The Impact of Sustainable Rate on Exchange Traded Funds Performance: A Case Study of iShares from Blackrock

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Abstract: This study aims to assess the specific effect sustainability rating, has on the profitability of ESG Exchange Traded Funds. To achieve this, we selected the 67sustainable ETFs issued by iShares of Blackrock and their performance during an overall timespan of five years but segmented in three years, 2015, 2017 and 2020. For the Analysis we made use of the ARDL approach have been used. Despite the continuous expansion of the ETF industry as a whole, there is an inattention regarding sustainable ETFs and more precisely their performance. Also, sustainability is not reserved to the private sectors as many suggest, it requires the input of society as a whole in order to be more impactful. Therefore, this study tried to also shed a light on ESG ETFs and their characteristics and returns toward both investor and on society. The finding of this study provides an objective insight and is useful not only for investors but also, authorities and regulators for a more tangible level of satisfaction on both ends.

Keywords: Exchange-traded funds, iShares, sustainability, ESG

1. Introduction

In the midst of the modern financial sphere, two definite entities have firstly sprung up distinctly and then merged in recent years into: Passive index funds committed to sustainability and responsible investment. An Exchange Traded Fund, commonly known as ETF is an investment fund which is traded as a stock. It's a fund which owns a set of various company's stock and security at once (with investors's money) but with lesser tax and in a timely manner compared to if the investor had to

handle the whole process by himself. ETFs have received an increasing attention over the recent years. This is due in part to their attractive set of advantages. For instance, while most mutual funds require a minimum investment which can be substantial to enter, ETFs investors have the ability to buy a single share of the ETF plus any commissions or fees. In addition, since most of them are passively managed and follow a fixed formula based on an existing index, their management fees are less compared to the common mutual funds actively managed by investment professionals who single-handedly select stocks for the fund. By doing so the ETFs widen the reach of investors and provides them with access to professional background and support. ETFs are in fact very similar to common mutual funds in the sense that they are both collective investment institution (CII), which invests collected funds from investors, but unlike ordinary mutual funds which can only be traded once a day or at the end of each trading day (Deville, 2008), ETFs can be traded whenever the stock market is open. Also, majority of the first mutual funds were actively managed, meaning they are managed by investment professionals who carefully study and pick stocks for the fund. Hence their fees were expensive as most of them charge between 1% and 2% annually regardless of gains or losses. Meanwhile ETFs are passively managed (set aside 2% of them which are actively managed), meaning they follow a fixed formula or a market index. This method eliminates the need for the fund to hire professionals who constantly investigates for stock to buy and sell on behalf of the fund, it then lowers the management fees required from investors. But this doesn't go without disadvantages because index investing most of the time forces you hold on to unprofitable companies for period of time and endure with them, reason why aactive mutual funds tend to have higher fees compared to passive ones because they tend to take more risks, hence hire expensive professionals to manage them which in consequences increase their expenses ratios but lead to large returns when well assessed. Even though the first EFTs were introduced in the early 1990s, their global rising popularity is portrayed by the increasing amount of assets held by ETFs providers. In fact, in August 2021 the total value of ETFs, plus Exchange Traded Products (ETPs) listed globally increased from US$1.77 trillion in 2012 of asset to US$9.73 trillion of AUM in 2021 and around US$70 billion in net inflows from 2012 to US$834 billion in net inflows nearly 1000% growth in inflows in 2021 (ETFGI, 2021).

Another important topic is the global rise of sustainable investing or Socially Responsible Investment (SRI) in the financial environment (Przychodzen,

Gómez- -Bezares, Przychodzen, & Larreina, 2016). Sustainable investment is essentially referring to investing in companies which are focusing of promoting good environmental, social and governance (ESG) values and matter as well as financial returns (US SIF, 2017a). Simply put, investing sustainably refers to addressing current needs without jeopardizing the coming generation's ability to meet their needs but in contrast to prepare and leave them with the proper tools and environment to provide for their future requirements. This originally small market, has grown to be an established sector, in fact not only the increasing number of studies on this topic but also the large number of assets allocated worldwide confirms it. For instance, from we went from US$13.6 trillion in early 2012 to over US$35 trillion sustainable asset under management globally in 2021 (Global Sustainable Investment Alliance 2021). Legislators and investors are also playing an important role in the establishment of sustainable practices. Indeed, investor's rising consciousness (boosted by riots of society which they're part of) and law enforcers participated in the increasing the number of financial institutions, asset managers and companies integrating, disclosing and being more compliant with the ESG values. In recent years, we have witness stock exchange market and central bank for examples creating completely new divisions or signing new laws which didn't exist before. For instance, the Paris agreement emphasizing on the climate change was adopted by 196 parties at the COP21 on 12th December 2015 which (UNFCCC, 2020). Due to these considerable breakthroughs, both sustainable and ETF investing are now established in the financial market and are envisioned to keep on progressing. On one hand, investor's concern for a different, yet more sector focused and cost-efficient way in passive asset management fuel the ETF's growth and simultaneously on the other hand, ESG investing is held significant by stakeholders, a growing number of regulations and investors. The main objective of this study is to assess the requirements, process and performance of sustainable investments ETFs (environmental, social and governance or ESG ETFs). While majority of previous research have been oriented to assess the performance of the active fund and less to the one of passive funds this research intends to fill the gap. Also, the perpetual awareness on the importance of sustainability, and society holding partially responsible financial institutions as key players in fueling the deteriorating process of our environment and communities prompt this study. However, as stated above all investors didn't stayed on the sideline of this revolution, instead they facilitated the changes occurring in the financial institutions. Their

need to respond to the sustainability crisis with their resources prompted many financial structures to design specific structures which value their ESGs objectives. This study also will not only focus on the financial aspect but also on the tangible impact the investments through ETFs had on the society.

