Exchange-Traded Funds: What You Need to Know?

Remy Nyukorong,
General Financial Administration,
Stichting Kongregatie FIC, Maastricht, The Netherlands

Doi:10.19044/esj.2020.v16n19p1 URL:http://dx.doi.org/10.19044/esj.2020.v16n19p1

Abstract

Exchange-Traded Funds (ETFs) have become one of the most interesting and valuable innovations in the financial industry today. These funds are expected to remain growing at a pace more rapidly than mutual funds and hedge funds in the next couple of years. Educating a new and expanding investors has become a global imperative among ETF issuers. Sensible and engaged investors need to know what makes ETFs unique. The purpose of this article is to help asset owners and investors understand and use ETFs to build institutional-quality portfolios. Through literature search in books, journal articles and the internet, the current research article explored what ETFs are, the regulatory and legal environment, benefits, drawbacks, and criticisms levelled against them as investment vehicles. The results indicated that ETFs are passive and diversified investment instruments with lower management fees, tax efficiency, transparent and easily accessible. However, the strategic investment decision in ETFs are determined by investors' objectives, risk aversion and time horizon of investment. Thus, this article is useful to CEOs, Board of Directors, Investment Managers, investors of all sizes, and prospectus investors to help them navigate the risks and rewards and decide whether these securities, now three decades old, make sense for their portfolios. The article is also useful for charterholders, graduate students in economics and finance and CFA candidates to fully absorb. Both practitioners and academics can use this article as a reference and guide.

Keywords: Exchange traded funds, index-based investments, investment strategy, momentum, portfolio management

Introduction

Since the first locally bid ETF was initiated in the 1990s, ETFs have become gradually more popular as investment instruments for both institutional and retail investors. Large investor inflows into ETFs over the last 10 years have attracted numerous new competitors to enter the market and

stimulated an explosion of new products. When contemplating on investing, it is important for the investor to ensure that the particular investment product is fully understood before making an investment decision. Regrettably, many people both young and old appear under-informed (Lusardi & Mitchelli, 2007) regarding these innovative investment vehicles. Moreover, it is a great concern that a number of investors, including "mattress stuffers" and "bargain hunters" are taking hasty investment decisions without bearing in mind their long-term financial objectives. In such a context, basic information may have a large impact (Duflo & Saez, 2003) on investment decisions.

While educators in the field of investment may not tell prospective investors how to manage their investment portfolio during a precarious market, they can provide useful information as a tool to make an informed decision. Effective investors do not follow the pack (Sternberg & Lubart, 1991). Rather, they seek to understand the impacts of ETFs on liquidity, efficiency and the mechanics involved because this is essential not only from a theoretical perspective, but also from a regulatory standpoint (Itzhak et al., 2017).Thus, the main motivation for this paper is an initiative to enhance financial literacy, since financial education is viewed as a potentially vital opportunity to increase the quality of investment decision making both by policy makers and individual investors.

On the whole, ETFs have altered the asset management domain by initiating low-cost investment instruments that are traded day and night. The scholarly literature recognises this financial innovation but also indicates a number of potential fragilities that seem to be adequately critical to attract regulatory review. Moreover, the increased volume of ETF trading during the coronavirus crisis has provided a rigorous test for the reliability of these funds.

This paper integrates the scholarly literature on ETFs with a focus on enhancing financial literacy, trading, and markets. Firstly, the author provides a concise description of the methodology used as well as an overview of the developments and growth of ETFs. Secondly, the paper will examine the academic studies that explored the attractiveness of passive asset management with special emphasis on ETFs. Next, this paper will survey the literature that discussed the benefits and drawbacks of ETFs on the quality of financial markets. The last section presents the conclusions of the study including implications for practice and suggestions for future research.

Background To ETFs

Exchange Traded Funds (ETFs) are hybrid investment products, the portfolio building blocks of the modern age, typically passively managed, and usable by investors of all sizes and for a variety of portfolio demands (Hill et al., 2015). According to Madhavan (2016), the growth of passive investing is causally linked to the innovation of exchange-traded funds (ETFs). ETFs

cover all geographic regions and asset classes, comprising most interestingly fixed income and alternatives. ETFs are investment trusts traded on the stock exchange. The ETFs business is also called iShares based on the idea of an index, which is tracked by the fund or product (Stevenson &Tuckwell, 2019).The use of Exchange-Traded Funds is indeed a revolutionary change both for investors and for business people in the financial services industry (Blitz & Huij, 2012). Never have investors had the liquidity, transparency and accessibility now offered in the form of ETFs. The products have bundled old and new indices, and diversity of asset classes, smartly into one-trade instruments usable by all categories of investors. ETFs are enabling financial advisors to broaden client portfolios, adapt them to better manage risk, and reduce the costs for their investors (Abner, 2016; Itzhak et al, 2017; Stevenson & Tuckwell, 2019). In addition, investors are increasingly prepared to bring ETFs into their portfolios to take advantage of these benefits. Liedtke and Lai (2019) are of the view that ETFs are handy for investors who lack the capacity to select individual stocks among the hundreds listed on the stock market.

ETFs do not have any constraint on their contract period and can therefore be perpetually traded at the current stock exchange price in the same way as shares (Itzhak et al., 2017). Upon buying a share in a fund, the investor now becomes the shareholder of the constituent parts of the fund. When purchasing an ETF, the investor also contributes to the development of the securities within the fund.

In contrast to actively managed funds, Exchange Traded Funds are predominantly passively managed. A benchmark index is reproduced as precisely as possible (Hill et al., 2015; Itzhak et al., 2017). As a result, no fund manager is responsible for perpetually monitoring the fund and actively adjusting it in response to the market situation, but instead the index itself governs the composition. As there is no active management, the management fee for ETFs is usually much lower than for other investment funds. If shares in a fund are bought over the stock exchange, only the costs of buying and selling securities over the stock exchange without an issue surcharge are to be paid. Since Exchange Traded Funds with passive management aim to reproduce a benchmark index as accurately as possible, ETFs can never outperform the development of the associated index (Barker & Chiu, 2017; Business Insider, 2020).

Methods

To address the main objective of this research paper: to help asset owners and investors understand and use ETFs to build institutional-quality portfolios, a desktop literature review was conducted. The study relied on secondary sources guided by the analytical framework developed by Grant and Booth (2009) known as “Search, Appraisal, Synthesis and Analysis

(SALSA)." Thus, the author concentrated on the concrete processes needed in a review alive in the SALSA method. This method depends neither on vocabulary nor on responses but in a way consistent with the philosophies of objective practice, considers the quality and magnitude of the review activities as represented in the portrayal of the methodology (Grant & Booth, 2009). Consequently, the following scientific tools were used: the search and study of scientific literature; the study and analysis of the performance of various markets which trade with exchange-traded funds; an in-depth reflection, analysis, and synopsis of theoretical and practical relevant information. To be specific, reputable textbooks, journal papers, websites, the internet, discussions with portfolio managers, and other sources were considered. The paper started with a review of the historical developments and growth of exchange-traded funds and their distinguishing qualities. The paper then explored the key benefits, drawbacks, criticisms of ETFs based on the findings of the existing studies. Quality and usefulness of the literature review were considered (Palmatier et al. 2018), which also informed the appropriate strategy for selecting articles, books, and websites. Finally, the paper concluded and provided thoughts for further research.

Results

The Basics of Exchange-Traded Funds (ETFs)

Educating a new and expanding investors has become a global imperative among ETF issuers. For the customers to make use of the broader variety of available investment products, it needs to comprehend and figure out how to attain an efficient implementation (Madhavan, 2016). Understanding the appropriate valuation and trading processes will empower investors to increase their product usage. Furthermore, it will allow the business community to offer the services needed to support the future growth of this growing industry. Through literature search, appraisal, synthesis, and analysis this paper documents the fundamental ideas, processes, and practices necessary for understanding and to use ETFs to build solid institutional portfolios.

