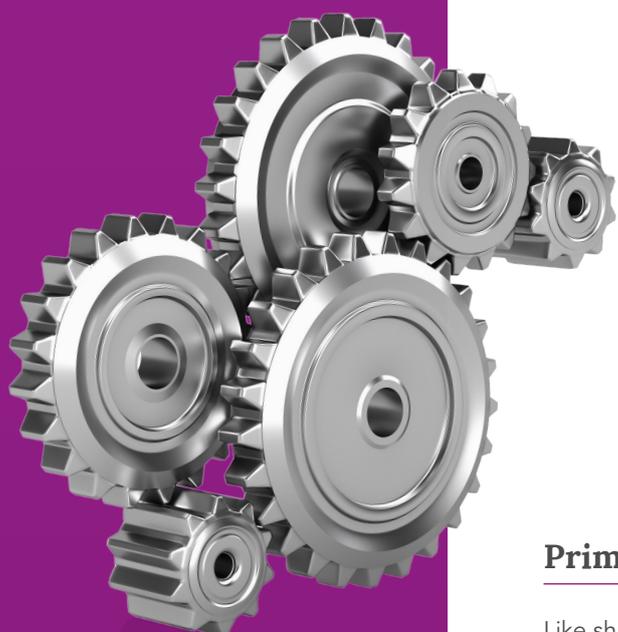


# HOW AN ETF WORKS

Exchange Traded Funds, or ETFs, are managed funds that are traded on ASX just like shares.



## Primary and secondary markets

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Like shares, ETFs operate in the 'primary' and 'secondary' markets.

### Primary market

Large numbers of ETF units are first issued by VanEck to institutional investors (Authorised Participants), in the 'primary market'. In exchange for the ETF units, the fund receives the securities that make up the fund's investment portfolio, as determined by its investment strategy. For ETFs these are typically securities from the fund's benchmarked index. When Authorised Participants request VanEck to issue ETF units in the primary market, this is known as a 'creation'. When Authorised Participants redeem ETF units in the primary market this is known as a 'redemption'.

### Secondary market

After receiving the ETF units, Authorised Participants act as Market Makers and make the ETF units available for trading on ASX, also known as the 'secondary market'. Investors can trade (buy and sell) the ETF units in the fund with the Market Maker or other investors on ASX throughout each ASX trading day, just like trading shares.

## Roles and responsibilities in an ETF

### Issuer/responsible entity

ETF issuers such as VanEck are responsible for operating the ETF including issuing ETF units and investing in the portfolio.

### Authorised Participant

Transacts directly with VanEck to create (or redeem) units in the ETF in exchange for fund assets to meet demand for trading by investors on ASX.

### Market Maker

ETFs quoted on ASX are generally required to have a Market Maker whose role is to match trades with ASX investors to ensure investors can buy when they want and sell when they need.

### ASX

The secondary market place where ETF units are bought and sold.

### Brokers or advisers

Facilitate trading on ASX on behalf of investors.

### Investor

Buyers and sellers of ETF units on the ASX.

### Index provider

Calculates the stock market benchmark index that the ETF tracks.

### Custodian

Holds the assets of the ETF separately from assets owned by VanEck for safe-keeping on behalf of investors.

### Fund administrator

Maintains books and records of the ETF including fund accounting, calculating unit prices, distributions and taxation.

### Registrar

Maintains the register of investors in the ETF including quantity of units held, TFNs, distribution reinvestment plan details and sends all communications to investors.

## Looking under the bonnet of an ETF

Let's look at the VanEck Vectors Australian Banks ETF (ASX code: MVB). MVB tracks the MVIS Australia Banks Index (Banks Index). Let's assume the Banks Index includes the following companies:

Shares	Weighting
CBA	20%
NAB	20%
ANZ	20%
Westpac	20%
Macquarie	13%
Bank of Queensland	4%
Bendigo Bank	3%

To track the Banks Index, MVB would buy all of the above shares in the same proportion as their predetermined index weighting.