The second section of this paper will cover the literature review and coming up will be a presentation and discussion of data methodology used. In the fourth section, we will be disclosed the empirical results and examine the main findings. The last section will conclude the paper.

2.   Literature Review

The publishing titled the Portfolio Selection in the Journal of Finance in 1952, in which Harry Markowitz revealed the Modern Portfolio Theory which encourage the diversification of asset and foster the establishment of a set of portfolios which can increase dividends in order to alleviate but don't eliminate peculiar risks. Most funds were actives, meaning they employ professional investors who focus on finding stocks whose returns can surpass the market's index funds, but this strategy is costly and involves more risks. Nonetheless, this method was available to wealthy investors, considering the high transactions fees. Hence more investors started asking for fund which facilitates the bulk purchase of stocks and decrease the transaction costs. ETFs are commonly considered as cost effective and pave the way to global industries and market (Bodie and Al, 2017). This brought about the appearance of this new breed of funds at that time, the passive fund. Passive exchange fund usually establishing a set of portfolios by imitating an index's stocks or a poll of them and then sells this stock portfolio to retail investor at a price lower than it would have cost retail investors if they were to purchase the each of the index on their own. ETFs are passive index funds which quickly spread and divide into various categories, but regarding the field of sustainable investment, majority of the ESG ETFs focus on the technological approach. Greater part of ESG ETFs target renewable energy, electric vehicles and climate change among others (Levitt, 2017). The rapid expansion of ETFs is due to the fact, they offer many advantages such as the possibility to be listed on stock exchange like single stocks, and can be traded throughout the common tradability time period unlike those of active mutual funds. They also have the possibility to be sold back to the original ETF's issuer at the net asset value (NAV). ETF also birth other similar system which constitutes Exchange Traded Product (ETPs). These products are Leverages ETFs,

inverse ETFs, active ETFs, alternative ETFs, currency ETFs, Exchange Traded Commodities (ETCs) and Exchange Traded Notes (ETNs), among others (ETF database, 2017b). In 2000, they were approximatively 100 ETPs worldwide with a value of 79 billion U.S dollars in AUM, by 2020 the ETPs had over 5000 ETPs with a value of more than 7 trillion U.S dollars in total assets under management (ETFGI). ETFs are favorable and cost-effective tools to enter specific market that would be complex and expensive to reach properly under different conditions. (Bodie and Al, 2011 ETF database 2017). ETF eased the ability for retail, or non-professional investors to enter some specifics market by allowing rather cheap minimum investment compared not only to common index mutual fund but also the wide range of company they can reach at once, in a single ETF. However, not all ETFs are created equal, and the BlackRock iShares team aims to ensure that by making a difference. iShares focus on empowering investors with the right tools by setting the industry benchmark for ETFs trading practices but also by providing investor, a large pool of more than 800 ETFs to choose among. Commonly Index investing is described as passive, managing those index funds require a diligent hands-on process depending on the commitment of fund. iShares team is dedicated at building and maintaining portfolios that delivers strong performance. Their Portfolio engineers, are doing more than the average portfolio managers, their job takes in consideration portfolio construction, investment risk management and designing efficient trading plans. The techniques and allocations strategies that Portfolios engineers use are crucial to the establishment of funds that promote the investor's specific objectives. All of this scene occurs in the background in order to deliver a high level of accuracy in the details of each ETFs and their components. Unlike many funds who just copy and paste existing index, the iShares team goes further, and it reflects in their position and performance being among the top largest ETF provider with 383 ETFs traded on the U.S. markets, and a total AUM of $2,4 Trillion. As of October 2021, iShares possess the largest ETF which is iShares Core S&P 500 ETF IVV with $317.16 Billions in AUM around 13 percent of (ETF, 2021). As of June 2021, The U.S. sustainable ETF market has $96.1 bbillions in assets and iShares hold $58.3 billions of it (Statista, 2017). Those number are result of not only Aladdin which is their investment software and they portfolio engineers but also millions of investors around the world who trusts the fund with their resources. iShares tracks the market to build smart trading strategies that helps investor gain liquidity over the long term. They focus on major market