Current Status of the ETFs Industry

The ETFs industry continues to grow. And growth is largely performance driven. This is a move that is reforming and restructuring asset management globally. However, fears that the coronavirus pandemic will bring about a global economic recession have generated dramatic drop in financial markets globally and thrown the growth strategies of ETF administrators into confusion.

Table 1 below provides a snapshot of the current status of the ETFs industry.

Table 1: *A snapshot of the ETFs Industry Now*

Value of assets managed by global ETFs
6.18 trillion USD
Number of ETFs Worldwide
6,970
Leading ETF Provider Worldwide
BlackRock

Source: Szmigiera (2019, November 26)

What Are ETFs?

Exchange Traded Funds (ETFs) are baskets of securities that are traded, like individual stocks, through a brokerage firm on a stock exchange (Abner, 2016; Baiden, 2011; Hill et al., 2015). Abner (2016) explained that the goal of the ETF basket is to satisfy the critical characteristics of transparency, liquidity, and tracking, which must all be well thought-out within the limits of basket development. The main factors in determining the underlying basket are the price point for product positioning and the volume analysis of the components. Thus, shares of ETFs are traded with several investors who engage or rely on brokerage firms to facilitate trading processes (Ferri, 2009). Blitz and Huij (2012) have observed that ETFs can be bought and sold throughout the trading day at any time the securities exchanges are open. This is known as intraday trading. Shares can also be sold short or bought on margin. This attribute makes these investment vehicles useful for portfolio managers, long-term institutional investors and traders who often need to quickly hedge equity positions (Anson et al., 2011; Itzhak et al., 2017). Next is a discussion of the important features of exchange-traded funds. ETFs have the characteristics of both a stock as well as an open-end mutual fund. Similar to index mutual funds, ETFs denote a fractional ownership in an underlying pool of financial securities.

Distinguishing Features of ETFs

ETFs are the most widely used product in the category of index funds (Madhavan, 2016). ETFs are similar to mutual funds in that they offer public investors an undivided interest in a pool of securities and other assets, but unlike a mutual fund, shares can be bought and sold like stocks on an exchange through a broker-dealer. ETFs have several distinguishing qualities:

Authorized Participants. The portfolio is managed by an investment advisor for a fee and with a mandate to track the index or portfolio benchmark (Hill et al., 2015). ETFs may be actively managed, or index based. If it is an index-based fund, the portfolio manager has the freedom of choice as to how to track the index, whether a full replication or sampling of the index (Abner, 2016). The fund structure allows management of cash and ready money within

the fund, including the reinvestment of dividend revenue, financial securities lending, tax-loss harvesting, as well as several other elements.

Regulatory and legal environment. Since the United States makes up for many global assets under management, the focus of this article is on the U.S. governance and legal environment. The regulatory structure and context matter a lot, particularly regarding the future growth of ETFs in the active window where the legal foundation for such funds is still in development. ETFs are registered under the Investment Company Act of 1940 (1940 Act), which provides investors with certain regulatory protections (Abner, 2016; Baiden, 2011). The 1940 Act effectively approves three wide-ranging categories of investment funds to be open and accessible to the ordinary investors: open-end funds, closed-end funds, and unit investment trusts.

Exemptive Reliefs. Since ETFs blend components of open- and closed-end funds in conditions not envisioned by the writers of the 1940 Act, the law does not in principle permit them to exist. By preference, ETFs must be given an exemption by the Securities and Exchange Commission (SEC) from acting in accordance with specific sections of the law (Abner, 2016; Baiden 2011). The availability of ETFs in the present day emanate from a discharge granted by the SEC in 1992 to allow the initial ETF, the Standard and Poor's Depositary Receipt (SPDR) S&P 500 ETF (SPY). Throughout the later years, scores of exemptive reliefs have been granted, every one of which authorizes a specific ETF underwriter to issue ETFs bound by explicit conditions stipulated in the dispensations.

Liquidity and Price Discovery. Unlike mutual funds, ETF shares are frequently traded in uninterrupted markets on international stock exchanges, can be sold and bought through brokerage arrangements, and have unremitting pricing and liquidity during the trading day. Hence, ETFs can be shorted, lent, margined, or opened to any other strategy operated by leading-edge equity investors (Hill et al., 2015).

Independent Board of Trustees. Just like conventional mutual funds, ETFs largely have a self-governing board of trustees that has supervisory role over the fund (Abner, 2016; Prather et al., 2009). The board exercises responsibility for the whole management and operations of the fund. There are, nevertheless, unit investment trusts (UITs), for instance, the SPDR S&P 500 ETF, that do not have a board, have practically no investment tractability as UITs, administered by a trustee as opposed to a fund manager and cannot manage cash or lend securities (Abner, 2016; Mazumder, 2014).

Unique Features of Both Open-and Closed End Mutual Funds. One difference between ETFs and traditional open-end mutual funds is that ETFs do not necessarily trade at their net asset value (Hill et al., 2015; Itzhak et al., 2017). That is the combined market value of the underlying security and cash holdings. Although the supply and demand for ETF shares is driven by

the values of the underlying securities in the index they track, other factors can and do affect ETF market prices. As such, the market price for ETF shares is determined by forces of supply and demand for those ETF shares (Mazumder, 2014), and the price occasionally gets off track from the underlying values in the fund. But not by much. Furthermore, ETFs have a mechanism that regulates price discrepancy and prevents discounts or premiums from becoming substantial or persistent. Hill and Colleagues (2015) have noted that experienced and skilful traders can create and redeem shares at the close of the day for net asset value (NAV), a characteristic that helps maintain ETF market prices in line with "fair value. "This quality accelerates the price discovery process of ETFS.

A number of empirical studies that have researched into the performance of ETFs that track U.S. equity indexes and conclude that ETF performance can be predicted to a high level of accuracy: Exchange traded funds usually cope to correspond to their benchmark indexes with low levels of tracking error, and there appears to be a discrete negative relation between ETFs returns and their outflows (Agapova, 2011; Gastineau, 2004; Poterba & Shoven, 2002). The latter result is further developed by Blitz, Huij and Swinkels (2012), who demonstrated that passive equity funds which invest outside their country of registration are burdened with an additional strain on performance. For instance, there are no dividend income, due to withholding taxes charged by foreign tax officials.

Since the introduction of ETFs in 1993, the number of ETFs and their asset sizes multiplied radically over time (Mazumder, 2014). Thus, the Growth of the ETF Marketplace is growing rapidly, and that growth will likely continue for several years to come. ETF issuance has increased exponentially every year since 2000. There were over 1,000 ETFs trading on the U.S. markets by 2008, with assets well over $1 trillion in investor dollars. That is, 20 percent of the value of traditional open-end mutual funds. By 2010, there could be near to 2,000 available ETFs on U.S. exchanges, with assets close to $2 trillion. It is likely that the number and asset level of ETFs could equal that of open-end mutual funds over the next ten years, and that could be a conservative educated guess. Stevenson and Tuckwell (2019) opined that ETFs have the potential to become the largest segment of the mutual fund marketplace in the next decade.

Leading 10 ETFs by Assets Under Management

Assets under management (AUM) indicates the market value of assets as managed by professional investment company on behalf of the asset holder. Assets under management are therefore viewed as a measure of achievement alongside competition. They include growth, loss of capital, and new capital inflow or capital outlay. The best ETFs usually have the highest AUM. The

reason is that these assets will also possess greater trading volume (Thune, 2020). This reduces the dispersion between the offer price and the purchase price. Higher AUM also implies a higher quality fund with a dedicated performance history. The table below shows the largest 10 ETFs by assets under management, corrected to the nearest billion United States dollar.

