Beaumont Capital Management

Exchange Traded Funds: The What and the Why

Within the past decade, Exchange Traded Funds, commonly referred to as ETFs, have exploded onto the scene and are quickly becoming many investors' go-to choice for index-like exposure. Similar to an index-based mutual fund, each share of an ETF represents a fractional ownership in a basket of assets making up a particular underlying index. By purchasing the index in aggregate through an ETF, rather than purchasing each asset independently, investors can receive their desired exposure with just one trade and one position. Although ETFs are a new concept to many investors, the investment community as a whole has embraced ETFs for some time. Total ETF assets are set to eclipse 3 trillion dollars this year[1], and the world's largest ETF, the State Street SPDR® S&P 500® Index ETF (SPY), held over 176 billion dollars in assets as of July 31st, 2015[2]. Some of the benefits of ETFs are outlined below, using SPY as an illustration:

Low Cost: The average ETF has a net expense ratio of 0.44% which equates to $44.40 in annual fees for a $10,000 investment[3]. Many of the large index ETFs have expense ratios that are even lower. SPY, for example, has a net expense ratio of 0.0945%, which equates to roughly $9.50 in annual fees for a $10,000 investment[2].

Diversification: ETFs allow an investor to conveniently buy and sell broad, diversified exposure. To illustrate this point, we calculated that an investor would need about $270,000 to create an S&P 500 proxy portfolio, plus the costs of trading all 503 component stocks[4]. SPY, on the other hand, can be purchased in roughly $200.00 increments[5], plus the cost of trading the ETF, and provide the same S&P 500 proxy exposure as the expensive $270,000 portfolio that we proposed above. ETFs can also provide diversification among different asset classes as they track a large number of different asset classes and sub-asset classes.

Transparency: Many of the large ETFs update fund holdings daily and the listing exchange of each ETF is required to publish an intraday net asset value ("iNAV") every 15 seconds, compared to mutual funds which generally reveal holdings quarterly and publish net asset value ("NAV") once at the end of the day.

Convenience: Like any regular stock, the shares of an ETF are traded on exchanges and can be bought and sold at any time during market hours. As a result, buyers and sellers have a much better idea what price they will pay or receive than they would with mutual funds, which are bought and sold at the end-of-day NAV regardless of when the order is placed prior to the market close.

ETFs vs. Mutual Funds

Comparing ETFs to mutual funds requires an important distinction between active and passive mutual funds. Active mutual funds employ an active investment strategy, generally with the goal of outperforming an index with similar characteristics to the fund. Unfortunately, however, most active mutual funds historically underperform their index[6], and the primary reason is obvious when you consider how expensive active mutual funds are.

"**The Real Cost of Owning A Mutual Fund**"[7]

Account Type	Expense Ratio	Transaction Costs	Cash Drag	Tax Cost	Total Costs	Cost per $10,000
Taxable	0.64%	0.53%	0.20%	0.91%	2.28%	$228.00
Non-Taxable	0.64%	0.53%	0.20%	0.00%	1.37%	$137.00

Looking at the table above, in a taxable account the fund needs to return over 2% in excess of the market to justify the cost. This is without considering potential load fees which occur when an investor purchases the fund and can be as high as 5%. While there are select managers who can consistently accomplish this feat, the list is short. Passive mutual funds are somewhat less expensive, but they can only mitigate the expense ratio and transaction costs. When it comes to mutual funds, cash drag and tax costs aren't a choice—they are a result of structure.

When a person invests in a mutual fund, they deliver cash and receive newly created shares. These shares are "non-negotiable", meaning they are not easily transferable to another person. When these shares are redeemed, they are destroyed and cash is given to the investor. This cash needs to come

