as opposed to providing access to an underlying asset with an inbuilt currency hedge. Currency ETPs offer investors access to the largest financial market globally without the need to utilise sophisticated derivatives. Using currency ETPs investors can express strategic views on foreign exchange markets, hedge currency risk or trade tactically around macroeconomic events.

The 4 ‘major’ traded FX currency pairs are:

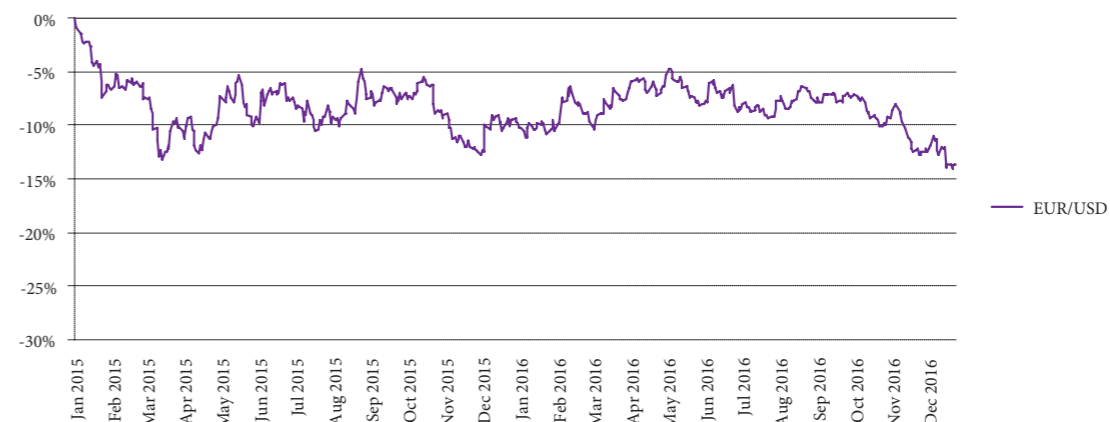
-  EUR/USD (Euro/US Dollar) – “Euro”
-  USD/JPY (US Dollar/Japanese yen) – “Gopher”
-  GBP/USD (Pound Sterling/US Dollar) - “Cable”
-  USD/CHF (US Dollar/Swiss franc) – “Swissie”

The 3 less popular pairs are:

-  AUD/USD (Australian dollar/US Dollar) – “Aussie”
-  USD/CAD (US Dollar/Canadian dollar) – “Loonie”
-  NZD/USD (New Zealand dollar/US Dollar) – “Kiwi”

### Currency ETPs as an asset class: EUR/USD returns from January 2015 - December 2016

Currency ETPs can help protect against currency depreciation. A falling currency makes foreign assets more expensive, and by using a currency ETP, an investor can preserve the purchasing power of their currency. A long USD short EUR ETP would have allowed an investor looking to purchase foreign assets to preserve the value of their Euro funds while the investment decision is being made. Conversely, if the strong US Dollar rally were to reverse in the future, a short USD long EUR ETP would allow them to preserve the value of the foreign assets they already hold in the portfolio.



Source: ETF Securities (January 2015 - December 2016).

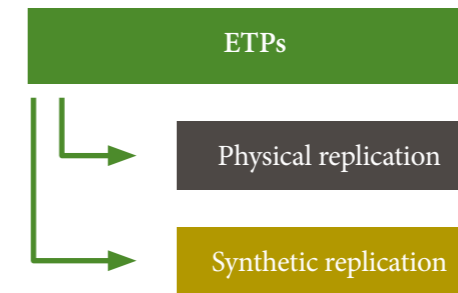
## 02 ETP structure

For an investor to make an informed investment decision, it is important to understand and consider the different investment vehicles available in the market. In this chapter we look to educate investors on the structures currently used within the Exchange Traded universe.

### Replication methods

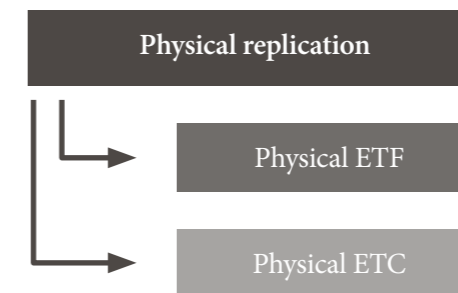
As a passive investment, ETPs replicate the return of an underlying benchmark or asset. ETPs can be structured in two ways to achieve this: physically or synthetically.

When considering an investment in an ETP, the structure is an important consideration. A product's structure impacts its risks, its costs and how accurately it tracks its underlying.



### Physical replication

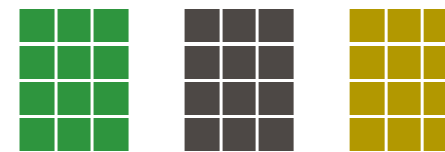
Physical replication is where the ETP buys the underlying assets it is designed to track. Physical replication differs slightly between products that track a benchmark (usually ETFs) or a commodity (usually ETCs).



### Physically backed ETFs

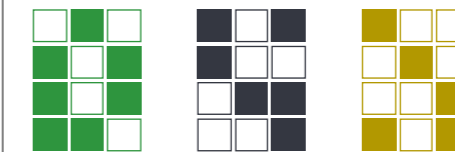
A physically replicating ETF either owns all, or a sample, of the assets that comprise the underlying benchmark. The two asset classes most often physically replicated in an ETF are equities and fixed income. These types of ETF are known as, respectively, 'full replication' and 'sampling replication'.

#### Full replication



All the underlying assets are held in the same proportion as their weighting in the index being replicated. This method is employed if the underlying assets are readily available, reasonably small in number and do not significantly alter (e.g. the 100 shares listed on the FTSE 100 reviewed quarterly).

#### Sample replication



Instead of holding all assets that constitute an index, the product holds a sample of some of the index constituents. This approach might be used if the benchmark contains a large number of assets which change frequently (e.g. the MSCI World Index, with more than 1,600 constituents, sometimes changing over 300 shares annually) or if some constituents suffer from low liquidity.

### Securities lending

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

While the fee from securities lending can reduce the cost of an ETP, it creates counterparty risk. That is, the loaned securities may be lost if the borrower defaults. In such an event, the product could be left holding assets unrelated to those on the index it is meant to track.

A key benefit of full replication is that, since the product holds the same assets as the index, it should track the index very accurately. However, the disadvantage is the potential for high transaction costs if the index changes a large number of its constituents frequently.

With sampling replication, transaction costs are kept lower. However, because the ETP's holdings are not the same as those that comprise the index, the product's return may not correspond exactly to the index's return.

With physical replication, counterparty risk can be introduced if the product engages in securities lending.

### Physically backed ETCs

Physically backed ETCs are backed by a specific quantity of that commodity. This is only possible if the asset can be easily stored for long periods. Consequently, physical replication is only possible for precious and industrial metals.

The value of a physically backed ETCs comprises:



Physically backed ETCs are backed by the corresponding amount of bullion deposited in a vault (precious metals) or warehouse (industrial metals). This bullion is reserved for the product and segregated from the general stock of metal stored in that vault or warehouse. There are a number of organisations that oversee and standardise 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 metal quality and inspecting storage. Precious metals are stored in vaults located in London, Zurich or Singapore; industrial metals are stored in warehouses inspected by the London Metal Exchange.

The most significant benefit for investors of physically backed ETCs is that they provide exposure to commodity price movements, safe in the knowledge that each ETC is backed by an entitlement to high quality, securely stored, physical metal.

## Synthetic replication

Unlike physical replication, a synthetic ETP does not hold the underlying assets the product is designed to track. Instead, the ETP issuer enters into a swap agreement with a counterparty that contracts to provide the return of the underlying assets.

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

- **Accuracy:** Because 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:** Non-metal commodities can only be accessed synthetically because of the difficulties associated with storage.
- **Variety:** Synthetic ETP structures can offer products which could not be offered physically, including short and leveraged products, volatility indices and emerging market securities.

The most significant risk with synthetic ETPs is that of counterparty default, known as counterparty risk. If a counterparty defaults on its obligations under the swap, the ETP would not provide the return of the asset it is designed to track which could also expose investors to losses.

To minimise the impact of any default, most synthetic ETPs are backed by collateral.

### Swap

An agreement where the parties swap the return of one investment for another; or, alternatively, one party pays a fee for the return of a particular investment.

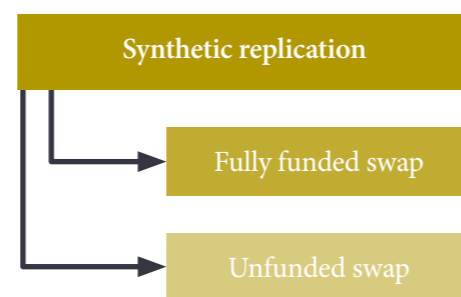
For example, an ETP may agree to pay a fee for the performance of the FTSE 100. If the FTSE rises by 1%, the counterparty will pay this to the ETP. If it falls by 1%, the ETP will pay the difference to the counterparty.

### Collateral

Generally, the asset(s) that a borrower offers as security for a debt.

In the context of ETPs, it usually refers to assets provided by swap providers to secure their payment obligations under a swap agreement.

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



### Fully funded swap structure

In a fully funded swap, the money investors have paid to buy the ETP is transferred to the swap counterparty (hence, fully funded). In exchange, the counterparty will provide that amount of 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 title to the collateral may be owned by the counterparty or the ETP depending on how the ETP has been structured. Where the counterparty defaults in both cases, the ETP will have title to the collateral as well as be able to sell the collateral and return the proceeds to the investors.

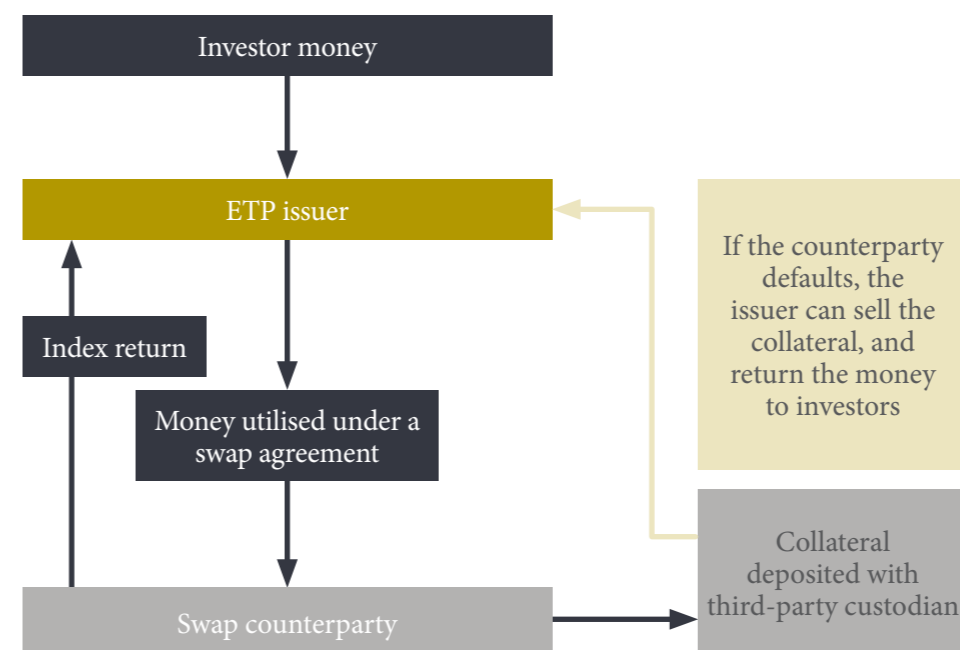
UCITS require the collateral deposited by the swap counterparty to meet certain requirements in terms of asset type, liquidity and diversification for ETFs. Appropriate haircuts must also be applied to protect against the risk of price fluctuations. The level of haircut depends on the asset type, and laws of the jurisdiction in which the product is domiciled. The collateral is marked-to-market daily.