Table 2: *Ten Best ETFs by Assets Under Management (AUM)*

Symbol	Name	AUM	Expense Ratio
SPY	Spider S&P 500	$278 Billion	0.09%
IVV	iShares Core S&P 500	$179 Billion	0.04%
VTI	Vanguard Total Stock Market ETF	$115 Billion	0.03%
VOO	Vanguard S&P 500 ETF	$113 Billion	0.03%
QQQ	Invesco QQQ	$76 Billion	0.02%
VWO	Vanguard FTSE Emerging Markets ETF	$73 Billion	0.05%
VEA	Vanguard FTSE Developed Markets ETF	$71 Billion	0.07%
IEFA	iShares Core MSCI EAFE	$64 Billion	0.08%
EFA	iShares MSCI EAFE	$63 Billion	0.31%
AGG	iShares Core US Aggregate Bond	$60 Billion	0.05%

Source: The Balance

A Pictorial Guide to the ETF Space

A cursory glance at the ETFs product listings indicates the dominance of market position of equity-based funds. All together, they constitute more than 80% of the ETF industry's total assets and greater than two-thirds of the total product tally. The high-volume S&P 500 ETF (SPY, A) is without doubt the leading equity ETP, in addition to the largest fund within the ETF environment. To look at the big picture, SPY's total assets managed by professional investors represents more than one-tenth of all equity-based funds' assets pooled. Details are presented in Table 3 and Figure 1 below, respectively.

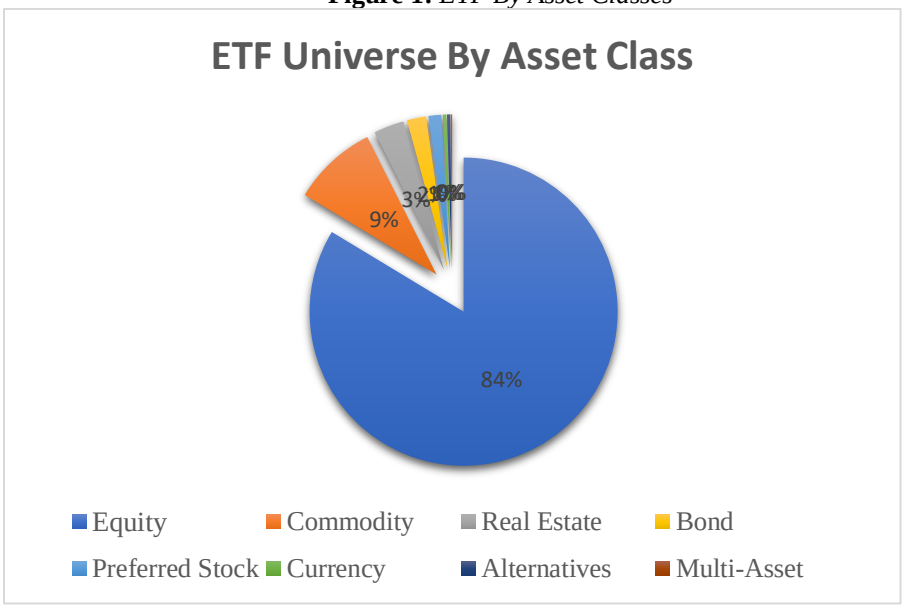
The second largest group is the fixed income exchange-traded funds. Next is commodity based ETPs. However, despite the fact that there are a larger number of individual bond ETFs, commodity funds shovel in substantially more assets. A further startling statistic is that whereas there are barely roughly 35 real-estates ETFs, collectively they retain larger amount of assets under management than alternative and bond funds put together (Pylypczak-Wasylyszyn, 2014).

Table 3: *ETFs By Asset Class*

Asset Class	Product Count	Largest ETF
Equity	879	SPY
Bond	215	LQD
Commodity	151	GLD
Alternatives	54	VXX
Currency	37	UUP
Real Estate	35	VNQ
Multi-Asset	35	MDIV
Preferred Stock	8	PFF

Source: ETF db.com Database

Figure 1: *ETF By Asset Classes*



Source: Based on ETF db.com Database

Geographic ETF flows

Whereas US funds registered the greatest flows, non-US based ETFs yielded inflows of in excess $7 billion for the period of June, as displayed in the table below. A critical observation at the statistics, however, shows the flows could have been the result of a single investor redeploying financial resources before an expansive directional trend. A closer look at the regional level revealed that 76% out of the $3.7 billion capital flows came from a single fund. Likewise, at the individual country level, 95% of the $2 billion capital flows was due to the yield from a single fund. But despite all that, eliminating these individual-investor inflows still consign the corresponding classes in net inflow standings, together with the larger non-US group, which shows reaction close to the space is definitely constructive.

An additional signal that ordinary investors are concentrating on global exposures can be realized in emerging markets asset flows, as the sector interrupted its four-month splash of capital outlays. Emerging markets outperformed US stocks by a margin of 6.7% in June, the greatest comparative performance since the year 2012. This was reinforced by an enhanced reopening of trade, a weakening US dollar and better positive valuations.

Table 4: *Equity ETF Flows by Geography*

In Millions ($)	June	Year to Date ($mm)	Trailing 3 Months ($mm)	Trailing 12 Months ($mm)	Year to Date (% of AUM)
US	11,167	81,842	39,078	186,538	3.18
Global	2,133	6,833	5,013	10,311	6.27
International-Developed	-1,368	4,214	-8,833	25,248	1.03
International-Emerging Markets	1,347	-9,531	-5,227	-9,787	-4.81
International-Region	3,719	-1,405	1,507	-2,375	-2.65
International-Single Country	2,013	-8,366	-2,752	-7,158	-8.79
Currency Hedged	-382	-3,378	-1,744	-4,453	-17.20

Source: Bloomberg Finance L.P., State Street Global Advisors, as of June 30, 2020

Sector ETFs Flows

Cumulatively, sector flows recorded positive results for the three-consecutive months, as illustrated in the table below. Assuming that sector systematic three-month spread is in its 90th percentile historically, based on daily return data from 1998-2020 (Bloomberg Finance L.P.), the likelihood for Generation Alpha from carefully selecting or choosing sector professions is expected to be driving the constant inflows. The quality of financial inflows has become somehow cyclically orientated. Technology has been the single most important factor, recording streams of cashflow within 12 successive months. That was its second prolonged stretch ever recorded as is the 13 is the record. Technology is a top score, with regard to total inflows of more than 14 million US Dollars for this specific sector funds throughout any 12-month cycle ever. This is an important signal to ordinary investors pursuing growth in under conditions where growth is expected to remain challenged.

