

# The Benefits of Creating Exchange Traded Funds at RIAs

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## Brief Biographies:

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## RIAs - Discretionary Investment and Vehicles

In 2020, the number of Securities and Exchange Commission (SEC) Registered Investment Advisors (RIAs) grew to nearly \$110 trillion in assets for roughly 61 million clients (Longo, 2021). Among the available investment strategies, 41% of RIAs employ a passive and active management hybrid approach.<sup>1</sup> Historically mutual funds were among the top investment vehicles used by RIAs due to its diversification benefits. Despite its popularity, mutual funds are often more costly, lack tax efficiency, and only trade once per day. As a result, we have seen a significant shift from mutual funds to exchange traded funds (ETFs). As of 2021, ETFs are the most popular choice among the different financial assets used by financial advisors. In a recent survey by the Financial Planning Association, sixty-four percent of financial advisors recommend ETFs, thirty-two percent of advisors recommend ESG funds which might also consist of ETFs.<sup>2</sup>

Given the wide use of ETFs among financial advisors, we explore a novel idea whereby (RIAs) who employ dynamic investment strategies do so by creating an ETF to improve tax efficiency, leading to better after-tax returns and increased wealth for their clients.

The first ETF, the SPDR, was launched in 1993 by State Street. Since then, the ETF market has experienced significant growth with a reported \$6.3 trillion in assets<sup>3</sup>. While most ETFs are passively managed and track an index, there are actively managed

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<sup>1</sup> Study carried out by RIA in a Box <https://www.riainabox.com/blog/ria-study-portfolio-management-styles-passive-active-or-hybrid>

<sup>2</sup> The Financial Planning Association Trends in Investing Survey <https://www.financialplanningassociation.org/sites/default/files/2021-05/2021-Trends-in-Investing-Report-FIN.pdf>

<sup>3</sup>Investment Company Institute ETF Data [https://www.ici.org/research/stats/etf/etfs\\_05\\_21](https://www.ici.org/research/stats/etf/etfs_05_21)

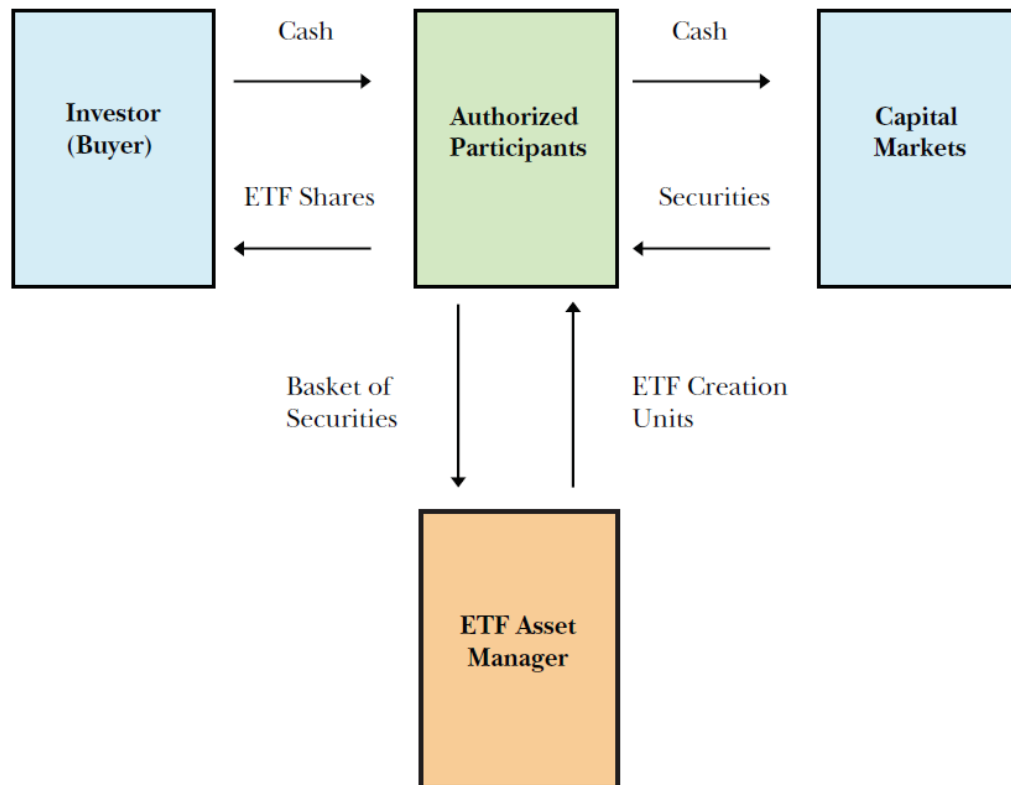
funds, Smart-Beta Funds, Leveraged Funds, Environmental Social and Governance (ESG) funds, Bond Funds, etc. Investing in ETFs provides investors with several advantages compared to the traditional open-end mutual fund. ETFs often have lower transaction costs, less cash drag, trades throughout the day, have lower expense ratios, and distribute fewer capital gains. (Kostovetsky, 2003; Ben-David, Franzoni, & Moussawi, 2017)). In early 2021, history was made when the first mutual fund was converted to an ETF. Guinness Atkinson Asset Management converted two of its mutual funds to an ETF<sup>4</sup>. Since then, other large financial institutions such as Dimensional Fund Advisor have followed suit.<sup>5</sup> Moussawi, Shen, and Velthuis (2020) suggest that the growth of ETFs and the reason companies are converting mutual funds to ETFs is because of the value it brings to “high-net-worth” and other tax-sensitive investors. ETFs, possess the ability to defer taxes by avoiding the distributions of realized capital gains.

