

# Synthetic Replication

Where swap ETFs offer a smart approach  
to market exposure

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The information contained in this document is primarily intended for index ETFs, i.e. those whose investment objective is to replicate a market index, whether upwards or downwards.

The effectiveness and structural integrity of an Exchange-Traded Fund (ETF) are fundamentally determined by its replication methodology. Synthetic replication - or 'swap-based replication' - has experienced significant advancements since these instruments were launched in the early 2000s. They have become essential in index management, which is reflected in their growth in number and popularity.

Over the past decade, the European synthetic replication framework has been strengthened through enhanced regulatory oversight and the adoption of best practices by synthetic ETF issuers. This has increased the robustness and transparency of synthetic ETFs – also named 'swap ETFs' –, making them a critical tool for accessing certain market exposures where physical replication may be less efficient or feasible.

While both physical and synthetic ETFs have evolved in recent years, it is the evolution of the latter that we bring in to focus here. Institutional investors are increasingly comfortable in digging into the synthetic structure and evaluating the nuances of the replication models. With this in mind, we look to offer a deeper explanation of how synthetic ETFs work and their potential benefits. We also highlight the key characteristics of Amundi's synthetic ETF platform.



ETFs are investment vehicles listed on stock exchanges that replicate the performance of a market index, capturing both its upward and downward movements. Their growing adoption among institutional investors is driven by their operational efficiency, accessibility, transparency, and cost-effectiveness. ETFs provide broad and customisable market exposures, aligning with diverse investment mandates and strategies.

## Amundi ETF: Leading the way in synthetic replication

**Amundi ETF is the global leader in synthetic ETFs**, with about 40% of the total market share in this segment of the UCITS ETF market<sup>1</sup>. As a pioneer in synthetic replication, Amundi can rely on proven expertise and operational processes, along with a dedicated and efficient organisation.



1. Source: Amundi, Bloomberg, Data as of December 31, 2025. UCITS: 'Undertakings for Collective Investment in Transferable Securities' – European Directive 2014/91/EU. Information given for indicative purposes only, may change without prior notice. 2. Source: ETFGI as of December 31, 2025. 3. Source: Amundi as of December 31, 2025.



### Strong founding pillars

- Multi-swap counterparty model, with strict counterparty selection and monitoring
- Strict daily reset model
- Strict substitute basket rules and controls