**Haircut**

A percentage reduction to the market value of an asset used for collateral.

Haircuts are imposed to provide a cushion to protect the ETP issuer in case the market value of the collateral falls.

### How a fully funded swap works



Below is an example of how a fully funded swap operates:

Fully funded swap	Day 1	Day 2		Day 3	
Index value	100	105		105	
Swap value	100	105		105	
		Before	After	Before	After
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: ETF Securities, hypothetical example.

## Unfunded swap structure

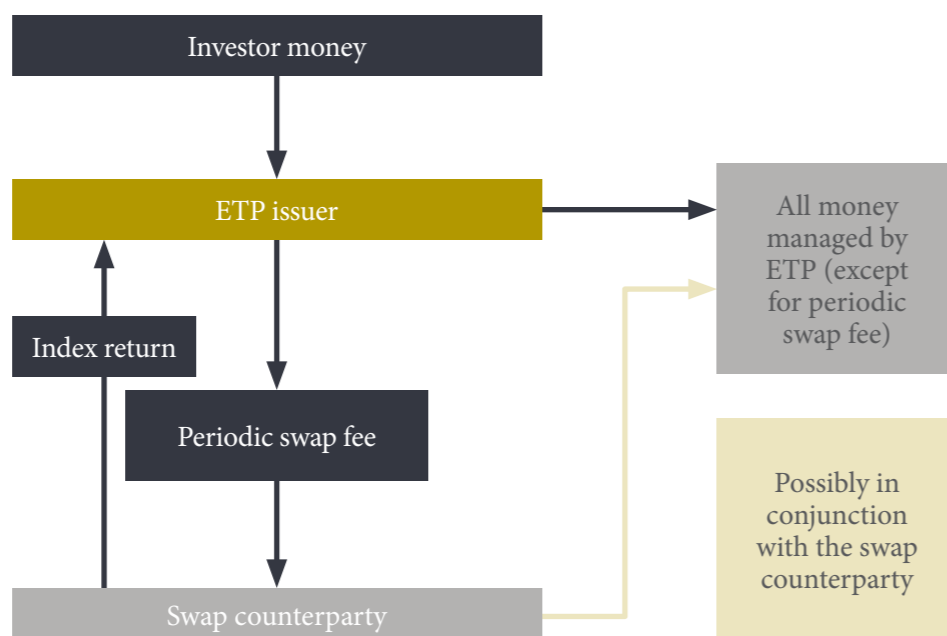
<b>Repurchase agreement (Repo)</b>
An agreement where one party agrees to sell an asset temporarily and repurchase it in the future.
<b>Reverse Repo</b>
The same agreement, but from the perspective of the party purchasing the asset and selling it in the future.

In an unfunded swap, the money investors have paid to buy the ETP is not directly transferred to the swap counterparty. Instead, a proportion of the money is used to pay the swap fee. The rest of the money is managed by the ETP provider. How the money is managed differs between providers:

- **Reference basket:** Some providers use the money to buy a basket of assets, usually from the swap counterparty, unrelated to the assets being tracked. The basket's return is then exchanged for the return of the assets the ETP is designed to track.
- **Repurchase agreement:** Some providers invest the money with the swap counterparty in a reverse repo to generate a return.

However investors' money is managed, any counterparty exposure will usually be collateralised in an ETP.

### How an unfunded swap works



## UCITS and ETPs

UCITS, the 'Undertakings for Collective Investment in Transferable Securities', are a set of European directives that impose a common framework for regulating collective investment schemes throughout the European Union. UCITS have been embraced by ETP providers because it allows easy and cost-effective distribution throughout the fragmented European market via registration in an EU country.

UCITS require specific diversification criteria and therefore, only ETFs can be UCITS compliant.

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.

### The benefits of UCITS for investors

#### Liquidity

In times of market disruption, a UCITS ETF may begin to trade away from its NAV, perhaps because there are no market makers willing to quote prices. Where an ETF is trading significantly away from its NAV on exchange, investors who are named on the Register of Shareholders for the ETF should be able to redeem their shares directly with the ETF. If an investor purchased the shares via a broker, they will need to request that the broker redeems directly on behalf of the investor.

#### Segregated assets

The assets of a UCITS fund must be entrusted to an independent custodian for safekeeping, segregated from the assets of that custodian and the company that issued the ETF. These assets cannot be used to discharge the liabilities of either the custodian or the fund issuer.

This means that the fund's assets could not be seized to pay creditors of the fund issuer were it to default.

#### Diversification

To be UCITS compliant, the index an ETF tracks must be sufficiently diversified. No individual security can exceed 20% of a fund's NAV. This figure can be increased to 35% under certain market circumstances.

#### Collateral

If an ETF uses derivatives, such as swaps, UCITS requires an ETF to limit the amount of its exposure to a single counterparty. The amount exposed through a derivative contract must not exceed 5% or 10% of NAV, depending on the type of counterparty.

Furthermore, the UCITS regulations oblige the fund to reduce its exposure to any counterparties in case such counterparties default on their obligations under the derivative contracts. One way of doing this is to post collateral. This collateral should meet minimum criteria. For example, the collateral must be valued on at least a daily basis and assets that exhibit high price volatility should not be accepted unless suitably conservative haircuts have been applied.

#### Disclosure

UCITS ETFs must publish a number of documents to inform investors about the nature of the product, such as (i) the prospectus; (ii) the Key Investor Information Document (KIID); and (iii) annual and semi-annual reports.

The prospectus must set out information such as a description of the index being tracked, the method of tracking and a description of the factors that contribute to the ETF's performance. The amount of information required in the prospectus will vary according to the type of ETF.

Since prospectuses can be extremely long and dense documents, the KIID is a plain and concise summary of the important facts about the ETF. Usually, it is limited to two A4 pages in length. However, it should be noted that the KIID will inevitably omit certain information and investors should always read the full prospectus.

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

### UCITS, ETCs and ETNs

ETCs and ETNs are not issued as shares in funds but as debt securities. As such, they are not collective investment schemes for the purpose of the UCITS directive, and are therefore not governed by the UCITS regulations. However, while they are not UCITS compliant, they may be UCITS eligible. This means that they are investments which, while not themselves compliant with UCITS, are capable of being an eligible investment for another UCITS fund.

## 03 ETP risks

Hopefully now you have some idea of the benefits on offer from using ETPs. But as with all investments, there are risks. It is important to distinguish what risks any individual ETP is subject to before making an investment.

### 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 their underlying markets.

#### Tracking difference

The structure and cost of an ETP means it may not track its underlying exactly.

#### Tax

As with the majority of investments, ETPs will usually incur some form of taxation. Each investor should obtain independent tax advice.

#### Costs

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

#### Currency

Any investment involving a non-local currency will be affected by exchange rate fluctuations (unless the product incorporates a currency hedge).

### Additional risks to consider when investing in...

#### Physical ETFs

##### Securities lending

Physical ETFs that engage in securities lending can help reduce the cost of the product. However, securities lending introduces counterparty risk.

##### Sampling

Physical ETFs that engage in sampling replication may reduce transaction costs but may not track its underlying 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 is likely that the return will not be provided by the counterparty. Synthetic ETPs are collateralised to minimise the impact of this possibility.

#### ETNs

##### Credit risk

ETNs are affected by the credit rating of their issuer because they have no segregated assets and are not usually collateralised.

### Summary

	Physical ETFs	Synthetic ETFs	Physical ETCs	Synthetic ETCs	ETNs
Market risk	•	•	•	•	•
Tracking difference	•	•	•	•	•
Tax	•	•	•	•	•
Costs	•	•	•	•	•
Currency	•	•	•	•	•
Securities lending	(•)				
Sampling	(•)				
Counterparty risk	* (•)	•		•	•
Credit risk					•

\* If engages in securities lending.

( ) = if engages in

## 04 Trading and pricing

Investors often judge ETP liquidity by the volumes traded on-exchange.

In fact, there are 2 sources of ETP liquidity:

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

This is because ETPs can be created in exchange for the underlying assets or with cash. Therefore, ETPs are able to source liquidity from the underlying assets being tracked. Unlike a share, pricing is not determined by the supply and demand of a fixed number of units because ETP securities can be created to meet demand. Instead, ETPs are priced by reference to the underlying asset. Arbitrage will ensure ETPs track their underlying closely.

An understanding of how ETPs are created and redeemed, and the role of arbitrageurs, will help investors fully appreciate the mechanics of ETP pricing and how best to trade them.

### Creation and redemption

Investors in ETPs purchase and sell securities on the stock exchange. This is referred to as the secondary market. There is also a primary market, where Authorised Participants (AP) are able to deal directly with the issuer of the ETP. A closer look at this process is detailed below for informational purposes. However, all of the interactions retail investors have with ETPs will take place only on the secondary market via the stock exchange.

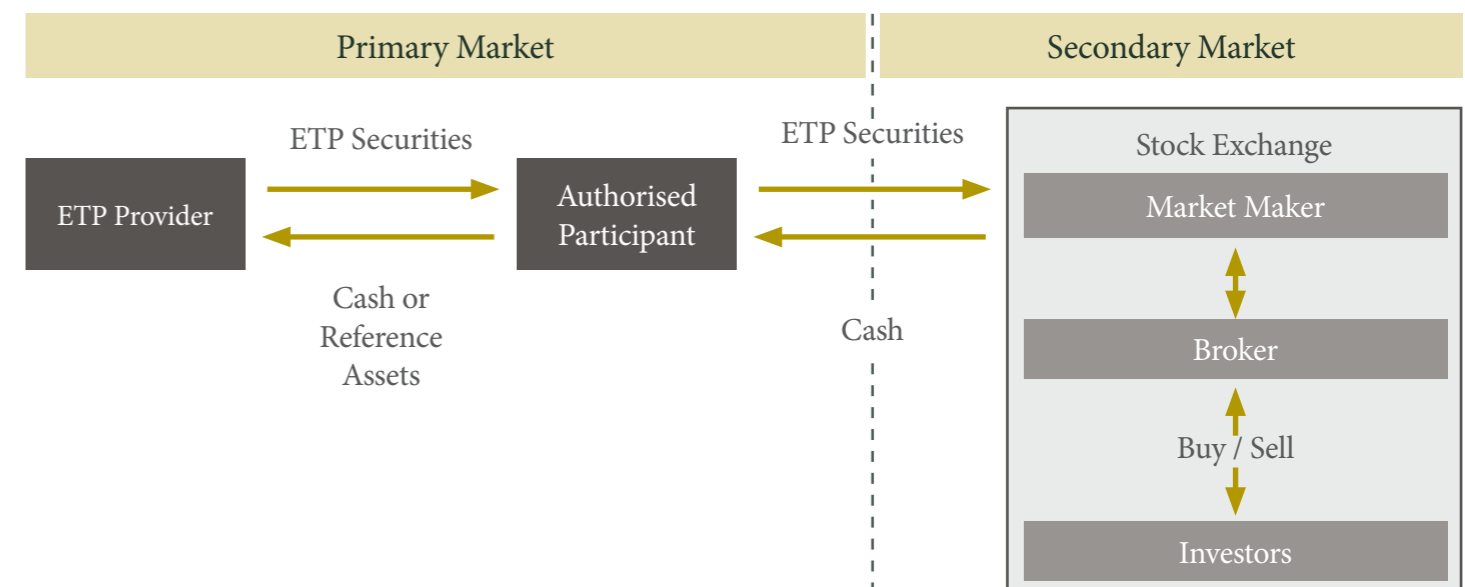
#### Creation

##### The creation process

1. The AP submits an application to the ETP provider to purchase (i.e. 'create') securities.
2. The AP then delivers the underlying reference asset or the cash equivalent to the ETP provider (e.g. 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 such 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.

