Actively Managed ETFs: Are They Really Active?

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Actively managed ETFs are a relatively new but fast-growing product in financial markets. They provide many similar benefits as traditional ETFs, such as intraday liquidity, low cost investing, and tax efficiency, and allow managers to employ active investment strategies and opportunity to outperform passive benchmarks.

The main concern regarding active ETFs has been the efficiency of their pricing. The arbitrage pricing mechanism that ensures that ETFs shares trade close to their NAV relies mainly on the transparency of their holdings. To address this concern, SEC requires that all actively managed ETFs disclose identities and weightings of their holdings daily. Studies of premiums and discounts associated with active ETFs find that their long-term mean premium is close to zero, with relatively low diffusion volatility (Hilliard 2014). This suggests that the arbitrage process remains efficient for these funds despite their decreased transparency. Due to the novelty of these funds, however, the study uses a limited number of actively managed ETFs over a short time period.

The newest development in actively managed ETFs is the debut of ANTs, actively managed non-transparent ETFs that were approved by SEC in the end of 2019.  These types of actively managed ETFs have the same features as other ETFs except they disclose their holdings to the public only quarterly not on daily basis. This feature ensures that they can meaningfully pursue an active investment strategy but comes with more serious lack of transparency. To address this issue, SEC limits  their investments only to securities that trade at the same time as the funds themselves. This means that ANTs can trade only in U.S. stocks, the American Depositary Receipts and Global Depositary Receipts of foreign companies, U.S Treasuries, U.S. listed ETFs, and in foreign stocks that trade during U.S. market hours. To insure that the *in-kind* creation/redemption process can function, ANTs’ sponsors are required to provide additional information on creation and redemption baskets and their intraday NAVs[[1]](https://www.bloomberg.com/news/articles/2020-07-16/active-etf-launches-are-outstripping-passive-for-first-time?srnd=etfs).

The assets under management of actively managed ETFs account only for a small part of total ETF assets (Figure 1). The number of actively managed ETFs, however, as well as their assets under management, have been increasing exponentially, especially in recent several years (Figure 2). In fact, the amount of money invested in active ETFs has increased from $10 million in February 2008, when the first such funds were launched in the market, to $112 billion in May 2020. Figure 2a and 2b show distribution of actively managed ETFs across Morningstar US category groups. The largest number of funds operate in taxable bond category (98 funds as of May 2020). Assets under management in this category represent \*\*\* percent of assets of all actively managed ETFs domiciled in the US as of January 2020. The dominance of active ETFs in fixed income category can be attributed to the fact that corporate bonds are traded in rather opaque over-the-counter market, providing greater opportunity for professional managers to outperform. In addition, (Meziani 2015) and (Beck, Chong, and Phillips 2017) point out that the daily holdings disclosure is less of a concern to bond funds than to equity funds as investors may not achieve significant benefits by trading ahead of these funds. Actively managed ETFs investing in US equity have also registered large growth (81 funds as of May 2020). Their assets managed have increased from $7 million in April 2008 to almost $5 billion in May 2020. Active ETFs focusing on international markets have shorter history and slower growth pace with 39 funds and total assets of $2.9 billion as of May 2020.

Despite the structural challenges that actively managed ETFs face, they represent an attractive alternative to passive funds for ETF investors. According to data compiled by Bloomberg, the number of newly launched actively managed ETFs (68 funds) in the first half of 2020 surpassed, for the first time in history, the number of newly launched traditional ETFs (63 funds)[[2]](https://www.bloomberg.com/news/articles/2020-07-16/active-etf-launches-are-outstripping-passive-for-first-time?srnd=etfs).  This suggests that investors are starting to turn toward ETFs not only as a form of efficient diversification but also in their search for higher performance.

In this paper we examine actively managed ETFs within the U.S. equity and International equity category and ask three question. (1) Do active ETFs really employ active investment strategies? (2) Do they offer better returns to investors than their passive peers? (3) Are the flow to these funds determined by the same factors as are the flows to passive funds?

We find that active ETFs do not have higher tracking error than passive funds in the same category suggesting that active management does not represent substantial investment strategy of these funds and that they tend to adhere to the underlying index similarly as their passive peers.