events able to trigger risks, volatility and identify factors that may impact portfolio performance. The anticipation of the impact of changes index is also one of the elements which distinguishes iShares from their peers. Their exclusive risk monitoring tools globally tracks ETFs helps in advancing investor protection and sound regulation of product structure and market. Index investing have a huge impact on money management and ease the barriers of entry toward investment. Even though the indexed assets under management constitutes around 10 percent of the total public investment asset worldwide, it still represents a huge opportunity for hundreds of millions of people who have yet to make a good use of this opportunity. Index investing or indexing has broadened the way to various types of investors by being more inclusive and easier to grasp since it allows investors not to choose between a multitude of bonds and stocks, nor among thousands of investment professionals. It's a huge advantage mostly for retail investors considering the cost, knowledge and time it requested otherwise. Recently, exchange traded funds have proved to be an excellent tool for sustainable investment or Socially Responsible Investment (SRI), they represent a driving force in finance on simultaneously addressing sustainability and long-term investment which not only support the economy but also the environment (UN PRI, 2017a). Being one of the world's largest and renown ETF providers iShares is furthering the motto of its parent company which is to provide the ability to a vast number of people the ability to partake of financial wellness. On their report on investor progress in 2020 they backed this mission by restating their commitments which is to make investment more straightforward, more accessible, sustainable and durable over a long-term period. By doing so they maintain high, the expectations of millions of investors who entrusted Blackrock with their resources. Among the people who weren't investing very few of them were as a consequence of insufficient funds but mostly due to the surrounding high barriers of entry (access, age, race, cost). Also, investors were restrained to invest in their domestic countries, but 20 years ago many of those remaining barriers have been for the most part, fully lifted. iShares by providing the possibility to diversify its investment, allowing local investors the right to enter global market more effortlessly has played a part in this revolution. iShares has over 100 million people who make use of their passive investing abilities hence have access to a portion of international market through ETFs. The process of owning a bulk of a given industry or parts of many ones, is now similar to purchasing a single stock, thanks to ETFs. iShares is also solving one of the most

overlooked issue to long-term investment and return which has to deal with time. The firm help people to start investing earlier with minimum amount, and this has a huge effect on the growth and reflect of long-term investment. Market uncertainty and risks aside, one thing certain is that the sooner you start to continuously invest the earlier you'll be able to constantly receive returns on your investment. This change allows more than a million Germans to contribute each month to an ETFs saving program which include iShares ETFs and allow repeated deposits of as low as one or two euros and more while the average monthly subscription for this plan is 160 euros (Osterhoff, F., & Kaserer 2016). iShares also allow investors with a smartphone and just above $10 to acquire some ETF without any trading fees in the US while 50 years ago majority of mutual fund required at least $700 to access. While some private funds still charge a lot more, the above practice was inexistent before. iShares isn't the only fund to use this process many other institutions authorize it, it increases tremendously the number of investors, mostly among the youth. As of now, more than 22 million people own an iShares ETF, and they still maintain their mission to make more suitable the process for new investors and thus incrementally increase the number of index investors and ETFs investors (JM, Nadig, iShares, 2021). Although the delineation of sustainable investment waver from an industry to another, like various ETFs providers, iShares considers sustainable funding to yield significant economic gain, since investing in favor of ESG values is now part of the requirement of a rising amount good investment. For year, it was assumed that investing in conformity with your principles was far from being a wise decision as it implied ruling out many profitable options. Now the narrative is starting to change. For instance, the world is globally changing as 90 percent of global GDP countries are now targeting a net zero carbon emission in comings decades. Even recently this was joined by India which pledge to reach a net zero carbon emissions by 2070 at the Conference of the Parties in November 2021 (UNFCCC, COP26), two decades later than the 2050 promised by the US, UK and others high GDPs countries. Those decisions a going to shift the paradigm of various sectors hence the operations of existing companies, and those law will and already do set the stage for the arrival of a new breed of companies which emphasize on sustainability in order to help their government keep their pledge. Sustainable ETFs and index investing represents a driving force for investors wishing to comply to new and upcoming laws, promote the ESG standards, while generating economic returns on the long turn. By providing their clients with a vast number of sustainable

funds to choose from, iShares is enabling them to precisely further their vision, whether it's on renewables and clean energy or promoting the social equality or invest in company portraying simultaneously various aspect of sustainability. They also facilitate investors wishing to completely avoid firms and sectors considered as laggard in ESG disclosure. Needless to say, solely investing sustainably lessen the quantity and kind of investment possibilities to the funds thereby falling short in returns opposed to peers which doesn't mind sustainability. But Seeing that ESG criteria are being implemented in almost every industry, this can totally change in a future where all sector of activity globally operates under a commonly distinguished ESG standard (Standard & Poor's, 2017). It's considering this, that couple years ago iShares investors required better fees, returns and options regarding sustainable investing through ETFs. This position further the firm to complete the mission which is to facilities all level of investors globally to contribute in the shifting toward sustainability. The amount of works devoted to the profitability of ESG ETF is insufficient, this is in part due to the fact that there are seemingly absent in the industry unless you are purposively looking for them. Chen & Scholtens (2018) opted to investigate US ESG as a whole and introduced the ESG ETFs secondary, revealing the lack of specific data disclosed. However, Alexopoulos (2018) affirmed that energy ETFs funds possessing both the ethical and sustainable companies deliver a better result.

3. Data and Methodology

This section of the study describes the method used to assess the impact of sustainability on financial performance of ETF. This section begins with a presentation of the data to be processed and then describes the regression equations and the analysis method will also be presented.

