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Performance Evaluation, Selectivity Skills and Aggressiveness of Global Low-Rated ETFs Managers

Rafaela Kyrkou*, Eftychia Saiti

Department of Economics, University of Thessaly, Volos, Greece

Abstract

The present study conducts an empirical investigation concerning twenty-five exchange traded funds (ETFs) that are rated as one star (*) according to the Morning star rating service, have a global character and are traded in the U.S.A. Weekly data are employed that cover the QE-tapering period, from October 27, 2014 until September 24, 2018. The capital asset pricing model (CAPM) is adopted and the measures of Sharpe Ratio and Treynor Ratio as well as the Jensen's alpha and the Betas are used. We look into whether managers of modern forms of mutual funds demonstrate managerial skills and to what extent they prefer aggressive behaviour in relation to the market in times of monetary policy normalization. In the majority of ETFs we observe low performance with high risk. Half of ETFs in the sample follow a bearish behaviour whereas the other half follow a bullish behavior. The latter were less numerous during the period of QE-tapering, that is during normalization times in monetary policy where interest rates were higher than the Zero Lower Bound. In other words, econometric findings indicate that the managers of these low-rated ETFs do not exhibit selectivity skills during the QE-tapering period and that most of these ETFs do not reveal aggressive behaviour in relation to the market. This study is differentiated from previous academic work in that it examines low-rated global ETFs during the period of QE-tapering, that is the normalization of monetary policy.

Keywords

Exchange Traded Funds, Sharpe Ratio, Treynor Ratio, CAPM, Jensen's Alpha, QE-tapering

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1. Introduction

The Global Financial Crisis that was triggered by the Lehman Brothers collapse has led to a proliferating bulk of academic research about the effects of unconventional monetary policy (Quantitative Easing) on financial markets and the real economy. There have been a number of important empirical papers that have looked into the effectiveness of such out of the ordinary practices and whether these impacts have been altered during the normalization of monetary policy (QE-tapering). Such papers are Aizenman et. al., (2014) [1] and Chari et. al., (2017) [4] that investigate how news about QE-tapering have affected emerging financial markets.

Quantitative Easing has been extra expansionary monetary policy through conducting large-scale as set purchases (LSAPs), according to Fawley and Neely, (2013) [9]. QE is a nun conventional monetary policy in which the Central Bank buys Government bonds or other securities from the market to lower interest rates and increase the money supply. QE-Tapering means pausing QE and this has the opposite effect compared with QE practices. The reduction of quantitative easing intensity creates a situation where the speed with which new money is injected in to the economy is lowered.

Mutual funds in short is a basket of securities purchased or

* Corresponding author
E-mail address: rkyrkou@uth.gr (R. Kyrkou), esaiti@uth.gr (E. Saiti)

sold through a broker age firm on the stock exchange. The ETFs are among the most important and valuable products created for individual investors in recent years world wide. An ETF, or exchange-traded fund, is a market able security tracking a stock index, a commodity, bonds, or a basket of assets. Despite their many resemblances, ETFs differ from mutual funds because shares trade like common stock on an exchange. The price of an ETF's shares will change through out the day as they are bought and sold. It should be noted that the largest ETFs usually have higher average daily volume and lower fees in comparison to mutual funds hares and this turns them into an attractive alternative for individual investors.

The 25 ETFs that are discussed in this paper have a low ranking for reliability, but are of primary importance for investors globally, since they are considered to belong to the most influential ETFs world wide according to the Morning star rating service. The main reason for selecting this period is for examining this innovative tool for investments during the period of normalization of monetary policy after having implemented extra easing monetary action taking. We study 25 ETFs in the modern form of the Morning star mutual funds that have extreme rankings, that is ranking of one star (*), there by low-rated ETF during the taper tantrum period, that is during the QE-tapering, when interest rates by the Federal Reserve have begun to increase.

The remaining part of this study is structured as follows: Section 2 presents the literature review concerning past academic work relative to performance of mutual funds based on trust worthy models, such as CAPM. Section 3 includes the data and the methodology adopted in order to extract econometric results and calculate the Sharpe and Treynor ratios. Section 4 provides the findings after estimations and their economic implications. Finally, Section 5 offers the conclusions.

