Introduction

The creation and redemption mechanism underpins the inner workings of an exchange-traded fund (ETF). Many of the potential benefits of an ETF are enabled by the creation and redemption process. While this process is executed daily in the ETF industry, confusion often arises due to the complexity associated with how and why creations and redemptions occur.

As with a traditional mutual fund, the number of shares of an ETF in circulation can change on any trading day as a result of the product's open-ended structure—meaning shares can be added or subtracted to balance supply and demand in the market. This mechanism—referred to as "creation and redemption"—allows the share price of an ETF to be only momentarily tethered to supply and demand while staying grounded in the value of the assets held by the fund over the longer term. The creation and redemption process occurs between ETF issuers and large institutional investors known as "authorized participants," or APs.

Creation and redemption mechanism

ETFs have a unique creation and redemption mechanism. APs create or redeem shares of an ETF directly with the ETF provider in creation units (typically large blocks of at least 25,000 ETF shares), which are generally exchanged in-kind for baskets of the underlying securities and/ or cash. APs act as market makers on the open market, using their ability to exchange creation units with their underlying securities to provide liquidity to the ETF shares and help ensure that their intraday price approximates the net asset value (NAV) of the fund.

Creation

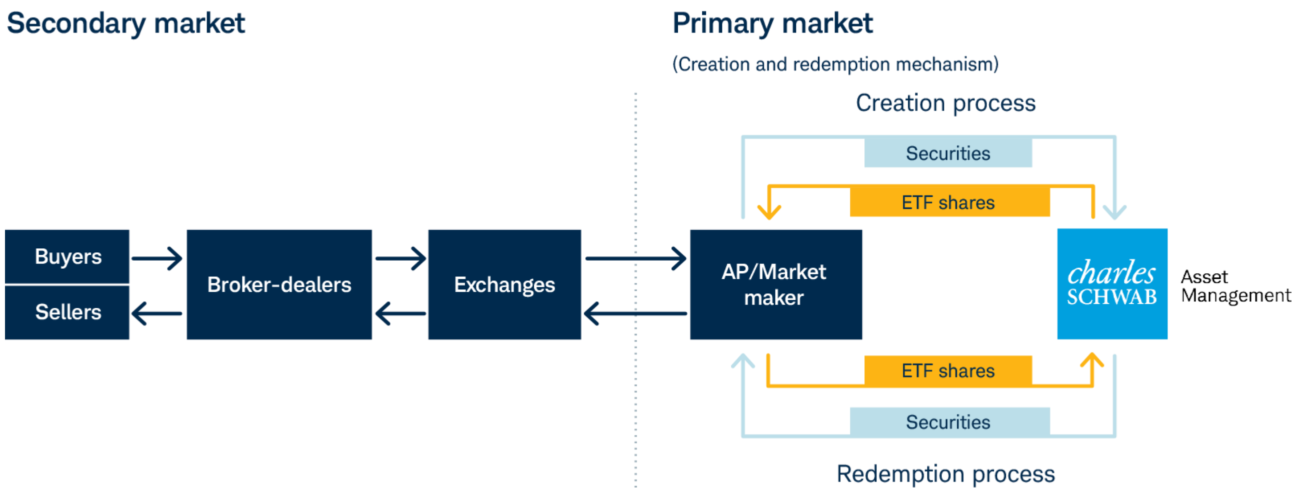
To create additional shares of an ETF, an AP will generally purchase all the securities that constitute the ETF in appropriate proportion to the overall portfolio and will then exchange this "basket" of securities with the ETF issuer in exchange for one or more creation units of the ETF.

Under certain circumstances, an AP may provide cash-in-lieu of some or all of the basket securities, along with a transaction fee to offset the cost to the ETF of acquiring the securities.

Redemption

To redeem shares of an ETF, an AP will accumulate a sufficient number of shares of the ETF to constitute at least a creation unit and will then exchange these ETF shares with the ETF issuer for a basket of securities of equivalent value.

If an AP receives cash-in-lieu of securities, it will typically pay a transaction fee to offset the cost to the ETF of liquidating the securities from the ETF's portfolio.

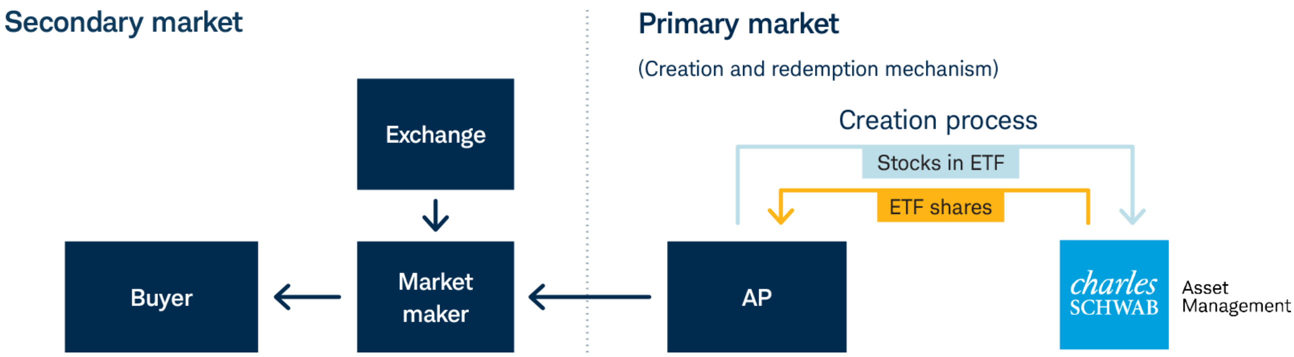


Why do creations and redemptions occur?