With regard to the performance of these funds,  empirical evidence is not conclusive. Some studies support the idea that actively managed ETFs indeed add value to investor’s portfolios by enhancing risk-adjusted performance (see, for example (Beck, Chong, and Phillips 2017), (Meziani 2015), (Schizas 2014), (Garyn-Tal 2013)). Other studies rather attest to their failure to deliver positive alphas while exposing investors to higher volatility (see for example  (Rompotis 2015)).  Our results support the later studies. We find that active ETFs do not bring higher returns to their investors and even underperform in the U.S. equity group.

To answer our last question, we examine the flow to actively managed ETFs. Demand for active ETFs is not on average higher than for passive funds as net flows to these funds are either lower or not statistically different from flows to passive funds. Following recent literature on flows ((Barber, Huang, and Odean 2016), (Song 2020)), we decompose returns into skill alpha and non-skill components. We document  persistence in ETF flows and performance chasing behavior of their investors. This is consistent with findings of (Clifford, Fulkerson, and Jordan 2014), (Broman and Shum 2018), (Dannhauser and Pontiff 2019). However, alpha and benchmark adjusted returns have stronger impacts on net flows to passive funds. This finding is rather surprising because it is the active, not passive index-tracking funds, that deviate from the index in their search for better returns. This finding differs from findings of (Yousefi, Najand, and Sun 2020) who conclude that flows to active ETFs appear to be smart money.

# Data

Our main source of data is Morningstar Direct. To be included in the sample, each ETF must be domiciled in the U.S. and have Morningstar U.S. Category classification as either U.S. Equity or International Equity. Active ETFs are identified by the *Actively Managed*indicator in Morningstar database. We exclude ETNs, leveraged ETFs by using *Leveraged Fund*and *Exchange Traded Notes*indicators and by name detection. To be included in the sample, each fund must have at least 30 monthly observations and available data on all the variables used in the analyses. Following (Clifford, Fulkerson, and Jordan 2014), (Broman and Shum 2018) and mutual fund flows literature, we remove all funds that are less than 12 months old to avoid issues with incubation bias and outliers in the number of shares outstanding during the early life of a fund. We classify all ETFs that invest only internationally but not domestically as an International equity (e.g. Japan, Europe, Diversified Emerging Markets, Foreign Giant Morningstar categories     are there more ? ). The sample does not contain any active ETFs that invest in a single country (with exception of Japan). Therefore, we also remove their passive counterparts that invest in single countries (except Japan). We classify funds that invest both internationally and in the U.S. as a World equity (Morningstar Institutional Category World Large Growth, World Large Value are there more ?) . According to Morningstar, these funds still keep 30-70% of assets in domestic stocks.

Our final sample includes \*\*\* active and \*\*\* passive ETFs covering the period from April 2008 to December 2019. The US equity consists of 39 active and 218 passive funds, international equity 24 active and 236 passive funds and the World equity \*\*\* active and \*\*\* passive funds.

Previous literature has shown the fund prospectus benchmark often does not match the fund’s actual style ((Sensoy 2009), (Cremers and Petajisto 2009)). Therefore, we do not use the self-declared benchmark when evaluating fund’s tracking error and performance. Instead, for U.S. equity funds, we rely on the Morningstar equity style box to define the benchmark for a fund at each month . The Morningstar equity box is based on fund’s actual holdings. It classifies holdings to nine styles: Large Blend, Large Growth, Large Value, Mid Blend, Mid Growth, Mid Value, Small Blend, Small Growth and Small Value with following corresponding benchmarks: Russell 1000, Russell 1000 Growth, Russell 1000 Value, Russell Mid Cap, Russell Mid Cap Growth, Russell Mid Cap Value, Russell 2000, Russell 2000 Growth, and Russell 2000 Value. For International and World funds, we use the FTSE/Russell benchmark assigned to each fund by Morningstar. This assignment is also based on the fund’s holdings. Monthly tracking error and fund’s volatility of returns are calculated based on 12-month rolling standard deviation of benchmark adjusted returns and net returns.

