



## 2010 3rd Quarter Stock Market Commentary

### ETFs – Extremely Tricky Financial Securities

"If past history was all there was to the game,  
the richest people would be librarians."

-Warren Buffett

Americans love a "two-fer". Buy one ticket, get one free. Marketers have long exploited this longing to get something extra for nothing. Purchase a pack of Certs breath mints, and get a candy mint, too. Pick up a six pack of Bud Light because it tastes great. And by the way, it's also less filling. This no doubt explains the basis for the appeal of the Doublemint twins. After all, what else could it be?

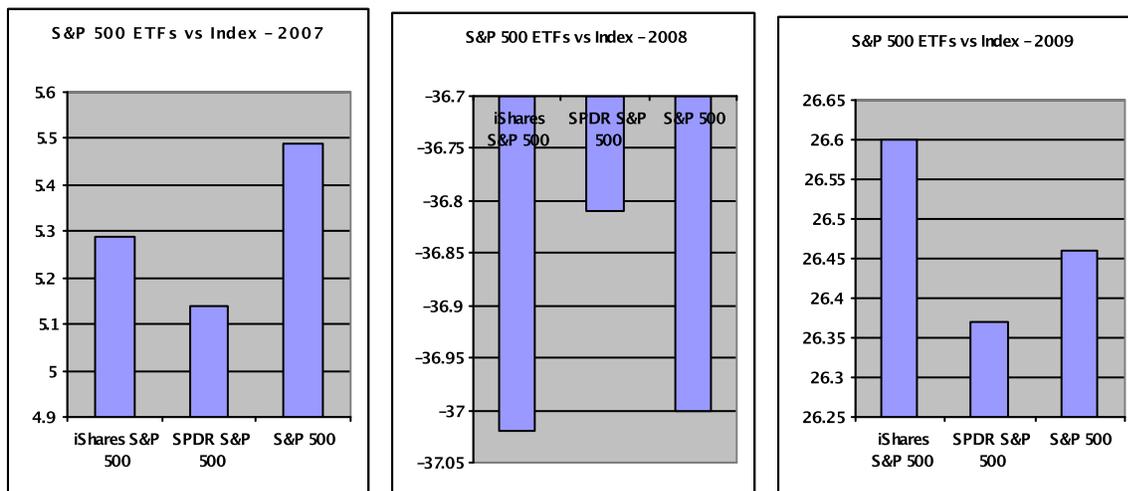
Wall Street, like Madison Avenue, has long been adept at creating securities which exploit people's foibles and offer them what they think they want. When low interest rates earlier in the last decade prompted investors to search for higher yields, Wall Street offered up synthetic CDOs (collateralized debt obligations), securities offering high yield and the AAA safety of a government security, at least until they defaulted. The latest and greatest two-fer is the ETF (exchange traded fund), a generally open-ended mutual fund which trades continuously on an exchange at a price designed to be reasonably close to its underlying asset value. ETFs are marketed as offering the diversification of a mutual fund that can serve both as a long term asset and a vehicle for day traders.

The first ETF was launched in 1993 by State Street Global Advisors, and was designed to mimic the performance of the Standard & Poor's 500 Index. It was dubbed the "spider", based upon the acronym SPDR, for Standard & Poor's Depositary Receipts. Originally, this security was marketed to institutional investors for two purposes. The first was as a way to get instant exposure to the broad market when funding a new manager. A pension plan sponsor or large endowment could own the SPDRs until the new manager could deploy the assets into stocks of their own choosing, without the risk of missing a large market move. The second use was as a hedging tool, where a manager might go long a basket of stocks he felt would outperform the index, while selling short the SPDRs against this underlying position. With \$72 billion in assets, the spider is the largest exchange traded fund, and there are now over 2,000 separate ETFs with assets exceeding \$1 trillion. Last month Morningstar hosted its first-ever ETF Invest Conference in Chicago.