#### Authorised Participant (AP)

APs are financial institutions that source the underlying assets or cash needed to create the ETP. Only APs can create or redeem ETPs. They are typically investment banks or specialist market makers.



### NAV or Net Asset Value

Generally, NAV 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 equities bonds, swaps, cash, etc.) minus its liabilities (management fee, swap fee, etc.). ETCs are valued according to their price, as securities are issued as debt securities and not as shares. That price is calculated by reference to a formula that references the underlying asset. The price of an ETC is sometimes referred to as its NAV for convenience purposes.

### 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.

### Redemption

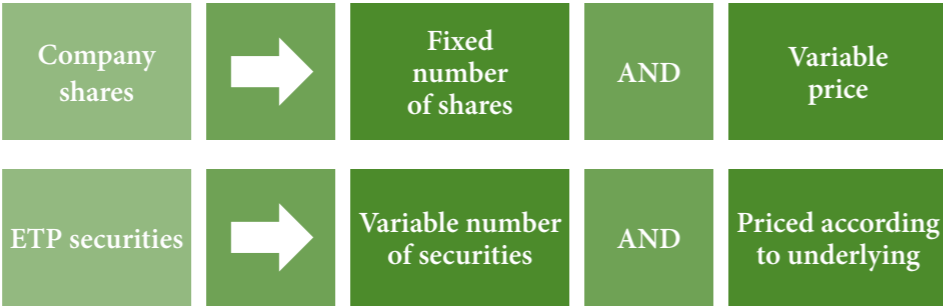
The redemption process is the opposite of the creation process. When investors sell securities in an ETP, the AP will either hold them as 'inventory' or will redeem them with the ETP provider.

#### The redemption process

1. The AP submits an application to the ETP provider to return (i.e. '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.

### Pricing and NAV

ETPs can be created and redeemed according to demand, which means the number of ETP units issued is variable. This is unlike company shares. Companies issue a fixed number of shares (unless a corporate event takes place to issue additional shares) that trade at a variable price determined by 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 depending on supply and demand, it would no longer track its underlying accurately.



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

ETP price	=	NAV	÷	Number of securities
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Although the price of an ETC is sometimes referred to as its NAV for convenience purposes, physically backed ETCs technically do not have a NAV is because they are not cash settled. Instead, its price is determined by the metal entitlement multiplied by the spot price of that metal.

Physically backed ETC price	=	Spot price	×	Metal entitlement
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### Arbitrage

Arbitrage occurs when an ETP is trading above or below fair value. Arbitrage is only risk free profit once all transaction costs have been taken into account.

#### If ETP price > underlying assets

The AP can buy the underlying assets and exchange 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 profits.

#### If ETP price < underlying assets

The AP can buy ETP securities and exchange 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 profits.

With ETPs, the creation / redemption process allows arbitrage to take place. The AP can continue the arbitrage until there is no price difference between the ETP and the underlying assets, hence the process of arbitrage will no longer be profitable. This ensures that ETPs will only trade away from its NAV for short periods.

### Arbitrage

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. There is an opportunity to buy bread in Manchester and sell it in London for 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 shares. By selling them, the AP makes a profit of £5. As it buys the ETP and sells the underlying assets, 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.

## Liquidity of the underlying asset

Since ETPs can take advantage of the liquidity of its underlying assets, large transactions can be executed without significant impact on costs. For example, average daily volume of all LSE-listed ETPs that track the FTSE 100 is approximately £61 million. Looking at this metric alone, an investor might conclude liquidity in these products is limited. However, the liquidity available to FTSE 100 ETPs is actually much larger, since average daily volume of FTSE 100 shares is over £4.7 billion. ETP volume represents only 1.31% of the underlying asset volume.

Therefore, investors thinking about an investment in ETPs should consider underlying asset liquidity as a more accurate measure of an ETP's liquidity and not just on-exchange volumes.

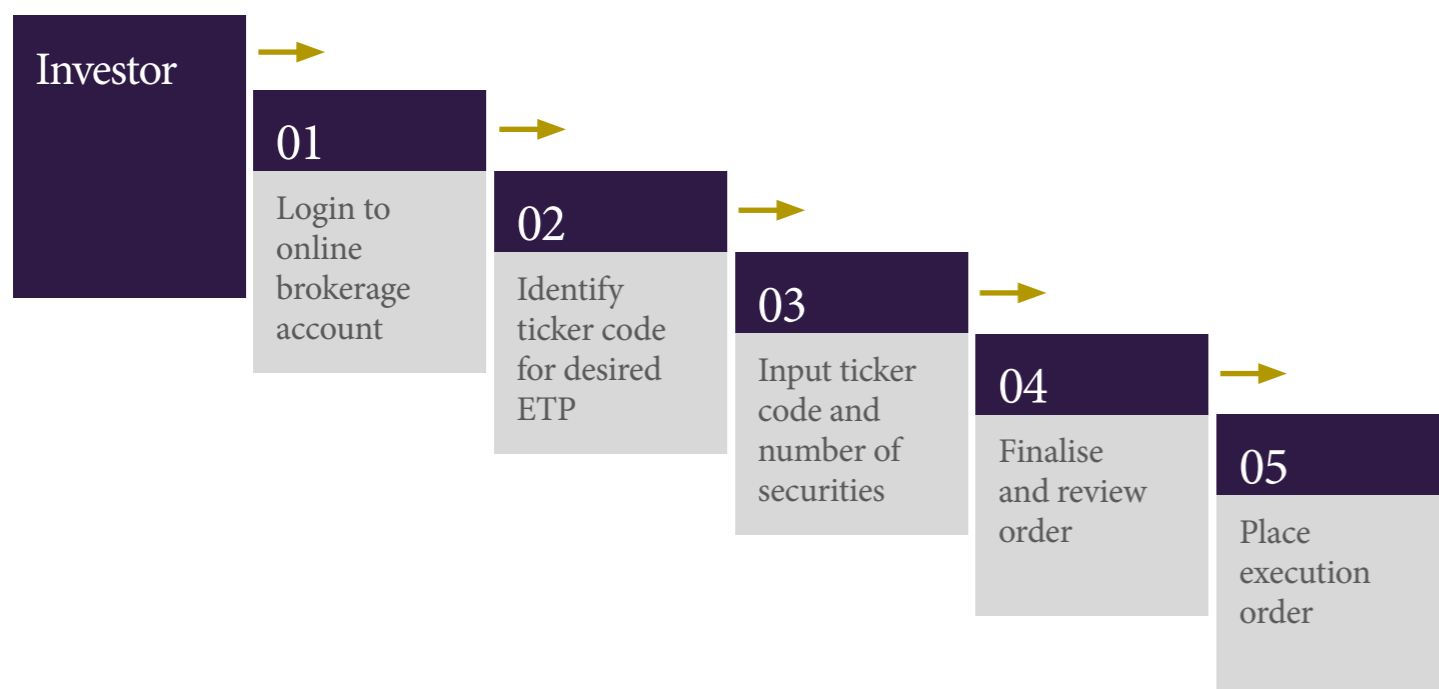
	FTSE 100 ETPs	FTSE 100 shares	ETP volume as % of underlying
Daily volume (£)	61,657,355	4,724,042,460	1.31

Source: ETP Securities, Bloomberg – Average Daily Volume (September 2016 - August 2017).

## Understanding order types

ETPs can be bought and sold on-exchange in the same way as shares in companies. They can be traded through an online platform or through a broker.

### Buying an ETP



## ETP names explained

At first glance, ETP names can look rather complicated. This section aims to break down the names of ETPs and help investors understand the logic behind each section.

Examples:

Issuer Name	S&P 500	GBP Daily Hedged	UCITS	ETF
Issuer Name	Physical	Gold	ETC	
Issuer Name	FTSE 100	Daily 2x Long	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. For example, the S&P 500, FTSE 100 or Gold.

### Currency hedge

If the ETP incorporates a currency hedge (at either 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 the local currency and the US Dollar. 'Daily' simply refers to the frequency of the hedge.

### Regulatory information

Here, 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

As explained previously in this guide, there are different types of ETP. The examples above show ETFs and an ETC.

### 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 long (bullish) exposure by applying a 'leverage factor' to the performance of the underlying index or asset. Note that these types of products are only intended for investors who understand the risks involved in investing in a product with short and/or leveraged exposure and who intend to invest on a short-term basis.

### Income

This section relates to the way the ETP handles dividend income. 'Dist', 'Dis', or 'D' stands for 'distributing', and means that any dividend income is sent back to your brokerage account. On the other hand, any dividend income can be reinvested or 'accumulated' to increase your holdings (shown as 'Acc', or 'C').

# 05 Costs

Cost is one of the most important factors to take into consideration when making an investment. While performance is difficult to predict, costs are not.

Unfortunately, ETP costs are not always clear. The most widely reported cost figure, the ongoing charge figure (OCF) or total expense ratio (TER) is often incomplete and can neglect a number of internal and external expenses, including transactions costs, swap spreads and bid / ask spreads on exchange.

In this guide, we attempt to outline the most common components that contribute to an ETP's total cost of ownership, dividing them between internal costs (related to the product) and external costs (incurred in trading the product).

## Internal costs

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

- the ongoing charge figure (OCF)
- any rebalancing costs
- any swap spread

### Ongoing charge figure (OCF)

The OCF is the annual cost of managing the product, expressed as a percentage. The OCF is also sometimes referred to as the Total Expense Ratio (TER). The costs included within the OCF can vary among providers, but usually incorporate:

- Management expense ratio
- Administrative costs
- Index license fee
- Storage costs (for physically backed ETCs).

### Rebalancing costs

The cost incurred by physical ETFs when they buy and sell securities.

When the underlying index changes its constituents, the ETF must do likewise. Transaction costs depend on how many and often the index constituents change: the greater the number and frequency, the more expensive the rebalancing costs.

### Swap spread

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

The swap fee is a matter of negotiation 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, more illiquid or exotic exposures have more expensive swap spreads.

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

### Securities lending

The process whereby an owner of a security lends it to a borrower in exchange for a fee and often collateral. The borrower is contractually 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 preceding its return.

### Market Maker (MM)

MMs are firms that provide liquidity to the market by quoting bid / ask prices. Their profit comes from buying an asset at a lower price than which it is sold or, vice versa, selling an asset at a higher price than which it is bought. The MM wants to hold the asset for as little time as possible, ideally buying and selling simultaneously.

For example, for ETP 1, a MM 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.

### Creation / redemption fee

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

### Market maker spread

MMs do not 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, therefore the MM will hedge against the price fluctuation of an asset. The cost of doing so is the market maker spread passed on to the investor.