2. Literature Review

Financial performance is a subjective measure of the extent by which a company can take advantage of its assets in order to accomplish profitability. Aiming to achieve abnormal profits in relation to the market, managers have been practicing active management policies. A number of sophisticated measures have been developed in order to accurately capture the extent by which managers have proven efficient.

Among the most suitable measures is the Sharpe index Sharpe, (1994) [32] for the performance analysis of investment risks that contributed to the development of the valuation method, the gradient method for optimizing the distribution of assets and analysis based on returns for the performance evaluation of investment funds. Moreover, one of the most trustworthy measures is the Treynor index Treynor and Mazuy, (1966) [34], which constitute same a sure of portfolio performance that adjusts for systematic risk. Unlike the Sharpe Ratio, which adjusts the performance with the standard deviation of the portfolio, the Treynor index uses the portfolio Beta that is a measure of systematic risk. The two indicators dealing with both risk and performance with the performance of a portfolio and is a performance quotient divisible by the risk. The Treynor index took its name from the Jack Treynor, who was an American economist best known as one of the inventors of the capital asset pricing model Treynor and Mazuy, (1966) [34].

Ledoit and Wolf, (2008) [18] construct a studentized timeseries boots trap confidence interval for the difference of the Sharpe ratios so as to declare the two ratios different if zero is not contained in the obtained interval. This approach has the advantage that one can simply resample from the observed data as opposed to some null-restricted data. Their simulation study exhibits the improved finite sample performance compared to existing methods. Auer and Schuhmacher, (2013) [2] provide the first Sharpe ratio based performance analysis of the hedge fund market. They address whether the choice of hypothesis test used to statistically compare Sharpe ratios can influence aninvestor's hedge fund selection process. They argue that only a small fraction of hedge funds can significantly out perform passive investments in corresponding hedge fund indices. Mahdavi, (2004) [24] presents a generalized approach to calculating the Sharpe ratio of an asset or a portfolio when the return distribution is not necessarily normal. The procedure adjusts the entire distribution of the asset's return so that it will match there turn distribution of a benchmark (e.g., S&P500). The Sharpe ratio of the adjusted return can then be directly compared to that of the benchmark. He applies the procedure to simulated data and the historical data on hedge fund indices. Gregoriou and Gueyie, (2003) [10] rank 30 funds of hedge funds according to the Sharpe and modified Sharpe ratio. They document that the modified Sharpe is lower and more accurate when examining non-normal returns.

There is also considerable a number of academic papers studying the Treynor ratio as a performance measure. Hübner, (2005) [12] defines the Generalized Treynor Ratio as the abnormal return of a portfolio per unit of premium-weighted average systematic risk, normalized by the premium-weighted average systematic risk of the benchmark. It is found that the portfolio rankings produced with this measure are more precise and more stable compared to the ones given by Jensen's alpha and the Information Ratio. Jobson and Korkie, (1982) [15] provides evidence that the z-statistic, based on the Treynor measure, is not well behaved in small

samples and also lacks power. For multiple comparisons achi-square statistic, obtained from the Sharpe measures, is reasonably well behaved at small samples and its power increases as the number of portfolios increases and /or the coefficients of variation decrease. Achi-square statistic derived from the Treynor measure is not so well behaved. Hodges, et. al., (2003) [11] compute Beta and Treynor ratios for portfolios of small stocks, large stocks, and bonds for holding periods of 1 to 30 years. For both the stock and bond portfolios, beta, and the Treynor ratio alter substantially with the holding period. Furthermore, the relative Treynor rankings of the portfolios change. Thereby, betas and Treynor ratios can not be calculated independently of the intended investment horizon. Investors with long-run investment horizons must interpret performance parameters obtained from investment advisory services with due consideration for horizon impacts. Scholz and Wilkens, (2005) [27] analyze the investor-specific performance measure (ISM) necessary for investors in practically relevant decision situations. A typical investor creates an overall portfolio consisting of three parts: an arbitrary fund, a risk-free asset and an existing, fixed portfolio. Since the ISM is considerably defined by the Sharpe ratio and the Treynor ratio, an economic justification of these traditional performance measures is offered. Pilotte and Sterbenz, (2006) [26] support that reword risk ratios vary inversely with maturity and are very high for short-term bills. There forein vestors would benefit more by highly leverage investments.