3.1. Data Source and Collection

This study makes use of secondary data from Blackrock's iShares sustainable ETF's report. We choose the ETFs from the iShares database because they're among the largest provider of ETF in the world and stand as a leader in the domain of sustainability investing through ETFs. The sample consists on 67 iShares MSCI country-specific ETFs disclosing their financial performance during an overall timespan of five years but segmented in three years, 2015, 2017 and 2020. We also choose iShares because they disclose the ESG data of all the funds in which they

invest, regardless of the ESG rate. Our sample encompass compagnies rated from leaders (AAA) to Laggards (B, CCC). the ESG consideration refers to company which account for their environmental, social and governance factors as well as their financial factors in their decision-making process. The sustainable ETFs of iShares are split in three main categories, the iShares ESG SCREEN ETF, the iShares ESG ADVANCED ETF and the iShares THEMATIC ESG ETF, depending on the level of tolerance of the funds toward some specific commodities such as alcohol, Tabaco, weapons, and oil among others. Our data set has been selected from each of them. All the funds selected do not have a high ESG score meaning they are not all leaders in terms of sustainability. This helps us to have a broader term of the impact of sustainability from various perspective. Majority tend to assume that a funds operating under the connotation of sustainability, automatically equates having a high ESG score, but it isn't always the case. In fact, many other factors intervein, hence some company operating in traditional industries while making some adjustment in their process tend to have even higher ESG score than those solely focusing on sustainability. This helps us have an objective analysis of the results, regardless of the outcome, it won't only apply to highly rated ESG companies.

For each ETFs the data present the ESG Score and ESG Global rating relative to all the funds MSCI ESG Fund Metrics coverage. It also shows the investment return of 2015, 2017 and 2020 and the average return over the years.

3.2. Variable Definitions

Dependent variable: Average Investment Return (AY)

The average return here represents the mean of an investors earning's received from his investment in a tradable financial asset over the five-year time period. The average return is mostly expressed in percentage, and this percentage can be whether positive in case of an increased return of the amount invested or negative in case of a loss overtime. In short, the percentage reveal the capital gain or loss realized from the capital's original value over those five years

Independent variables: Investment Return: The investment return rate also known as the financial return, refers to the amount or rate of gain or loss on the fund's investment over a specific period of time typically one year. It is a crucial information for current and future stockholders to have, for it allows them to forecast accurately, and to make informed future decisions such as to exist, enter or remain in the fund.

Investment Return of 2015 (Y1) represents the amount of value investors in iShares, received in 2015.

Investment Return of 2017 (Y2) represents the amount of value investors in iShares, received in 2017.

Investment Return of 2020 (Y3) represents the amount of value investors in iShares, received in 2020.

The ESG Score (ESGS): The ESG score is related to a firm ability to comply to specific environmental, social and governance standards. This score is calculated on peculiar traits, linked to the company's direct environment such as its industry, country, industry and size among others.

The ESG Global Rating (ESGGR): The ESGGR is designed to evaluate the strength of a company, while focusing on the long term ESG opportunities and risks. This score is provided by the MSCI ESG RATING and it encompass the level of compliance, adaptation and improvement of a company toward global ESG standard compared to their international peers in similar industries and under the same MSCI ESG rating.

An ESGGR rating of AAA, AA 8.6-10 are representative of leader, an ESGGR rating of A, BBB, BB are representative of average and an ESGGR rating of B and CCC portrays laggards. Aside from disclosing companies ESG score, the MSCI ESG metrics also reveal sustainable global Score, and it is crucial, because making investment based uniquely on the ESGS can be misleading. For instance, a company by itself can have a good sustainable score but when compared to other companies in the same industry their score has to be reduce, due to many reasons such as laws and regulations in countries which aren't in others, how severe are the sanctions in case of disregarding ESG laws and the awareness of the society among others.

3.3. Methodology and Regression Equations

The functional form of the model being used is as follow

$AY_t = f(ESGS_t, ESGGR_t, Y1_t, Y2_t, Y3_t, \varepsilon t,)$

AY_t = Average Return

$ESGS_t$ = ESG Score

$ESGGR_t$ = ESG Global Rating

$Y1_t$ = The investment return in 2015

$Y2_t$ = The investment return in 2017

$Y3_t$ = The investment return in 2020

εt = the Error Term

Before utilizing dynamic ARDL model, the Phillips-Person (PP 1988) and Augmented Dickey-Fuller (Dickey and Fuller 1979) tests were applied. The relationship between the variables was also assessed with the following equation.

$$AYt = \beta0 + \beta1 ESGS_t + \beta2 ESGGR_t + \beta3 Y1_t + \beta4 Y2_t + \beta5 Y3_t + \varepsilon t$$

The coefficients of the regressors are symbolized by β1 to β5 in the equation above and the constant is symbolized by β0.

3.4. Autoregressive Distributed Lag (ARDL) and ARDL Bounds Testing Approach

There are various cointegrations models available largely used to process economics data. However, they have quite a list of requirements or sometimes several limitations. In view of that, many researchers have shifted to the Ordinary Least Square (OLS) followed by the Autoregressive Distributed Lag (ARDL). The ARDL model has several advantages in comparison with others cointegration methods, it is a flexible model, and allows the use of variables from different integrations. It also enables the assessment of the relation between variables through its simultaneous estimation of short run and long run cointegration. The ARDL has been developed by Pesaran and Shin (1997) and have been used for years, but more recently they have proved to be very accurate means of examining the presence of long- and short-term relationship in economic time series. In our case, the ARDL test has been used to evaluate which impact does the sustainability grade of an ETF had on its main financial performance over a five-year time period. Although this model has been used for decades, they recently proved to examine and detect accurately, the presence or absence of long and short-term relationship in economic time series.