There are two primary reasons why creations and redemptions are essential for the everyday efficiency of an ETF. First, because APs do most of the buying and selling of the securities held by the ETF, the trading costs and fees are removed from the fund, allowing tighter tracking to its underlying index. Second, because an ETF trades on an exchange like a stock, its share price will fluctuate throughout the trading day due to supply and demand. APs monitor this demand and buy or sell the underlying shares. In turn, the ETF's share price is kept closely aligned with the value of the assets held in the portfolio, while the AP profits from these temporary deviations between the ETF share price and the share prices of the underlying shares (arbitrage).

Large trade orders

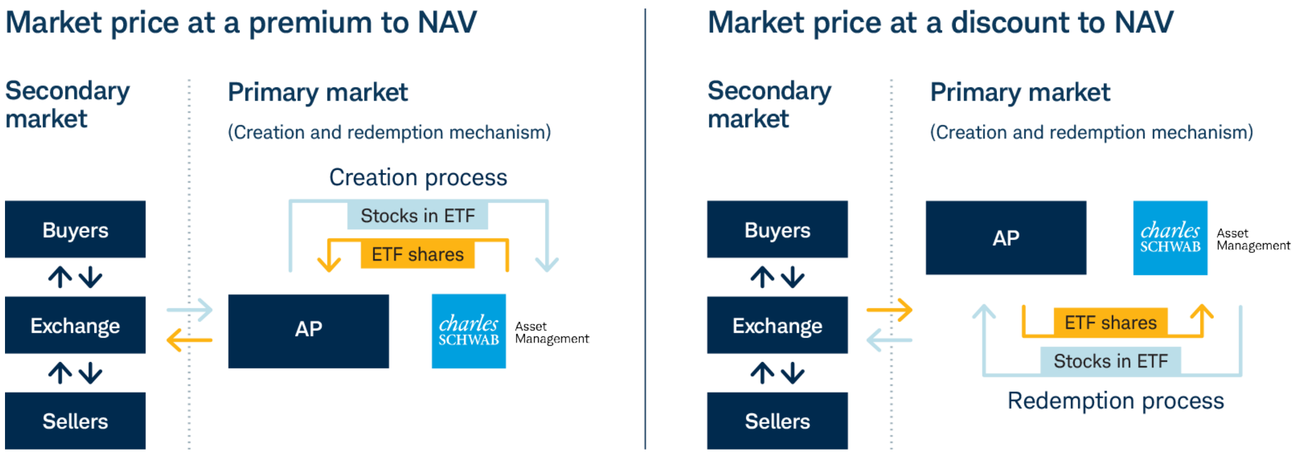
When interest in an ETF is high, either because of many smaller orders or because one client wishes to acquire or divest a position of significant size, an AP may effect a creation or redemption event. The creation/redemption mechanism is an efficient way to execute a large trade order. The AP will generally pay the trading costs and fees, including those to the ETF issuer to cover processing the creation/redemption activity. Since the ETF itself generally doesn't pay for these transaction costs, the fund may have tighter tracking to its benchmark index performance. In comparison, in a mutual fund, all shareholders bear the cost of the trading expenses due to the buying and selling of the underlying securities held within the portfolio. Due to transaction costs and trading spreads of the underlying securities, this may be costly and impact the returns of the mutual fund.



Maintaining fair value through arbitrage

Arbitrage is a profit opportunity that helps ensure an ETF's share price in the secondary market remains tightly correlated to the value of the securities held in the ETF portfolio. To the extent that an ETF's share price strays from the fair value of its portfolio securities, APs will "arbitrage" the difference.

If the market price of the ETF is above the its NAV, an AP could purchase the underlying basket of securities and short-sell[1] the ETF. Later the AP will execute a creation event, with the new ETF shares covering the short-sell position. The opposite occurs when the market price of the ETF is below the its NAV. In this case, the AP would buy the ETF and short-sell the underlying basket of securities, and later execute a redemption event to cover the short position in the underlying basket.



Key terms

- **Authorized participants:** Large institutions that transact directly with the ETF provider to create or redeem shares of an ETF.
- **Creation unit:** The minimum number of ETF shares required to transact directly with the ETF issuer.
- **Primary market:** The direct exchange of securities for shares of an ETF between authorized participants and ETF issuers.
- **Secondary market:** The national markets system (e.g., the stock exchanges and other venues where listed securities can be traded). Shares of ETFs are continuously bought and sold throughout the day on an exchange or other trading venue by investors.

Summary

The creation and redemption mechanism is a key component of how an ETF functions. The ability of APs to add or subtract ETF shares from the market to match demand can help deliver efficiencies and tighter tracking typically not seen in a traditional mutual fund. Many of the potential benefits of an ETF can be derived as a result of this process. APs play a critical role to ensure the ETF is priced fairly and in line with its NAV. APs may also help to provide tighter tracking within the ETF by absorbing the transaction costs caused by the buying or selling of the underlying securities held within the ETF. This unique process has helped ETFs become one of the fast-growing investment vehicles available to investors in today’s modern world.