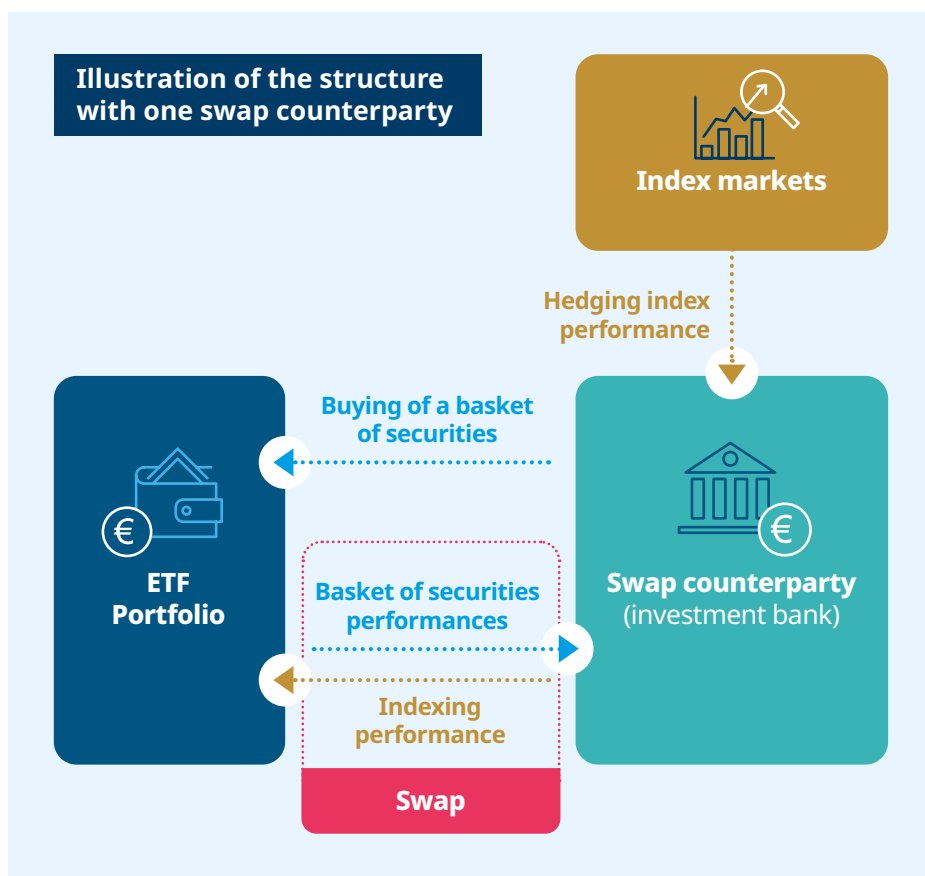
### Dedicated organisation

- In-house management providing flexibility and opportunity to innovate
- Efficient organisation - Dedicated portfolio managers and operational oversight teams
- Dedicated tools - Alto proprietary global system

## How does synthetic replication work, and why is it used?

### Demystifying synthetic replication

Synthetic replication aims to reproduce the performance of an index 'synthetically' using a derivative instrument - a swap<sup>4</sup>. The ETF enters into a swap with a counterparty, usually an investment bank, who commits to deliver the performance<sup>5</sup> of the ETF index.



In practical terms, the ETF buys a diversified basket of assets called a 'substitute basket', made up of securities that may or may not belong to the ETF index.

The ETF simultaneously enters into a swap (called 'Total Return Swap') with a counterparty, in which the ETF receives the performance of the index and pays out the performance of the substitute basket.

A synthetic fund can enter one or several swaps (therefore having one or several swap counterparties).

### A replication adaptable to any type of market exposure

Synthetic replication can be used for any type of index. The use of swaps allows for optimal exposure to the index, regardless of the index itself. This is an advantage compared to certain physically replicated ETFs, for which replication is difficult if the indices are broad (with a large number of components) or more difficult to replicate (such as emerging exposures).

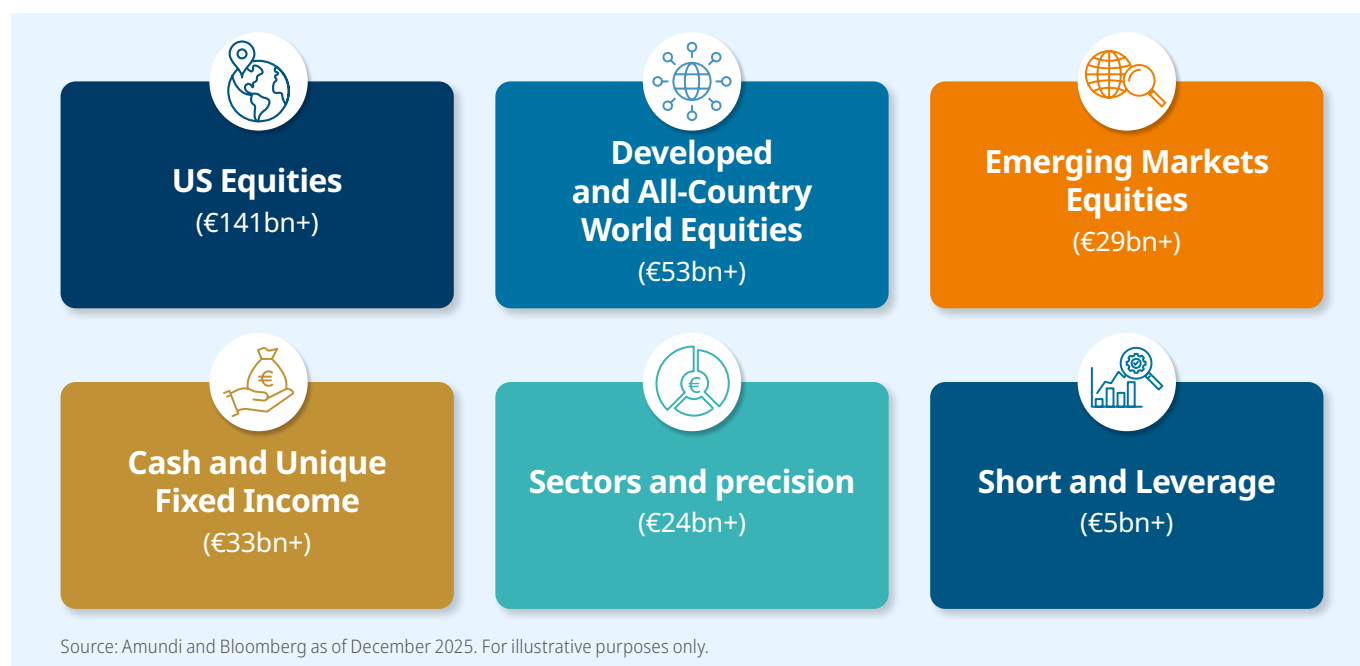
4. Investment involves risks. For more information, please refer to the Risk section below. For more information regarding the index methodology, please refer to index provider website. 5. Past performance does not predict future returns.