### 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.

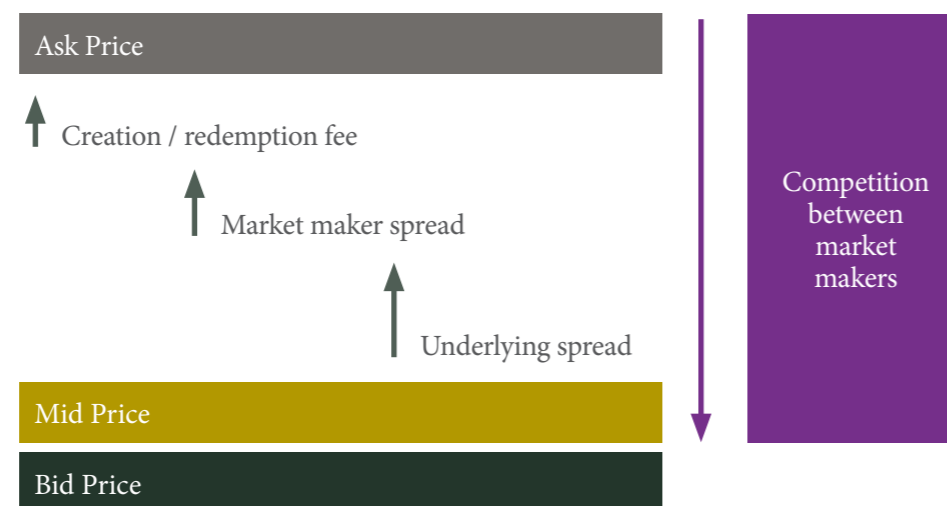
## External costs

### 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	Bid / ask spread
The price at which a buyer is willing to buy an asset.	The price at which a seller is willing to sell an asset.	The difference between the bid and ask price.

Bid / ask prices are quoted by market makers (MMs), who ensure there is always a price at which an asset can be bought and sold. MMs compete for customers by trying to offer the most competitive prices. For an ETP, the costs that MMs consider are the creation / redemption fee, the market maker spread and the underlying spread.



If any of these 3 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 that of the underlying asset they are designed to track. This, in turn, means the investor pays less money to buy the product and receives more money on its sale.

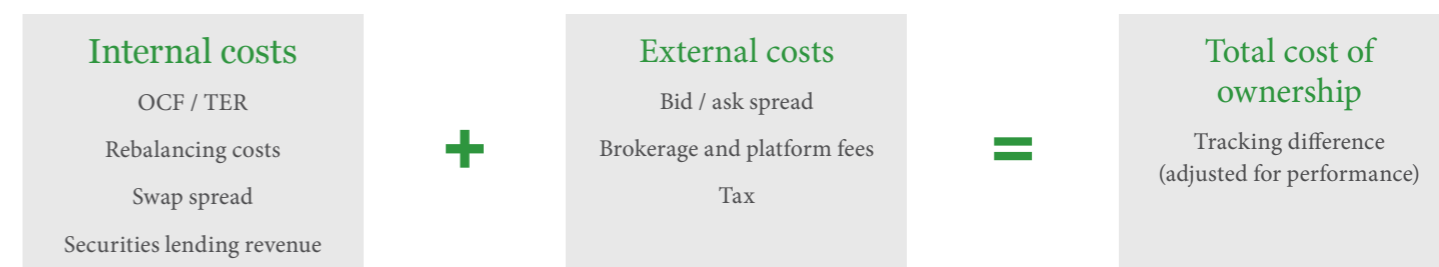
## Brokerage and platform fees

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

## Tax

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

## Total cost of ownership equation



## Beyond TER

A product's TER is only one aspect of a product's total ownership cost. Unfortunately, to think of TER as 'total' would be misleading: a lower TER does not necessarily guarantee the cheapest investment.

In the following simplified example, ETP 1 has a cheaper TER by 15 basis points. However, when all the costs of ownership are considered it becomes 9 basis points more expensive. Investors should resist the impulse to judge an ETP by TER alone and adopt a more holistic view about ETP costs.

	TER (bps)	Rebalancing costs (bps)	Securities lending (bps)	Bid / ask spread (bps)	Total cost (bps)
ETP 1	25	15	-5	10	45
ETP 2	40	5	-15	6	36

Source: ETF Securities, hypothetical example.

### Tracking error

The volatility of the difference of the returns between a product and its benchmark. 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.

### Tracking difference

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

Tracking difference is calculated by accessing the difference between the return of a benchmark and the return of the ETP designed to track it. It shows 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 both cause physically backed ETFs to have a positive tracking difference, in which case the ETF has outperformed its benchmark.

## Tracking error and tracking difference

Both internal cost and replication method can affect how the product tracks the underlying. Even if the product tracked its underlying perfectly, it would still underperform its benchmark by the internal cost (see page 39).

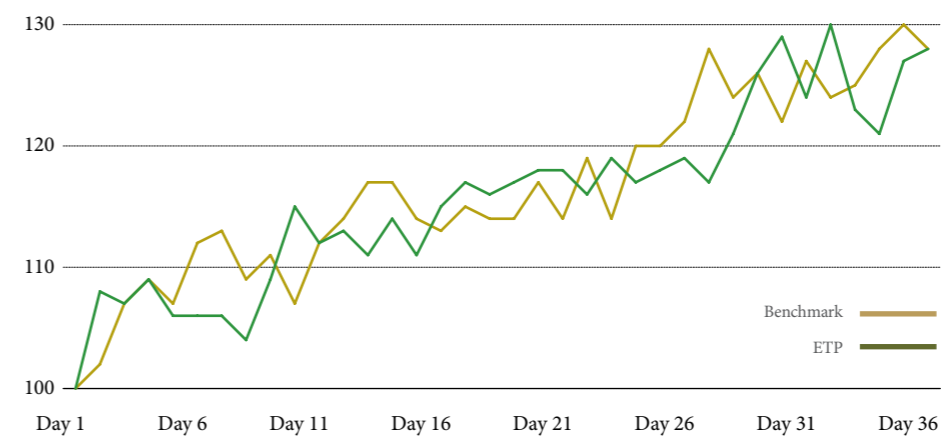
The two most common methods of defining how well an ETP tracks its benchmark are tracking error and tracking difference.

In the hypothetical example below, the volatility of the difference of the returns between the benchmark and the product is the cause of tracking error. However, if measured between day 1 and day 36 there is no tracking difference since both the benchmark and the product 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 difference tends to vary over time and is therefore sensitive to the time horizon that is selected. As such, 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 tracking error.

### ETP tracking error calculation



Source: ETF Securities, hypothetical example.

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

Currently, there is no standardised methodology to calculate tracking error, which means the figures supplied by ETP providers may not be a like-for-like comparison.

## 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 comprises both fixed elements (OCF / 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). However, there are a number of causes of tracking error and tracking difference that are not covered by costs.

Cost factors that impact tracking	Non-cost factors that impact tracking
OCF / TER	Dividend reinvestment
Rebalancing costs	Withholding taxes
Swap spread	Sampling
Tax	Securities lending

### Dividend reinvestment

For physical ETFs tracking equity benchmarks, the difference in the dividend reinvestment assumptions of the benchmark and the product 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 re-invest. During this period, there will therefore be a difference between the performance of the ETF and its benchmark.

### Withholding taxes

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

While these taxes are factored in the index calculation, they may not apply to all investors. Please consult an independent financial adviser in order to determine 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 do not exactly 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.

For a full explanation of securities lending please see page 24.

## Tracking error or tracking difference?

Investors often ask which is more important: tracking error or tracking difference?

The answer depends on the purpose of the investment. For return generating investments, tracking difference is a more useful metric because these investors want to maximise return while minimising cost. Tracking error may be more appropriate to consider if the investment is for hedging purposes since tracking precision will be more important than the overall return. Long-term investors may be more concerned with tracking difference whereas investors seeking to profit from short-term fluctuations may want to focus on tracking error.

## 06 Performance

It is important for investors to understand the objectives of ETPs, and how they are designed to behave – only then can accurate and meaningful comparisons be made when assessing their performance.

This chapter focuses on helping investors understand the various factors that could have an impact on performance, including different types of indices, market volatility, and futures contracts.

### 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 are reinvested.

For instance, the FTSE 100 total return index (Bloomberg code: TUKXG).

There are also total return indices for bonds and commodities, which are calculated in a slightly different way.

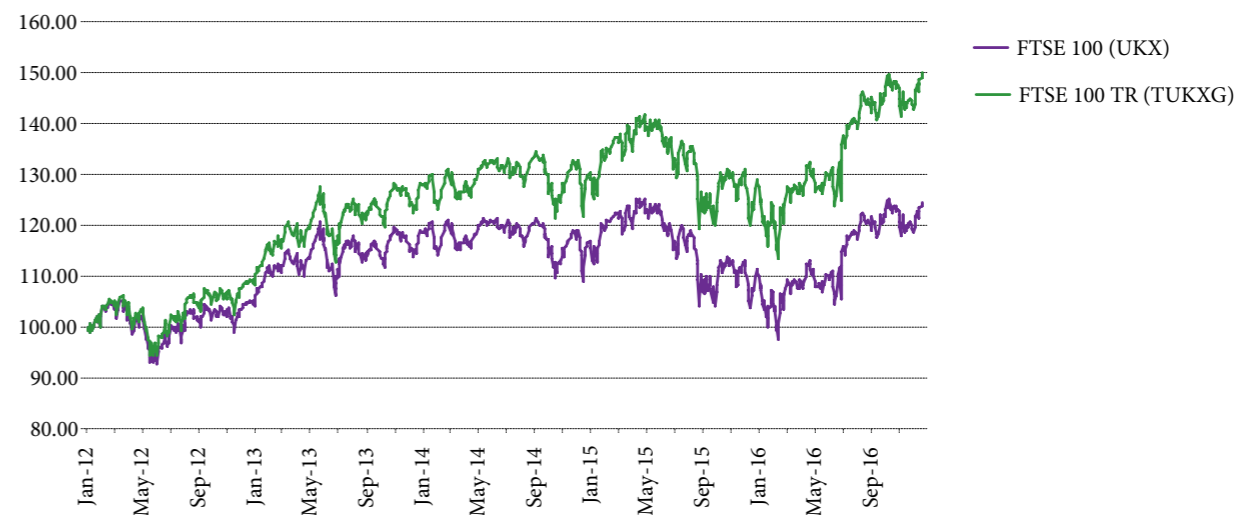
See page 51 for an example of a total return commodities index.

#### Price return index (PR)

An index which only tracks the price movements of the underlying assets and does not reinvest cash distributions.

For instance, the FTSE 100 price return index (Bloomberg code: UKX).

FTSE 100 total return index (TR) vs. FTSE 100 price return index (PR) from January 2012 to December 2016



Source: Bloomberg (January 2012 - December 2016).

This distinction is important because whenever cash dividends are made, PR indices will fall but TR indices will not be affected by the distributions. For instance, if a number of FTSE100 companies pay out dividends on a particular day, UKX would drop as a result of the dividends, but TUKXG would not be affected by the dividends. As such, TUKXG has outperformed UKX by 1% over the past year and by 11% over the past three years. Since news media almost exclusively quote PR indices, this can cause some confusion among investors who have invested in an ETP that tracks a TR index. Thus, potential investors should be aware of which version of an index (PR or TR) a particular ETP tracks.

Futures (contracts)

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

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

Futures contracts have varying maturities (when the commodity is to be delivered), ranging from 1 month to 3+ years.

## Understanding commodity indices

### Futures, contango and backwardation

ETPs make the broader commodities asset class more widely accessible to investors through the provision of a futures strategy in a share traded format. Most non-precious metal commodities cannot be traded physically because they are difficult and expensive to store. For example, agriculture and livestock are perishable and oil is explosive. Therefore, investors seeking commodity exposure, without wanting to manage the physical asset itself, have used futures contracts and ETPs are no different.

ETPs make use of futures-based indices in order to gain commodity exposure. However, there are certain costs and benefits inherent in trading futures that investors should be aware of, namely the impact of roll yield.