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<sup>4</sup> See article published by Think Advisor at <https://www.thinkadvisor.com/2021/03/29/history-made-with-first-u-s-mutual-funds-converted-to-etfs/>

<sup>5</sup> From the media center of Dimensional Funds <https://us.dimensional.com/about-us/media-center/dimensional-lists-four-new-etfs>

Figure 1  
The ETF Architecture



Source: Lettau and Madhavan, 2018

In Figure 1, we outline the architecture of an ETF. At the inception of an ETF, the sponsor establishes a relationship with one or more institutional investors who assume the Authorized Participant's role (AP). The manager of the ETF issues and redeems large blocks of shares known as “creation units” in exchange for either cash or a basket of securities. ETFs adjust their shares in response to the supply and demand through a process referred to as the creation/redemption mechanism. Creation refers to increasing the supply of ETF shares, and redemption reduces the number of outstanding shares. Hence, transactions can either be in cash or in-kind. The creation/redemption process is

between an ETF fund and an AP. Thus, investors do not redeem shares directly from the ETF. Instead, the ETF works with AP, who provides shares of the ETF to the market.

## What Makes an ETF Tax Efficient?

“Redemption- In-kind” is available to all registered investment companies operating under the terms of the Investment Company Act of 1940. While traditional open-end mutual funds can also utilize this Strategy, it is seldomly employed. ETFs' more frequent use of this Strategy is partly due to their greater frequency of large trades, as arbitrageurs create and redeem trust shares (Poterba and Shoven, 2002). Redemption-In-kind is a convenient mechanism that allows ETFs not to have to recognize capital gains. Under section 311(b) of the tax code, any distribution to shareholders of a corporation triggers a capital gain. However, under section 852(b)(6), Registered Investment Companies are not subject to section 311(b). Hence, an ETF can give appreciated shares to an AP and not trigger capital gains (Toolson, 2012). Instead of liquidating securities, realizing gains, and creating a taxable event, the ETF can swap securities with their AP. By taking advantage of this process, ETFs can defer short-term, and long-term realized capital gains. Furthermore, this process has become even more efficient for ETFs who can create custom baskets due to Rule 6c-11 passed by the SEC in 2019. Under Rule 6c-11, exempt ETFs can create custom baskets that do not consist of a pro-rata representation of the fund's portfolio or differ from the initial basket used in transactions on the same business day. Ideally, it is best practice for the ETF to implement written policies and procedures outlining the parameters for the custom baskets.<sup>6</sup> Moussawi,

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<sup>6</sup> See SEC press release for more details at <https://www.sec.gov/news/press-release/2019-190>

Shen, and Velthuis (2020) provide empirical evidence to show that ETFs, in contrast to mutual funds, advantageously use outflows to allocate stocks with the lowest cost basis to redemption baskets, deferring capital gains distributions, and leaving the fund with shares that have on average, a higher cost basis. Consistently, ETFs often have the lowest tax burden compared to passively managed mutual funds and actively managed mutual funds. Moussawi, Shen, and Velthuis (2020) find that the tax burden for ETFs ranges from 0.17% to 0.48%, which is much lower in comparison to index mutual funds that have a tax burden ranging from 0.22% to 1.37% and actively managed mutual funds with a tax burden between 0.18% and 1.85%. Similarly, from 1993 to 2017, Arnott, Kalesnik, and Schuesler (2018) estimate an average tax burden of 1.1% and 0.3% for mutual funds and ETFs, respectively, causing a net 0.8% loss in returns. Investors with taxable accounts will not have to pay any taxes due to gains within the ETF until they decide to sell their shares, effectively transforming short term realized capital gains at the fund level into long term gains at the investor level (Colon, 2017), which is valuable for those who wish to manage their taxes.