Table 5: *ETF Flows by Sector*

In Millions ($)	June	Year to Date ($mm)	Trailing 3 months ($mm)	Trailing 12 months ($mm)	Year to Date (% of AUM)
Technology	2,562	10,651	7,559	14790	9.93
Financial	993	-2,042	2,236	-5,447	-4.03
Healthcare	-2,831	7,383	6,440	4,684	11.68
Consumer Discretionary	674	660	1,963	-305	2.87
Consumer Staples	-1,103	511	-446	1,166	2.30
Energy	1,146	5,346	2,715	6,274	12.02
Materials	-784	-137	1,235	635	-0.43
Industrials	1,836	579	2,412	478	2.21
Real Estates	130	-2,932	-2,020	544	-3.77
Utilities	-282	929	70	1,215	4.78
Communications	-85	2,677	1,608	3,241	25.70

Source: Bloomberg Finance L.P., State Street Global Advisors, as of June 30, 2020

History and Development of ETFs

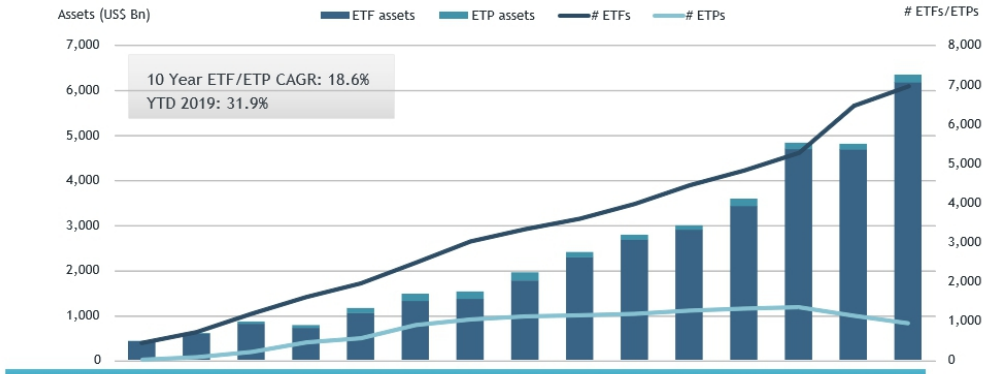
Since their introduction in Canada in 1989 and in the US in 1993, ETFs have presented new investment prospects. Their higher liquidity and low pricing facilitated retail investors to gain access to passive investments and institutional investors to allocate exposure in a more flexible way. Since the start of the 21stcentury and the introduction of ETFs in Europe, new providers have offered a superfluity of new investment products. The global ETF market has currently been growing by 31.9% per year, as illustrated in Figure 2. Financial assets in fixed income ETFs increased 900% and the quantity of funds went up 326% from 2009 to 2014, traversing the $500 billion dollar score in the last quarter of 2015 (Madhavan, 2016).There were more than 1.5 million diverse debt securities alone in 2015. Growing adoption of ETFs emerged partly from bond market liquidity difficulties after the 2008−2009 crisis.

Today, more than ever, it is crucial and an imperative for ETFs providers to design suitable products, for the appropriate investors, at the psychological moment. The ETFs industry appears to remain as creative and robust as ever, and ordinary investors expect this to continue. As majority of ordinary investors are risk averse, they would normally desire to reduce risk without upsetting the amount of return that they can accept from their investment (Iraya & Wafula, 2018). This should be a matter of concern for ETFs providers. There also appears the possibility for unnecessary cost build-up, and odds for investor disappointment. The author is of the view that innovating around client base will be central to realizing the long-term sustainability of ETFs growth. As such, product development requires the following attitudes: anticipating investor needs, looking beyond the short-term

and focusing on the big picture (such as regulation, potential for artificial intelligence, impact of macroeconomic policies, etc.) as well as focusing on education to confirm that all investors entirely understand the investment products that they use.

In summary, within 30 years, ETFs as innovative financial products have gone from an afterthought to one of the most critical drivers determining how investors invest and how the market itself works (Hill et al., 2015). The outlook for sustained growth is strong and compelling.

Figure 2 : *Global EFT Asset Growth as At the End of December 2019*



Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Dec-19
# ETFs	452	728	1,192	1,617	1,968	2,488	3,029	3,343	3,607	3,986	4,456	4,833	5,284	6,474	6,970
# ETFs/ETPs	482	826	1,420	2,090	2,547	3,400	4,085	4,476	4,769	5,184	5,734	6,164	6,650	7,624	7,927
ETF assets	417	579	806	716	1,041	1,313	1,355	1,771	2,283	2,674	2,898	3,423	4,690	4,683	6,181
ETF/ETP assets	426	603	856	774	1,157	1,478	1,526	1,951	2,402	2,787	2,997	3,552	4,839	4,815	6,350

Source: ETFGI Report

ETFS Benefits and Drawbacks

Benefits of Using ETFs As Investment Tools

In this section, we discuss the features of ETFs that have made these funds successful.

Cost Savings. Most ETFs are index funds and, therefore, do not bear the costs of discretionary, and active portfolio management (Hill et al., 2015; Mazumder, 2014). Another part of the cost advantage is implied by their name: The funds are exchange traded. The costs of recording who the buyer or seller is, sending of the prospectus documents, handling inquiries, and other factors are all borne by the broker (Engle & Sarkar, 2006). ETFs are generally cheaper to run and distribute than traditional mutual funds, active institutional strategies, and certainly hedge funds. Thus, ETFs are generally cheaper to own.

Gaining access. This is another core benefit, the easiness of gaining access (Hill et al., 2015). ETFs have created a wealth of new portfolio construction opportunities for a broad range of investors, regardless of the size of their investment holdings or horizon, by opening new asset classes for investing. ETFs have made all areas of the capital markets accessible for any

investor with a brokerage account. In addition, ETFs can be sold short and, in some cases, have inverse exposure as an investment objective (Gastineau, 2004); this feature makes access possible for investors seeking to profit from decreases besides increases in price.

Transparency. Transparency is another key benefit because most ETF providers display their entire portfolios daily through their websites (Appel, 2007), and this information is also picked up by financial data services. This clarity can be extremely helpful in portfolio construction and analysis. Thus, actively managed ETFS are required by law to disclose their full portfolios daily. This makes actively managed ETFs the most transparent of all fund products (Hill et al., 2015).

Tax Efficiency and Tax Fairness. In most situations, ETFs have a pronounced advantage over mutual funds when it comes to after-tax returns (Poterba & Shoven, 2012). There are two reasons for greater tax efficiency with ETFs: lower portfolio turnover and the ability to do in-kind redemptions, which keeps capital gain (and loss) distributions low in contrast to mutual funds. ETFs also offer an outstanding opportunity for tax loss harvesting (Hill et al., 2015). In general, if an investor desires to sell a financial security to record a loss, the "wash sale rule" forbids the stockholder from receiving it if a significantly identical financial security is procured within a 30-day period. This regulation can trigger problems for a long-term asset allocation strategy. However, with ETFs, asset owners and investors can frequently sell one fund and swap it with an alternative tracking atypical but related index and as a result uphold the exposure at the same time capturing the loss.

Drawbacks in Using ETFs as investment Tools

ETFs are powerful investment tools that involve lower costs, open out strategic choices, and deliver ease of access with transparency. When investors use ETFs properly, they can expand their return–risk profiles. However, like any other powerful tool, ETFs can be dangerous if not well understood. Investors must be aware of the following potential drawbacks before using ETFs in any investment strategy.

Lack of Sophistication. Investors new to ETFs and their sometimes-novel asset classes and strategies may be unfamiliar with the underlying assets, drivers of return, and associated risks (Baiden, 2011; Blitz & Huij, 2012). Even an investor who is well versed in the international equity market may not be familiar with the inherent risks of say, international corporate bonds, direct currency investing, or emerging market small-capitalization stocks. For instance, investing in iShares robotics and artificial intelligence exchange traded funds requires expert knowledge.

Underlying Variabilities and Risks. Many alternative ETF are funds providing exposure through futures, notes, or swaps - involve portfolio structures, counterparty risks, and unfamiliar tax treatments, not because of the nature of the underlying exposures but because of the means of accessing them (Abner, 2016; Ackert & Tian, 2008). ETFs offering exposure to commodities, tracking errors, leveraged and inverse returns, currency, or volatility are particularly subject to this caution. Investors considering the less-conventional investment strategies may need to dive deeper into the features of the strategies than they would when investing with stocks and bonds, which are more straightforward investments. Education is the key to understanding the various risks in certain asset classes and strategies (Hill et al., 2015).