Traditional mutual funds always trade at net asset value (NAV). At the end of each day's trading, all of a fund's holdings are priced, and the total value of the cash and securities is simply divided by the number of shares outstanding. This gives the net asset value, the price at which all purchase and sale orders received during the day are executed. But the goal of ETFs was to permit trading continuously throughout the day, which meant that there needed to be some mechanism for keeping the market price

near the NAV. The solution was to allow large institutional investors to trade directly with the fund manager, rather than in the marketplace, provided that they trade in so-called “participation units”, generally 50,000 shares. Moreover, these large holders, called “authorized participants”, have the option of redeeming their shares in cash, or in kind. Thus, if the spider ETF is trading at a discount to its NAV, authorized participants will buy ETF shares, convert them to the underlying securities in the S&P 500, and immediately sell those shares in the market for a riskless profit. This has the effect of increasing the ETF share price (because of the buying that occurs) while simultaneously depressing the value of the shares in the index, eliminating the disparity between the ETF price and the NAV. Conversely, if the ETF is trading above the value of the shares it represents, authorized participants will purchase a basket of stocks in the market and turn them in to the fund company for ETF shares, which they will immediately sell. Again, the gap between price and NAV will be closed.

By far the vast majority of ETFs are designed to track indices. For example, the spiders discussed above track the Standard & Poor’s 500. But there is another ETF sponsored by Blackrock (which was purchased from its originator, Barclays), called the iShares S&P 500 Fund. Despite the fact that these two securities track the same broad-based index, they have not always performed in lock-step, either with the index or with each other.



Some ETFs which track indices purchase all of the index members in the same proportion as the index. Some avoid buying illiquid securities. Yet others do a statistical sampling of the index, resulting in having far fewer securities than the index itself. As an interesting side note, in the case of the ETFs discussed above, the iShares eked out a slightly higher return over the three year period 2007-9, while charging a higher management fee. Thus, the difference in performance was not due to expenses, but rather to methodology.

The amount by which an index-based fund misses its target is called “tracking error.” In the case of the two ETFs discussed above, the tracking errors have been reasonably small. But across all ETFs the tracking error was 1.25% in 2009, more than double the average tracking error of 0.52% in 2008. More than 50 ETFs had tracking error in excess of 3%, compared to only four such funds the prior year. And some funds missed their mark by a staggering margin. The \$36 billion iShares MSCI Emerging Markets Index ETF rose a very respectable 71.8% in 2009. But it looks less respectable when judged against the 78.5% gain in its benchmark index. This particular fund owns only half of the securities in its benchmark

index, which improves liquidity but tends to increase tracking error. The \$4.7 billion SPDR Barclays Capital High Yield Bond ETF rose 50.5%, lagging the index it tracks by 13%.

Failure to track an index closely does not always cost investors. For instance, the fund with the largest tracking error last year was the Vanguard Telecom Services ETF, which actually outperformed its benchmark by a whopping 17.09 percent. That miss was due to the fact that its benchmark, the MSCI US Investable Market Telecommunications Services Index, has a 49 percent weighting in AT&T, while SEC rules limit individual security positions in any fund to 20 percent of the portfolio. With AT&T performing poorly last year, the ETF benefitted from the underweighting.

Obviously, any investor buying an index fund which fails to produce a return near the index feels stung. But this pales compared to the blow to the head with a 2x4 experienced by some ETF holders on May 6, 2010, the date of the “flash crash.” In a matter of minutes, the Dow Jones Industrials plunged nearly 1,000 points, shaving 8-9% off of the value of the major indices. Many individual securities traded at only pennies per share as bids evaporated. The panic was so pervasive that the exchanges decided to cancel any trade which took place at a price that differed by more than 60% from pre-crash levels if the trade occurred between 2:40 P.M. and 3 P.M. ETFs, which account for less than 10% of all listed securities, represented more than 70% of the cancelled trades. As buyers disappeared, limit orders to sell once an ETF dropped to some trigger point were executed at “stub prices”, which are orders placed for pennies a share by a market maker as a placeholder for when there are no other bidders. These are prices which were never intended to produce trades. This event walloped investors who assumed (incorrectly) that the diversification of ETFs implied safety.