The capital asset pricing model (CAPM) is an extension of the portfolio theory as originally reported by Markowitz, (1952) [25]. It was developed by Sharpe, (1992) [31], Sharpe, (1994) [32], Lintner, (1975) [22], Treynor, (1965) [33] and describes the relationship between the expected return of an asset and thereturns of the market by also taking into consideration the level of risk. As concerns the application of CAPM in practice, a large amount of research investigated the performance of mutual funds in terms of risk. Since 1965, the Treynor, Sharpe and Jensen starting from 1968 were the first to be reported in the assessment of the performance of mutual fund sin relation to the risks and developed standards to measure tailored to risk betting. Sharpe studied the annual rates of return of 34 mutual funds compared to the risk for 1954-1963 years, which showed that 19 out of the 34 mutual funds had higher rates of return than the mutual fund market portfolio. Sharpe's study supports the view that the market is effective and that the capable administrators may vary depending on their portfolios, assessing properly the risk inventory, thus producing higher rates of return. Similar to Jensen, (1968) [14] studied 115 mutual funds for the period from 1945 until 1964. Taking into account transaction costs, they found that only 43 of the 115 had portfolios exhibiting better annual returns than those of the market. Among models that detect the selectivity and market timing features, Treynor and Mazuy, (1966) [34] are included.

The strategy-beta (popularly referred to as smart beta, but also with products) that are traded on the stock market and have enjoyed explosive grow thin the last period, are studied by Johnson, (2016) [17]. Based on the information of Morning star, on March 31, 2016, there are 1,117 such products which seek either to improve performance or to alter the risk in connection with the "more traditional" market with collective assets of 480 billion USD. Joenväärä and Salehi, (2016) [16] they show that ETF users are more passive regarding there are stock portfolios management, invest in large requities with broader analyst coverage and are holders of more diversified portfolios. The equity portfolios of ETF users perform worse than those of non-users and this difference is higher for smaller and more active institutions. Shanmugham and Zabiulla, (2012) [28] have examined the effectiveness of rates of the Nifty BeES ETF in India in conditions of visibility and modest purchases using high-frequency data for a period of seven years. They investigate three questions. Firstly, if a portfolio manager of Nifty BeES follows the replication reporting strategy in different market conditions. Secondly, if a portfolio manager minimizes the volatility of portfolio performance relative to the benchmark volatility. Thirdly, if the size of the premiums /discounts vary depending on market conditions and the defensive investor. Our findings indicate significant differences on first generation capabilities of manager funds between two market conditions. The tracking error is found to be relatively high in the treaties of defensive investor (bearish). The average premium is higher-priced markets that are characterized by higher volatility.

Finally, the performance of 15 international mutual funds based in the U.S. for the period 1980-89 are assessed by Chen and Jang, (1994) [5]. The selectivity and timing skills of mutual fund managers are the main criteria for evaluating performance. The technique used here is the one developed by Treynor and Mazuy, (1966) [34] and was developed by Lee and Rahman, (1990) [19]. It was found that many of the international mutual funds out performed the American benchmark on the market, probably because of increased opportunities for diversification.

3. Data and Methodology

We look into the twenty-five mutual funds examined by employing well-known economic models and by performing econometric estimations by the STATA 14 software. The period under scrutiny is October 27, 2014–September 24, 2018, which represents the normalization of monetary policy

after QE practices. The findings by descriptive statistics indicate the mean, the standard deviation, the maximum and minimum as well as the symmetry with the kurtosis of all these funds investigated in this paper.

Table 1. Summary statistics of the SP500 and the twenty-five ETFs under scrutiny.