Financial advisors who work with high-net-worth clients prefer ETFs. Moussawi, Shen, and Velthuis (2020) find that financial advisors who work with high-net-worth individuals are four times more likely to invest in ETFs when compared to those who work with a low or a non-high-net-worth clientele. Arguably, the high demand for ETFs among advisors with a tax-sensitive client base is due to its tax efficiency. Given the tax efficiency of ETFs, RIAs who employ rules-based dynamic trading strategies within their client's accounts ought to reduce the tax drag in a taxable account by executing their strategies within an ETF instead of carrying out such a strategy in an ETF or mutual fund.

## Mutual Funds and ETFs –Superior Options to Separately Managed Accounts

Compared to separately managed accounts by RIAs, large institutional investors can create funds with a specific investment objective and utilize a well-established institutional trading infrastructure. The access to institutional clearing will reduce the bid-ask spreads when adjusting allocations, regardless of the trading volume. Furthermore, they have access to some markets that RIAs cannot participate in, such as short-term security lending and over-the-counter option contracts.

From a tax efficiency standpoint, the main issue that arises when RIAs rely on mutual funds and ETFs to execute a rule-based strategy are the taxes that must be paid whenever there are changes in allocation, rebalancing, and other changes that require the sale of an appreciated fund.

### Tax Cost Ratio Comparison between Mutual Funds and ETFs

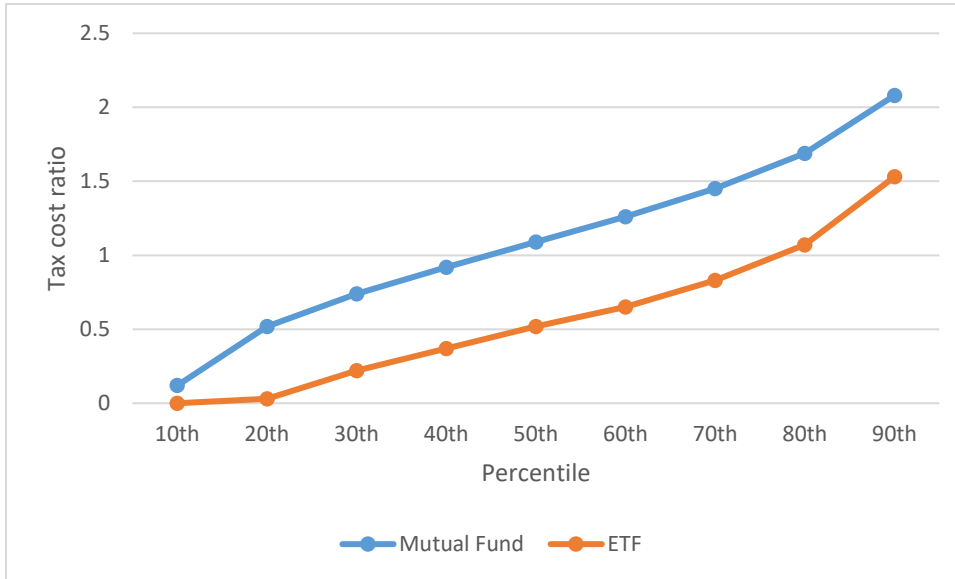
The tax cost ratio captures the reduction in annualized return due to taxes paid on distribution. Throughout the year, mutual funds and ETFs distribute income and dividends. ETFs can transfer all the low-cost basis shares to the AP through in-kind redemptions to avoid capital gains tax. Thus, mutual will have a higher tax cost ratio. Our analysis use data from Morningstar Director. The tax cost ratio data consist of U.S. active ETFs (2,706) and mutual funds (24,772). The range for the tax cost ratio is usually concentrated between 0% and 5%, with a higher number indicating less tax efficiency. Exhibit 1 shows tax cost ratios of ETFs and mutual funds sorted by percentiles. Regardless of investment style, ETFs' average tax cost ratio is lower than mutual funds in all three groups. For all investment categories, the tax cost ratios of actively and passively managed ETFs are similar in value.

**Exhibit 1: Tax Cost Ratio by Investment Category.** Reports the tax cost ratios of ETFs and mutual funds according to their investment styles. The tax cost ratios are calculated since the inception of the funds.

