Performance of Mutual Funds: Evidence from Nigeria

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ABSTRACT
Mutual funds pool funds from investors that they invest in assets on behalf of unit holders to enable investors enjoy the benefits of professionally managed portfolios of investments. Mutual funds are also known as collective investment schemes. In Nigeria, mutual funds' assets are in excess of over 750 billion naira; and with a dearth of empirical works in this area, the study investigated the performance of mutual funds (MFs) from 31st January to 31st December 2019. Deploying commonly used risk-adjusted performance criteria of Sharpe, Treynor, Jensen and information ratios and the Treynor and Mazuy model, the study computed risk-adjusted performance values using the combinations of monthly net asset values of seven (7) mutual funds types (portfolios), monthly treasury bill rates and monthly allshare index by means of Microsoft Excel worksheet and EViews 9.0 econometric software. The study found that real estate funds, bond funds, money markets funds, fixed income funds and equity funds outperformed the market benchmark index on the Nigerian financial market and that only three fund types (portfolios) - real estate funds, bond funds, and fixed income funds have the capacity to generate persistent returns above market returns to investors; and that managers of bond funds and fixed income funds can exercise superior selectivity skills but with little evidence to suggest that mixed funds could lend themselves to managers' ability to time the market. The study recommends, among others, that investors in mutual funds whose investment objective is principally profitability can do well by investing in funds that generate consistent above market returns and that professional fund managers particularly new market entrants who desire to quickly make a mark can seek to boost fund performance by establishing fund portfolios that enhance manager's stock picking capability as well portfolios that could consistently provide above market returns to unit holders.

Key Words: Financial markets, mutual funds, collective investments, fund performance, capital market

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INTRODUCTION

Collective investment schemes, otherwise known as mutual funds (MFs), have become one of the most innovative and successful investment vehicles for pooling savings from small investors by professional managers in the world today. Mutual funds (MFs) offer avenue for investors who purchase ownership units in small amountsto reap the benefits of professionally managed funds pooled into diversified portfolio ofinvestments that minimize investors' risk while enhancing returns. As at the end of 2019, the total amount of investments in MFs globally is put at 54.9 trillion US dollars with the United States having the lion share of 25.7trillion US dollars(Investment Company Institute, 2020). In Nigeria,

total non-exchanged traded mutual funds net assets were 181.35billion naira as at June 2014. This figure rose to 750.37billion naira by June 30, 2019 (SEC, Nigeria, 2020) representing over 310 percent asset growth rate.

With such huge value of assets in the coffers of mutual funds and the impressive growth potentials, concerns are high amongst investors, financial analysts and academics as to the level of efficiency these funds are being managed by those who have the responsibility to manage MFs. Thus, it is imperative to scrutinize the operational proficiency of MFs and the managerial ability of their managers. A major concern is whether these funds generate good return that justifies the trust and confidence reposed in fund managers by investors. It is, therefore, needful to assess the performance of MFsso as to determine how well their returns compare with market bench mark return and to gain insights into the managerial capacities of the fund managers, that is, their stock selection and market prediction abilities.

Performance evaluation of MFsshould be of interest to many investors if it would help them to know the type of mutual funds that consistently generate high returns to enable investors make appropriate choice of MF portfolios.

Several studies in the US, UK and other countries have examined mutual funds' performance. Blake and Timmermann (1998), Carhart (1997), Gruber (1996), Jensen (1967), and Labao and Gomes (2015)found that managers of MFscould notbeat the market bench mark return while in some instances performed below market indices. Cuthbertson, Nitzsche, and O'Sullivan (2004) found evidence to support stock picking ability of managers of income stock andgrowth stock type mutual fundsin the UK. In India, Triparthy(2017) provided proof of reversal of MFs' performance but offered evidence to back managerial capacity to predict the market. Notwithstanding, Gusni, Silviana and Hamdani (2018) found that manager's ability to predict the market and the size of the fund did not significantly influence MFs'efficiency in Indonesia. In the UK, Ntozi-Obwale, Fletcher and Power (2009) also found little evidence that managers' stock picking skills contributed to the effectiveness and efficiency of unit trusts.

Evidently, despite the enormous size of MFs' assets and the growing interest of academics, investors and others to appropriately assess the operational capability of mutual funds across the world, there is yet no consensus on the capacity of managers of MFs to beat the market bench mark, and the evidences on fund managers' asset pickingand market predictioncapacitiesare mixed and scanty.

In Nigeria, there is a dearth of empirical works available in the public domain that investigate the operational performance of mutual funds (collective investment schemes). And with an ever growing number of MFs and equally rising number of fund managers, and a huge portfolio of fund assets in excess of 800 billion naira, the need to empirically examine the performance of MFs in Nigeria is of utmost necessity.

There are currently 85 mutual funds schemes spread across seven different categories of fund types, viz: bonds, ethical, equity-based, money market, fixed income, mixed, and real estate funds; being managed by 71 professional fund managers in Nigeria (SEC, Nigeria, 2020).

This study implicitly raises a number of research questions that shape the specific objectives of the paper, which are to:

i. Investigate the ability of MFsto generate persistent returns above market returns to investors,

ii. Determine the relationships between MF type (portfolios) and MFs' performance.

iii. Assess the extent to which MF types (portfolios) lend themselves to the managerial abilities of fund managers in terms of selectivity or stock picking skills and capacity to predict or time the market.

This work adds to extant literature by examining managerial capacity of MF managers to produceexcess returns to investors compared to market bench mark index. Secondly, the findings of this study should benefit investors in making the right choice of MF portfolios to assist them to achieve their investment objectives. Also the study fills the gap in the dearth of empirical literature on mutual funds in Nigeria, and hopefully wouldgenerate and redirect research interest tothis important investment vehicle that has been largely neglected in the academic circle in Nigeria.