The performance of funds is based on benchmark adjusted returns using the Fama-French-Carhart (4 factors), Fama-French (3 factors) and CAPM models. For funds that are classified as International and World, we utilize the international version of these models following   (Breloer, Scholz, and Wilkens 2014) . The market factor for these funds is the excess return of the MSCI ACWI IMI index. The size factor is the average return of the MSCI ACWI Small Value index and the MSCI ACWI Small Growth index minus the average return of the MSCI ACWI Large Cap Value and the MSCI ACWI Large Cap Growth index. The value factor is the difference between the average return of the MSCI ACWI Small Value and the MSCI ACWI Large Cap Value index and the average return of the MSCI ACWI Small Growth and the MSCI ACWI Large Cap Growth index. The momentum factor is proxied by the returns of the MSCI ACWI Momentum index.

Following the recent literature ((Barber, Huang, and Odean 2016), (Song 2020), (Dannhauser and Pontiff 2019)), we decompose the fund monthly excess returns into two components. Specifically, we estimate the factor sensitivities by 12-month rolling regression for fund *i* in month *t* using model *FN* with *N* factor as

$$r\_{i,t}−r\_{f,t}=α\_{i,t}^{F\_{N}}+\sum\_{n=1}^{N}β\_{i,t}^{n}F\_{n,t}+ϵ\_{i,t}.$$

Using each fund estimates of factor exposures, the fund factor-related return (*FRR*) in month *t* is calculated as

$$FRR\_{i,t}^{F\_{N}}=\sum\_{n=1}^{N}β\_{i,n,t−1}^{F\_{N}}F\_{n,t}.$$

Factor-adjusted component (alpha) is estimated as $α\_{i,t}^{F\_{N}}=(r\_{i,t}−r\_{f,t})−FRR\_{i,t}^{F\_{N}}.$

We also calculate monthly net flows as

$$Flow\_{i,t+1}=\frac{TNA\_{i,t+1}−TNA\_{i,t}(1+r\_{i,t+1})}{TNA\_{i,t}}$$

and winsorize net fund flows at the 1st and 99th percentiles in order to mitigate the impact of outliers or data error issues. (Clifford, Fulkerson, and Jordan 2014) and (Broman and Shum 2018) document that exchange and trading characteristics can also affect the flows of ETFs. Therefore, we include the following variables in regressions when examining flows of ETFs: standard deviation of daily volume, average daily spread, standard deviation of daily spread, price-NAV ratio (as of the end of the month) and share turnover (average daily volume in a month divided by the beginning of month shares outstanding). The independent variables in all analyses are lagged by one month. We also control for Month (Year) and Style fixed effects (using Morningstar Institutional Category). Standard errors are clustered at the fund level.

Summary statistics are shown in Table 1. Active ETFs are significantly smaller and younger than passive funds. They do not seem to outperform their passive peers on benchmark adjusted returns althogh they charge significantly higher fees to their investors. They have significantly higher tracking errors and their portfolios are comprised of lower number of holdings. The exchange and trading characteristics are significantly different only in International category. Specifically, active ETFs in this category have lower liquidity (higher spread), lower trading activities (lower share turnover), and trade at larger premium than passive funds.

[Insert Table 1]

# Are active ETFs really active?

In this section we address our first question whether active ETFs do really employ active investment strategies. We use tracking error as a proxy for active management. Tracking error measures how much the fund’s returns deviate from returns of the benchmark. Passive funds aim to replicate the benchmark and therefore should have low tracking errors. Actively managed funds, on the other hand, aim to beat the underlying benchmark by stock selection or by strategic asset allocation. Therefore, if they indeed employ active management, we should observe higher tracking errors.

In the previous section, we have shown that active ETFs have significantly higher tracking errors than passive funds. Tracking errors are, however, also related to other fund characteristics, such as fund size, age, expense ratio, fund return volatility, and number of assets in fund’s holdings ((Vardharaj, Fabozzi, and Jones 2004), (Rompotis 2015)). To closely examine tracking errors of active *versus* passive funds, we regress tracking errors on a  dummy variable *Active* that takes value of one for actively managed ETFs, zero otherwise and control for other fund’s characteristics:

$$TE\_{i,t}=α+β\_{1}Active\_{i,t}+β\_{2}Log(Age)\_{i,t−1}+β\_{3}Log(TNA)\_{i,t−1}+β\_{4}Expense\_{i,t−1}+β\_{5}Volatility\_{i,t−1}+β\_{6}Holdings\_{i,t−1}+(StyleFixedEffects)+(TimeFixedEffects)+ϵ\_{i,t},$$

where *TE* is a tracking error, *Log(Age)*, *Log(TNA)*, *Expense*, *volatility*, and *holdings* are control variables depicting the size, age, volatility of fund returns, and number of stocks in fund’s holdings, respectively.