Variable	Obs	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
SP500	204	0.0018009	0.154888	-0.0614972	0.0373111	-1.002178	6.058685
UPW	204	0.0024402	0.393929	-0.0967185	0.0822923	-0.3589276	2.799321
UXI	204	0.0039278	0.0389328	-0.1138706	0.1178646	-0.357439	3.863484
ASEA	204	0.000363	0.0231205	-0.0759015	0.1147971	0.3616143	6.566024
RSX	204	0.0005708	0.0393683	-0.1621928	0.1115022	-0.1398258	4.74555
NLR	204	0.0006717	0.0179199	-0.0813456	0.0509052	-0.342628	5.239281
DXJF	204	0.0004225	0.0403308	-0.1634192	0.1408191	-0.4732067	5.838852
MLPC	204	-0.0021526	0.0342697	-0.1174717	0.1255808	-0.3386845	5.233769
JXI	204	0.0006757	0.018459	-0.0491962	0.0798059	-0.0377143	4.360412
ASHS	204	-0.0010501	0.0490774	-0.18522	0.1336534	-0.7139842	6.057881
ZMLP	204	-0.0034349	0.0375234	-0.1376247	0.1177101	-0.4696715	4.741659
DIV	204	0.0005052	0.0156677	-0.0451996	0.050297	-0.1734671	3.806301
GYLD	204	-0.0006195	0.0192645	-0.072535	0.0666914	-0.313713	5.528446
PPH	204	0.0004464	0.0229491	-0.064528	0.0602307	-0.4828336	3.413932
PXR	204	0.000238	0.0288936	-0.0942054	0.1016061	-0.0086528	4.175998
LALT	204	-0.0005153	0.0075967	-0.0464287	0.0294895	-0.888368	10.30035
EDIV	204	-0.0000634	0.0266029	-0.0847187	0.0938177	-0.1000547	3.896507
PXJ	204	-0.0035486	0.0453795	-0.168287	0.1712623	0.2340784	4.403408
YMLP	204	-0.0049029	0.0413098	-0.1929045	0.1335278	-0.8322027	7.176744
FCG	204	-0.0056628	0.0525186	-0.2184944	0.2269237	0.18098	6.107531
PSCE	204	-0.004065	0.0538878	-0.2055054	0.2198596	0.2421919	5.282491
FLM	204	0.0013144	0.0215795	-0.0698938	0.086158	0.0189136	4.990704
CPI	204	0.000308	0.0038074	-0.0149775	0.0146146	-0.3709216	5.699948
DIG	204	-0.0018513	0.0559727	-0.2162714	0.1767962	-0.4891939	4.973117
BWZ	204	-0.0003432	0.0096551	-0.0263216	0.0233052	0.0744227	3.131135
WBIF	204	0.0012996	0.014396	-0.047574	0.0727444	0.0841833	6.602445

From Table 1 it can be seen that the twenty five mutual funds with one star (*) that were tested based on Morning Star ranking present the following characteristics. The number of observation sis 204, i.e. 204 weeks, which we used in order to conduct our analysis. There turns take general values somewhat smaller than 1%. One can see that there are returns of about 0.18%, 0.39%, 0.02%, but also with negative values near –0.06%.

More specifically, in order to provide an integrated picture, we observe that the mutual funds that have the highest average yield are the UXI, UPW, SP500, FLM, WBIF with values 0.0039278, 0.0024402, 0.0018009, 0.0013144 and 0.0012996, respectively. While those that have the lowest yields are the FCG, YMLP, PSCE, PXJ, DIG with values -0.0056628, -0.0049029, -0.004065, -0.0035486 and -0.0018513, respectively.

Regarding the standard deviation, which helps us to understand what mutual fund has the greatest risk or greater variability, we note that ETFs have an average of 0.048742296. Moreover, to figure out which ETFs are more dangerous, we observe the mutual funds with the comparatively larger standard deviations which are the UPW, DIG, PSCE and FCG with prices 0.393929, 0.0559727, 0.0538878, 0.0525186, respectively. Those with smaller standard deviations are the CPI, LALT, BWZ, WBIF and DIV with values 0.0038074, 0.0075967, 0.0096551, 0.014396, 0.0156677, respectively. There for ether mutual fund which has the greater performance and less variation is UXI and constitutes the optimal as set for interested investors.

When examining the minimum value, it can be seen that the ASHS exhibits the value -0.18522. What we observe is that the one with the greatest deviation from the minimum is DXJF with -0.1634192. By focusing our interest on the maximum values, the greatest value belongs to the ETF FCG with 0.2269237.