For certain exposures (such as emerging markets, US equities, select European equities exposures, etc.), the investment bank, or swap counterparty, may receive conditions that are better than those available to the fund when purchasing index securities, thanks to its nature, scale, global presence or expertise: access to broader markets, more favourable pricing or tax conditions, etc. Ultimately, the counterparty can pass on

these benefits to the fund through a higher index performance compared to its equivalent in physical replication.

Synthetic replication is also used for ETFs with strategy indices (short or leveraged indices) where physical replication is not possible.

## European synthetic ETF AuM can be broadly categorised into six key buckets



## The risks associated to synthetic replication

One risk often associated with synthetic replication is what is known as counterparty risk. This is the risk that the investment bank providing the performance swap may default and be unable to pay the performance to the ETF, resulting in a potential loss for the fund.

The ETF manager can implement safeguards to limit the impact of this risk, notably with the use of a rigorous risk management framework and adequate governance. This includes:

- A strict selection of the investment bank counterparty to the swap, and ongoing monitoring of it throughout the life of the ETF,
- A selective choice of the securities in the basket within the ETFs portfolio,
- A strict control of the swap value aimed at achieving a counterparty risk close to zero on a daily basis.

It is important to remember that physically replicated ETFs can also be subject to counterparty risk if they use securities lending.



## Where does synthetic replication offer an edge?



### The US case and the impact of withholding tax

Synthetic replication is particularly suitable for certain exposures, such as US equities.

Whilst physically replicated ETFs are subject to 15-30% withholding tax on US equity dividends<sup>6</sup>, synthetically replicated ETFs can benefit from a favourable tax treatment.

In a synthetic structure, the swap counterparty (usually an investment bank) receives close to 100% of US dividends if the ETF tracks a so-called 'Qualified index' (such as S&P 500) respective to the US '871m' regulation<sup>7</sup>.

This US tax regime positively impacts on the performance of ETFs tracking 'Qualified' US indices. The table below illustrates these impacts based on an assumption of an annual dividend yield of 1.5% for the index.



Structure receiving US equity dividends	S&P 500 Net Total Return index	ETF in synthetic replication	ETF in physical replication	
		Whatever the country in which the fund is domiciled	Fund domiciled in Ireland	Fund domiciled in Luxembourg or France
% of dividends received	70%	100%	85%	70%
Estimated slippage based on illustrative dividend yield of 1.5%, versus gross return index	-	0 bp	22.5 bps	45 bps

Source: Amundi, as of 30 September 2025. For illustrative purposes only and subject to change.

For example, if we concretely analyze the offer of European ETFs replicating the S&P500 Net Total Return index<sup>8</sup>, we note an approximate annual outperformance of the synthetic ETF by 10 bps compared to the best physical ETF<sup>9</sup> (gross of fees<sup>10</sup>).



### Emerging market exposures, single countries and regions

Emerging markets are often complex and difficult to access, with specific and complicated regulations. For example, opening an account in-country, trading in local currency, facing currency controls or complying with local regulatory and tax constraints might all require specialist knowledge. Some countries also impose foreign ownership restrictions. It can also lead to long and painful procedures for fund managers.

An investment bank, on the other hand, may have more resources and facilities for acquiring index securities (access to local books and hedging techniques, notably) and managing exposure on a day-to-day basis. The investment bank is also

used to dealing in and managing index swaps. Ultimately, it can pass on these benefits to the fund through a higher index performance compared to its equivalent in physical replication. As a result, exposure management may be more efficient in a synthetic structure than it would be in physical replication.