The ARDL bound test investigates the existence of a cointegration among the variables through the F-test results. Once, the long run association established, the next two steps need to be executed to estimate long run and short run coefficients of the proposed ARDL models. The long-run ARDL (*m, n, q, t, v, x, p*) equilibrium model is as follows

Short run equation:

$$\Delta AY_t = \beta_0 + \sum_{i=1}^{P} \beta_{1i} \Delta AY_{t-i} \sum_{i=1}^{P} \beta_{2i} \Delta ESGS_{t-i} + \sum_{i=1}^{P} \beta_{3i} \Delta ESGGR_{t-i} + \sum_{i=1}^{P} \beta_{4i} \Delta Y1_{t-i}$$
$$+ \sum_{i=1}^{P} \beta_{5i} \Delta Y2_{t-i} + \sum_{i=1}^{P} \beta_{6i} \Delta Y3_{t-i} + \varepsilon t$$

Long run equation:

$$\Delta AY_t = \beta_0 + \sum_{i=1}^{P} \beta_{1i}\,\Delta AY_{t-i} + \sum_{i=1}^{P} \beta_{2i}\,\Delta ESGS_{t-i} + \sum_{i=1}^{P} \beta_{3i}\,\Delta ESGGR_{t-i} + \sum_{i=1}^{P} \beta_{4i}\Delta Y1_{t-i}$$

$$+ \sum_{i=1}^{P} \beta_{5i}\,\Delta Y2_{t-i} + \sum_{i=1}^{P} \beta_{6i}\,\Delta Y3_{t-i} + \theta_1 AY_{t-i} + \theta_2 ESGGR_{t-i} + \theta_3 ESGS_{t-i} + \theta_4 Y1_{t-i}$$

$$+ \theta_5 Y2_{t-i} + \theta_6 Y3_{t-i} + \varepsilon t$$

Where the regressors are represented by β1 to β6 and the long run multiplier by θ_1 to θ_6.

The null hypothesis, $\theta_1 = \theta_2 = \theta_3 = \theta_4 = \theta_5 = 0$ against the alternative, $\theta_1 \neq \theta_2 \neq \theta_3 \neq \theta_4 \neq \theta_5 \neq 0$.

4. Empirical results

Table 1: Descriptive Data Results

Variables	AY	ESGS	ESGGR	Y1	Y2	Y3
Mean	39.06	7.37	66.45	10.49	39.89	61.76
Median	33.95	7.66	75.6	8.7	32.86	53.16
Maximum	119.93	10	100	45.76	157.3	205.23
Minimum	-3.27	2.87	5.02	-9.93	-8.25	-2.86
Std. dev	27.67	1.79	28.3	11.71	32.48	44.27
Summation	2616.8	493.97	4452.27	703.4	2672.8	4138.3
observation	67	67	67	67	67	67

The Table 1 shows the descriptive statistics of the ESG Score, the ESG Global Rating, the average investment return, the return of 2015, 2017 and 2020 of 67 sustainable Exchange Traded Funds. The total number of observations is 67. The mean value of ESG Score for the 67 ETFs is 7.37 (A and BBB) indicate that most of these firms have a rather good ESG standard on average. The mean for their ESG Global score is 66.45% which shows that compared to other firms in similar industry and who also figure in the MSCI ESG, their performance is relatively low in term of sustainability, than when they are assessed on their own. The mean for average return on investment is 39.06 which reveal that there has been a capital increase of around 39.06% from its original value. While the mean of the return of 2015, 2017, and 2020, progressively increase over time from around 10 percent to 61 percent considering the compound interest. Also, ESGS has the lowest volatility among all the variables based on its standard deviation. Overall, the

closeness between the mean and median of each variable which doesn't exceed 10% (*Metron, 2003*), reveals that the variables in this econometric model are representative of a normal distribution.

Table 2: Unit Root Test Result

		ADF Test			
		Intercept		*Trend & Intercept*	
Variables	*Level of Significance*	*T-Statistic*	*P-Value*	*T-Statistic*	*P-Value*
AY	Level	-5.852500	0.0000	-5.807364	0.0000
ESGS	Level	-1.727271	0.4130	-4.009013	0.0139
	1st Difference	-11.64583	0.0000	-11.75389	0.0000
Y1	Level	-7.362805	0.0000	-8.077481	0.0000
Y2	Level	-6.957078	0.0000	-6.902813	0.0000
Y3	Level	-6.776334	0.0000	-6.726946	0.0000
ESGGR	Level	-2.648447	0.0896	-3.849986	0.0210
	1st Difference	-12.12148	0.0000	-12.20369	0.0000
		PP Test			
		Intercept		*Trend & Intercept*	
Variables	*Level of Significance*	*T-Statistic*	*P-Value*	*T-Statistic*	*P-Value*
AY	Level	-5.880215	0.0000	-5.834820	0.0000
ESGS	Level	-1.954719	0.3059	-1.908753	0.6388
	1st Difference	-11.53369	0.0000	-11.76929	0.0000
Y1	Level	-7.362805	0.0000	-8.077487	0.0000
Y2	Level	-7.071534	0.0000	-7.021926	0.0000
Y3	Level	-6.855611	0.0000	-6807424	0.0000
ESGGR	Level	-1.796217	0.3793	-1.725975	0.7286
	1st Difference	-11.79450	0.0000	-12.03588	0.0000