To be able to determine the morphology of distributions, a prerequisite apart from calculating the mean and the variance of the data employed, the skewness and kurtosis a real so investigated. So in terms of asymmetry of mutual funds that we employ we can say that most findings are less than zero (skewness<0) i.e. exhibiting negative skewness. More specifically, out of the 25 ETFs, almost half of them have negative asymmetry. The more intensely negative is the asymmetry, it means that values differ from the mean, i.e. have low returns. To be more precise, out of the twenty-five, six ETFs have positive skewness and eight are distributed normally. Low returns are not desirable for investors, because investors want as high returns as possible accompanied by lower risk. The latter case would be considered ideal by investors in order to invest their capital.

Concerning the kurtosis, which measures the degree of concentration of values – in our case the 25 mutual funds –

under the average arithmetic and to the extremities of the average arithmetic, we notice that most values seem to exhibit greater curvature of three (kurtosis>3), so we see that it is leptokurtic. This means that we have presence of extremes that are not compatible with the normal distribution and this means that the values are not equally frequented.

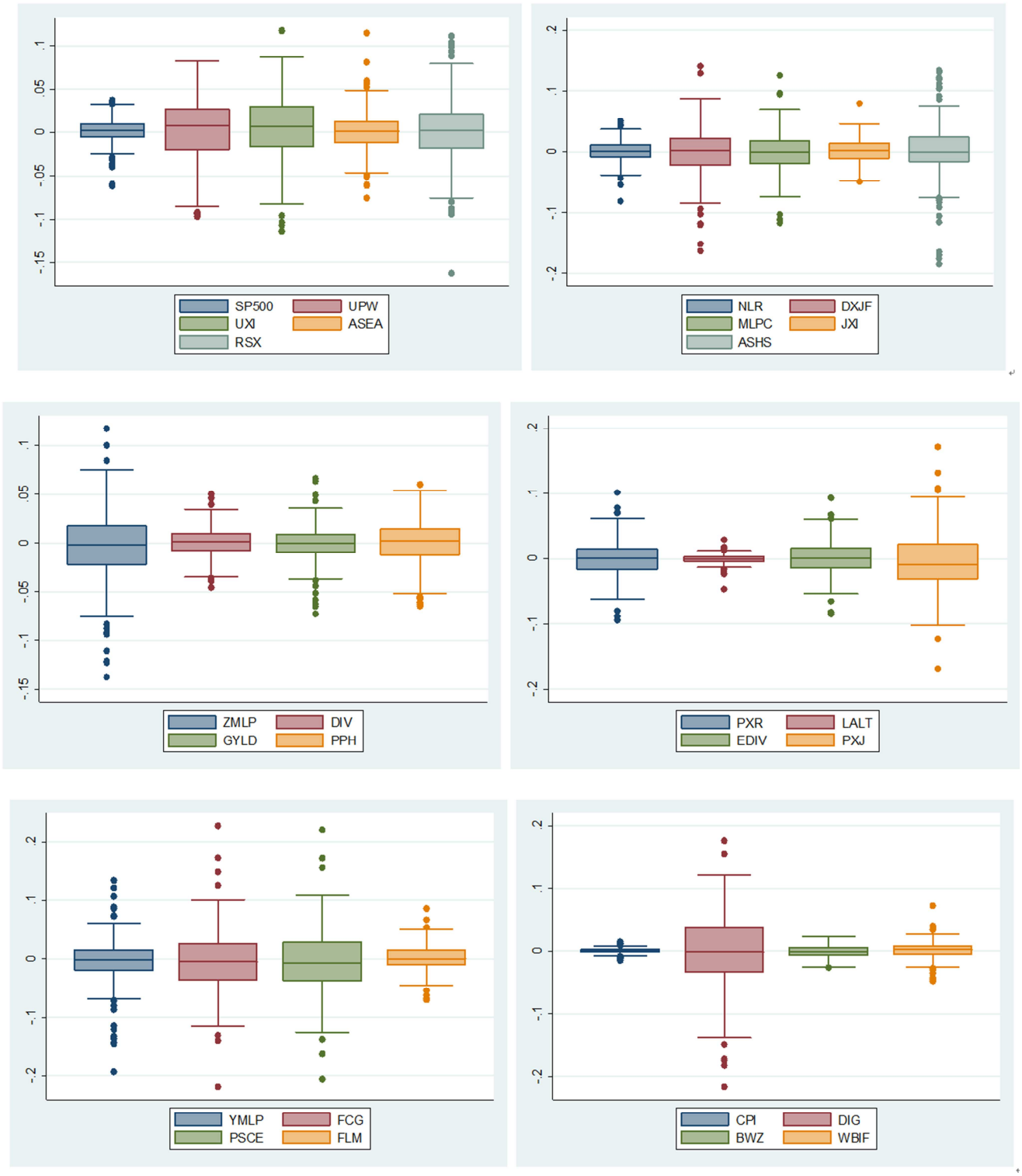

Figure 1. Boxplots of SP500 and ETFs.

Aswecansee, findings from Figure 1 are in accordance with findings from Table 1 that lays out the summary statistics about the SP500 index and the twenty-five ETFs. The boxplots also exhibit that in their majority the twenty-five ETF sex a mined exhibit that their distribution is skewed to the left, there by is negatively skewed, while the curvature of

most is leptokurtic.

For the investigation of mutual funds during the QE-tapering period, we analyzed for 205 weeks with the help of the CAPM model as mentioned above. We have relied on the following formula for the 25 excess returns of EFTs

$$\text{Excess returns of ETF}=a+b\ (\text{excessreturnsofmarketSP500index}) \quad (1)$$

In order to arrive to the results of this function, we calculated the measures SHARPE RATIO and the TREYNOR RATIO.

In 1952, the Arthur D. Roy proposed to maximize the measure "(md)/n, where mis the expected gross performance, dis a "level of destruction" (aka, minimum accept able return, or MAR) and σ is the standard deviation of returns. There as on for this is simply because Sharpe (1964) uses only the minimum acceptable performance instead of percentage risk –free in the numerator and the standard deviation of returns instead of the standard deviation of excess returns in the denominator.

