



International ETFs and the price discovery mechanism

Exchange-traded funds (ETFs) that provide exposure outside the U.S. invest in securities that trade on exchanges in different time zones, many of which are closed when U.S. markets are open. But while those non-U.S. markets are closed, events are transpiring in the U.S. and elsewhere that may impact the anticipated future value of those securities. This article examines how the market price of an ETF with international holdings reflects those changing price expectations during the U.S. trading day.

The closing market price of an ETF typically is aligned with its net asset value (NAV), the value of the ETF based on the stocks in its portfolio.¹ However, for some ETFs that invest in securities that trade outside the U.S., it may be more common for market prices to differ from the NAV. These ETFs may trade at a premium or a discount, particularly in times of increased market uncertainty or volatility. While this may initially be a source of concern or confusion for investors, a closer look reveals why this difference can occur and highlights one of an ETF’s potential advantages: price discovery.

Pricing in closed markets

Many world stock exchanges do not trade during U.S. market hours. Because of the differences in time zones, European exchanges close several hours before the U.S. trading day ends, while Asian exchanges do not overlap with U.S. market hours at all. For ETFs with Asian or European holdings, though the NAV of the ETF and corresponding benchmark returns are calculated or “struck” based on prices at the time these foreign exchanges close, the ETF trades throughout the U.S. market day. As a result, any significant, late-breaking news can move the market price return away from the “stale” prices used to generate the NAV and index returns.

Many world stock exchanges do not trade during U.S. market hours



New York Stock Exchange trading hours 9:30AM – 4:00PM ET

Priced across the day

Unlike an ETF with domestic holdings, the performance returns of an ETF with international holdings are priced at different times of day depending on international market closings. As the chart below shows, for an ETF with domestic holdings only, the NAV is struck just once a day, after the close of the stock exchanges at 4 p.m. ET.

	ETF with domestic holdings	ETF with domestic and international holdings	ETF with international holdings
Index	■	■	■
Net asset value	■	■	■
Market price	■	■	■

■ Returns based on prices at New York Stock Exchange close of 4 p.m. ET

■ Returns based on prices of underlying security at foreign exchange close

How price discovery works

Authorized participants (APs) are large institutions, such as market makers or clearing firms, that create and redeem large blocks of ETF shares. APs monitor financial markets, news, and events to determine “intrinsic fair value” (IFV), a proprietary calculation of an ETF based on its holdings’ current price or, for any holdings in closed markets, the expected price at next market open.²

The result of this “price discovery” is to determine the ETF’s current bid and ask pricing,³ keeping the ETF’s market price in line with its IFV and next expected NAV. Simply put, the ETF offers access to other markets, even when those markets are closed, which is why most differences between an international ETF’s NAV and its current market price are an intended result of price discovery.

Summary

ETFs can offer access to international markets—even when they are closed. The process of price discovery helps ensure that international ETFs are reflecting key events at all times. With a deeper understanding of how international equity ETFs are priced, investors can make more informed decisions.



We're always here to help

ETF Know:How is a full-spectrum curriculum of ETF tools, resources, and insights created for all levels of ETF expertise. This educational program offers you a 360-degree view of ETF investing, with tactical steps to help support your business—from client engagement to portfolio implementation.

To learn more about ETF Know:How and how it can help advance your ETF expertise, call 877-824-5615 or visit schwabfunds.com.

Investment returns will fluctuate and are subject to market volatility, so that an investor's shares, when redeemed or sold, may be worth more or less than their original cost. Unlike mutual funds, shares of ETFs are not individually redeemable directly with the ETF. Shares of ETFs are bought and sold at market price, which may be higher or lower than the net asset value (NAV).

¹ Net asset value is the per-share valuation of an exchange-traded fund's securities, officially calculated once per day at market close. Index return is typically calculated throughout the day and reflects the value of the securities in the index. Market price is the price on the secondary market at which investors buy and sell shares throughout the trading day.

² Intrinsic fair value (IFV) is not calculated or published by Charles Schwab Investment Management, Inc., or any of its affiliates; it is calculated by professional market makers and/or authorized participants and may differ for each firm.

³ Bid: The price at which a trader is willing to buy a security. Ask: The price at which a trader is willing to sell a security

The information and content provided herein is general in nature and is for informational purposes only. It is not intended, and should not be construed, as a specific recommendation, or legal, tax, or investment advice, or a legal opinion. Tax laws are subject to change, either prospectively or retroactively. Individuals should contact their own professional tax and investment advisors or other professionals to help answer questions about specific situations or needs prior to taking any action based upon this information.

Charles Schwab Investment Management, Inc. (CSIM), is the investment advisor for Schwab ETFs. Schwab ETFs are distributed by SEI Investments Distribution Co. (SIDCO). SIDCO is not affiliated with CSIM.

©2018 Charles Schwab Investment Management, Inc. All rights reserved. JUT (0818-8C3S)
MKT78887-06 (08/18)

00216290

The Charles Schwab logo, consisting of the word 'charles' in a lowercase, serif font above the word 'SCHWAB' in a bold, uppercase, sans-serif font, both in white text on a blue square background.

Investment
Management