The ARDL require prior of the level of integration of our variables. To ascertain the order of the integration, both the Augmented Dickey-Fuller (ADF) and the Phillips and Perron (PP) were applied. The results of the unit root test are revealed in the Table 2. The P-values of AY, Y1, Y2 and Y3 are all of them are inferior to 5% for the ADF Test AY, Y1, Y2 and Y3 at level, with intercept and with trend and intercept. A similar result is observed with the Phillips Perron model with a slight difference in the T statistic. Regarding the ESGS and ESGGR variables, even though the ADF Test shows that ESGS is significant at level with trend and intercept, For the great part ESGS and ESGGR are statistically significant at first difference in both tests with intercept and with trend and intercept. Hence, the

regressors are a mixture of both I(0) and I(1), some are stationary significant at level and other at first difference. A set of variables with a mix order allows the application of the ARDL bound test initially proposed by Pesaran and Shin (1998) unlike to others regression model. The findings thus reject the null hypothesis, there is no trend nor unit root problem.

Table 3: ARDL bound co-integration test

Regression function	F-Statistic	Sig. Level	Lower bound	Upper bound
AY= *f*(ESGS, ESGGR, Y1, Y2, Y3) 141.15825		10%	2.08	3
		5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Before completely evaluating the ARDL model, the co-integration relationship between independent and dependent variables must first be assessed through the application of the bounds test. Table 3 above present the results of the bounds test for the ARDL model. This part assess the existence of a cointegration between the average investment return and the ESG score, the ESG global rating and also how much each year's return evolution, affected the average. The null hypothesis is, there is no cointegration and the alternative hypothesis is there is cointegration. The ARDL bound test requires a comparison first between the F-statistics and the lower bound and then a comparison between the F-statistics and the upper bound at the four levels of significance. Meaning, If the F-statistic is higher than the upper bound of the critical value, then the variables are cointegrated. Otherwise, if the F-statistic is lower than the lower bound of the critical value, then there is no

Table 4: ARDL Short Run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(AY(-1))	0.041055	0.030619	1.340820	0.1864
D(AY(-2))	-0.047371	0.028838	-1.642656	0.1071
D(ESGGR)	0.286061	0.270529	1.057413	0.2957
D(ESGGR(-1))	0.224206	0.284873	0.787038	0.4352
D(ESGGR(-2))	1.328784	0.298561	4.450623	0.0001
D(ESGGR(-3))	0.197007	0.073458	2.681892	0.0101
D(ESGS)	-6.008679	4.271707	-1.406623	0.1661
D(ESGS(-1))	-3.188608	4.450594	-0.716446	0.4773
D(ESGS(-2))	-12.28835	4.580080	-2.682998	0.0100
CointEq(-1)*	-0.953579	0.028567	-33.38036	0.0000

cointegration. However, if the F-statistic is situated within the lower and the upper bound levels, the results are then inconclusive. The findings of the study show the existence of a cointegration among the variables. The calculation of the F-statistic value of 141.16 is greater than the lower bound and the upper bound values at 2.5%, 5% and 10% levels of significance, this mean we can strongly reject the null hypothesis and accept the alternative hypothesis, there is cointegration relationship among the variables. Therefore, estimating our model using the ARDL approach is permitted.

The empirical findings in Table 4 include estimations of the short-run coefficients of the ARDL model, it has been revealed automatically through the use of the Akaike Information Criterion (AIC). The short run coefficients present ESGS which portrays a negative coefficient and a p-value superior to 5%. This affirm the observation upon which, an individual company complying to ESG, doesn't immediately translate into financial benefit, most of the time it can prove to be a disadvantage economically in the short term. This is due to many factors, in fact, most of the new companies before adopting new sustainable behaviors have to cease or reduce the many of their traditional actions. And this can cost them some contract or increase their internal cost, hence be an economic disadvantage mostly in the beginning. But this is not always the case for all business hence, the insignificance of the probability. On the other hand, the return of the previous years will have significant impact on the average yield, mostly when the returns are steadily increasing over the years. Also, the CointEq (-1)* representing the Error Correction Term (ECT) reflects the speed of adjustment of the equilibrium from a short-run to the long run. The ECT coefficient -0.95 in our case, is higher than -1 which state that there is a stable relationship between the variables short run, and the p value is significant, we can then assess the long-term relationship. In the short run the ESG global rating ESGGR have a positive and significant impact on the average growth. As specified above have a good ESGGR as more benefits internationally, and since we are in the context of ETFs which are a basket of company from all over the world, having a good ESGGR makes company very attractive to ETFs providers, including iShares even more considering, it's a matter of sustainability. Here, a 1 percent increase in ESGGR, can lead to up to a 130 percent increase in average return in the short run, this reflects the high willingness of early adopters and investors to inject large amount of capital in new companies, for a various reason. One of them is the continuously expanding waves of green funds and agreement

regarding compagnies operating under and toward sustainability goals. This cause most of them to raise a lot more than they require at their IPO, even when their potential is obviously disputable.