Category	25 <sup>th</sup> Percentile			Median			75 <sup>th</sup> Percentile		
	Active ETF	Passive ETF	Mutual Fund	Active ETF	Passive ETF	Mutual Fund	Active ETF	Passive ETF	Mutual Fund
Equity									
Global equity	0.020	0.595	0.560	0.710	0.840	0.840	1.080	1.070	1.180
US Large cap value	0.310	0.620	0.950	0.610	0.760	1.300	0.720	1.170	1.690
US Large cap growth	0.000	0.000	0.760	0.095	0.185	1.170	0.268	0.340	1.730
US Large cap blend	0.000	0.185	0.710	0.400	0.480	1.090	0.640	0.630	1.585
US mid cap	0.000	0.218	0.820	0.490	0.430	1.270	0.880	0.653	1.730
US small cap	0.000	0.265	0.905	0.285	0.430	1.340	0.625	0.560	1.770
US sector	0.000	0.220	0.710	0.440	0.470	1.240	0.863	0.820	1.770
Long/Short	0.075	0.095	0.340	0.375	0.300	0.740	0.810	0.730	1.230
Developed Europe	N/A	0.590	0.790	0.97	0.810	1.010	N/A	1.070	1.303
Developed Asia Pacific	0.000	0.360	0.365	0.435	0.640	0.815	1.335	1.050	1.278
Emerging	0.630	0.633	0.313	0.830	0.840	0.550	1.040	1.020	0.800
Other	0.330	0.388	0.700	1.350	0.810	1.320	2.128	1.183	2.550
Fixed income									
Broad market	N/A	0.340	0.845	1.200	0.680	1.130	N/A	0.830	1.480
Emerging markets	1.560	0.820	1.630	1.700	1.660	1.970	1.910	2.030	2.250
High yield	1.670	1.583	0.988	2.115	2.095	2.230	2.483	2.250	2.600
Investment grade	0.545	0.310	0.830	0.940	0.870	1.300	1.298	1.240	1.748
Municipals	0.000	0.000	0.000	0.000	0.000	0.010	0.040	0.000	0.040
US government	0.350	0.580	0.800	0.920	0.690	1.040	1.275	1.030	1.405
Core/Core plus	0.925	0.360	1.140	1.150	0.990	1.360	1.290	1.193	1.590
Other	1.890	1.703	1.120	1.930	2.185	1.380	2.590	2.243	1.880
Convertibles	N/A	0.130	1.473	0.74	1.200	1.795	N/A	1.700	2.090
Commodities	0.270	0.000	0.445	0.590	0.000	0.710	1.080	0.000	1.513
Alternatives	0.000	0.000	0.428	0.000	0.000	0.750	0.305	0.000	1.170
Asset allocation	0.563	0.223	0.840	1.115	0.540	1.150	1.578	1.898	1.490
Other	0.015	0.000	0.150	0.235	0.100	0.290	0.478	0.405	0.530



**Exhibit 2: Tax Cost Ratio**—graphical representation of the tax cost ratios for ETFs and Mutual Funds. Note, the tax cost ratios of ETFs in all percentiles are below those of mutual funds.



Actively managed funds have a higher turnover ratio compared to funds that are passively run. It is reasonable to assume that actively managed funds will possess a higher tax cost ratio as they are more likely to liquidate securities with capital gains. Exhibit 3 displays the distribution of turnover ratios for ETFs and mutual funds. While the turnover ratios of mutual funds are more evenly distributed, ETFs are more concentrated within the range of 0 to 30%. Such results are expected since the majority of ETFs are passively managed.

**Exhibit 3: Turnover Ratio Distribution.** This figure shows the number of ETFs and mutual funds with different turnover ratios.