### Futures

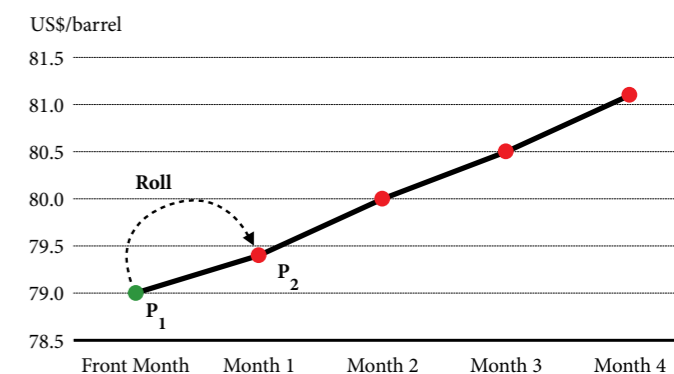
The price of a commodities futures contract is inherently linked to the cost of purchasing the underlying asset and holding it for the term of the agreement. For example, an investor who wants to receive 1,000 barrels of oil in 3 months' time could either buy the appropriate futures now or buy 1,000 barrels of oil and store it for 3 months. Buying the underlying commodity for use in the future incurs costs such as interest, storage and insurance. These are collectively known as the "cost of carry" and form a key component of a commodity futures price.

### Roll yield

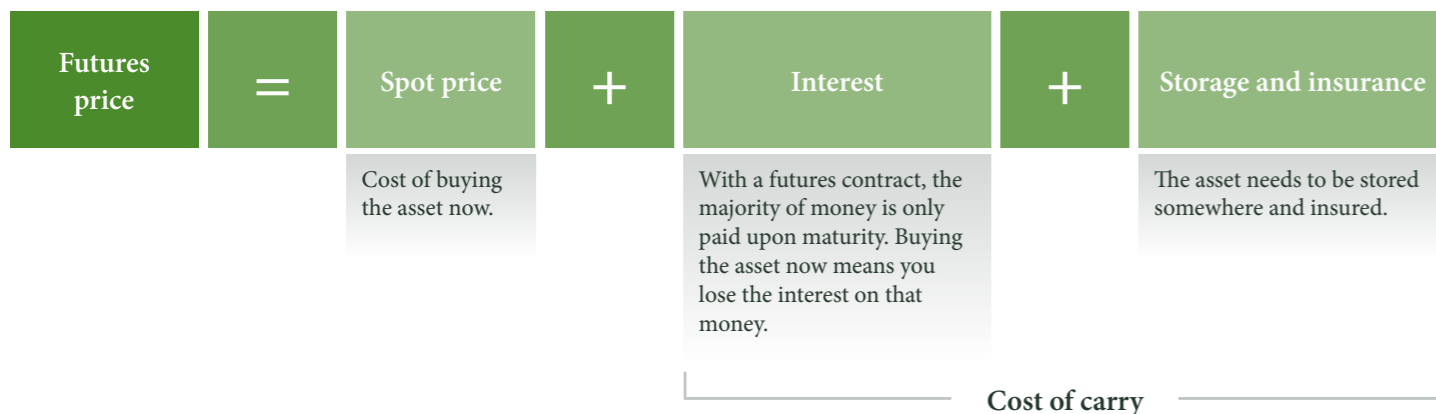
Unlike futures contracts that have a fixed term, futures-based indices are constructed to offer a continuous exposure to commodity futures of a particular maturity. In order to achieve a constant exposure, futures positions need to be periodically closed out before expiry and transferred to a new longer dated contract. This process is known as "rolling" and can generate a "roll yield" which can have a positive or negative impact on returns.

The longer dated contracts may be more expensive than the current contract being closed, a market state known as "contango". Amongst other things the difference in the price of the two contracts reflects the "cost of carry" of holding the underlying asset and can cause the investor in commodity futures to incur a negative roll yield. This is because the total return on a futures strategy reflects the total investable return on the asset rather than the mere movements in the spot price (which in isolation cannot be replicated).

### Oil futures curve in contango

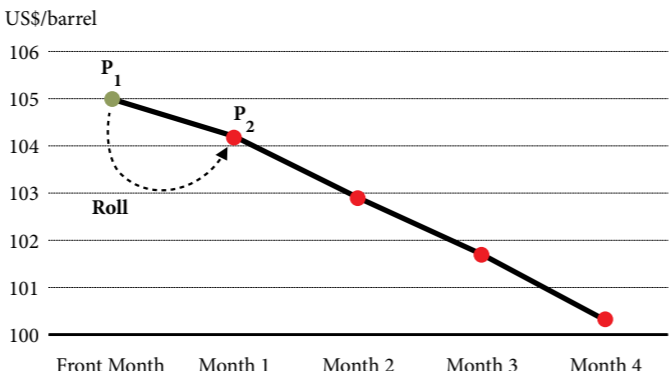


Source: ETF Securities hypothetical example.



Conversely, the longer dated contracts may be cheaper than the ones being closed, a market state known as 'backwardation'. When the market is in backwardation an investor can earn a positive roll yield.

**Oil futures curve in backwardation**



Source: ETF Securities hypothetical example.



**Collateral yield**

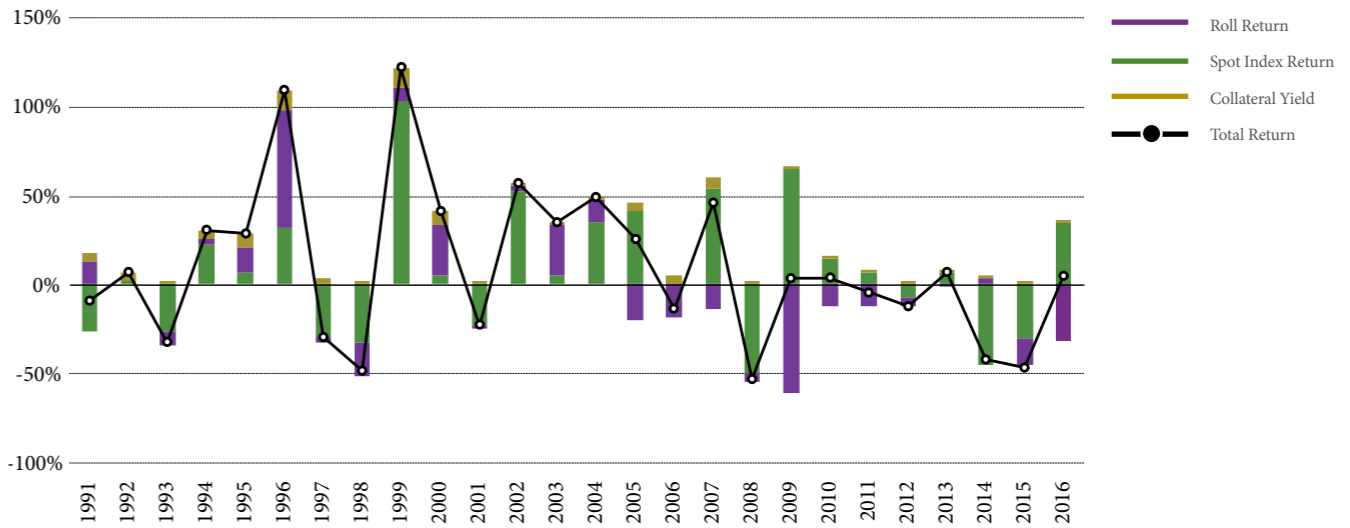
With a futures contract, the majority of cash due to be paid on delivery of a commodity does not change hands immediately. In contrast, futures indices presume that the entire contract value is paid up-front. However, this would mean a futures index investor would lose the interest on cash that could have been earned by using futures contracts. As such, the index calculation includes a collateral yield to more accurately simulate a rolling futures exposure.

**Total return index**

Thus, a futures index can be said to be 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.



**Composition of returns - Bloomberg WTI Crude Oil Subindex annual return, from 1991 to 2016**



Source: ETF Securities, Bloomberg (1991 - 2016).

Note that some ETPs track excess return indices. These are indices which omit the collateral yield.



## The impact of contango and backwardation

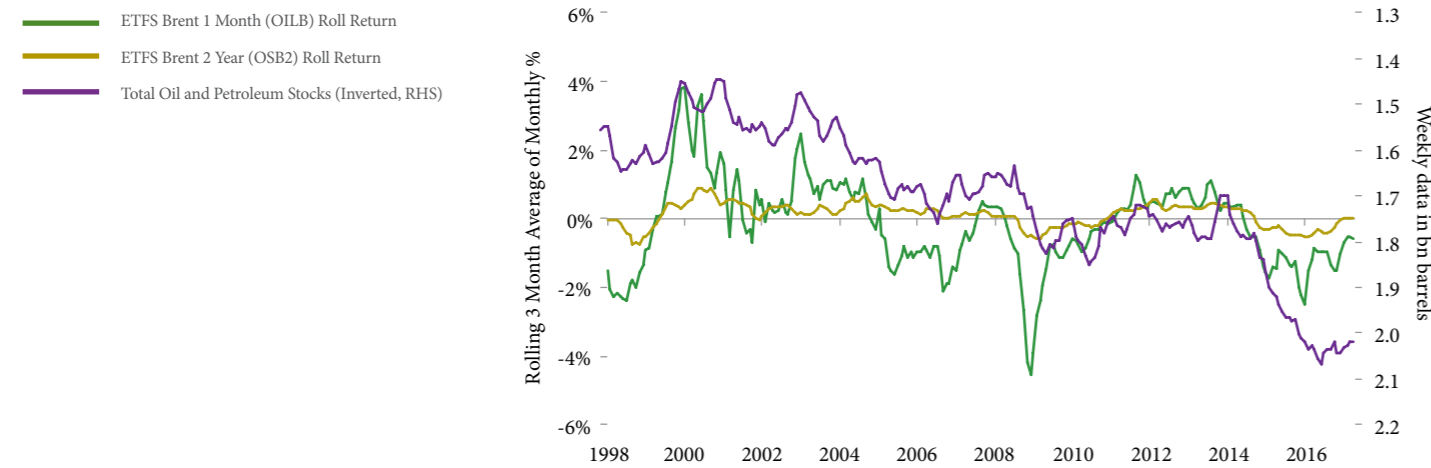
Since non-precious metal ETPs or ETCs track futures indices, the return of these products will be composed of the three elements - spot return, roll yield and collateral yield. As can be seen from the graph on page 49, the roll yield is often the primary reason why a commodity ETP will deviate from its spot index return. Thus, the impact of contango and backwardation in these markets on commodity ETP returns should not be underestimated.

Commodity ETPs can track futures indices that target an exposure of varying maturities. A method of mitigating the impact of roll yield can be to maintain an exposure to longer dated contracts, where the magnitude of contango and backwardation is typically less pronounced. Commodity ETPs tracking shorter dated futures indices benefit from a higher sensitivity to short-term market movements but are often exposed to the most considerable degrees of contango or backwardation. The price of longer dated futures, while also driven by cost of carry considerations, tend also to be driven more by structural supply/demand considerations.

There are also commodity ETPs which track indices that dynamically adjust the target maturity of the futures contract in order to optimise the impact from roll yield. However, the effect of these strategies is uncertain given the scarcity of data available to assess their performance.

## Contango / backwardation of Brent 1mth & 2yr vs. US Oil Inventories

(Rolling 3 month average returns, December 1998 - June 2017)



Source: Bloomberg, ETF Securities as of close 30 June 2017

Ultimately, investors need to consider their investment aims. If an investor is seeking to profit from temporary supply / demand imbalances, then an ETP that tracks a short dated futures index may be considered to achieve the investment aim. If an investor is attempting to benefit from structural discrepancies, a longer dated ETP may be worth considering further.

## Understanding currency indices

Before we delve into the various elements of currency ETP returns, it is important to know how they are structured and how they are designed to perform.

As explained in the first chapter, currency ETPs offer investors access to both individual currency pairs and baskets of multiple currencies via a single investment. They are structured as exchange traded currencies (ETCs). Currency ETPs are designed to track currency indices which are tradable benchmarks that reflect the performance of one currency versus another (i.e. EUR/USD or USD/GBP) or one currency against a basket of currencies.