Table 5: ARDL Long Run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
AY(-1)*	-0.953579	0.051032	-18.68592	0.0000
ESGGR(-1)	0.214446	0.194252	1.103958	0.2752
ESGS(-1)	-3.808218	3.142959	-1.211666	0.2317
Y1**	0.183465	0.084538	2.170208	0.0351
Y2**	0.491930	0.121042	4.064114	0.0002
Y3**	0.203471	0.087892	2.315002	0.0250
D(AY(-1))	0.041055	0.042266	0.971362	0.3363
D(AY(-2))	-0.047371	0.035857	-1.321129	0.1929
D(ESGGR)	0.286061	0.312625	0.915029	0.3648
D(ESGGR(-1))	0.224206	0.317438	0.706300	0.4835
D(ESGGR(-2))	1.328784	0.331963	4.002803	0.0002
D(ESGGR(-3))	0.197007	0.083115	2.370287	0.0219
D(ESGS)	-6.008679	4.969967	-1.208998	0.2327
D(ESGS(-1))	-3.188608	4.984110	-0.639755	0.5254
D(ESGS(-2))	-12.28835	5.095878	-2.411429	0.0199

** and * denote that a series is stationary at 1% and 5% level of significance, respectively.

The empirical findings in Table 5, above reveal the estimation of the long-run coefficients of the ARDL model through the use of the Akaike Information Criterion (AIC). In the long run, the three investments return have a positive significant impact on the average yield, however the year 2017 had highest significance during this period. This same year a 1 percent increase in the return, lead up to a 49 percent increase in average return in the long run. While 2015 and 2020 respectively lead to an 18 and 20 percent increase to the average return in the long run. The year 2017 was quite special for in the ETF world, during this year they topped their growth record as a whole, we witness a great number of retails as much as professional investors rushing toward this investment vehicle. Data from the State Street global Advisors (SSGA) recorded an inflow of $464 billion in 2017, which represents an increase of 161% from 2016 which amounted in $288 billion. This massive inflow of capital received by ETFs has had a major impact on the ETF family. This aspect inevitably impacted their return to their investors. Regarding the ESG Score, it is statistically significant but negative, a 1 percent increase in the ESG

score can lead to up to a 12 percent decrease in the average return in the long run. The ESG Global Rating has appositive statistically significant impact on the average return on the long run. A 1 percent increase in the ESG Global Rating can lead to up to a 13 percent increase in the average return in the long run. It emphasizes the importance of also considering the global sustainability score of funds and not solely relying on the ESG score publicly disclosed but independently assessed. In the long run, investment in sustainable ETFs based on funds which solely disclose their ESG score may turn into losses, while investment based on the ESG global Rating in addition to the ESG score tend to be more profitable.

Table 6: Residual Diagnostic Test

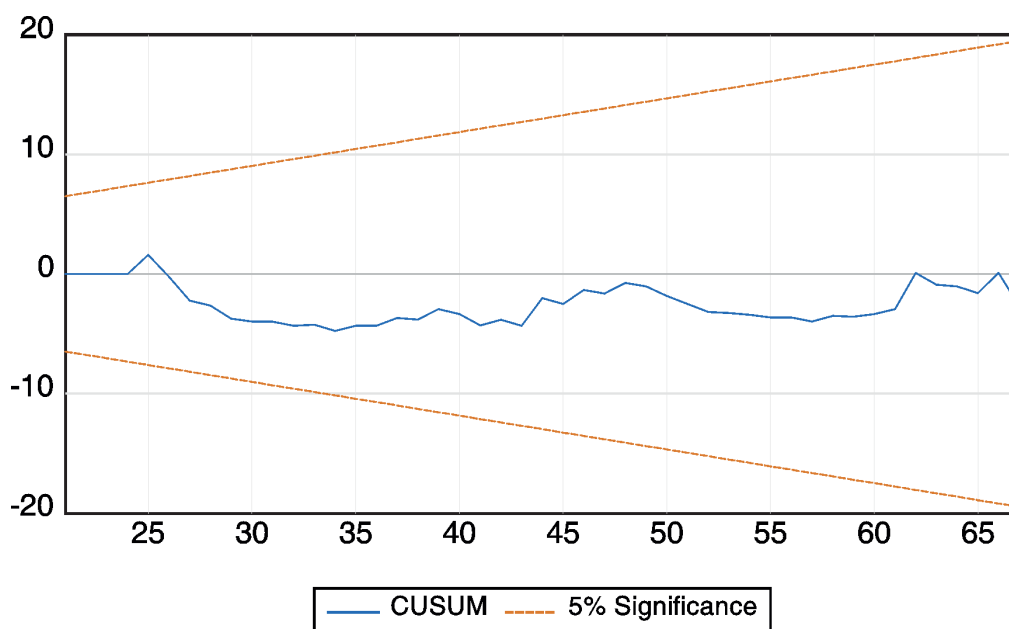| Test	Statistic Value	Probability
Ramsey Reset	1.087	0.3025
Normality Test (Jarque-Bera)	29.53187	0.0000
Serial correlation Test (Breusch-Godfrey)	2.267969	0.3217
Heteroscedasticity Test (ARCH)	25.71928	0.1411

Figure 1: CUSUM Test Result

In the Table 6 above, Although the Jarque-Bera results reveals that the residuals are not normally distributed, the probability value of the Ramsey Reset is greater

than 0.05 it means the estimated model is free from specification errors. The Heteroskedasticity ARCH test disclose a P-value which is greater than 0.05, reveals that the data has homoskedasticity. The Serial correlation test Breusch-Godfrey Test have a P-value higher than 0.05, the data set is now free from serial correlation. We also provided the results of the CUSUM stability test of the ARDL Test used in this study. The figure 1 above shows that the CUSUM graph lies within the 5% critical lines for the CUSUM test.