Example: Let's assume \$1,000,000 of units in MVB have been created at \$25 (40,000 units). The portfolio would be as follows:

Shares	Price	Shares	Total
CBA	\$80.19	2494	\$199,994
WBC	\$33.67	5940	\$200,000
NAB	\$33.05	6051	\$199,986
ANZ	\$33.03	6055	\$199,997
MQG	\$58.42	2225	\$129,985
BEN	\$11.38	3515	\$40,001
BOQ	\$12.01	2498	\$30,001
Cash	\$63		\$63
<b>NAV</b>			<b>\$1,000,000</b>
<b>Unit price (40,000 units)</b>			<b>\$25</b>

## ETF NAV, unit price and iNAV

As the price of the shares in the portfolio change throughout the day, so too does the price of MVB's units.

The net asset value or NAV of the fund is calculated as:

$$\text{NAV} = \text{total assets} - \text{total liabilities}$$

The NAV is calculated at the end of each day. The unit price is the NAV divided by the number of units on issue with Market Makers and Authorised Participants and is the price used to transact in the primary market.

Investors on ASX trade at 'market prices' determined with Market Makers or other investors based on the unit price. MVB also publishes indicative NAV, or iNAV units. The iNAV changes based on changes in the prices of the shares held in the ETF's portfolio throughout the ASX trading day.

The iNAV allows investors to track the fair value of MVB and compare it to market prices to help decide when to buy and sell units. iNAVs are available from brokers or financial advisers.

## Trading within the portfolio

Let's revisit the MVB portfolio above. Because the banks' share prices change every day, the weightings of the shares in the ETF also changes every day. VanEck reviews the ETF's portfolio every three months (quarterly) and trades the shares as necessary to 'rebalance' the portfolio to match the Banks Index weightings.

In the following example we have assumed that only the price of CBA has changed: increasing to \$92.00 per share. The other banks' prices have not changed. As a result of CBA's increase, as shown in the table below, all the weightings have changed and MVB's unit price has risen to \$25.74.

Shares	Price	Shares	Total	%
CBA	\$92	2494	\$229,448	22
WBC	\$33.67	5940	\$200,000	19
NAB	\$33.05	6051	\$199,986	19
ANZ	\$33.03	6055	\$199,997	19
MQG	\$58.42	2225	\$129,985	13
BEN	\$11.38	3515	\$40,001	4
BOQ	\$12.01	2498	\$30,001	3
Cash	\$63		\$63	
<b>NAV</b>			<b>\$1,029,481</b>	
<b>Unit price (40,000 units)</b>				<b>\$25.74</b>

CBA is now 22% of MVB's portfolio. VanEck needs to rebalance the portfolio so CBA, NAB, ANZ and Westpac are all brought back to 20% weightings to match the Banks Index.

To determine how many CBA shares the ETF now needs to hold to match the Banks Index, the calculation involves taking the total value, \$1,029,481, and multiplying it by 20%.

Then we divide that by the share price. CBA needs to represent \$205,896 of the total fund. CBA shares are \$92.00; therefore we only need 2,238 CBA shares. The result is that 256 CBA shares must be sold. A similar calculation is done for the other shares in the portfolio.

Like shares, ETFs operate in the 'primary' and 'secondary' markets.

As the table below shows, the result of the rebalance is that the NAV remains unchanged and MVB's portfolio weightings match the Banks Index.

Shares	Price	Shares	Total	%
CBA	\$92	2238	\$205,896	20
WBC	\$33.67	6115	\$205,892	20
NAB	\$33.05	6229	\$205,868	20
ANZ	\$33.03	6233	\$205,876	20
MQG	\$58.42	2290	\$133,782	13
BEN	\$11.38	3618	\$41,173	4
BOQ	\$12.01	2575	\$30,926	3
<b>Net Asset Value</b>			<b>\$1,029,413</b>	
<b>Unit Price (40,000 units)</b>			<b>\$25.74</b>	

This is a simple example. In reality the prices of all shares in the portfolio change throughout the day. VanEck constantly reviews all its portfolios to ensure that they track their respective indices. For more information on trading ETFs see the 'How to trade an ETF' fact sheet on our website.

## Index changes

At each quarterly rebalance, in addition to rebalancing weightings due to changes in prices of individual shares in the portfolio, VanEck may be required to trade shares due to changes in the index made by the index provider.

Existing shares may no longer be eligible for inclusion in the index so they may drop out, or new shares may be included as they have met eligibility criteria. For more information on indices see the 'How an index is constructed' fact sheet on our website.

## FOR MORE INFORMATION

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