Currency indices achieve this by continuously buying and selling currency forward contracts (a process also known as “rolling”) in order to maintain a constant exposure to the underlying currencies. They are usually denominated in either US Dollars, Euros or Pound Sterling.

Thus, 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

Movements in the current price that a currency can be bought or sold for relative to another. For example, consider a UK holidaymaker who is looking to travel to Spain. If the Euro were to depreciate by 5% against Sterling, then the value of Sterling relative to the Euro will have increased. Simply put, a UK based investor would be able to buy more Euros for every Pound.

### Interest rate differential

An interest rate differential is simply the difference in interest rate between two currencies in a pair. For example, imagine Sterling has an interest rate of 3% and the Euro has an interest rate of 2% - there is a 1% interest rate differential.

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

This difference in short term interest rates between currency pairs is typically factored into the pricing of currency forwards. A constant position in these forwards (achieved by “rolling”) therefore results in investors capturing this interest rate differential, which can have either a negative or a positive impact on returns.

### Collateral yield

When using currency forward contracts, the full amount of cash is not handed over immediately – it is settled on a future date. The collateral yield is simply a return provided to the investor reflecting the hypothetical interest rate that they would have received on an amount of cash equal in value to the underlying currency forward contracts. This is also commonly referred to as the “risk free rate of return”.

### 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 3 months’ time would purchase a currency forward contract with a delivery date 3 months in the future.

## 07 Active and passive investments

When considering an investment fund, there are two main strategies an investor will consider - active management and passive management. Here we look into the factors an investor should consider when making a choice between actively and passively managed funds.

### Comparing product costs

Passively managed ETPs are typically cheaper to manage than actively managed funds and this difference is generally reflected in the cost passed on to end investors. Ongoing charges have to be disclosed by all European UCITS funds and although not representative of total cost of ownership, this measure provides 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% where the ETP charges only 0.5%. The table below shows how much money would remain over various periods:

	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: ETF Securities hypothetical example.

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

## Understanding the concept of core-satellite investing

In order to understand the core-satellite structure of a portfolio, it is important to recognise the fundamentals of asset allocation.

### Asset allocation, what is it?

In simple terms, asset allocation means investing across a wide variety of asset classes to achieve your objectives. When investments that tend not to go up or down in value together are combined, it can result in substantially less volatility within an investment portfolio.

For investors interested in steady growth over the long term, asset allocation is an ideal strategy. However, even when compared against active stock picking (trying to buy low and sell high), portfolios following a pre-defined, diverse asset allocation strategy have consistently come out on top.

### Core-satellite portfolios

At its most basic level, core-satellite investing is an investment strategy that combines a core of long-term investments with a selection of more specialist or shorter-term investments. Portfolios constructed in this manner have become popular due to their low cost and flexibility – cost and volatility are kept relatively low whilst still maintaining the potential to outperform the market. Investors can benefit by spreading risk across various asset classes, sectors and strategies, and also reduce the cost involved in constantly rebalancing and maintaining a portfolio.

#### Core – long-term portfolio foundation

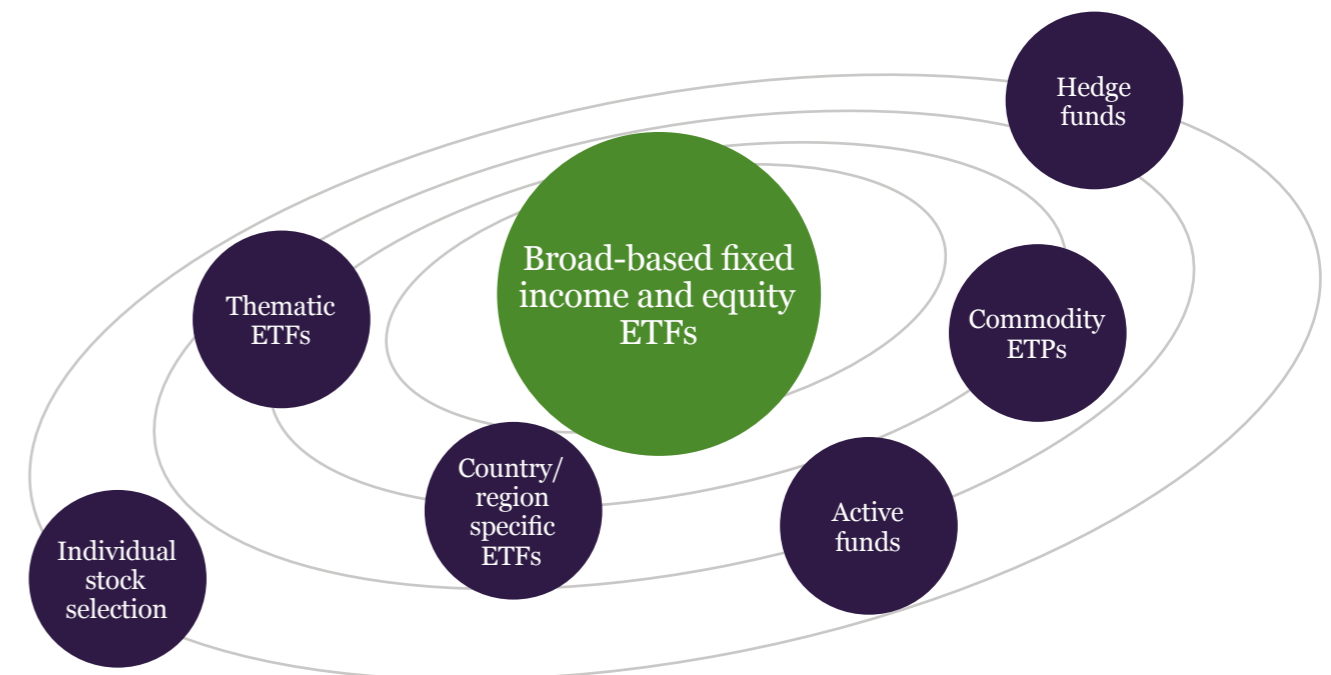
Traditional asset allocation models have invested predominantly in equities and fixed income to provide the 'core' building blocks of a portfolio.

#### Satellite – specialist or short-term

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

#### How can ETPs be used?

The majority of European ETP assets are exposed to equities and fixed income, in line with the traditional 'core' model. However, ETPs also provide access to other asset classes, such as commodities and currencies that were not readily accessible to investors in the past. This level of access is changing the way in which people approach portfolio construction, and means that ETPs can be used either as core or satellites depending on the investor's goals.



ETPs can be used as building blocks in an investment portfolio. Ultimately, investors can benefit by combining active and passive investments in a single portfolio. Incorporating passive funds into the core of a portfolio will help to minimise the overall costs and volatility of a portfolio.

# 08 Glossary

## A

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### Active investment / management

An investment methodology whereby a fund manager attempts to generate above-benchmark returns by actively selecting assets in which to invest. The selection process may be based on research, a particular strategy, or individual judgement. The opposite of passive investment.

### Allocated (account)

In the context of metal storage, an account in which the metal can be physically identified as belonging to a particular client. It is segregated from other metal held by the custodian. Contrast, unallocated (account).

### Alpha

A risk adjusted measure of the active return on an investment.

Alpha takes the volatility of a fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark is a fund's alpha.

### Arbitrage

The process of using market inefficiencies to take advantage of price differences. In the context of ETPs, the arbitrage process of creation and redemption ensures that ETPs track their underlying closely.

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

### Arbitrageur

A person or institution that engages in arbitrage.

### Ask / offer price

The market price at which an ETP can be bought.

The opposite of bid.

### Asset allocation

The process of allocating a proportion of a portfolio to a particular asset, class of assets or geographical regions. The allocation of asset classes in a portfolio will depend on the goals, risk appetite and investment horizon of the portfolio manager.

## A

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### Asset class

A type of asset.

For instance: cash, equities, fixed income, commodities, property, currency, etc..

### Authorised participant (AP)

Banks or other financial institutions that act as intermediaries between issuers of securities and other investors or intermediaries. Authorised participants create and redeem securities directly with the issuer and buy and sell those securities to investors/intermediaries either directly or via stock exchanges.

## B

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### Backwardation

The market state whereby the price at which an earlier expiring futures contract can be sold is higher than the cost of buying a futures contract which expires at a later date. In other words, when the roll yield in respect of a futures contract is positive.

### Bankruptcy

When a person (debtor) does not have enough money to pay their debts as they fall due. Upon the successful completion of bankruptcy proceedings, the debtor is relieved of their debt obligations.

### Basis point / bps

One hundredth of a percentage point (1 basis point = 0.01%).

### Benchmark

A fund, product or portfolio may aim to provide returns equal to a particular measure, such as an index. This is its benchmark and the performance of the fund, product or portfolio will be measured in comparison.

### Bid

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

The opposite of ask.

# 08 Glossary

## B

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### Bid / ask spread

The difference between the bid and ask price of a given security. Typically a spread will be quoted as a percentage. For example, if the bid price for ETP 1 is 100p and the ask price is 102p, the bid / ask spread will be 2p (or 0.02% expressed as a percentage). Typically the more liquid products will have narrower spreads, reflecting more active buying and selling of a security by market makers.

### Brent Crude

A major trading classification of crude oil that is sourced from the North Sea. Brent Crude is an international benchmark for oil production.

### Broker

An entity that executes buy and sell orders on behalf of investors for a fee.

### Brokerage fees

The fee that a broker charges a client to execute an order on his/her behalf.

## C

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### Collateral

Generally, asset(s) that a borrower offers as security for a debt.

In the context of ETPs, collateral usually refers to assets offered by swap providers to secure their payment obligations under a swap agreement.

### Collateralised (secured)

A loan or obligation backed by security. Collateralisation of assets is intended to give lenders a sufficient level of reassurance against the risk of default. Contrast, uncollateralised.

### Collateral yield

In the context of ETPs this is an equivalent of the interest an investor would have earned had they had not invested in the underlying futures contract.

## C

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### Collective Investment Scheme / Vehicle

Broadly, an arrangement with respect to certain types of property that permits individuals to pool their investments and participate in/or receive profits or income arising from the management of these investments.

### Commodity

A physical good that is interchangeable with commodities of the same type. When commodities are traded on exchange they must also meet specified minimum standards. For example the LBMA has set the minimum acceptable fineness of Good Delivery gold bars at 99.5%.

### Commodity currency

Currencies of countries that depend heavily on the export of raw materials, such as 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 leverage 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 2% on day 1, then declines by 2% on day 2. The average return is 0%. A 2x leveraged ETP tracking this index, however, would have increased to £104 on day 1, then declined to £99.84 on day 2. The 2 day compound ETP return is -0.016%.

### Contango

The market state whereby the price at which an earlier expiring futures contract price can be sold is lower than the cost of buying a futures contract which expires at a later date. In other words, when a futures contract's roll yield is negative.

### Core & Satellite Investing

An investment strategy that incorporates traditional fixed-income and equity-based securities (for example ETPs). The 'Core' is comprised of passively managed securities and the 'Satellite' is made of holdings that are expected to add alpha.

### Correlation

A statistical measure of how the prices of two securities move in relation to one another. Correlation is often measured as a coefficient ranging between -1 and +1. A correlation coefficient of +1 would mean the two securities move perfectly in synchronisation. A relationship of -1 would mean the two securities move exactly in proportion but in opposite directions.

# 08 Glossary

## C

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### Counterparty risk

Any ETP that relies on a counterparty to help it achieve its objective will be subject to counterparty risk if that counterparty fails to carry out its contractual obligations.