Exposures on the China A equity market are a good illustration of the benefits brought by synthetic replication, since banking entities benefit from structural and opportunistic advantages on the lending/repo markets. This translates into an approximate annual outperformance of around 390 bps in 2025 compared to the best physical ETF<sup>11</sup>.

6. French or Luxembourg physical funds are subject to a 30% withholding tax rate on US equity dividends, and Irish physical funds to a rate of 15%. 7. Section 871m is a US anti-avoidance tax law aimed at preventing the circumventing of withholding tax on US source dividends, by imposing a US withholding tax on 'dividend equivalent payments' made from certain qualifying financial instruments. However, financial instruments referencing 'qualifying indexes' (rather than specific US equities) are out of scope of the 871m regulations. 8. The Net Total Return index is the Gross Return index less 30% withholding tax. 9. Data as of end of December 2025. **Past performance does not predict future returns.** The outperformance depends on the dividend yield level (i.e. the higher the yield the more advantage for synthetic ETFs). Information given for indicative and illustrative purposes only, may change without prior notice. 10. Before the management fees are deducted from the ETF performance. The outperformance depends on the dividend yield level (i.e. the higher the yield the more advantage for synthetic ETFs). 11. Data as of end of December 2025. **Past performance does not predict future returns.** The outperformance depends on the dividend yield level (i.e. the higher the yield the more advantage for synthetic ETFs). Information given for indicative and illustrative purposes only, may change without prior notice.

In addition to the direct outperformance in the ETF's tracking difference, two other potential synthetic replication advantages are:

- If the exposure includes India, for example (where fees of nearly 1% may apply to the sale of Indian stocks), the redemption fees of the synthetic ETF on the primary market will be lower than those of the physically replicated ETF. In the case of Global Emerging Market exposures, redemption fees are around 20bps in synthetic vs 100 bps in physical<sup>12</sup>.

- The greater accuracy of synthetic replication for certain exposures results in relatively lower tracking error than those observed with physical replication. For example, consider the MSCI Emerging Markets exposure where the tracking error is 1 basis point in synthetic versus 115 in the physical equivalent<sup>12</sup>.



## European exposures

European securities may be expensive to buy due to financial transaction taxes and stamp duties (e.g. France, Italy, the UK etc.). These investment costs - potentially high on certain exposures - are reflected in the creation fees in the primary market<sup>13</sup>. In these specific cases, synthetic ETFs offer competitive creation or redemption fees compared to their physical peers. For example, on the MSCI Europe exposure, creation fees are around 3 bps in synthetic vs 21 bps in physical<sup>12</sup>.

## Why choose Amundi ETF's synthetic platform?

### Our market leading synthetic operating model



Investment involves risks. For more information, please refer to the Risk section below. Information given for indicative purposes only, may change without prior notice.



## What differentiates Amundi ETF from its peers?

What sets Amundi ETF apart is its distinctive approach to counterparty risk management in the synthetic ETF market:

- Swap counterparties are carefully selected exclusively from the pool of counterparties already authorised by Amundi for its broader activities, ensuring a high standard of reliability.
- The swap is reset daily to maintain counterparty risk at zero every day to protect investors.

12. Data as of end of December 2025. Information given for indicative and illustrative purposes only, may change without prior notice.

13. Transaction cost and commissions may occur when trading ETF.

## Deep dive

It is important to remember that European regulation (UCITS<sup>14</sup> and EMIR<sup>15</sup>) require strict risk-mitigation measures, particularly in the context of counterparty risk. These frameworks ensure that synthetic ETFs operate within a robust risk-management environment.

Furthermore, Amundi ETF places great emphasis on the quality of synthetic ETFs, risk control, and transparency of its organisation and products, notably through the publication of data on its website.