In 1966, William Sharpe developed what is known as the Sharpe ratio. The revision of the 1994 Sharpe acknowledged that the basis of comparison must be an applicable benchmark, which changes with time. Sharpe's measure has been reviewed by various researchers for its validity, but even Sharpe himself agreed that this indicator has some problems. The Sharpe index ratio describes how high is the performance that an investor receives when invests and includes securities with risks. Each investor requires an extra pay off as a motivation for the additional risk he suffers or prefers to invest in risk – free securities. More specifically, the Sharpe ratio expresses the extra expected return per unit of risk. It is used for the ranking of portfolios, and the higher the value of the index is the more desirable it becomes.

The Sharpe ratio is calculated from the relation:

$$\text{Sharpe Ratio} = [E(R_i) - r_f] / \text{Standard deviation} \quad (2)$$

Where,

$E(R_i)$ stands for the average excess returns of asset i

The R_f stands for performance of an average investment with out risk (risk-free)

Std. Dev. Stands for Standard deviation

An important trequirement of this indicator is that there turns can be of any frequency (daily, weekly, monthly or annual) but should follow the normal distribution.

Treynor efficiency index for volatility (sometimes called reward-to-variability ratio or measure Treynor), was named by Treynor, (1965) [33] and is a measurement of earnings higher than those that could be earned in an investment that has no differentiable risk (e.g. bills or a fully diversified portfolio), for each unit of market risk undertaken. There as on why Treynor ratio is associated with excessive interest rate performance at no extra risk, is that employs the beta as a denominator, in contrast to the Sharpe ratio. The higher the Treynor ratio, the better is the performance of the portfolio.

$$\text{Treynor Ratio} = [E(R_i) - r_f] / \text{beta} \quad (3)$$

Where:

TR denotes Treynor Ratio

r_i denotes the portfolio performance

r_f is the performance of an average risk-free investment

β_i denotes the beta of the asset or the portfolio

Like the Sharpe ratio, Trey nor ratio does not quantify the added-value, if any, of active portfolio management. This is only a criterion for classification. The ranking of portfolios based on the Treynor index is only useful if the portfolios under consideration are branches of a larger, fully diversified portfolio. Sharpe and Treynor ratios lead to the same assessment, when we consider well diversified mutual funds, because by default the risk of the portfolio is well diversified and only systematic risk remains.