Beaumont
CAPITAL MANAGEMENT

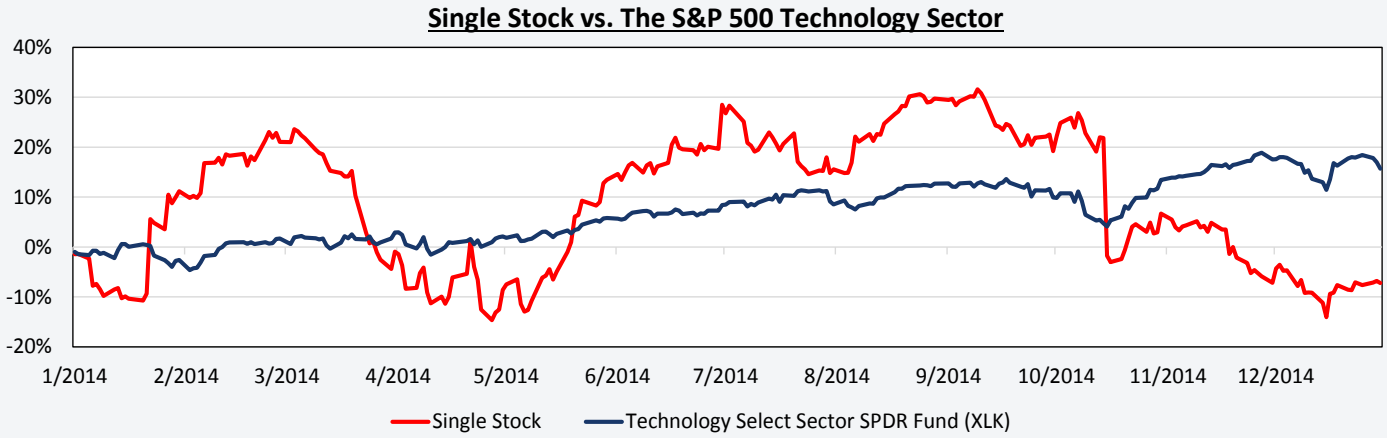
from somewhere, so to facilitate these redemptions, mutual funds retain cash in the portfolio. Furthermore, if cash levels get too low the mutual fund will liquidate securities, potentially resulting in a taxable gain which may be distributed to the remaining shareholders. ETFs solve both of these problems. ETFs are "negotiable", meaning they are easily transferable to another person. Shares are bought and sold between investors on an exchange, relieving ETFs of any required cash holdings. Additionally, because the fund doesn't buy or sell any holdings during the transaction, it avoids accruing taxable gains.

ETFs for Institutions

For an institutional investor, such as Beaumont Capital Management (BCM), the ability to conduct in-kind asset transactions is one of the more important differences between ETFs and mutual funds. Using SPY as an example, an institutional investor can purchase the component stocks of the S&P 500 and exchange them with the fund sponsor for newly created shares of SPY. This process works in reverse as well, where outstanding shares are redeemed in exchange for the underlying component stocks. The ability to create new shares and redeem existing ones means that even if the ETF itself doesn't trade very often, it is still as liquid as its underlying securities. This is called "implied liquidity", and it allows institutional investors to acquire and dispose of large ETF positions without the need to buy or sell ETF shares in the market.

The Benefits of Diversification

While we covered the ease with which one can diversify using ETFs above, it also makes sense to touch upon the benefits of diversification and investing in a diversified vehicle. Single stocks and bonds are both perfectly viable means of investment, but investing in them requires considerable expertise as it invites single company risk. This is illustrated by the chart below, which shows the price of a single component stock of the S&P 500 Index Technology Sector, against an ETF representing the sector. A diversified vehicle will allow an investor to take advantage of what they believe to be a favorable industry trend or asset allocation without having to bear the additional risks present in the securities of a single company.



ETFs for a Quantitative Strategy

According to the Capital Asset Pricing Model (CAPM), there are two primary sources of risk: systematic and unsystematic. Systematic risks affect broad asset classes making them generally unavoidable for securities within that group. On the other hand, unsystematic risk, which could be an earnings report, a new product launch, or a lawsuit, is company-specific and can be significantly reduced by holding a well-diversified portfolio. In a traditional "bottom-up" portfolio, the stock picker is selectively bearing unsystematic risk as a potential source of active return. The problem is that it is incredibly difficult to adequately quantify unsystematic risk without inviting undue complexity. When it comes to quantitative investing, simplicity is key. Going back to the chart above, the single stock was more volatile over the time period displayed due to company specific events while the technology sector as a whole was relatively calm. Since our models attempt to take advantage of systematic inefficiencies, they require the use of a diversified vehicle in order to reduce unsystematic risk; ETFs are without a doubt the most convenient, efficient and transparent means of accomplishing this. As a result, they are the vehicle of choice for all of the BCM strategies.