Results of the regression are presented in Table 2. The dummy variable *Active* is not significant for U.S. Equity and World Equity ETFs. These results suggest that active ETFs do not deviate from their benchmarks and therefore do not really employ active management.  The negative sign of the dummy variable  in International category indicates that active ETFs have even lower tracking errors in this category. This finding is surprising but understandable. It may be challenging for low cost passive funds to perfectly track different markets around the world. Active funds with higher expense ratios are more likely to achieve better tracking results. Overall, our results are consistent with (Schizas 2014), who finds that active ETFs are not active compared to their respective passive funds. Our results also agree with empirical evidence that many of active mutual funds are “closet indexers” ((Cremers and Petajisto 2009)).

[Insert Table 2]

# Performance of active and passive ETFs

In previous section we find that despite charging higher expense ratios to investors, active ETFs are not really active. In this section, we investigate whether they bring significant benefits to investors compared to their passive peers. We regress different performance measures while controlling for other confounding variables of fund performance:

$$Performance\_{i,t}=α+β\_{1}Active\_{i,t}+β\_{2}Log(Age)\_{i,t−1}+β\_{3}Log(TNA)\_{i,t−1}+β\_{4}Expense\_{i,t−1}+β\_{5}Flow\_{i,t−1}+β\_{6}Performance\_{i,t−1}+β\_{7}TE\_{i,t−1}+β\_{8}Turnover\_{i,t−1}+β\_{5}Flow\_{i,t−1}+(StyleFixedEffects)+(TimeFixedEffects)+ϵ\_{i,t},$$

where  *Performance* is expressed as benchmark-adjusted returns and alphas from the Fama-French-Carhart (4 factors), Fama-French (3 factors) and CAPM models.

Regression results are reported in Table 3. We find that actively managed ETFs significantly underperform their passive peers in the U.S. Equity category. On monthly basis, the risk-adjusted returns for U.S. Equity active ETFs range from 0.12 to 0.20 percentage points lower than the risk-adjusted returns of their passive peers. This translates to the difference ranging from 1.44 to 2.4 percentage points annually. Funds that trade their portfolios more often and funds that deviate from underlying benchmark earn significantly lower risk adjusted returns. Our findings are consistent with findings in mutual fund literature that suggest that active mutual funds underperform passive funds and therefore, investors would generally benefit by investing in passively-managed funds (see, for example (Sharpe 1991) and (French 2008)).

For International Equity and World Equity, we do not find significantly different performance between active and passive ETFs. There is, however, evidence of short term performance persistence in International ETFs, as the coefficient of the first lag of alpha is positive and statistically significant. Similarly as for U.S. Equity, funds that have higher turnover earn significantly lower risk-adjusted returns. In contrast to the U.S. Equity, however, the International Equity funds with higher tracking error earn significantly higher risk-adjusted returns. In short, the empirical evidence so far has shown no significant difference in portfolio management and benefits between active and passive ETFs.

[Insert Table 3]

# Determinants of flows

In this section we examine the determinants of flows to ETFs and compare the impact of previous performance on flows between active and passive funds. We control for various previously documented determinants of fund flows, including fund characteristics e.g. age, size, expense, and turnover and exchanged related variables ((Clifford, Fulkerson, and Jordan 2014)). We also include three lags of flows since (Dannhauser and Pontiff 2019) document persistence of ETF flows for up to three months. We estimate following regression:

$$Flow\_{i,t}=α+β\_{1}Active\_{i,t}+β\_{2}Performance\_{i,t−1}+β\_{3}Performance\_{i,t−1}Active\_{i,t}+β\_{j}\sum\_{j}^{}FundVariables\_{i,t−1}+β\_{k}\sum\_{k}^{}ExchangeVariables\_{i,t−1}+(StyleFixedEffects)+(TimeFixedEffects)+ϵ\_{i,t},$$

where *Flow* is the monthly ETF net flow (Define it here - how is it calculated, units), *Active*is a dummy variable indicating the actively managed fund and *Performance* is measured as benchmark-adjusted returns and alphas from the Fama-French-Carhart (4 factors), Fama-French (3 factors) and CAPM models. Due to data availability of the control variables, the sample period of the flow analyses is from May 2014 to December 2019. Table 4 presents the results for U.S. equity (Panel A), International (Panel B) and World categories (Panel C).

[Insert Table 4]

We find that active ETFs have not been fully successful in attracting investor flows. Monthly net flows into active funds are approximately 1.2 to 1.4 percentage (what are the units of flows?) points lower than the flows to their passive peers in the U.S. equity category and not statistically different in the other two categories. These findings are in line with the fact that active ETFs still account only for a small proportion of ETF total net assets.

Consistently with previous studies ((Clifford, Fulkerson, and Jordan 2014),  (Dannhauser and Pontiff 2019)),  we document performance chasing behavior and flow persistence in U.S. equity and International categories. The coefficients on lagged alphas and benchmark adjusted returns are all positive and statistically significant in the U.S. Equity and International Equity. Although these coefficients are not significant in the World Equity, it should be treated with caveats due to small number of funds in this category. We expect, however, different responses to performance between investors of active and passive ETFs. The skill component of performance, alpha and benchmark adjusted returns, should be stronger determinants of flows to active ETFs, since it depicts manager’s ability to pick stocks. Consistently with this view, (Yousefi, Najand, and Sun 2020) provide empirical evidence that flows to active ETFs appear to be smart. We find, however, that the coefficient on the interaction term between *Alpha* and *Active* is negative and significant for the U.S. Equity and not significant for International and World equity categories. This suggests that investors in active ETFs do not differentiate between skill and non-skill components of returns or do not seem to pay attention to skill-related returns of the managers.

Turning to other variables, we find that investors do pay attention to expense ratios and age of the fund. Funds with higher expense ratios and younger funds have lower ETF flows.

# Conclusion

Actively managed ETFs are relatively new type ETFs. So far, they manage only a small proportion of assets in the ETF industry but recently the number of newly launched funds in this category exceeds the number of newly launched passive funds. In this paper, we examine three important aspects of actively managed ETFs. Specifically, we compare the tracking errors, risk-adjusted performance, and net flows of actively managed ETFs to traditional passive ETFs.

We find that despite their name, actively managed ETFs do not seem to significantly depart from their benchmarks. Their tracking errors, c*eteris paribus*, are not significantly different from tracking errors of their passive peers in the U.S. and World Equity categories and even significantly lower in the International Equity. Consequently, they do not deliver better performance to their investors. In fact, in the U.S. Equity category, the performance of actively managed ETFs is significantly lower than the performance of passive funds.  An analysis of flow performance reveals that net flows to these funds are less sensitive to alpha than net flows of passive funds. This is surprising because it is the purpose of these funds to deliver returns above the benchmark and therefore alpha as a measure of “skill” of their managers should attract investors.

In short, our analysis did not reveal any significant benefits of investing in actively managed ETFs. To this time, however, actively managed ETFs were not able to take full benefit of active management mainly because of the requirement for daily holding disclosure and generally low market volatility. Recent SEC approval of new non-transparent ETF models and the ongoing fee competition in the asset management industry together with growing concerns of consequences of pure index-tracking and increased market volatility may be just the right spark for these funds to soar.

