

The Truths About ETF Liquidity and Pricing

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Exchange-traded funds (ETFs) represent an exciting product class that has exploded in asset size and interest in recent years. Demand has come from retail and institutional investors alike. Retail investors are still becoming comfortable with these funds, and often make them more confusing than they truly are. Institutional investors have yet to become entirely at ease as well; most of their concerns center around liquidity and mispricing risk.

Many potential investors are using traditional measures to gauge both premium/discount levels and liquidity in ETFs. In our opinion, the results one gets can be deceptive and can lead to an incorrect conclusion. In fact, in most cases, an ETF's bid price is just below its intraday value, and the ask price is just above.¹ As for liquidity, even the least frequently traded ETFs seem to have a backstop market at 25,000 shares, \$0.25 wide. For larger trades, mispricing risk is irrelevant, and liquidity is identical to the liquidity of the underlying basket of stocks.

THE MYTHS ABOUT PREMIUMS/DISCOUNTS

Many investors associate ETFs with closed-end funds. Over the year ending June 30, 2001, closed-end funds closed at premiums as high as 76% and discounts as low as 46%. Many ETF naysayers have claimed they can also find meaningful premiums/discounts in ETFs.

We believe, however, that they are making one of three mistakes:

1. Comparing current prices to net asset values in international funds.
2. Comparing closing prices to closing NAVs.
3. Comparing last trade to NAVs.

International funds often cause the most confusion. The problem stems from one major fact: The underlying markets are not always open when the ETFs are trading in the United States. Therefore, the iShares MSCI Japan Index Fund (EWJ), formerly known as the Japan WEBS, may be trading on the Amex at a price that is above or below the stated intraday value. The reason for this discrepancy is that the underlying Japanese stocks in the fund have closed and are not trading, while EWJ is. Much like futures contracts, which may trade above or below fair value before the market opens, EWJ can be used to gauge whether the Japanese market will open up or down.

The second mistake investors may make is comparing closing ETF prices to closing NAVs. ETFs trade until 4:15 Eastern time, or 15 minutes past the underlying markets. Therefore, if Microsoft were to announce disappointing news at 4:05, the underlying stocks in the index will not react, while the ETF can sell off.

Finally, investors often compare last trade to intraday value. Keep in mind that last trade

indicates only where someone else bought the fund, which is not as relevant as bid-ask prices. The last trade may have happened three hours ago in small funds, and is therefore not comparable to current intraday value.

THE TRUTH ABOUT PREMIUMS/DISCOUNTS

In our opinion, the best way to gauge premiums/discounts is to compare bid-ask prices to intraday value in U.S. funds. Our study takes random snapshots of the ETF market, excluding international funds, and compares the bid, ask, and midpoint between the bid and ask to the intraday value. A random snapshot study is more effective than picking a specific time, such as the close, since the specialist may realize he or she is being watched. The results of our study, covering 90 random snapshots during May 2001, support our theory.

In 92% of instances, a fund's intraday value was between the bid and the ask. While we were disappointed that that number was not 100%, we found that the problem prevailed in either very small funds or in funds with high volatility. Therefore, the slight deviation may be caused by the fact that the intraday value is calculated only every 15 seconds.

Keep in mind that the specialist can create new shares of an ETF or redeem old shares on a daily basis. As long as the specialist can hedge that position (typically via a program trade or futures position), prices can be kept in line with NAV.

During our study, the average fund's midpoint between bid and ask was at a 0.01% premium to NAV (Exhibit 1). The average bid was at a 0.18% discount, and the average ask was at a 0.21% premium. This only reinforces our belief that one of the most important factors in selecting an ETF is the spread.

As might be expected, the larger, more frequently traded ETFs fare even better. This is demonstrated by the market cap-weighted averages, also seen in Exhibit 1. When we market cap-weight our averages, we find that the midpoint is exactly on intraday value. We also find that the bid discount and ask premium contract dramatically, down to 0.07% in each case.

On the negative side, we did see a premium of 1.03% and a discount of 0.86% during our study. In both cases, these observances were in small, less frequently traded ETFs. If a bid gets to a premium or an ask gets to a discount, typically an *authorized participant* (AP) will step in and arbitrage that opportunity. Therefore, these instances are short-lived.²

Keep in mind that for trades of 50,000 shares or more, an AP such as Salomon Smith Barney can simply buy the basket and create new ETF shares, or accept the basket and redeem old shares, thus cutting out the market and the mispricing risk.