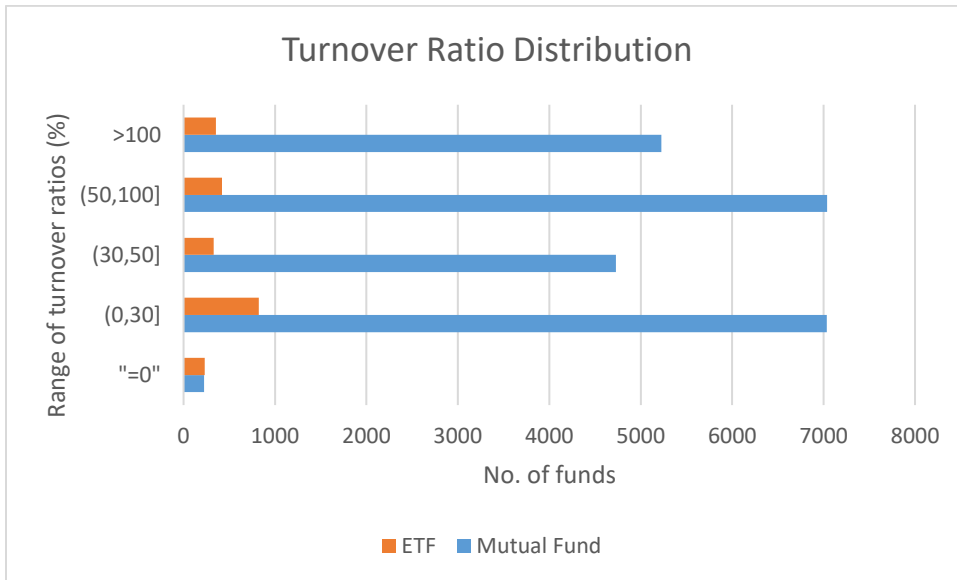
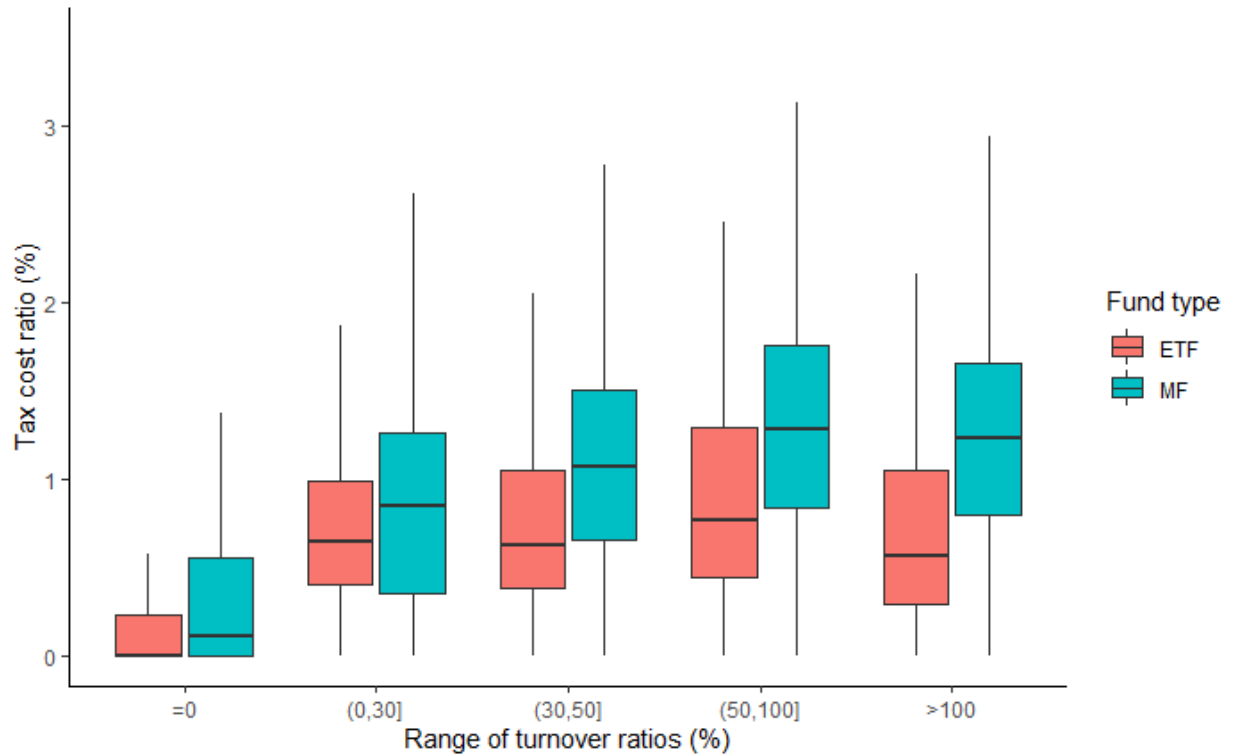


Exhibit 4 displays the value of tax cost ratios for ETFs and mutual funds with different turnover ratios. Each box shows the interquartile range of observations within a turnover ratio range, and the bar in the middle of the box indicates the median value. Despite the level of trading activity, the tax cost ratio for ETFs is persistently below mutual funds. Hence, RIAs can maximize after-tax returns and produce a tax alpha by utilizing ETFs in taxable accounts.

**Exhibit 4:** This figure shows the tax cost ratios for investment ETFs and mutual funds sorted by turnover ratio. Each box gives the interquartile range of observations within a turnover ratio range. The bar in the middle of the box indicates the median value.