An alternative method of classification of portfolio management is the alpha of the Jensen, (1968) [14], which quantifies the added performance as the excess of invest ment over the securities market line in asset pricing model. As the methods examined determine the classification based on systematic risk only, this will rank portfolios identically.

The CAPM (Capital Asset Pricing Model), according to Brennan, (1989) [3], is employed to analyze these twenty-five ETFs. Therefore, werely on a valid and well – known model. The CAPM is specifically a model describeing the relationship between expected return and risk of investing in a security. The CAPM was introduced by Treynor, Sharpe, (1964) [29], Lintner, (1975) [22] independently, based on the earlier work of Harry Markowitz on diversification and modern portfolio theory, when:

R_a: Expected return on a security.

r_f: Risk-free rate.

B_a: Security Beta.

R_m: Expected return of the market.

Note: "Premium Risk" = (R_m-R_{rf}).

The CAPM formula used to calculate the expected return on investment. It is based on the principle that investor shave cases of systemic risk (also known as market risk or non-differentiated risk) and should be compensated in the form of risk-premium refund greater than the market rate risk-free. When investing in a security, investors demand higher returns for taking additional risk.

4. Econometric Results and Policy Implications

Table 2 presents the estimations and the econometric results about the Sharpe and Treynor ratios, as well as the Jensen's alpha, the betas and the a/b.

Table 2. Assessments and empirical outcomes about the Sharpe and Treynor ratios, as well as the Jensen's alpha, the betas and the a/b.

ETFs	SHARPERATIO	a_i p-value (a_i)	b_i p-value (b_i)	a_i/b_i	TREYNORRATIO
UPW	0.08187	0.00174 (0.526)	0.38405 (0.031)**	0.00455	0.00836
UXI	0.12063	0.00032 (0.847)	2.00260 (0.000)***	0.00016	0.00234
ASEA	0.02709	-0.00098 (0.487)	0.74831 (0.000)***	-0.00131	0.00084
RSX	0.03408	-0.00189 (0.420)	1.36946 (0.000)***	-0.00138	0.00097
NLR	0.04649	0.00011 (0.922)	0.30684 (0.000)***	0.00038	0.00270
DXJF	0.03064	-0.00192 (0.437)	1.30110 (0.000)***	-0.00147	0.00094
MLPC	-0.04607	-0.00436 (0.031)**	1.22951 (0.000)***	-0.00355	-0.00127
JXI	0.04577	0.00006 (0.959)	0.33946 (0.000)***	0.00018	0.00249
ASHS	0.00279	-0.00314 (0.331)	1.16389 (0.000)***	-0.00270	0.00011
ZMLP	-0.07364	-0.00590 (0.007)***	1.37344 (0.000)***	-0.00430	-0.00199
DIV	0.04007	-0.00055 (0.538)	0.58889 (0.000)***	-0.00094	0.00106
GYLD	-0.02265	-0.00187 (0.099)*	0.69482 (0.000)***	-0.00269	-0.00062
PPH	0.03098	-0.00123 (0.330)	0.93129 (0.000)***	-0.00132	0.00075
PXR	0.02259	-0.00185 (0.250)	1.15829 (0.000)***	-0.00159	0.00056
LALT	-0.06427	-0.00058 (0.278)	0.04091 (0.141)	-0.01417	-0.01189
EDIV	0.01085	-0.00183 (0.236)	0.98262 (0.000)***	-0.00186	0.00029
PXJ	-0.05523	-0.00626 (0.024)**	1.50757 (0.000)***	-0.00415	-0.00166
YMLP	-0.10003	-0.00749 (0.003)***	1.43839 (0.000)***	-0.00521	-0.00281
FCG	-0.08112	-0.00861 (0.009)***	1.63258 (0.000)***	-0.00527	-0.00261
PSCE	-0.04811	-0.00717 (0.031)**	1.72332 (0.000)***	-0.00416	-0.00151
FLM	0.07155	-0.00031 (0.786)	0.90459 (0.000)***	-0.00034	0.00171
CPI	0.08283	0.00010 (0.673)	0.11534 (0.000)***	0.00087	0.00273
DIG	-0.00552	-0.00576 (0.070)*	2.17302 (0.000)***	-0.00265	-0.00014
BWZ	-0.03073	-0.00026 (0.699)	-0.04532 (0.315)	0.00573	0.00654
WBIF	0.09728	0.00001 (0.986)	0.71548 (0.000)***	1.39766	0.00196

Notes:(*) stands for 90% confidence interval, (**) stands for 95% confidence interval and (***) indicates 99% confidence interval.