5.　Data Analysis and Discussions

ETFs are relatively new investment vehicle, their popularity can be said new, and is still increasing when compared to others investment vehicle such as bonds and stocks. They constant inflow of capital from investors tend to boost their valuation, more than their actual performance. It is hence more complex to properly discern which of the sustainability factor of a sustainable company, belonging in an ETF, is responsible for their profitability. A closer look to ESG funds, make us wondering if those ETFs aren't just pawns on which investors bets in order to profit from each other's investment rather than the actual efficient usage of the investment received. ESG ETFs does not consist uniquely in providing investors the ability to incorporate ESG standards in their investment portfolio, it is first of all an investment tool from which society and the environment can benefit. Investors should ask more from the fund, not only in terms of returns, but also to trace the process of creation of those returns and ensure that the process is as sustainable than title the company is bearing.

5.1. Conclusion

Since the past decades, exchange traded funds are regarded as one of the pillars in financial innovation and since then, its expansion and popularity hasn't ceases to increase. In fact, it has extended outside of the traditional purpose of solely generating profit to stockholder and investors to now addressing an issue common to society as a whole. The aim of this paper was to analyze the impact of the ESG factors on the performance of 67 sustainable iShares ETFs. This paper singles out one aspect which is sustainability and how ESG ETFs the perform both sustainability and financially. Many countries are currently pledging to the net zero agreement, and this will directly or indirectly affect most of the industries and the way they operate. Financial institutions and funds are not excluded, in fact they are regarded as one of the fuels

for most of companies regardless the industries, considering that most business at a point in time required funds from those institutions, whether to start, to expend or to adapt to a coming change. Exchange traded funds, also play a huge role in the evolution of companies, they hold share in all the industries on behalf of their investors. They may now serve as a subtle law enforcer to a certain extent regarding sustainability standards. Companies going in the sustainable direction may tend to benefit from the support by the ETF's providers such as tax relief and the flow of capital compared to companies working in the opposite directions. Although this specific support or privation (depending on the company's position) from fund's issuer might not yield a huge effect on society as a whole, it is one of the various tools that every actor in society has to make to bring the global sustainability goal to success. This will bring more firms to shift toward stakeholder's capitalism, which is a system in which corporations focus on meeting the need of all its stakeholders, namely customers, employee, their community and society as a whole opposed to only shareholder's profit maximization. However, Companies considering seriously this change are going to be among the top in the future, whether sustainably or economically (in few years those two words will be inseparable pairs). They are going to be future leaders, because they won't be solely backed by banks or society but highly favored by a growing amount of law and regulations which will make their desire to do good, a new normal. Also, the current state of change, whereby countries are making net zero a legislative objective, can create a good competition among companies, and make the non-disclosing of ESG practices an odd thing for a business. Compagnies and exchange traded funds ignoring these coming changes, are heading toward a grey horizon, considering that they are threatening their long-term return and by doing so, their client's investment, and their own longevity. Since financial profitability it is soon going to be tied with sustainability. For investors, although this study suggests that being socially responsible does not currently rhyme with a proper, distinctive financial performance, investors do not need to sacrifice financial returns for being socially responsible because through ESG ETF investing, they are investing in a future where sustainability is a sure value.

5.2. Recommendations

Based on our analysis, we make the following policy recommendations. The delineation of ESG standard and score is a concern which has to be globally solved,

but still in a way specific to every industry and the reality they individually face in their environment. Otherwise, we will witness to the appearance several highly ESG rated firms which in reality, negatively affect stakeholders. The increase number of sanctions for infringement on sustainable practices is a good start but, in some places, they are hardly applied, due to many factors such as corruptions, misinformation. Governmental and financials Authorities, have to seriously investigates compagnies focusing on highlighting their sustainable achievements but secretly operating in a manner which says otherwise. Companies which acknowledge and deal with their ESG shortcomings are likely more trustworthy in terms of sustainability than the ones which showcase whitewashed accounts of their achievements. ESG exchange traded funds should make more use of refinement when selecting fund in a way which avoid endorsing the wrong ones. Also, funds should deliberately include the sustainability effect and report their ESG related actions fairly. The more the ETFs are turning toward sustainability companies, the more other companies can be trigger to do the same. In a first place, it maybe just for inclusion and enjoy the financial benefit or the goodwill it provides but once they're in, the regular strict control they'll be under will either make them fully abide or expel them which important sanctions. Other studies should look for others relevant sustainable factors which can be used to evaluate ESG funds and performance aside from the factors on which traditional mutual funds are assessed.

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