ETNs are identified if the fund name contains *ETN, exchange traded note, or exchange-traded note*; Leveraged funds are identified if the fund names contain the following strings: *plus, enhanced, enh, inverse, 2x, 3x, ultra, 1.5x, 2.5x.*

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# References

Hilliard, Jitka. 2014. “Premiums and Discounts in ETFs: An Analysis of the Arbitrage Mechanism in Domestic and International Funds”. *Global Finance Journal* 25 (2): 90–107. <https://doi.org/10.1016/j.gfj.2014.06.001.>

Meziani, A. Seddik. 2015. “Active Exchange-Traded Funds: Are We There Yet?”. *The Journal of Index Investing* 6 (2): 86–98. <https://doi.org/10.3905/jii.2015.6.2.086.>

Beck, Kristine L., James Chong, and G. Michael Phillips. 2017. “Risk-Adjusted Performance of the Largest Active ETFs”. *The Journal of Wealth Management* 20 (3): 52–63. <https://doi.org/10.3905/jwm.2017.20.3.052.>

Schizas, Panagiotis. 2014. “Active ETFs and Their Performance Vis-à-Vis Passive ETFs Mutual Funds and Hedge Funds”. *The Journal of Wealth Management* 17 (3): 84–98. <https://doi.org/10.3905/jwm.2014.17.3.084.>

Garyn-Tal, Sharon. 2013. “An Investment Strategy in Active ETFs”. *The Journal of Index Investing* 4 (1): 12–22. <https://doi.org/10.3905/jii.2013.4.1.012.>

Rompotis, Gerasimos G. 2015. “A Performance Evaluation of the Canadian Actively Managed ETFs”. *The Journal of Index Investing* 6 (2): 57–75. <https://doi.org/10.3905/jii.2015.6.2.057.>

Barber, Brad M., Xing Huang, and Terrance Odean. 2016. “Which Factors Matter to Investors? Evidence from Mutual Fund Flows”. *Review of Financial Studies* 29 (10): 2600–2642. <https://doi.org/10.1093/rfs/hhw054.>

Song, Yang. 2020. “The Mismatch Between Mutual Fund Scale and Skill”. *The Journal of Finance* 75 (5): 2555–89. <https://doi.org/10.1111/jofi.12950.>

Clifford, Christopher P., Jon A. Fulkerson, and Bradford D. Jordan. 2014. “What Drives ETF Flows?”. *Financial Review* 49 (3): 619–42. <https://doi.org/10.1111/fire.12049.>

Broman, Markus S., and Pauline Shum. 2018. “Relative Liquidity Fund Flows and Short-Term Demand: Evidence from Exchange-Traded Funds”. *Financial Review* 53 (1): 87–115. <https://doi.org/10.1111/fire.12159.>

Dannhauser, Caitlin D, and Jeffrey Pontiff. 2019. “Flow”. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3428702.>

Yousefi, Hamed, Mohammad Najand, and Licheng Sun. 2020. “Fund Flow and Managerial Skill: Evidence from Exchange-Traded Funds (Etfs)”. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3521664.>

Sensoy, Berk A. 2009. “Performance Evaluation and Self-Designated Benchmark Indexes in the Mutual Fund Industry”. *Journal of Financial Economics* 92 (1): 25–39. <https://doi.org/10.1016/j.jfineco.2008.02.011.>

Cremers, K. J. Martijn, and Antti Petajisto. 2009. “How Active Is Your Fund Manager? A New Measure That Predicts Performance”. *Review of Financial Studies* 22 (9): 3329–65. <https://doi.org/10.1093/rfs/hhp057.>

Breloer, Bernhard, Hendrik Scholz, and Marco Wilkens. 2014. “Performance of International and Global Equity Mutual Funds: Do Country Momentum and Sector Momentum Matter?”. *Journal of Banking & Finance* 43 (June): 58–77. <https://doi.org/10.1016/j.jbankfin.2014.01.041.>

Vardharaj, Raman, Frank J. Fabozzi, and Frank J. Jones. 2004. “Determinants of Tracking Error for Equity Portfolios”. *The Journal of Investing* 13 (2): 37–47. <https://doi.org/10.3905/joi.2004.412305.>

Sharpe, William F. 1991. “The Arithmetic of Active Management”. *Financial Analysts Journal* 47 (1): 7–9. <https://doi.org/10.2469/faj.v47.n1.7.>

French, Kenneth R. 2008. “Presidential Address: The Cost of Active Investing”. *The Journal of Finance* 63 (4): 1537–73. <https://doi.org/10.1111/j.1540-6261.2008.01368.x.>