In the context of swap-backed ETPs, one example of counterparty risk is that the swap counterparty will fail to meet its payment obligations under the swap agreement. Swap-backed ETPs are typically collateralised to mitigate counterparty risk.

### Cost of carry (futures)

A component of futures pricing.

The cost of storing and insuring an asset, and any other costs associated with the holding of the asset, and the interest that could have been earned on that amount.

### Creation

The process by which ETP shares or securities are created. An Authorised Participant will deliver the underlying assets to the ETP provider in return for the ETP securities.

### Credit Rating

An evaluation of the credit worthiness of financial entity (e.g. a bank) or a financial instrument. This analysis is under taken by a credit rating agency.

### Creditworthiness

The likelihood that a borrower will repay its debt. Creditworthiness is often expressed as a credit rating.

### Credit risk

Wherever there are payment obligations, there will be an element of credit risk. Credit risk is often used to describe the risk that a borrower might fail to pay its debt.

### Currency hedge

A mechanism that attempts to protect against currency risk. A currency hedge can be used to mitigate the effect of currency fluctuations.

### Currency risk

The risk that arises from changes in the exchange rate between two currencies.

For instance, you are a UK investor and you buy for Sterling ETP 1 denominated in Euros. ETP 1 appreciates by 10% over a year, but over the same period the Euro appreciates 10% against Sterling. As a result, the currency movement has completely offset your gain.

## C

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### Custodian (bank)

Bank specialising in the safeguarding of assets on behalf of clients. A custodian bank may also offer a number of ancillary services, such as dividend and interest collection, account administration and transaction settlements among others.

Well-known custodian banks include HSBC, Bank of New York Mellon and JPMorgan Chase.

## D

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### Debt Security

Generally, a term used to describe financial instruments which contain a promise by the issuer, normally a company, to pay the holder of the instrument a defined amount on or by a specified date (maturity date), with or without interest.

### Delivery (futures)

In the context of commodities, delivery usually refers to a seller of a commodity physically delivering the amount and type of underlying asset to the buyer in accordance with the terms of a commodity futures contract.

### Derivative

An instrument or contract whereby the value of the instrument or contract is derived from the performance of an underlying asset.

Derivatives can be categorised by the contract type, such as forward, option, or swap, and the underlying asset type, such as equity, fixed income, or commodity.

### Diversification

The process of investing in a number of different assets and/or asset classes in order to spread risk. Investing in a number of assets or asset classes increases the chance that loss from one asset or asset classes will be offset by gain from another.

### Dividend reinvestment

When the dividend paid by a company's shares are used to buy more shares in that company, rather than being paid out as cash.

### Domicile

Broadly speaking, domicile refers to the country that is an individual's real or permanent home which, if they have left, they intend to return to. An individual's country of domicile status may affect the taxes they are required to pay in a given country.

# 08 Glossary

## E

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### Emerging Market

Broadly, countries with social and/or business activity in the process of significant growth and industrialisation. It is worth noting that there is no definitive definition. In the context of ETPs, index providers generally apply different definitions of emerging markets when determining applicable constituents to be included in an index.

### ETC

Exchange Traded Commodity and Currencies. A product that gives access to commodities and currencies through exchange traded debt securities that usually pay no interest.

### Exchange Traded Commodities (ETC)

Exchange-traded commodities are products that track the price of commodities, providing investors with the opportunity to gain access to the commodities market without having to take delivery of the commodities in question. Securities in ETCs are generally structured as debt securities rather than as equity.

### Exchange Traded Fund (ETF)

An investment fund traded on a stock exchange. An ETF usually aims to provide the same return as a specific benchmark. ETFs are usually governed by the laws regulating collective investment schemes in the jurisdiction in which they are domiciled. In Europe, this is UCITS; in the United States, it is generally the Investment Company Act 1940.

### Exchange Traded Note (ETN)

A non-interest bearing debt instrument designed to track an underlying asset or benchmark, usually issued directly from a bank.

Unlike ETCs and ETFs, ETNs are not backed by underlying assets and are exposed to the credit risk of the issuing bank.

### Exchange Traded Product (ETP)

An umbrella term to refer to all financial instruments that share a number of similar characteristics: (i) traded on a stock exchange; (ii) passive investment; (iii) intended to track an underlying asset or benchmark.

Includes ETFs, ETCs, and ETNs.

### ETP issuer

A legal entity that issues exchange traded products.

## E

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### Exchange volume

In the context of a particular asset, the total amount or value of the asset traded on a given exchange in a given period of time. A measure of exchange activity.

### Execution slippage

The difference between the best price a security could be traded at, and the actual price achieved.

Typically results from inefficiencies in the method of transaction.

## F

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### Fixed income

An investment that provides a fixed, period payment during its lifetime, and the principal at maturity. The amount and number of each payment is therefore usually known in advance. The most common fixed income investments are bonds.

### Front month (futures)

In the context of futures contracts, front month refers to future contracts which are due for delivery in the shortest time that can be purchased in the futures market. The expiration date of front month futures contracts will be a date close to the current date, and often in the same month.

### Full replication

A physical replication method whereby the ETF holds the securities in the underlying benchmark, in the same proportion as they are weighted in that benchmark.

### Fully funded

A fully funded swap is a swap whereby cash to the value of the swap on creation is transferred to the swap counterparty. In an ETP context, this means that cash received from investors on creation of the securities is transferred by an issuer to the swap counterparties.

### Futures (contract)

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

Contrast, the spot price.

## 08 Glossary

### F

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#### Futures index

An index which is constructed to replicate the return of a continuous futures exposure, either in respect of a single commodity or a basket of commodities.

### G

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#### Good Delivery

Rules for Good Delivery are issued by supervisory metals bodies in order to ensure that metals comply with a certain standard.

### H

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#### Haircut

The percentage by which an asset's market value is reduced for the purpose of calculating its value as part of a portfolio (for example as collateral) to mitigate the risk of its market value falling.

#### Hedge funds

Unregulated collective investment schemes that provide absolute returns using a variety of trading strategies, which are often not subject to many investment restrictions.

#### Hedging

An investment mechanism that aims to offset potential losses on one investment by use of another investment.

#### High yield bonds

Bonds with a lower credit rating and, consequently, paying more interest than investment grade bonds.

Generally, high yield bonds are those with credit ratings below BBB from Standard & Poor's, and below Baa from Moody's. Bonds with credit rating at or above this level are considered investment grade.

### I

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#### Impact cost

The amount by which buying or selling an asset affects the asset's price.

Assets with higher liquidity will have smaller impact costs; assets with lower liquidity will have larger impact costs.

#### Index fund / tracker

An investment vehicle that aims to replicate the movements of a specified benchmark or index.

#### Index licence fee

If a product tracks a performance of a specified index it may require a licence from that index provider. The licence fee is the cost of that licence for a specified period of time.

#### Industrial metal

A metal whose primary use is in industry. For instance, aluminium, copper, lead, nickel, zinc.

#### Inflation

A sustained increase in the aggregate or general price level in an economy. It is measured as an annual percentage increase.

#### Inflation-linked (security)

A security that intends to either match or provide a return higher than the rate of inflation if it is held to maturity, ensuring a real return.

#### Institutional investors

Professional, commercial organisations that pool large sums of money for investment, either on their own behalf or on behalf of other institutional or retail investors.

Institutional investors include pension funds, insurance companies, and hedge funds.

# 08 Glossary

## I

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### Interest-bearing investments

Investments that accrue interest.

Commonly, these include deposit accounts and bonds.

### Intermediaries

In its broadest sense, an entity that acts as a middle man between two parties in a financial transaction.

In the context of ETPs, entities which provide execution services for investors, advisers and asset managers – for example brokers and platforms.

### Intra-day trading

Securities that trade on exchange during specified trading hours. In the context of ETPs refers to trades that take place between the times the issuer publishes the formal NAV.

### Investment fund / mutual fund

Generic term for a collective investment scheme that pools money to make investments.

### Investment trust

A form of collective investment scheme.

Investment trusts are close-ended, public listed entities which raise money by selling shares to investors. This money is then pooled to make investments.

### ISA (Individual Savings Account)

An investment account available to retail investors in the United Kingdom with tax benefits designed to encourage saving. If an individual saves cash or stocks in an ISA they are entitled to keep all that they receive from an investment without having to pay tax on any gain, until such point any money is removed from the ISA.

## K

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### KIID (Key Investor Information Document)

A document which must be made available to any investor in a fund which is regulated under the UCITS IV Directive including the majority of European ETFs. It consists of a short summary containing the most important facts about a fund.

## L

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### Leverage

Generally refers to borrowed money used to make investments whereby both gains and losses are amplified.

In the ETP context, leverage specifically refers to the level of return that can be expected against the performance of a given benchmark. For example a x2 leveraged ETP will aim to provide a return twice that of the daily performance of the underlying benchmark.

### Limit order

An order that instructs a broker to buy or sell an asset only if a particular price can be achieved. Limits orders help ensure that an investor does not pay more than a pre-determined price for a stock.

### Liquidity

Degree to which an asset can be transacted without affecting its price. The liquidity of an asset can be measured by how often it is bought and sold (its volume). As such, liquid assets will have a large number of willing buyers and sellers.

Cash is the most liquid asset; real estate is an example of an asset that is not very liquid.

### Listed security

Generally used to refer to a security that is offered on a stock exchange for sale to the general public. Also means a security that has been approved for public offering by the regulator in a European Union Member State. London Bullion Market Association (LMBA)

An international trade association that represents the interests of the gold and silver markets. The membership encompasses banks, dealers, fabricators, refiners, shippers and brokers.

## 08 Glossary

### L

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#### LME Warrants

LME warrants are regulated warehouse receipts that entitle the bearer to an allocated amount of physical metal which is stored in LME approved warehouses in accordance with certain standards. The issuer holds LME Warrants in respect of the metal the product is tracking, providing security holders with a further level of security.

#### London Metals Exchange (LME)

A physical and futures exchange that provides producers and consumers of metal with a market of last resort and offers hedging, worldwide reference pricing, and the option of physical delivery to settle contracts.

#### London Platinum and Palladium Market (LPPM)

A trade association representing the interests of the platinum and palladium markets. The membership encompasses banks and producers as well as ETP product providers.

#### Long

Broadly, a position that profits if an asset's value rises.

### M

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#### Management fee / MER (Management Expense Ratio)

Generally, an amount, usually expressed as a percentage or as a number of basis points, that is charged by the management company of a product to investors in that product. The MER lowers the investment return by that percentage, every year that an investor's money remains in that fund.

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

#### Market makers

Institutions that quote prices for an asset in order to provide liquidity in that product. Market makers aim to profit from the bid / ask spread.

#### Market maker spread

The market maker spread is ultimately the difference between the price at which a market maker is willing to buy a security (bid price) and the price at which he/she is willing to sell (ask price) the security.

### M

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#### Market order

An instruction by an investor to a broker to execute an order immediately at the best market price.

#### Mark to market

Generally, the accounting practice of recording the price of an asset at its market price, rather than its book cost or net asset value.

In the context of ETPs, used in the context of the periodic revaluation of collateral posted by a swap counterparty.

#### Maturity

In the context of a loan or debt instrument, the length of time after which a debt, and all interest on that debt, must be paid.

#### Metal entitlement

The amount of metal that each share of a physical commodity ETC is backed by and entitles a holder to on redemption.

For instance, 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

Extremely liquid short-term debts and securities (such as Treasury Bills) traded by large financial institutions on decentralised 'money markets'. Maturities range from one day to one year.

## 08 Glossary

### N

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#### Net Asset Value (NAV)

Generally, the value of an entity's assets minus its liabilities.

In the context of ETFs, the value of assets held by the product (whether equities, bonds, swaps, cash) minus its liabilities (e.g. management fee, swap fee).