Trading Costs. With exchange tradability comes the burden of paying commissions, bid–ask spreads, and, potentially, premiums and discounts to net asset value (Barker & Chiu, 2017; Mazumder, 2014). As with trading stocks, these costs can affect returns. In the case of an institutional mutual fund, the fund incurs the costs of buying and selling the underlying securities with each day's cash flow or changes in portfolio holdings. The trading costs of commissions, managerial fee creep, and market impact show up in fund performance but are otherwise largely hidden from the mutual fund investor.

Momentum Strategy

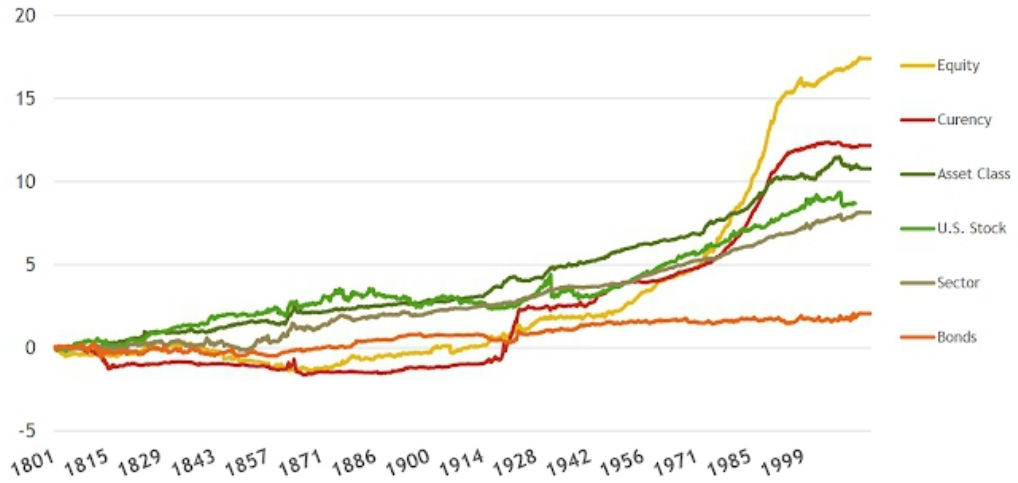
Momentum simply means persistence in performance (Antonacci, 2015). However, it is more than that. Momentum is also an efficient rules-based method for participating and exiting the markets founded on specific, verifiable criteria. Momentum has now been accepted by the scholarly community as the "premier anomaly" for accomplishing consistently high-risk-adjusted returns (Antonacci, 2015). Nevertheless, this innovative trading strategy is yet mostly unfamiliar with many ordinary investors. The overall goal of introducing this concept is to explain the fundamental principles behind momentum and demonstrate how a blend of trend-following and relative strength methods is the best way to invest today. It is important to stress that while relative strength (Levy, 1967) momentum can improve asset returns, it does not sufficiently lessen volatility. These risks may even surge compared to related portfolios applying buy and hold strategies. How can the investment professionals harmonize market forces and benefit from this newfound knowledge?

Prior Studies and Well-Established Ideas

Research has confirmed that momentum works well among and across almost all markets, involving U.S. and foreign equities, corporate bonds, global government bonds, industry groups, equity indexes, residential real estates, currencies, and commodities (Antonacci, 2015). Momentum has also

worked well among over different assets classes in over 40 countries (Soros, 2003) and consistently outperformed buy-and-hold back to the year 1801 (Geczy & Samonov, 2015).Two schools of thought exist as to why momentum strategies work. The first is that high momentum profits are compensation for taking on greater amounts of risk (the rational explanation). The second perspective is that abnormal momentum profits exist not as compensation for risk, but rather because investors behave unpredictably and illogically in orderly and expectable ways (the behavioural explanation).

Figure 3: *Asset Classes*



Source: Geczy & Samonov (2015).Two Centuries of Multi-Asset Momentum (Equities, Bonds, Currencies, Commodities, Sectors, and Stocks"

A large number of the scholarly literature treating momentum trading strategy agrees that a 12-month look-back period offers the best performance (Cowles & Jones, 1937; Jegadeesh & Titman, 1993; Moskowitz et al., 2012). Thus, this study applied a 12-month look-back period. The study also uses broad-based stock market indexes instead of individual stocks due to the fact that the former is less subject to noise. That aside, their transaction costs are relatively lower than individual stocks.

How to Implement a Momentum Strategy

To highlight the perception regarding the concept of momentum, this paper provides a simple time-series momentum approach on the S&P 500 employing the SPY ETF. The method shots long when the return of the last 12 months is positive. Otherwise, it is flat when the return of the last 12 months is negative. The signal is produced every day. To make simpler and address the perception, trading fees are ignored. The chart below exhibits the SPY price at the end of the day (closing price) with the trading signal superimposed

as a colour incline. Blue shows that the momentum strategy is long (i.e. the signal is +1). Then, the black shows the strategy is flat or smooth (i.e. the signal is 0). Just like all investment dynamics, sub-optimal execution of momentum strategies may cause weak performance or unplanned investment results. Momentum strategies can be susceptible to agonizing volatility and naïve execution could even eat away alpha over time.

The figures in the table below shows that the MSCI World Momentum Index has performed better than the broad equity market yardstick. The figures presented in Table 7 have a connection with past performance. It is important to emphasize here that past performance is not a dependable pointer of future outcomes and must not be the only factor of concern when deciding on a product or strategy.

Table 7: *The MSCI World Index over the past five years.*

Ann. return % Cum Return	**MSCI World Index**	**MSCI World Momentum Index**	**Excess Return**
5 Year Annualized	11.62%	14.84%	3.22%

Source: MSCI, data as of 31 October 2017

Illustration on the application of momentum Strategy. The figures 4 and 5 below shows a simple time-series momentum approach on the S&P 500 employing the SPY ETF. This strategy realizes an annualized return of 10% with lower volatility contrasted with the S&P 500 return of 9% over the same period. As a result of the function of compounding, such a strategy attains an aggregate return of 830% as opposed to 690% for the S&P 500.

Figure 4: *S&P 500 Index with Moment Trading Signal*

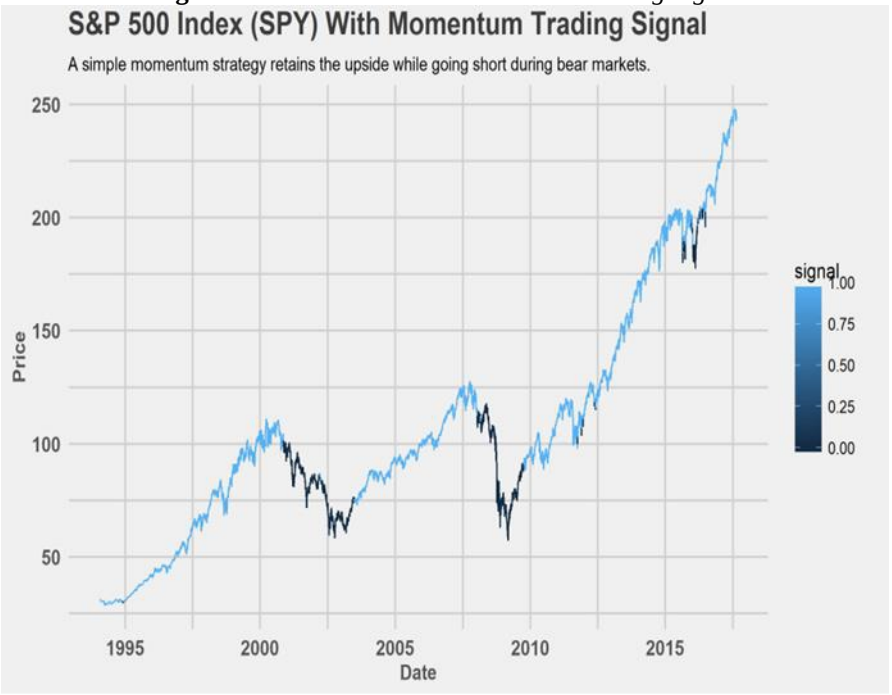


Figure 5: *Equity Curve of Momentum Strategy Vs SPY Return*

Momentum Intuition

By assessing the two charts above, it is possible to develop some insight into how momentum operates and determine the types of environments suitable for momentum-based trading strategies.