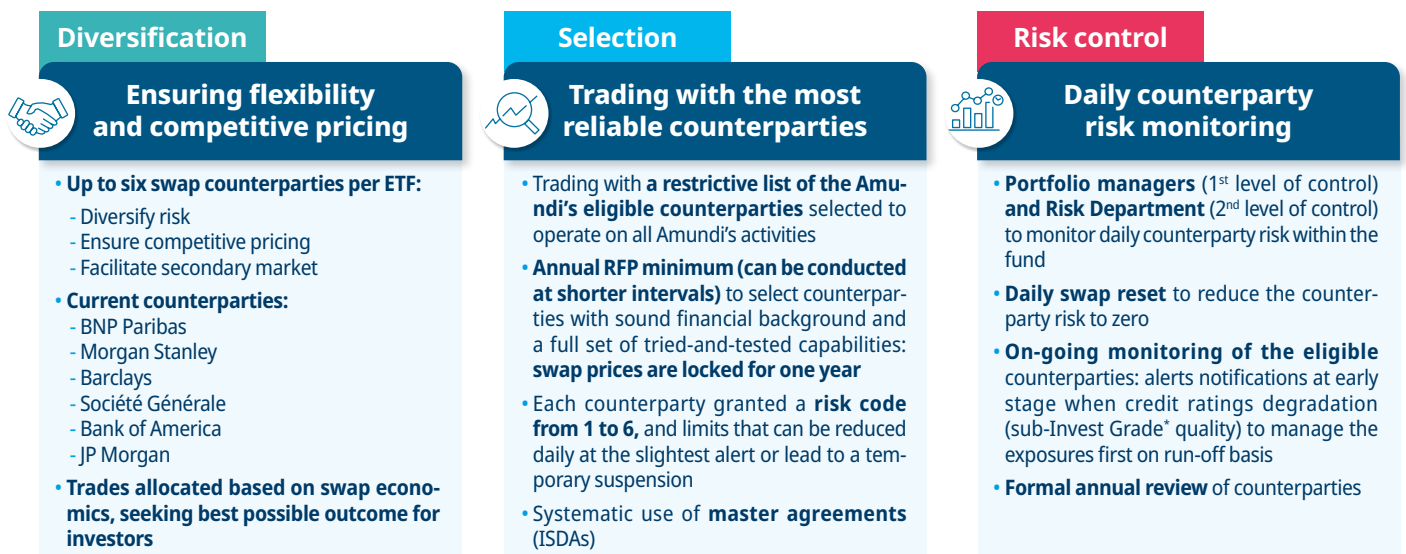
### A robust multi-counterparty model

Amundi's synthetic ETFs are managed within a robust and tightly controlled framework designed to limit risk for investors. This framework is supported by four key pillars:

#### 1 Swap counterparty management

- The swap counterparty is selected through a thorough request for proposal (RFP) among counterparties already approved by Amundi for its activities.
- It must have a high credit rating, demonstrate operational efficiency, have experience in ETF synthetic replication and a track record in servicing ETFs.
- It is strictly monitored on an ongoing basis.
- The list of Amundi ETF eligible swap counterparties is reassessed.

#### Our counterparty selection and monitoring process



Information given for illustrative purposes only, may change without prior notice. Source: Amundi as of December 31, 2025. \* Sub-Investment Grade – also called High Yield – are bonds with a credit rating below investment grade, i.e. from BB+ to D according to Standard & Poor's.

#### 2 Fund asset guidelines

- In the swap contract, the ETF manager defines a clear list of constraints for the composition of the basket of securities. The securities in the substitute basket held in the funds' assets must be high quality, liquid and diversified<sup>14</sup>. In equity ETFs they are large caps securities and belong to a well-defined universe<sup>15</sup>.
- The ETF manager is responsible for the day-to-day operational management of the swap. The ETF manager is the person who ultimately validates the fund's investments and is the ultimate guarantor of compliance with the ETF's investment strategy.

#### 3 Swap rules

- The swap's value represents the ETF's counterparty risk. UCITS regulations limit this risk to 10% of the fund's net assets per counterparty. In practice, however, Amundi ETF applies a much lower limit as the swap is systematically 'reset' on a daily basis to achieve near-zero counterparty risk. In practice, the ETF buys back (or sells) securities in the substitute basket to bring the value of the basket back to 100% of the fund's net assets, and at the same time the value of the swap is reset to zero.
- When the fund is facing multiple counterparties, in order to diversify the allocation of swaps (e.g. for funds with significant assets under management), the same swap rules apply across all counterparties on a daily basis.