Thus far, we have shown that ETFs are more tax-efficient than mutual funds empirically. Yet, there is even a more tax-efficient strategy for RIAs that serves a tax-sensitive clientele and employs a rule-based investment approach (taking a defined investment strategy and executing it within a mutual fund). By deploying the rule-based investment strategy within a proprietary ETF, the RIA can mitigate taxable events due to the liquidation of appreciated security by taking advantage of the in-kind redemption available within the ETF.

## Simulation Analysis

Exhibit 5 shows the annual return of the S&P 500 adjusted by the average tax cost ratio of ETFs and mutual funds. We sort the table by the turnover ratio to capture different levels of trading activities—the results highlight increased tax costs associated with active management. Overall, the after-tax return of ETFs is higher than those of mutual funds. Hence, when RIAs implement rule-based trading within a client's portfolio, it is best to do it within the structure of an ETF.

**Exhibit 5.** This table shows the adjusted annual return based on the tax cost ratio obtained from the Morningstar Direct database. The average of tax cost ratios sorted by turnover is presented.

Turnover ratio Range (%)		0		(0,30)		(30,50)		(50,100)		>100	
Fund type		ETF	MF	ETF	MF	ETF	MF	ETF	MF	ETF	MF
Tax cost ratio (%)		0.153	0.800	0.762	0.883	0.828	1.142	0.949	1.350	0.785	1.327
Year	Original return index (%)	Total return adjusted (annual, %)									
1992	7.62	7.46%	6.76%	6.80%	6.67%	6.73%	6.39%	6.60%	6.17%	6.78%	6.19%
1993	10.08	9.91%	9.20%	9.24%	9.11%	9.17%	8.82%	9.04%	8.59%	9.22%	8.62%
1994	1.32	1.16%	0.51%	0.55%	0.43%	0.48%	0.16%	0.36%	-0.05%	0.52%	-0.02%
1995	37.58	37.37%	36.48%	36.53%	36.37%	36.44%	36.01%	36.27%	35.72%	36.50%	35.75%
1996	22.96	22.77%	21.98%	22.02%	21.87%	21.94%	21.56%	21.79%	21.30%	21.99%	21.33%
1997	33.36	33.16%	32.29%	32.34%	32.18%	32.26%	31.84%	32.09%	31.56%	32.31%	31.59%
1998	28.58	28.38%	27.55%	27.60%	27.44%	27.52%	27.11%	27.36%	26.84%	27.57%	26.87%
1999	21.04	20.85%	20.07%	20.12%	19.97%	20.04%	19.66%	19.89%	19.41%	20.09%	19.43%
2000	-9.1	-9.24%	-9.83%	-9.79%	-9.90%	-9.85%	-10.14%	-9.96%	-10.33%	-9.81%	-10.31%
2001	-11.89	-12.02%	-12.59%	-12.56%	-12.67%	-12.62%	-12.90%	-12.73%	-13.08%	-12.58%	-13.06%
2002	-22.1	-22.22%	-22.72%	-22.69%	-22.79%	-22.75%	-22.99%	-22.84%	-23.15%	-22.71%	-23.13%
2003	28.68	28.48%	27.65%	27.70%	27.54%	27.61%	27.21%	27.46%	26.94%	27.67%	26.97%
2004	10.88	10.71%	9.99%	10.04%	9.90%	9.96%	9.61%	9.83%	9.38%	10.01%	9.41%
2005	4.91	4.75%	4.07%	4.11%	3.98%	4.04%	3.71%	3.91%	3.49%	4.09%	3.52%
2006	15.79	15.61%	14.86%	14.91%	14.77%	14.83%	14.47%	14.69%	14.23%	14.88%	14.25%
2007	5.49	5.33%	4.65%	4.69%	4.56%	4.62%	4.29%	4.49%	4.07%	4.66%	4.09%
2008	-37	-37.10%	-37.50%	-37.48%	-37.56%	-37.52%	-37.72%	-37.60%	-37.85%	-37.49%	-37.84%
2009	26.46	26.27%	25.45%	25.50%	25.34%	25.41%	25.02%	25.26%	24.75%	25.47%	24.78%
2010	15.06	14.88%	14.14%	14.18%	14.04%	14.11%	13.75%	13.97%	13.51%	14.16%	13.53%
2011	2.11	1.95%	1.29%	1.33%	1.21%	1.26%	0.94%	1.14%	0.73%	1.31%	0.76%
2012	16	15.82%	15.07%	15.12%	14.98%	15.04%	14.68%	14.90%	14.43%	15.09%	14.46%
2013	32.39	32.19%	31.33%	31.38%	31.22%	31.29%	30.88%	31.13%	30.60%	31.35%	30.63%
2014	13.69	13.52%	12.78%	12.82%	12.69%	12.75%	12.39%	12.61%	12.16%	12.80%	12.18%
2015	1.38	1.22%	0.57%	0.61%	0.48%	0.54%	0.22%	0.42%	0.01%	0.58%	0.03%
2016	11.96	11.79%	11.06%	11.11%	10.97%	11.03%	10.68%	10.90%	10.45%	11.08%	10.47%
2017	21.83	21.64%	20.86%	20.90%	20.75%	20.82%	20.44%	20.67%	20.19%	20.87%	20.21%
2018	-4.38	-4.53%	-5.14%	-5.11%	-5.22%	-5.17%	-5.47%	-5.29%	-5.67%	-5.13%	-5.65%
2019	31.49	31.29%	30.44%	30.49%	30.33%	30.40%	29.99%	30.24%	29.71%	30.46%	29.75%
2020	18.4	18.22%	17.45%	17.50%	17.35%	17.42%	17.05%	17.28%	16.80%	17.47%	16.83%
2021	17.24	17.06%	16.30%	16.35%	16.20%	16.27%	15.90%	16.13%	15.66%	16.32%	15.68%

