



## An Inside Look At ETF Construction

June 27, 2005 | By [Jim McWhinney](#)

Some people are happy to simply use a range of devices like wrist watches and computers and trust that things will work out. Others want to know the inner workings of the technology they use, and understand how it was built. If you fall into the latter category and as an investor have an interest in the benefits that [exchange-traded funds](#) (ETFs) offer, you'll definitely be interested in the story behind their construction.

### ETF Creation

The creation and redemption process for ETF shares is almost the exact opposite of that of [mutual fund](#) shares. When investing in mutual funds, investors send cash to the fund company, which then uses that cash to purchase securities and in turn issue additional shares of the fund. When investors wish to redeem their mutual fund shares, the shares are returned to the mutual fund company in exchange for cash. The creation of an ETF, however, does not involve cash.

The process begins when a prospective ETF manager (known as a [sponsor](#)) files a plan with the SEC to create an ETF. Once the plan is approved, the sponsor forms an agreement with an [authorized participant](#), generally a [market maker](#), [specialist](#) or large [institutional investor](#), who is empowered to create or redeem ETF shares. (In some cases, the authorized participant and the sponsor are the same).

The authorized participant borrows shares of stock, often from a pension fund, and places those shares in a trust, and uses them to form [creation units](#) of the ETF. Creation units are bundles of stock varying from 10,000 to 600,000 shares, but 50,000 shares is what's commonly designated as one creation unit of a given ETF. Then, the trust provides shares of the ETF - which are legal claims on the shares held in the trust (the ETFs represent tiny slivers of the creation units) - to the authorized participant. Because this transaction is an [in-kind](#) trade - that is, securities are traded for securities (the authorized participant provides shares of stock to the trust and the trust in turn provides ETF shares to the authorized participant) and no cash changes hands - there are no tax implications. Once the authorized participant receives the ETF shares, the shares are then sold to the public on the open market just like shares of stock.

When ETF shares are bought and sold on the open market, the underlying securities that were borrowed to form the creation units remain in the trust account. The trust generally has little activity beyond paying dividends from the stock held in the trust to the ETF owners and providing administrative oversight because the creation units are not impacted by the transactions that take place on the market when ETF shares are bought and sold.

### Redemptions

When investors want to sell their ETF holdings, they can do so by one of two methods. The first is to sell the shares on the open market. This is generally the option chosen by most individual investors. The second option is to gather enough shares of the ETF to form a creation unit and then exchange the creation unit for the underlying securities. This option is generally only available to institutional investors due to the large number of shares required to form a creation unit. When these investors redeem, the creation unit is destroyed and the securities are turned over to the redeemer. The beauty of this option is in its tax implications for the portfolio.

We can see these tax implications best by comparing the ETF redemption to that of a mutual fund redemption. When mutual fund investors redeem shares from a fund, all shareholders in the fund are affected by tax burden because to redeem the shares, the mutual fund may have to sell the

securities it holds, [realizing](#) the [capital gain](#), which is subject to tax. Also, all mutual funds are required to pay out all dividends and capital gains on a yearly basis. So even if the portfolio has lost value that is unrealized, there is still a tax liability on the capital gains that had to be realized because of the requirement to pay out dividends and capital gains.

ETFs minimize this scenario by paying large redemptions with shares of stock. When such redemptions are made, the shares with the lowest cost basis in the trust are given to the redeemer. This increases the cost basis of the ETF's overall holdings, minimizing capital gains for the ETF. It doesn't matter to the redeemer that the shares it receives have the lowest [cost basis](#) because the redeemer's tax liability is based on the purchase price it paid for the ETF shares, not the fund's cost basis. When the redeemer sells the shares of stock on the open market, any gain or loss incurred has no impact on the ETF. In this manner, investors with smaller portfolios are protected from the tax implications of trades made by investors with large portfolios.

### **The Role of Arbitrage**

Critics of ETFs often cite the potential for ETFs to trade at a share price that is not aligned with the value of the underlying securities. To help us understand this concern, a simple representative example best tells the story.

Assume an ETF is made up of only two underlying securities:

- Security A, which is worth \$1 per share
- Security B, which is also worth \$1 per share

In this example, most investors would expect one share of the ETF to trade at \$2.00 per share (the equivalent worth of Security A and Security B). While this is a reasonable expectation, it is not always the case. It is possible for the ETF to trade at \$2.02 per share or \$1.98 per share or some other value.

If the ETF is trading at \$2.02, investors buying shares of the ETF are paying more for the shares than the underlying securities are worth. This would seem to be a dangerous scenario for the average investor, but in reality, it isn't a major problem because of [arbitrage](#) trading.

Here's how arbitrage sets the ETF back into [equilibrium](#). The trading price of an ETF is established at the close of business each day, just like any other mutual fund. ETF sponsors also announce the value of the underlying shares on a daily basis. When the price of the ETF deviates from the value of the underlying shares, the arbitrageurs spring into action. If the underlying securities are trading at a lower price than the ETF shares, arbitrageurs buy the underlying securities, redeem them for creation units, and then sell the ETF shares on the open market for a profit. If underlying securities are trading at higher values than the ETF shares, arbitrageurs buy ETF shares on the open market, form creation units, redeem the creation units in order to get the underlying securities, and then sell the securities on the open market for a profit. The actions of the arbitrageurs set the supply and demand of the ETFs back into equilibrium to match the value of the underlying shares.

Because ETFs were used by institutional investors long before they were discovered by the investing public, active arbitrage among institutional investors has served to keep ETF shares trading at a range that is close to the value of the underlying securities.

### **End Result**

In a sense, ETFs have a lot in common with wrist watches. Everybody wants their watch to tell the correct time, but they don't need to know how the watch was built in order to benefit from it. With ETFs, investors can enjoy the benefits associated with this unique and attractive investment product, without even being aware of the complicated series of events that make it work. But, of course, knowing how those events work makes you a more educated investor, which is the key to

being a better investor.

(To learn about using ETFs, see [Advantages Of Exchange-Traded Funds](#).)

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