14. UCITS: 'Undertakings for Collective Investment in Transferable Securities' – European Directive 2014/91/EU.

15. EMIR: 'European Market Infrastructure Regulation' – Regulation No 648/2012. 14. Diversification does not guarantee a profit or protect against a loss. 15. Securities must belong to major representative indices of developed markets: MSCI World, S&P 500, Stoxx Europe 600, CAC 40, DAX, Nikkei 400 and Russell 1000 as of end of December 2025, or belong to the ETF underlying index. Exclusion of the swap counterparty and Amundi's securities.

#### 4 Direct assets ownership

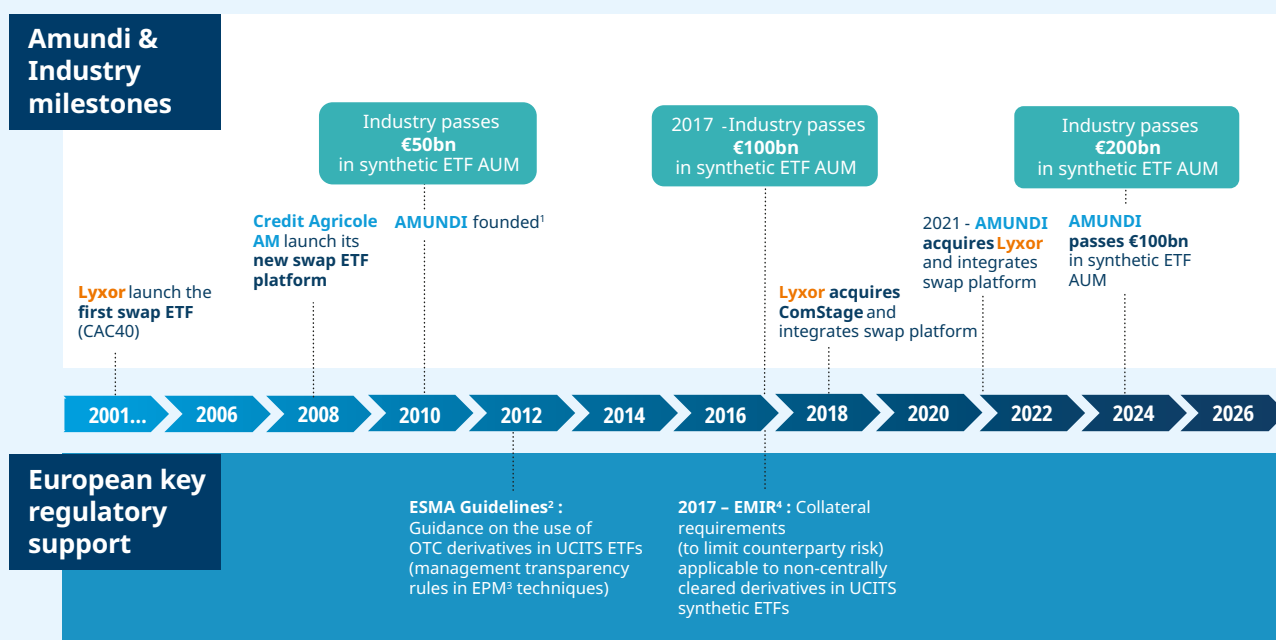
- The ETF is the full and direct owner of the assets (substitute basket securities), which are held in segregated accounts (i.e. for the benefit of the fund) with an independent custodian. This allows a direct and immediate access to the fund's securities.

### A dedicated swap platform

The Amundi ETF synthetic platform shows a long track record and experience. Lyxor, which Amundi acquired in 2021, launched the first swap ETF in 2001. As a pioneer in synthetic replication, with 24 years of experience, the size of the Amundi synthetic platform has been achieved through the merger of several powerful ETF houses and large inflows throughout.

The platform offers the broadest range of synthetic ETFs, providing multiple building blocks for asset allocation.