Momentum trading schemes are characteristically trend-following (Greyserman & Kaminski, 2015). Therefore, they participate in most of the positive aspects (upside) at the same time keeping away from bear markets as soon as they are strongly instituted. A larger part of momentum outperformance in relation to buy-and-hold can be explained by its ability to sidestep bear markets.

Even though momentum strategies maintain most of the positive aspects, they fail to benefit from certain gains during the switching over from bear markets to bull markets. For instance, because of the lag initiated by applying a 12-month lookback period, momentum have overlooked some of the recovery directly after the financial crunch.

Once there is lack of a clear trend and prices drop significantly with correspondingly huge rebounds, momentum strategies are burdened (Antonacci, 2015). Operating within this sort of market conditions, momentum strategies will be impacted more by the negative elements than the positive aspect. This can be easily recognizable during the latter period of 2015 and the first part of 2016 when the S&P 500 underwent high volatility. However, there was no trend either upwards or downwards.

At this point, it is necessary to ask the question: How can any investor use relative momentum to obtain improved investment results? To answer this question the paper proceeds as follows. Assume that the core holding is the S&P 500. To implement relative momentum, at least two assets are needed. For illustration purposes, this paper uses the MSCI All Country World Index ex-US (ACWI ex-US) to be the second asset. Every month the investor will invest in either of the two assets with a better performance over the previous 12 months.

The table below shows the results from January 1971 across February 2016 for this straightforward momentum strategy rebalanced every month. Relative momentum apportions to the ACWI ex-US 45% and to the S&P 500 55% of the time. Further assume that transaction costs are insignificant, as there is approximately less than a single trade each year. There are similarly no whipsaw losses such that the investor is left on the sidelines while the stock market progresses. There is also lesser probability of the presence of tracking error.

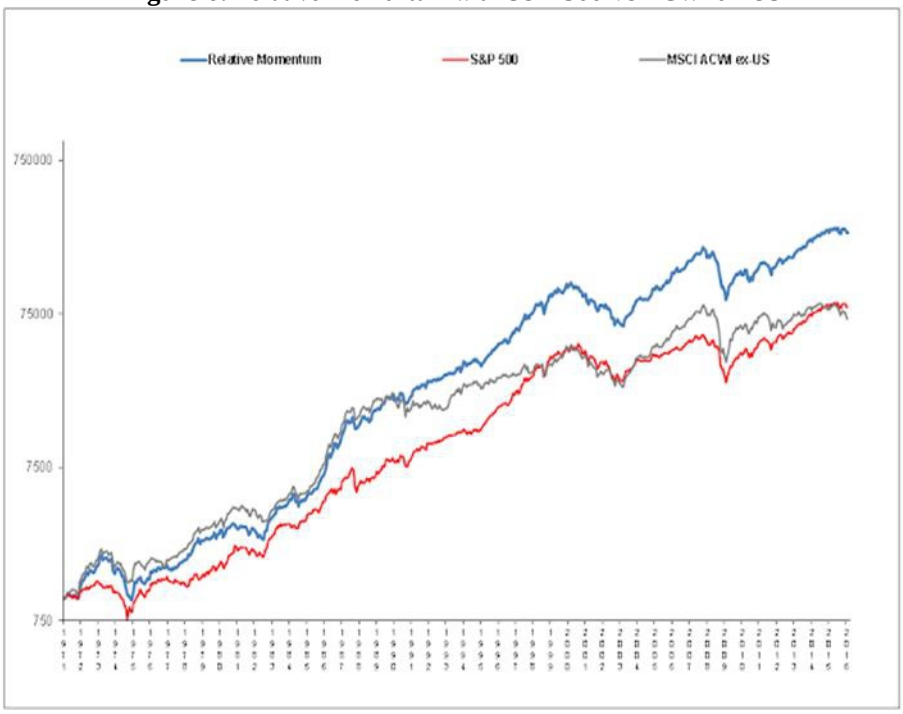
Table 8: *Momentum Strategy Illustration*

	Momentum	S&P 500	ACWI ex-US	Equal Weight
Annual Return	14.5	11.5	11.5	11.5
Standard Deviation	16.1	15.2	17.3	14.8
Sharpe Ratio	0.51	0.36	0.32	0.37
Worst Drawdown	-54.6	-51.0	-57.4	- 54.2

Source: Antonacci (2015)

Using the concept of relative momentum, revealed that there is nearly a 300 annual basis point growth in return contrasted with holding each asset or a combination of the two assets. The chart shows how these increased profits were attained. Which investor would not invest like this to make an extra 300 basis points annually? In spite of all this, it is important to be aware that historical ETF performance does not promise similar results in future periods. Share prices, investment returns and principal value oscillate with market circumstances. Therefore, an investment may be rated more or less than the initial cost when the investor redeems the shares.

Figure 6: *Relative Momentum with S&P 500 Vs ACWI ex-US*



There is more than sufficient evidence from academic research reinforcing the application of relative momentum. Geczy and Samonov (2015) indicated that relative momentum has outstripped buy-and-hold since the year 1800, and momentum utilizing stock indices have performed much better than individual stock momentum.

How does ETFs evolve during periods of market stress?

Anecdotal information propose that ETFs played a remarkable role in the financial crisis at the time that liquidity in core securities, mostly in fixed income, were in short supply. To investigate this claim, Madhavan and Sobczyk (2016) assessed the framework during the last financial crunch (Table 6, Panel A, starting in January 1, 2008 until December 31, 2009) and after-financial crunch (Table 6, Panel B) managing investment funds with a whole year of trading history (i.e. 252 business days) in each accounting period.

The findings revealed that the net asset value (NAV) staleness coefficients were higher during the crunch period for fixed income reserves, possibly reflecting the drop in selling and buying, predominantly in specific corporate bonds. Surprisingly, the arbitrage speed parameters were always smaller during financial crunch (Panel A) than after the financial crunch period (Panel B), corroborating the notion that ETFs serve as price discovery instruments during periods of market stress.

Table 6: *State-Space Model Estimates During and After Financial Crisis*

		Equity Income Domestic	Global	Fixed Income Domestic	Global
Panel A: Crisis	**(January 1,2008, to December 31, 2009)**				
NAV staleness Coefficient	Mean	-0.08	0.17	0.35	0.51
(ø)	Frac. Significant >0	0.02	0.73	0.88	1.00
Arbitrage speed	Mean	0.22	0.23	0.57	0.74
Parameter (Ψ)	Frac. Significant >0	0.66	0.60	1.00	1.00
Panel B: Post-Crisis	**(January 1,2010 to December 31, 2014)**				
NAV staleness coefficient	Mean	-0.04	0.19	0.29	0.43
(ø)	Frac. Significant >0	0.04	0.74	0.84	0.95
Arbitrage speed	Mean	0.27	0.29	0.58	0.86
Parameter (Ψ)	Frac. significant > 0	0.83	0.77	0.96	1.00

Source: Madhavan and Sobczyk (2016). Data for January 1, 2005, up to January 31, 2014. Significance is the portion of the approximations that is larger than zero. This is based on a one-tailed t-test at the 5% level.