One of the fastest growing sectors within the ETF market consists of “leveraged” ETFs. These are funds which attempt to deliver a daily return double (2X) or triple (3X) the underlying index. In some cases, ETFs are designed to produce -2X or -3X, meaning the funds are levered in such a way as to move in the opposite direction as the underlying index. These are known as “inverse” leveraged ETFs. They usually accomplish this by using borrowed money to purchase options and futures. The first leveraged ETF was approved in the summer of 2006, and there are now roughly 225 such securities. Most individual investors assume that if they are bullish, a leveraged ETF will permit them to make twice as much in a year as they could make by investing in the index itself. Unfortunately, the mathematics reveal a completely different dynamic, since twice the daily return can be very different than twice the annual return. Let’s consider an admittedly extreme example. Imagine that some broad based index rises a whopping 25% in a single day, only to be followed by a 20% drop the following day. (Such moves are unlikely, although in the October 19, 1987 crash the market dropped 23%, only to be followed by a 17% gain over the next two days.) An investor owning \$100 worth of the index would watch his account rise to \$125 (a gain of 25%), and then drop by 20% the next day, bringing its value back to exactly \$100. How would a leveraged investor fare?

	Day 1	Day 1	Day 2	Day 2
		Balance		Balance
Index	25%	\$125	-20%	\$100
2X Index	50%	\$150	-40%	\$90
3X Index	75%	\$175	-60%	\$70

Notice that the double leveraged investor would incur a loss of 10% of principal, while triple leverage would result in a loss of 30%.

Admittedly, such huge daily moves are extremely unlikely, but even plausible scenarios result in startling results. Imagine that the market rises 2% one day, only to be followed by a 2% decline the next, repeating this seesaw pattern every day for a year. An investor putting \$100 into the underlying index

would end the year with \$95.08. The doubly levered ETF would decline in value to only \$81.73, triple the loss of the index and the triple levered one would be worth only \$63.48, seven times the index loss.

Yet another large category of ETFs are those designed to track the price of a commodity. There are ETFs designed to track the performance of precious metals, like gold, silver or palladium, others which track industrial commodities, like aluminum or nickel, some which track agricultural commodities, such as coffee, cocoa or sugar, and some which track energy related commodities, like crude oil or natural gas. Some, like the SPDR Gold trust, take physical possession of the commodity itself. Several of these ETFs have encountered problems when the cash inflow into the ETF temporarily exceeded the available supply of the commodity. Most commodity-based ETFs try to track the commodity price by using futures. A typical strategy might be to try to maintain a constant 30-day weighted average of futures contracts. For example, a fund might invest all of its cash in the 30-day futures contract on the first day of a new contract month. One day later, it sells 1/30<sup>th</sup> of its one month futures and purchases an equal amount of two month futures, thus keeping its weighted average maturity at 30 days. It repeats this process daily. This works fine, so long as the near month contract price is close to the further month contract. But occasionally, the further month contract price is sharply higher than the near month, a situation known as contango. In such a case the fund manager is forced to sell the cheap contract and buy the expensive one, creating a loss for investors which can run as high as 12% per month. Some commodity based ETFs which use futures have encountered yet another problem. In an attempt to prevent speculators from cornering the market in any commodity, the Commodity Futures Trading Commission has imposed absolute limitations on the percentage of outstanding contracts that any market participant can own. This has affected the principal natural gas ETFs. Because of position limits and contango in futures pricing, almost every commodity ETF has trailed the underlying commodity as an investment by a wide margin.

If all of the above discussion seems dazzling, it is not surprising. It was our intent to give some sense of the complexity of these securities. In fact, we have only barely scratched the surface in exploring some of the pitfalls faced by investors in ETFs. We have deliberately avoided many of the more esoteric aspects, such as the different tax rules that apply to ETFs that are structured as notes, or the counterparty risks faced by commodity ETFs using private swaps. The original purpose of ETFs was to give investors a low cost way to get broad diversification and to reasonably approximate the return of a major index. When used for that purpose, they are an excellent vehicle. But Wall Street has taken to heart the advice of Edwin Herbert Land (inventor of the Polaroid camera), that “Anything worth doing is worth doing to excess.” The huge dollars placed in and pulled out of ETFs each day have created a need for their managers to buy and sell enormous volumes of securities near the close of trading, a tail wagging the dog effect in which ETFs push major indices around, rather than simply following. It seems almost inevitable that at some time in the not too distant future there will be some market cataclysm that be blamed on these securities. Then, just as in the aftermath of the subprime mortgage debacle, everyone will wonder where the regulators were when the pressure was building.