### The history of synthetic ETFs is the history of the Amundi synthetic platform



Source: Amundi, Bloomberg, December 2025. 1. Amundi is the result of the merger between the asset management activities of Cr dit Agricole (Cr dit Agricole Asset Management, CAAM, including CASAM) and Soci t  G n rale (Soci t  G n rale Asset Management, SGAM). 2. 'ESMA Guidelines' or 'ESMA guidelines on ETFs and other UCITS issues' - ESMA/2012/832EN dated 2012, updated in 2014 - ESMA/2014/937EN. 3. EPM: Efficient Portfolio Management techniques (including notably OTC total return swaps and securities lending transactions for UCITS synthetic ETFs). 4. 'European Market Infrastructure Regulation' - Regulation No 648/2012.

#### The platform benefits from the Amundi's outstanding pricing power as well as a dedicated organisation centred around 60 experts:

portfolio managers, engineering, dealing, analysts, risks, middle office and IT.

Amundi's ALTO Portfolio Management System is designed to monitor swap deviations and select the most cost and risk efficient trades. STP<sup>16</sup> automates all trades from portfolio managers to Amundi Intermediation (dealing), middle office and custody, with embedded pre-trade risk controls.



16. STP: Straight-Through-Processing is an automated process using electronic instructions and transfers with no manual intervention involved.



**Our commitment on transparency and quality**



**High level of transparency**

- Clear and full transparent set-up with **daily swaps reset**
- Daily disclosures on Amundi ETF websites: **swap mark-to-market, fund's assets, etc.**



**Efficiency**

- Amundi's size bringing **substantial resources and bargaining power**
- **Risk management as an integral part of Amundi's DNA**, applied at each step of our investment process (independent risks teams and in-house tools)



**Agility**

- **Monitoring of the fund's performance** for greater responsiveness to changes in underlying markets
- **A pragmatic approach to index replication** (synthetic or physical) to offer our clients the best possible solution

Source: Amundi as of December 31, 2025. Calculation based on ETF providers AuMs.



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## Knowing your risks

It is important for potential investors to evaluate the risks described below, and in the fund's Key Information Document ("KID") for non-UK investors or Key Investor Information Document ("KIID") for UK investors, and prospectus available on our websites [www.amundiETF.com](http://www.amundiETF.com).

- **CAPITAL AT RISK** - ETFs are tracking instruments. Their risk profile is similar to a direct investment in the underlying index securities. Investors' capital is fully at risk and investors may not get back the amount originally invested.
- **UNDERLYING RISK** - The underlying index securities of an ETF may be complex and volatile. For example, ETFs exposed to Emerging Markets carry a greater risk of potential loss than investment in Developed Markets as they are exposed to a wide range of unpredictable Emerging Market risks.
- **REPLICATION RISK** - The fund's objectives might not be reached due to unexpected events on the underlying markets which will impact the index calculation and the efficient fund replication.
- **COUNTERPARTY RISK** - Investors are exposed to risks resulting from the use of an OTC swap (over-the-counter) or securities lending with the respective counterparty(-ies). Counterparty(-ies) are credit institution(s) whose name(s) can be found on the fund's website [amundiETF.com](http://amundiETF.com). In line with the UCITS guidelines, the exposure to the counterparty cannot exceed 10% of the total assets of the fund.
- **CURRENCY RISK** - An ETF may be exposed to currency risk if the ETF is denominated in a currency different to that of the underlying index securities it is tracking. This means that exchange rate fluctuations could have a negative or positive effect on returns.
- **LIQUIDITY RISK** - There is a risk associated with the markets to which the ETF is exposed. The price and the value of investments are linked to the liquidity risk of the underlying index securities. Investments can go up or down. In addition, on the secondary market liquidity is provided by registered market makers on the respective stock exchange where the ETF is listed. On exchange, liquidity may be limited as a result of a suspension in the underlying market represented by the underlying index tracked by the ETF; a failure in the systems of one of the relevant stock exchanges, or other market-maker systems; or an abnormal trading situation or event.
- **VOLATILITY RISK** - The ETF is exposed to changes in the volatility patterns of the underlying index relevant markets. The ETF value can change rapidly and unpredictably, and potentially move in a large magnitude, up or down.
- **CONCENTRATION RISK** - ETFs can select a large portion of their assets in a particular issuer, industry, stocks or type of bonds, country or region for their portfolio. Where selection rules are extensive, it can lead to a more concentrated portfolio where risk is spread over fewer stocks. Where selection rules are extensive, it can lead to a more concentrated portfolio where risk is spread over fewer stocks. This can mean both higher volatility and a greater risk of loss.

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