The results of our study lead to the mutual funds examined showing selectivity and aggressive behaviour compared with the market over the period of study. From empirical results in Table 2, we can make out that Sharpe Ratio index in 25

mutual funds takes small values. In terms of higher precision, nine of the 25 ETFs exhibit negative values. Based on the results showing the nexus of performance with risk, it should be noted that the negative relation between the misevident. Concerning the Treynor ratio, it can be said that the majority of the ETFs exhibit allow Treynor ratio which is between zero and the unit. This means regarding the specific category of global ETFs that the investor is unable to achieve high returns and at the same time is exposed to risky securities.

In this table not only the profitability indicators are introduced, but also and the Jensen's alpha and the beta, as well as the a/b. The majority of the values of alpha that are extracted by the regressions is negative. It can be easily seen that the managers of these funds are not capable of exhibiting selectivity skills and can not outperform the market. It should be noted that below each value of the coefficient alpha, lies the p-value in parentheses which shows us the level and size of statistical significance.

In this regard, the coefficient b_i (beta) enables us to judge whether the behaviour of a manager is aggressive or not. Twelve of the betas present values lower than the unit which shows us that the manager has a defensive behavior. This will result only in risk-averse investors selecting the specific mutual funds to invest because the managers of these ETFs do not seek large profits neither are risky. The remaining thirteen exhibit betas higher than the unit, which informs us that each manager has an aggressive behaviour and, thereby they will be more prone to taking risk in order to realize excess returns and out perform the market.

As regards the a/b, 18 of the 25 ETFs present negative values. This indicates that the manager does not present good management skills, in relation to the level of risk head opts. This leads to ETFs having managers with poor selectivity skills and high levels of risk at the same time. Thereby, during the period of QE-tapering, it can be found that investors in general should not trust the majority of managers of the twenty-five low-rated global ETFs under scrutiny. This informs us that during the normalization of monetary policy investment options are not as profitable as desired for interested and potential investors. This is part lyin contrast to findings about the QE period that had triggered aspur in financial markets.

5. Conclusions

This study has undertaken a thorough analysis of the financial performance of 25 global ETFs rated by one star (*) according to the Morning star, thereby low-rated ETFs, during the QE-tapering period, that is from 27/10/2014 until 24/09/2018. The measures we have employed are the Sharpe and Treynor ratios as well as the Jensen's alpha, the beta and the a/b. The model on which this analysis is based is the well-known and prestigious CAPM model. This study is differentiated from previous academic work in that it examines low-rated global ETFs during the period of QE-tapering and the normalization of monetary policy.

It can be observed that the Sharpe ratio exhibits unusually small values, thereby revealing low profitability in relation with the risk. Furthermore, the Treynor ratio has presented a similar behavior. There is evidence that ETF managers do not exhibit significant selectivity skills and therefore they can not outperform the market.

In addition, by examining the link age between risk and return, we notice that we have low performance and high risk in the majority of the 25 ETFs. It can be seen that almost half of ETFs in the sample followed a bearish behaviour whereas ETFs with bullish behaviour were less numerous during the QE-tapering period, that is during normalization times in monetary policy where interest rates were higher than the Zero Lower Bound.

That is, we look into whether managers of modern forms of mutual funds demonstrate managerial skills and to what extent they prefer aggressive behaviour in relation to the market in times of monetary policy normalization. To the best of our knowledge, this is the first academic paper covering this subject. The study is carried out in the light of the relationship between risk, aiming to provide a compass for decision making concerning investors and monetary policy makers. The authors hope that this study will help even in the slightest degree towards developing research in this specific domain.

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