THE MYTHS ABOUT LIQUIDITY

We believe institutions are reluctant to use many ETFs because of liquidity concerns. Most of these concerns are based on misconceptions. Since a market maker can create new shares of an ETF or redeem old shares, historical trading volume is not indicative of an ETF's liquidity. It is for this reason that we have been using the term "less frequently traded ETFs" rather than "less liquid."

During our snapshot study we not only followed mispricing risk, but we also recorded the size of the bid and ask as well as the spread. We were attempting to gauge liquidity and trading costs in ETFs. Again, we are very pleased with the results.

On average, the funds had 63,000 shares on the bid and 70,000 shares on the ask (*see Exhibit 2*). On a fund-

EXHIBIT 1

Premium/Discount Results from Snapshot Study—May 2001

	Bid P/(D)	Mid P/(D)	Ask P/(D)
Average	-0.18%	0.01%	0.21%
Max	0.40%	0.63%	1.03%
Min	-0.86%	-0.76%	-0.66%
Mkt Wgt Avg	-0.07%	0.00%	0.07%

Source: SalomonSmithBarney, Reuters.

EXHIBIT 2

Bid-Ask Sizes and Spreads—May 2001

	Bid Size	Ask Size	Spread	Spread %
Average	63,409	70,016	\$0.23	0.39%
Max	500,000	500,000	\$0.83	1.53%
Min	100	100	\$0.01	0.02%
Mtk Wgt Avg	46,615	65,374	\$0.11	0.14%

Source: SalomonSmithBarney, Reuters.

by-fund basis, even the least actively traded ETFs had 25,000 shares on the bid and ask. In fact, during our study, several funds traded an average of under 6,000 shares a day, while having a consistent 25,000 shares bid for and offered at a \$0.25 spread.

The minimum bid-ask sizes in Exhibit 2 generally represent small retail orders inside the specialists' large orders. Therefore, we are not concerned by these numbers.

AUTHORIZED PARTICIPANTS

There are a number of authorized participants who can create or redeem shares of ETFs on a daily basis. This is important for three reasons: 1) The specialist is an AP, and can keep prices close to intraday value; 2) if the specialist is not keeping an orderly market, other APs can arbitrage any discrepancies; and 3) for large trades, APs can meet demand or supply needs away from the floor.

Premium/discount and liquidity concerns are dramatically reduced when buying and selling in large blocks (typically 50,000 shares) directly with an AP. Typically, an AP will buy the basket of stocks in an ETF, add a commission of \$0.03-\$0.06 per ETF share, include any cash amount in the fund, and add the creation fee.³

By transacting in this fashion, the mispricing risk is eliminated, and the liquidity of the fund is equal to the liquidity of the underlying basket. Therefore, institutions placing large orders through an AP will typically receive new shares or see their old shares redeemed rather than going to the floor of the exchange.

FINAL THOUGHTS

As investors become more comfortable with these issues, we believe ETFs will continue to grow. Individual investors represent an important source of investment, but institutions may be more important. The number of funds offered in the style and sector categories will fill a void left by futures contracts.

Portfolio managers of style-specific or sector funds have had a difficult time using futures contracts, since there are few that match their benchmarks.

As these managers become more comfortable with the ETF product and realize that mispricing risk is low and that liquidity is high, we believe they will begin to use them to equitize cash. This should help fuel further growth in these funds.

ENDNOTES

The views expressed in this article are not necessarily those of Salomon Smith Barney.

¹Intraday value, or *indicative optimized portfolio value* (IOPV), is a value that is calculated and quoted every 15 seconds for all ETFs and is designed to approximate the underlying value of the fund. Each ETF has an intraday value symbol.

²Authorized participants can create new shares of an ETF or redeem old shares of an ETF with the fund.

³Creation fees are charged for each creation and range in price. For funds investing in U.S. stocks, the fee generally depends on the number of holdings within the ETF and ranges from \$250 to \$11,500 for the iShares Russell 3000 Index Fund. International funds tend to be more expensive due to custody and tax issues, but reach a maximum of \$12,000.

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