Major criticisms

Over the past few years, instances of backlash against ETFs and their role in the marketplace have occurred (Hill et al., 2015). The key criticism of ETFs, came from the founder of the Vanguard, John Bogle (Madhavan, 2016), who has long campaigned and fought for index mutual funds for the common investor. Bogle regards ETFs with scepticism owing to the overabundance of

choices in the United States (on or after April 2015, a total of 1,700 ETFs were available on 1,300 individual indexes), with offerings in constricted industries such as social media, wind energy, nanotechnology or chain restaurants. In Bogle's judgement, this plethora of choices can engulf the ordinary investor, thereby resulting in undiversified positions and bigger turnover. The intraday financial resources or cash flow made available through ETFs could stimulate larger trading activity by average investors in succession would eventually be damaging to performance. Other critics have accused ETFs of corrupting the price discovery mechanism of the stock market, of posing a systemic risk to finance, of impairing market efficiency as well as liquidity in specific securities, of steering investors into inappropriate and complex investments (Baiden, 2011; Barker & Chiu, 2017; Madhavan, 2012, 2016), and of aiding to amplify investment bubbles (Authers, 2015). In the end, the harshest parts of these criticisms do not hold water. However, they do underscore the fact that each time a new and disruptive technology comes along, significant, and in-depth education (Hill et al., 2015) is needed.

The Increasing Importance of New Technologies

The emergent role of technology and analytics tools in the field of asset management needs special mention. Currently, Digital advisors which automate considerable investment planning and other financial processes are gaining assets rapidly, and they usually offer collection of portfolios using ETFs (Ahn et al., 2020; Madhavan, 2016). These automated investment advisors provide means to overcome a few the reasoning errors and biases people make that have been detected by quantitative behavioral finance, involving home bias and loss aversion (Berger, 2015; Madhavan, 2016). Investment trading technologies regarding accessibility as well as the increasing evolution towards automated trading site are strategic potencies.

Automated digital or robo-advisors provide three major classes of portfolio management services to consumers. These customer services are dear to venture capitalists particularly investors since they can be of assistance in overcoming well-known behavioural preconceived notions (Berger, 2015; Madhavan, 2016). The first is that digital advisors specify template-based portfolio solutions to investors by means of low-cost index funds and ETFs. Dummy portfolios are cautiously selected for the investor when the investment account is initially created (Madhavan et al., 2014). This is typically in line with answers to questions concerning financial goals, scope, and risk aversion. Secondly, robo-advisors computerize scheduled rebalancing by purchasing capital assets that have sunk in price at the same time trading capital assets that have increased in value (Berger, 2015). Robotic or computerized rebalancing aids resolve the instinctive inclination of specific investors to allow their securities holding to stray, particularly against the backdrop of a

robust market returns (Ahn et al., 2020). In this regard, digital advisors aid restrains a well-documented behavioural finance unfairness where stockholders are hesitant to purchase financial assets that have dropped in value. Likewise, robotic rebalancing also works as an off setter to trend chasing, whereby people invest more in financial assets that have appreciated in price. Finally, robo-advisors will operate tax loss trading to reap some tax debits that have been accumulated due to decreases in price (Berger, 2015), in certain cases on daily occurrence. Once more, this aids address identified behavioural biases demonstrated by individual stockholders and providing great ease.

Conclusion

It is only fair to state that ETFs have revolutionary changed the face of investing. The following points provide a succinct summary of the paper.

- ETFs have become a valuable investment instrument for both retail and institutional investors.
- A fundamental benefit of ETFs is liquidity: They are highly liquid. Portfolios based on ETFS can easily be constructed and with greater flexibility. Therefore, portfolio managers are able to create a broadly diversified global asset allocation.
- ETFs use a structure that benefits investors of all classes through their Intraday trading liquid assets. and daily disclosure arrangements
- Factor based investing such as iShares factor ETFs may help investors accomplish their investment goals by aiding to improve returns and at the same time reduce portfolio volatility.
- ETFs are innovative securities, they can provide instant diversification, cost efficiency, reduce tax burden, therefore a positive disruption in the capital market.
- ETFs are also a curse to investors in some ways particularly to short-term speculative dealers. Emotions boost performance-chasing investors who eventually become their own worst enemies. Cross-listing is also another hurdle within the disintegrated European market. A need exists for a deeper insight into the risks and returns dynamics.
- New technology is helping to minimize some of the tricky situations involved in trading with ETFs. However, there is need for private-public collaborations involving service providers, regulators and educational institutions as well as professional bodies to organize and roll out financial literacy projects for the investing community to make sure that insightful choices are made and to facilitate decision-making by differentiating between critical information and noise in the capital markets.

Managerial Implications

There are several steps investors can take to make management of their ETFs portfolio uncomplicated. Choosing the right brokerage firm is fundamental. Commission costs are critical, but the greatest attribute of a good brokerage firm is that fund managers representing different clienteles have the client's best interests at heart. How and when an investor trades ETFs can have a great impact on the performance of the investment. This article recommends buying and selling during the middle of a trading day and when the markets are relatively calm. Those are the moments when the price of an exchange traded fund is trading nearest to its intra-day value.

An alternative to managing one's own account is to hire a professional investor (a fund manager) to do the investment. This can be achieved through the brokerage firm where the trading is done or through a fee-only investment advisor. There are numerous benefits to engaging a professional advisor: this includes piece of mind and the assurance that an investment strategy will be followed. The authentic advisor will provide professional guidance towards the achievement of financial goals, effectively and efficiently, while keeping costs under control.

Finally, this article is of the view that good investment managers serve their clients best by creating a workable plan, implementing that plan, and keeping clients focused on that path. It is not an investment manager's job to risk a client's money by using exotic strategies. The professional investment manager's role is to understand the client's financial objectives and create an optimum mix of investments (stocks, bonds, money market securities) that has the maximum likelihood of attaining those objectives at a reasonable cost and tolerance for risk.

References:

1. Abner, D.J. (2016). *The ETF handbook: How to value and trade exchange-traded funds* (2nd ed.). John Wiley & Sons.
2. Ackert, L. F., & Tian, Y. S. (2008). Arbitrage, liquidity, and the valuation of exchange traded funds. *Financial Markets, Institutions &Instruments, 17*(5), 331-362. https://doi.org/10.1111/j.1468-0416.2008.00144.x
3. Agapova, A. (2011). Conventional mutual index funds versus exchange-traded funds. *Journal of Financial Markets, 14*(2), 323-343.https://doi.org/10.1016/j.finmar.2010.10.005
4. Ahn, W., Lee, H.S., Ryou, H., & Kyong, J.O. (2020). Asset allocation model for a robo-advisor using the financial market instability index and genetic algorithms. *Sustainability, 12* (3), 849. Doi:10.3390/su/12030849.