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Sources:

1. Kelley, T., Hwang, I., & Roche Kelly, L. (2015, May 13). ETF Assets Set to Overtake Hedge Funds This Year. Retrieved August 4, 2015, from http://www.bloomberg.com/news/articles/2015-05-13/etf-assets-set-to-overtake-hedge-funds-this-year

2. Fees presented do not include advisory fees or trading costs: SPDR® S&P 500® ETF. (2015, July 31). Retrieved August 4, 2015, from https://www.spdrs.com/product/fund.seam?ticker=spy

3. How to Choose an Exchange-Traded Fund (ETF). (n.d.). Retrieved August 4, 2015, from http:// guides.wsj.com/personal-finance/investing/how-to-choose-an-exchange-traded-fund-etf/

4. The S&P 500 proxy portfolio was created using the State Street SPDR® S&P 500® ETF (SPY) holdings as of July 31, 2015. The security with the lowest weight in the ETF, Diamond Offshore Drilling (DO), was assigned 1 share and the remainder of the portfolio holdings were scaled up to their respective weights using the dollar value of one share of DO as a reference. Share counts were rounded up or down so that no fractional shares were held in the portfolio. At least one share of each individual holding was required in the resulting proxy portfolio.

5. Roughly two hundred dollar increments is derived from the average closing price of the State Street SPDR® S&P 500® ETF (SPY) over the last twenty days ending September 9th, 2015. State Street SPDR® S&P 500® ETF (SPY) closing prices sourced from Bloomberg.

6. Egan, Matt. (2015, March 12). 86% of Investment Managers Stunk in 2014. Retrieved August 4, 2015, from http://money.cnn.com/2015/03/12/investing/investing-active-versus-passive-funds/

7. Bernicke, Ty. (2011, April 4). Retrieved August 4, 2015, http://www.forbes.com/2011/04/04/real-cost-mutual-fund-taxes-fees-retirement-bernicke.html

Mutual fund cost data presented in the above article has been updated to reflect more recent data where possible. Additional citation, where necessary, and further explanation of each cost is presented below.

Expense Ratio: most commonly recognized cost used to pay for management and administration of the fund. The number presented is "[t]he asset-weighted expense ratio across all funds (including mutual funds and exchange-traded products, or ETPs, but excluding money market funds and funds of funds)" in 2014.

Johnson, Ben and Rawson, Michael. "2015 Fee Study: Investors Are Driving Expense Ratios Down." April 23 2015. Morningstar Advisor. August 4, 2015.

Transaction Costs: cost presented in the original article of 1.44% included brokerage commissions, effective spreads, and price impact as determined in *Scale Effects in Mutual Fund Performance: The Role of Trading Costs*. This number was determined as the average cost across the sample period (1995-2005) for the mean fund. Due to substantial increases in trading efficiency

over the sample period we instead utilized the total trading cost from only 2005 for the median firm to give a more accurate depiction of trading costs.

Median Annual Trading Costs/Per-Unit Trading Costs = Scaling Factor

Scaling Factor * 2005 Per-Unit Trading Costs = Transaction Costs

Edelen, Roger M. and Evans, Richard B. and Kadlec, Gregory B., Scale Effects in Mutual Fund Performance: The Role of Trading Costs (March 17, 2007). Available at SSRN: http://ssrn.com/abstract=951367 or http://dx.doi.org/10.2139/ssrn.951367

Cash Drag: performance differential due to cash holdings assuming a 2.07% cash balance and a yearly return of 9.49%. The cash holding number is the median cash holdings of U.S. equity mutual funds as of August 2015 sourced from Morningstar. The yearly return is the total return of the S&P 500 between December 1989 and December 2014 gross of dividends as represented by the S&P 500 Total Return Index sourced from Bloomberg.

Tax Costs: the median annual tax cost ratio of U.S. equity mutual funds for the ten years ending August 2015 sourced from Morningstar.

Disclosures:

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