#### New York Mercantile Exchange (NYMEX)

A large commodity futures exchange owned and operated by CME Group of Chicago.

#### Non-local currency

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

For instance, the local currency of an investor in the United Kingdom is Sterling. All other currencies are considered non-local.

### O

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#### OEIC (Open-ended Investment Company)

A company in which shares can be issued and cancelled on a continuous basis and often established as vehicles for collective investment schemes.

#### OCF (Ongoing Charge Factor)

The OCF is the annual cost of managing the product, expressed as a percentage. The OCF is also sometimes referred to as the Total Expense Ratio (TER). The costs included within the OCF can vary among providers, but usually incorporate:

- Management expense ratio
- Administrative costs
- Index license fee
- Storage costs (for physically backed commodity ETPs)

#### Open-ended

In the context of an investment vehicle, means that there is no limit on the number of shares that can be issued or redeemed by the vehicles.

### O

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#### Order book

A list of orders that a trading venue (e.g. London Stock Exchange) uses to record all trades as well as the best bid and ask price for all market makers quoting a particular security. An electronic system uses data collected in the book to match both sides of a trade in order to determine which orders can be completed.

#### Order types

The type of instructions that can be given to a broker to execute. There are four key order types: market order, limit order, stop loss and stop limit order.

### P

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#### Passive investment / management

An investment methodology that attempts to replicate, as closely as possible, the performance of a specified benchmark but does not involve any active management of assets.

The opposite of active investment.

#### Passporting

Where a prospectus that has been approved by a financial regulator of a country within the European Union can be automatically approved for use in other countries of the European Union without having to go through the approval process again.

#### Physical replication

An ETP structure where the product actually holds the securities or assets that comprise the benchmark the ETP is designed to track. Physical replication can be either be full or sampling.

#### Physically backed

Physically backed ETCs hold the physical metal that the product is tracking. This physical metal is held in a vault by a custodian bank nominated by the provider and gives investors a further level of security.

#### Platform

Online portals often containing a range of different products that can be accessed by investors, often advisers or retail investors.

## 08 Glossary

### P

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#### Portfolio

A grouping of an individual's or institution's investible financial assets.

#### Precious metal

A rare naturally occurring metal which has high economic value; better known for its use as a currency or for ornamentation as well as in industrial processes.

The set of precious metals includes but is not limited to gold, silver, platinum, palladium, rhodium and iridium.

#### Price return index (PR)

An index that only takes into account the capital appreciation of the underlying assets, ignoring any income generated by assets, for example interest or dividends.

Contrast, total return (index).

#### Primary market

In the context of ETPs, where Authorised Participants exchange securities or cash for ETP interests through the creation or redemption process.

Contrast the secondary market.

#### Private equity

Where investors' money is pooled and used to buy or take large stakes in companies. These companies are typically held for a medium term (often 3-7 years) and then sold in order to realise profits for investors, making private equity a traditionally medium term investment.

#### Prospectus

Within the European Union, a document generally required for any security to be offered to the public for sale or listed on certain stock exchanges. The prospectus requires approval from the financial regulator in a member state of the European Union to ensure it contains all the pertinent facts and risks of the investment.

### R

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#### Rebalancing

(i) In the context of an index, the periodic change in the constituents of an index and/or the proportion such constituents represent in the index. For instance, the FTSE 100 comprises the 100 companies listed on the London Stock Exchange with the largest market capitalisation. It rebalances quarterly, where any company not currently in the FTSE 100 will be added if its market capitalisation would place it within the top 90 companies of the FTSE 100. The companies with the smallest market cap will be removed to keep the number of constituents constant at 100.

(ii) In the context of a portfolio, buying and selling assets in order to return a portfolio to a desired asset allocation percentage.

#### Redemption

The process by which ETP interests are returned to the issuer and cancelled in exchange for the underlying assets (in the case of physical ETPs) or cash (in the case of synthetic ETPs) equivalent to the value of the ETP interests returned.

#### Reference basket

In the context of an unfunded swap, the securities that may be purchased by an issuer in order to obtain a return that can be exchanged for the return of the securities or index the product is designed to track.

#### Register

The list of holders of financial instruments, for example this may be shareholders or members. Every company is required by law to keep a register of its members.

#### Repurchase agreement (repo)

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

#### Reset (swap)

In the context of swap agreements, the process of paying the amounts owed under a swap thereby reducing the liabilities owed under the swap to 0.

#### Retail Distribution Review

The Retail Distribution Review (RDR), launched by the FSA (now the FCA) in 2006, was a wide ranging review of the retail investment market. One of the primary aims of the review was to increase consumer confidence in the retail market and ensure retail investors are fully informed about their investment options and investments.

# 08 Glossary

## R

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### Retail investors

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

### Reverse repo

A repo agreement from the perspective of the party purchasing the asset and selling it at an appointed date in the future.

### Risk spread

A cost component for market makers. The risk of price fluctuation in a security during the time the market maker holds it.

### Roll yield

The return generated when a futures contract near expiry is sold, and the proceeds reinvested in another futures contract whose expiry is further in the future.

Contracts being purchased which are more expensive than contracts being sold will have a negative impact on investment returns (contango). Alternatively contracts being purchased which are cheaper than the ones being sold will have a positive impact on investment returns (backwardation).

### Rolling

The process of selling a futures contract near expiry, and reinvesting the proceeds in another futures contract whose expiry is further in the future, thereby maintaining a continuous exposure.

## S

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### Sampling replication

A physical replication method where the ETP holds a selection (rather than all) of the securities in the underlying benchmark.

### Secondary market

In the context of ETPs, where ETP interests are transacted between investors and intermediaries without reference to the Issuer, for example on the stock exchange. Contrast, the primary market.

### Securities lending

The process whereby an owner of a security lends it to a borrower in exchange for a fee and often collateral. The borrower is contractually 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 preceding its return.

## S

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### Short

Generally, the sale of a borrowed asset with the expectation that it will fall in value.

In the context of ETPs, 'short' has been used to denote ETPs that offer negative leverage exposure.

### SIPP (Self-invested Personal Pension)

A personal pension scheme available in the United Kingdom. Allows people to make their own investment decisions from a wide range of investments, as well as having certain tax benefits.

### Special purpose vehicle (SPV)

A legal entity created to fulfil a particular purpose or role which has a distinct legal personality from the parties that set it up.

### Spot (price)

The price at which a particular asset can be bought or sold at a given point in time.

Contrast, futures.

### Spot return

In the context of physically backed exchange traded commodities, the movements in the spot price of a given commodity. In the context of synthetic commodity exchange traded commodities tracking a futures index, the movement in the futures price of a given commodity .

### Standard deviation

A measure of the average variance of a series of returns in relation to the average return. In the context of financial markets, a mathematical measure of an investment's volatility.

### Stock

A security issued by a corporation that represents an ownership right in the corporation and a right to a proportionate share of profits after payment of corporate liabilities and obligations, often known as a share.

### Stop limit order

An instruction to a broker to make a limit order once a designated price has been achieved.

### Stop loss order

An instruction to a broker to execute a market order once a designated price has been achieved.

# 08 Glossary

## S

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### Sub-index

A specialised variant of a more general index.

Sub-indices might include certain component, different currency, geography or methodology versions of the main index.

### Swap (contract / agreement)

A derivative contract where two parties agree to swap the return of one investment for another, or alternatively, where one party makes cash payments to another in exchange for the return of an investment or benchmark.

### Swap fee / spread

The cost paid by one counterparty to another for the return of an investment or benchmark.

### Swap provider / counterparty

The institution that provides the swap.

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

### Swap value

The value owing from one counterparty to another under the terms of a swap agreement.

### Synthetic replication

An ETP structure where the product does not actually hold the securities that comprise the benchmark or asset the ETP is designed to track, but instead enters into a swap agreement whereby the swap counterparty agrees to provide the benchmark return in exchange for a fee.

## T

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### Tax wrapper

An instrument or account within which certain investments can be held in order to obtain certain tax benefits.

In the UK, examples include ISAs, SIPPs, and offshore bonds.

### Total return (index)

The full return of an investment over a given period, including the income generated from dividends or interest payments and any gains or losses from a change in the asset's market value.

A total return index tracks the price movement of its underlying assets and any associated collateral yield, and cash distributions in the form of dividends and interest payments.

### Total cost of ownership

The total cost owning an investment, comprising management cost and trade/post-trade costs.

A more holistic measure of cost that includes TER, tracking difference, bid/as spread, and any other costs.

### Tracking difference

The difference between an ETP and its benchmark index over a given period. Tracking difference is a measure of cost.

### Tracking error

The volatility of the difference between the return of an ETP and its benchmark or asset. Tracking error is a measure of accuracy.

### Transaction / rebalancing cost

In the context of physical ETFs, the cost of buying and selling assets in order to realign its holdings with its benchmark.

### Transferable Security

Defined in the UCITS Directive as the universe of financial instruments that a UCITS may hold

### Trustee

The Trustee is an independent entity that holds the physical metal on trust for the benefit of the security holders in proportion to each security holder's respective entitlement.

## 08 Glossary

### U

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#### UCITS (Undertakings for Collective Investment in Transferable Securities)

A set of European directives that impose a common framework for regulating collective investment schemes throughout the European Union. UCITS compliant funds are entitled to a number of cross-border marketing and distribution rights throughout the European Union. ETPs that are not regulated by UCITS, for example ETCs which are issued as debt securities, may still be UCITS eligible, meaning they may eligible for investment in other UCITS funds.

#### UK reporting fund status

A tax status for ETPs domiciled in offshore jurisdictions, such as Jersey, Dublin and Luxembourg, that ensures gains on them will be taxed as capital gains, not as income.

#### Unallocated (account)

In the context of metal storage, an account where metal is not physically identified as belonging to a particular client. Instead, the client's entitlement is backed by the general stock of metal held by that custodian. Contrast, allocated (account).

#### Uncollateralised (unsecured)

A loan not backed by any security. In the event of bankruptcy of the borrower, the unsecured creditors will have a general claim on the assets of the borrower after the specific pledged assets have been assigned to secured creditors. Contrast, collateralised.

#### Underlying

In the context of ETPs, the asset or benchmark that the ETP is designed to track or held by that ETP.

#### Underlying Spread

The bid / ask spread associated with the cost of buying the underlying assets required for the creation of a physically backed ETP.

#### Unfunded swap

A swap whereby no cash is transferred to the swap counterparty on creation. Instead, some of the money is used to pay the swap fee, and the rest of the money is managed by the party seeking the return under the swap (possibly in conjunction with the swap counterparty). In an ETP context, this means that the cash received from investors on creation of the securities is held by the issuer

#### Unit trust

An open-ended collective investment scheme that pools money to make investments. Constituted as a trust, not as a company, and issues units, rather than shares.

### V

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#### Volatility

Volatility refers to the degree to which financial prices fluctuate. It is a mathematical measure of the range of returns for an asset or index over a period of time.

Volatility can be measured using standard deviation.

#### Volatility index

An index constructed in an attempt to measure perceived market volatility.

Examples include the VIX and IVSTOXX.

### W

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#### West Texas Intermediate (WTI)

WTI is a classification of crude oil that is produced in Texas and southern Oklahoma. WTI is the benchmark for US crude oil.

#### Withholding Tax

The amount that an individual paying income to another person must withhold from that payment due to local taxation. In the context of securities, withholding tax often applies to dividends and/or interest. The person responsible for the withholding is often referred to as the withholding agent. Rates for withholding tax vary and are usually governed by the tax law of the jurisdiction from which the payment is made. They are also influenced by the agreements between jurisdictions (double taxation agreements).

### Y

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#### Yield

The income return on an investment. This refers to the interest or dividends received from an ETP.

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