In Exhibit 6, we simulate the annual consumption over 30 years using yearly historical return data of S&P 500 from January 1992 to June 2021. The simulated client had a portfolio of one million dollars in 1992, 100% invested in the S&P 500 index, withdraws a constant nominal amount per year for consumption, and has a zero-dollar balance at the end of 2021. We simulated multiple scenarios with various turnover ratios using the adjusted returns shown in Exhibit 5. The first column of Exhibit 6 shows that someone who invested 100% in an ETF product that tracks the S&P 500 could withdraw \$110,695 annually for the 30-year return period using the average tax cost ratio for ETFs with 0% turnover. The number changes to \$112,397 annually when tax cost ratio switched from average to median and 75th percentile ranking. The second column shows that the clients will have less money to spend annually due to the higher tax cost when using mutual funds.

**Exhibit 6:** Using the S&P 500 data from 1992 to 2021, this table compares the annual withdrawal of ETFs and Mutual Funds from a \$1,000,000 portfolio.

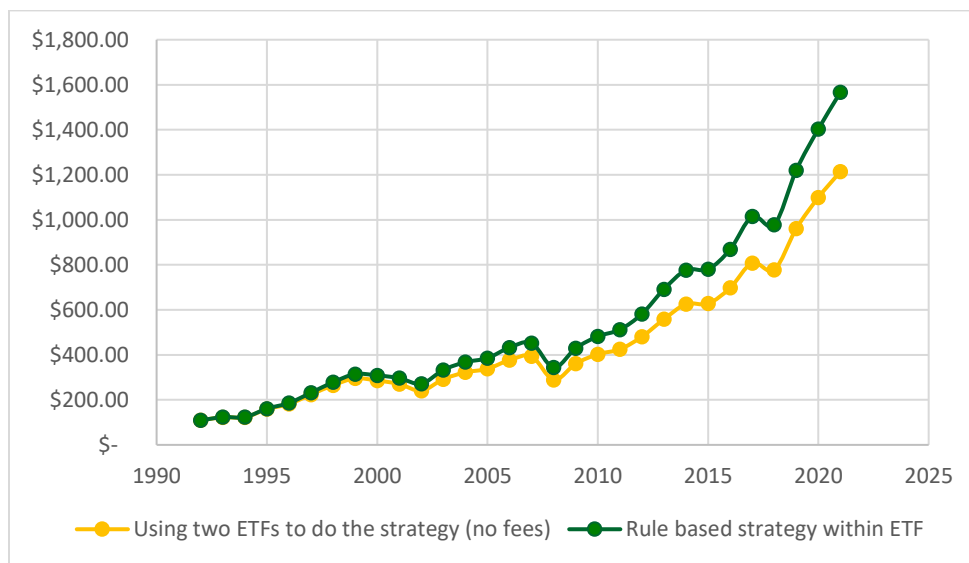
Turnover Ratio Range (%)		0		(0,30]		(30,50]		(50,100]		>100	
		ETF	MF	ETF	MF	ETF	MF	ETF	MF	ETF	MF
Mean	Annual sustainable Withdraw Consumption	\$ 110,695	\$ 103,584	\$ 103,997	\$ 102,682	\$ 103,279	\$ 99,885	\$ 101,967	\$ 97,658	\$ 103,747	\$ 97,903
	Differences/initial wealth	0.71%		0.13%		0.34%		0.43%		0.58%	
Median	Annual sustainable Withdraw Consumption	\$ 112,397	\$ 111,062	\$ 105,220	\$ 103,040	\$ 105,438	\$ 100,552	\$ 104,019	\$ 98,406	\$ 106,095	\$ 98,727
	Differences/initial wealth	0.13%		0.22%		0.49%		0.56%		0.74%	
75% percentile	Annual sustainable Withdraw Consumption	\$ 112,397	\$ 106,205	\$ 101,416	\$ 98,620	\$ 99,961	\$ 95,744	\$ 98,218	\$ 93,214	\$ 101,956	\$ 94,160
	Differences/initial wealth	0.62%		0.28%		0.42%		0.50%		0.78%	