5. Anson, M. J., Fabozzi, F. J., & Jones, F. J. (2011). *The handbook of traditional and alternative investment vehicles* (1st ed.). John Wiley & Sons.
6. Antonacci, G. (2015). *Dual momentum investing: An innovative strategy for higher returns with lower risk.* McGraw-Hill Education.
7. Appel, M. (2007). *Investing with exchange traded funds made easy* (1st ed.). FT Press.
8. Authers, J. (2015, August 16). Indexing: The Index Factor. *Financial Times.* https://www.ft.com/content/40bb7c10-419f-11e5-9abe-5b335da3a90e
9. Baiden, J. E. (2011). *Exchange Traded Funds: Advantages and disadvantages.* http://dx.doi.org/10.2139/ssrn.1874409
10. Barker, R.M., & Chiu, I.H.-Y. (2017). *Corporate Governance and Investment Management:The Promises and Limitations of the New Financial Economy*. Edward Elgar Publishing Ltd.
11. Bartolini, J.M. (2020, July 10). June ETF Flows: Search for a signal. State Street Global Advisors. https://www.ssga.com/us/en/institutional/etfs/insights/june-etf-flows-searching-for-a-signal
12. Berger, R. (2015, February 15). 7 Robo Advisors that make investing effortless. *Forbes*. https://www.forbes.com/sites/robertberger/2015/02/05/7-robo-advisors-that-make-investing-effortless/#1408be8c4ae4
13. Blitz, D., Huij, J., & Swinkels, L. (2012). The performance of European index funds and exchange-traded funds. *European Financial Management, 18*(4), 649-662. https://doi.org/10.1111/j.1468-036X.2010.00550.x
14. Blitz, D., & Huij, J. (2012). Evaluating the performance of global emerging markets equity exchange-traded funds. *Emerging Markets Review, 13*(2), 149-158. https://doi.org/10.1016/j.ememar.2012.01.004
15. Business Insider (2020, n.d.). About ETFs. Thomson Reuters. https://markets.businessinsider.com/etfs
16. Cowles, A., & Jones, H. (1937). Some posteriori probabilities in stock market action. *Econometrica, 5*(3), 280–94. https://doi.org/0012-9682(193707)5:3<280:SAPPIS>2.0.CO;2-Q
17. Duflo, E., & Saez, E. (2003). The Role of Information and Social Interactions in Retirement Plan Decisions: Evidence from a Randomized Experiment. *The Quarterly Journal of Economics, 118*(3), 815–842. https://doi.org/10.1162/00335530360698432

18. Engle, R., & Sarkar, D. (2006). Premiums-discounts and exchange-traded funds. *Journal of Derivatives, 13*(4), 27- 45. DOI: https://doi.org/10.3905/jod.2006.635418
19. Ferri, R. A. (2009). *The ETF book: All you need to know about exchange-traded funds* (1st ed.). John Wiley & Sons Ltd.
20. Gastineau, G. L. (2004). *Is selling ETFs short a financial extreme sport? Short selling strategies, risks, and rewards. Fabozzi, F., (Eds)*. John Wiley & Sons.
21. Geczy, C.C., & Samonov, M. (2015). 215 Years of Global Multi-Asset Momentum: 1800-2014 (Equities, Sectors, Currencies, Bonds, Commodities and Stocks). *SSRN Electronic Journal*. DOI:10.2139/ssrn.2607730.
22. Grant, J.M., & Booth, A.(2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal, 26*(2),91–108. https://doi.org/10.1111/j.1471-1842.2009.00848.x
23. Greyserman, A., & Kaminski, K. (2015). *Trend following with managed futures: The search for crisis alpha* (1st ed.). Wiley Trading.
24. Hill, J.M., Nadig, D., & Hougan, M. (2015). A comprehensive guide to Exchange Traded Funds (ETFs). *CFA Institute Research Foundation*.
25. Investment Company Institute (2018, January, n.d.). Frequently asked questions about ETF basics and structure. *Publications and Resources*. https://www.ici.org/pubs/faqs/faqs_etfs
26. Iraya, C., & Wafula, F. J. (2018). Does Portfolio Diversification Affect Performance of Balanced Mutual Funds in Kenya? *European Scientific Journal, ESJ, 14*(4), 158. https://doi.org/10.19044/esj.2018.v14n4p158
27. Itzhak, B-D., Franzoni, F., & Moussawi, R. (2018). Do ETFs Increase Volatility? *Journal of Finance 73*(6), 2471–2535. https://doi.org/10.1111/jofi.12727
28. Itzhak B.-D., Franzoni, F., & Moussawi, R. (2017). Exchange traded funds. *Annual Review of Financial Economics, 9*(1),169-189. https://doi.org/10.1146/annurev-financial-110716-032538
29. Jegadeesh, N., & Titman, S. (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. *Journal of Finance, 48*(1), 65-91. https://doi.org/10.1111/j.1540-6261.1993.tb04702.x
30. Levy, R.A. (1967). Relative strength as a criterion for investment selection. *Journal of Finance, 22*(4), 595-610. https://doi.org/10.1111/j.1540-6261.1967.tb00295.x

31. Liedtke, B., & Lai, P. (2019, August). Cautious creativity with investment funds: A guide for non-profits. INSEADknowledge. https://knowledge.insead.edu/blog/insead-blog/cautious-creativity-with-investment-funds-a-guide-for-non-profits-12216 via @INSEADKnowledge.
32. Lusardi, A., & Mitchelli, O. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education. *Business Economics, 42*, 35-44. https://doi.org/10.2145/20070104.
33. Madhavan, A.N. (2016). *Exchange-Traded Funds and the new dynamics of investing*. Oxford University Press.
34. Madhavan, A.N. (2012). Exchange-traded funds, market structure, and the flash crash. *Financial Analysts Journal, 68*(4), 20-35. https://doi.org/10.2469/faj.v68.n4.6
35. Madhavan, A.N., & Sobczyk, A. (2016). Price dynamics and liquidity of exchange-traded funds. *Journal of Investment Management, 14*(2), 86-102. DOI:10.2139/ssrn.2429509
36. Madhavan, A., Ursula, M., Wei, L., & Daphne, D. (2014). Equity ETFs vs. Index Futures: A comparison for the fully funded investor. *Journal of Index Investing, 5* (2), 66–75. DOI: https://doi.org/10.3905/jii.2014.5.2.066
37. Mazumder, I. (2014). Investing in exchange traded funds. *Applied Finance Letters, 3*(2), 16-23. https://doi.org/10.24135/afl.v3i2.23
38. Mazumder, M. I., Chu, T., Miller, E. M., & Prather, L. J. (2008). International day-of-the- week effects: An empirical examination of iShares. *International Review of Financial Analysis, 17*(4), 699-715. https://doi.org/10.1016/j.irfa.2007.09.001
39. Moskowitz, J.T., Ooi, H.Y., & Pedersen, H.L. (2012). Time series momentum. *Journal of Financial Economics, 104*(2), 228-250. https://doi.org/10.1016/j.jfineco.2011.11.003
40. Palmatier, R.W., Houston, M.B., & Hulland, J. (2018). Review articles: Purpose, process, and structure. *Journal of Academy of Marketing Science, 46*(1), 1-5. https://doi.org/10.1007/s11747-017-0563-4
41. Poterba, J. M., & Shoven, J. B. (2002). Exchange-traded funds: A new investment option for taxable investors. *American Economic Review, 92*(2), 422-427. https://www.jstor.org/stable/3083444
42. Prather, L. J., Chu, T., Mazumder, M. I., & Topuz, J. C. (2009). Index funds or ETFs: The case of the S&P 500 for individual investor. *Financial Services Review, 18*(3), 213- 230.
43. Pylypczak-Wasylyszyn, D. (2014, February 25). A visual guide to the ETF universe. https://etfdb.com/a-visual-guide-to-the-etf-universe/

44. Segal, T. (2019, August 29). Advantages and disadvantages of ETFs. Investopedia. https://www.investopedia.com/articles/exchangetradedfunds/11/advantages-disadvantages-etfs.asp
45. Soros, G. (2003). *The alchemy of finance.* John Wiley & Sons, Inc.
46. Stern, R.J., & Lubart, T.I. (1991). An investment theory of creativity and its development. Human Development, 34(1), 1-31. https://doi.org/10.1159/000277029.
47. Stevenson, D., & Tuckwell, D. (2019). *The ultimate EFTs guidebook.* Stream Ltd.
48. Szmigiera, M. (2019, November 26). ETFs-Statistics and facts. *Statista*.
49. Thune, K. (2020, February12). The 10 largest ETFs by assets under management (AUM). Why buy the largest ETFs by assets under management? https://www.thebalance.com/largest-etfs-by-assets-under-management-4161282