The annual consumption differences between mutual funds and ETFs can account for a relatively large percentage, as shown in the “differences/initial wealth” row. For example, clients invested in an active strategy with a turnover ratio above 100% (as shown in the last column), the differences in consumption between ETFs and mutual funds can be as high as 0.78% of the initial wealth (one million dollars). Thus, we can interpret the ratio as the break-even between ETFs and mutual funds. In other words, ETFs could theoretically charge 0.78% more than mutual funds and still achieve the identical return sequence.

Thus far, we have made the point to show that ETFs offer a significant tax advantage over mutual funds. As previously indicated, all else equal, ETFs provide investors with superior returns compared to mutual funds. Hence, when selecting between an ETF and a mutual fund with a similar investment strategy, financial advisors should lean towards the ETF as it produces a higher than the mutual fund. In exhibit 7, we compare a rule-based strategy executed within an ETF to simply investing in ETFs. In other words, in the rule-based portfolio, the RIA implements its investment strategy within an ETF to take advantage of in-kind-redemptions, reducing capital gains taxes. For simplicity, we assume the client invested \$100 in a portfolio comprised of 60 percent equities and 40 percent investment-grade bonds. The portfolio is rebalanced each year, and taxes are paid on realized capital gains and income. The fund and the AP will engage in in-kind-redemptions within the rule-based portfolio, reducing the capital gains taxes owed annually. As shown in exhibit 7, RIAs create their own ETFs to execute a rule-based trading strategy and produce higher returns for their clients.



**Exhibit 7: Rule-Based Strategy Within and ETF versus Using an ETF to Execute the Rule-Based Strategy.**  
Compares the growth of \$100 invested in a 60/40 portfolio using ETFs versus a 60/40 portfolio within an ETF.



## Additional Benefits from Deploying a Rule-Based Strategy Inside of an ETF

There are several drawbacks of managing portfolios in-house that RIAs might experience. A relatively small RIA that does not have a well-established infrastructure to implement trades in large quantities will experience a higher bid-ask spread compared to an institutional portfolio manager. For certain fixed-income products, the market might be inaccessible for most RIAs due to associated transaction costs and required order volume for each transaction. From a behavioral standpoint, advisors and portfolio managers fail to maintain pre-defined decisions. In March 2021, Capital Group analyzed the portfolio of 150 RIAs across the U.S. and found that most portfolio construction often does not align with their stated objectives.<sup>7</sup> One potential reason for this misalignment is the behavioral bias among financial advisors and portfolio managers. Loss-aversion bias, first identified by Kaheman and Tversky (1979), argues that people prefer avoiding losses as opposed to achieving

<sup>7</sup> For additional details, please read <https://www.capitalgroup.com/ria/insights/articles/common-gaps-in-ria-portfolio-construction.html>

gains. As a result, fund managers may deviate emotionally from the agreed investment objective to avoid realizing a loss. The disposition effect tends to sell assets that have appreciated in value while holding assets that have gone down in value. By automating trading, the disposition effect is reduced (Weber and Camerer, 1998). Samuelson and Zeckhauser (1988) identify “status quo bias” in which people do nothing instead of making changes. By automating the rule-based portfolio management process, such biases are removed.

## Conclusion

ETFs’ tax efficiency from “redemptions-in-kind” provide savings, increased wealth, and greater portfolio sustainability. From a practice management perspective, the ability to carry out portfolio management within an ETF is advantageous from a tax perspective. While the demand for ETFs continues to increase, and large financial institutions are converting mutual funds to ETFs, there is still a gap among RIAs who could better serve clients by creating ETFs to execute investment strategies. We propose RIAs partner with ETF providers to create funds that can be used to execute rule-based investment strategies. With sufficient assets under management, ETF providers and RIAs can work together to create low-cost funds. Without a tax drag, clients will experience better returns, more wealth, and increased portfolio sustainability during retirement.

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