The remaining parts of this paper are organized as follows: Immediately following this introduction is the review of relevant literature; and this is followed by the research methods. The fourth section is the results and discussionswhile the summary, conclusion and recommendations finalize the paper.

REVIEW OF RELEVANT LITERATURE

Brief Review of Theoretical Literature – Some theories provide justification for the existence, operations and trading strategies of mutual funds and a few of such theories that are relevant to this particular study are briefly examined below.

The Optimal Fund Objectives and Industry Organization Theory - The theory was formulated by Mamaysky and Spiegel (2002). The model sees the mutual fund (like other financial intermediaries) as firms established by investors to manage their investments while theinvestors go about their personal activities. The theory opines that these firms (are not like individuals endowed with utility function) but take orders from investors; thus with profound implications for the firms (mutual funds) trading styles and the effect on asset prices. Furthermore, Mamaysky and Spiegel (2002) opine that MFs are gifted with vastly spanning set of trading strategies as opposed to those of individuals and other firms.

The Rational Theory of Mutual Funds' Attention Allocation. This theory was developed by the trio of Kacperczyk, Nieuwerburgh and Veldkamp (2014). It posits that funds process information on future assets values on the basis of which they invest in "high-valued assets". The model regards the condition of the business cycle as the attention allocation variable that is used to predict information choices usable for predicting effectivestrategiesfor investmentand returns in portfolio of funds. Ultimately, the theory opines that as optimum attention allocation changesaccording to the prevailing economic condition, MF investment portfolios and the returns they generate also change. The theory has implications for fund managers' managerial abilities, their portfolio investment strategies and the differing returns across mutualfunds.

The Agency Theory is also relevant to the role and activities of mutual funds. The agency theory, traceable to Ross(1973) and Mitnick (2013), espouses the relationship and conflict that arises between, the principal, usually the business owners, and the agents, mainly business executives or managers of business organizations (such as MFs). The theory recognizes that although agents are contracted to promote the interest of the principals but that the interests of both parties are not always congruent, thus manifesting in differences in goals and level of risk aversion between the owners (in this case investors) and managers (mutual fund managers). These lie at the root of the agency problem in business organizations including financial intermediaries like mutual funds. One common technique that is used to resolve the agency problem is the use of performance-based compensation plan for managers.

Thus, the agency theory has implications for the goals MFs managers pursue, and their risk-return trade-offs.

Other theories of mutual funds exist; for instance the mutual fund's runs and liquidity management proposed by zeng (2017) which is not within the scope of this present study.

Review of Relevant Empirical Literature

There abounds a rich volume of empirical works that examined the performance of MFs, particularly from developed financial markets. Foremost works in this area are those of Friend, Brown, Herma and Vickers (1962), Treynor and Mazuy (1966), Sharpe (1966) and Jensen (1967) that studied MFs' performance with regards to whether MFs under-performed or over- performed in comparison with market portfolio index. These studies, using standard performance measures, that later came to be known in academic literature as Sharpe ratio, Treynor Ratio and Jensen's alpha generally concluded that MFs returns do not surpass the market bench mark returns.

Treynor and Mazuy (1966) explored managerial capacityof US MFs'managers (market timing ability) from 1953 to 1962 and found that MF managers can neither beatthe market nor predict the direction of the market. Their conclusion was that MFs were not successful enough in their investment activities to beat the market and could hardly recover brokerage expenses.

More recent studies by Peasnell, Skerratt and Taylor (1979),Oldham and Kroeger (2005), Bialkowski and Otten (2011), Chen, Chuang, Lin and Lan (2013), Jaksic, Lekovic and Milonovic (2015), Doshni, Elkamhi and Simutnic (2015), Tripathy (2017), and Malefo, Hsieh and Hodnett (2016) reached similar conclusion that MFs do not beat the market bench mark consistently.

However, a few other studies in the literature have contradictory findings. Grinblatt and Titman (1992), Bollen and Busse (2004), Horst and Verbeek (2000), Kaminsky, Lyons and Schmuckler (2001) provided support for persistence in the performance of MFs thatis above market return by funds that adopt momentum trading strategy particularly in emerging markets. Padobnik, Balen, Jagric and Kolanovic (2017) investigated 14 MFs from 2015to 2016 in Slovenia. They found that all the funds produced positive alpha indices that were statistically significant for 50 percent of the samples, which were indicative of superior selection ability of their managers. This is contrary to the findings of Bradfield (1998) who finds no evidence of manager's asset selection ability in South Africa.

Many studies have also investigated the ability of MF mangers to time the market. Cuthbertson, Nitzsche and O'Sullivan (2010) appraised the ability of individual UK equity funds to time the market and concluded that not much evidence existed to validatesuccessful market prediction capacity among managers of UK funds. Swinkels and Rzezniczak (2009) reached similar conclusion in Poland. Gudimetla (2015) posits that MF managers in India do not possess market prediction and selectivity talents. However, Tripathy (2017) finds that 43 percent of managers of mutual funds investigated possessed market prediction capacity.

In Bangladesh, Hasan and Mainul Ahsan (2016) investigated manager's security selection and market prediction capacityina six-year study from2010 to 2016. While employing six common performance measures to analyze weekly data of 25 MFs, they could not find consistent stock picking skills among fund managers. In addition, they found that poor selection ability led to wrong asset selection which resulted in negative profit. Furthermore, they found no market prediction capacity amongst fund managers in Bangladesh.

Similarly, in Nigeria, Ilo, Yinusa and Elumah (2017) assessed security picking talent amongst managers and based on the returns from 37 MFsthat cut across six classes of

exchange traded fund portfolios from 2012 to 2015 concluded that the funds could not consistently generate superior risk-adjusted outcomes; thus demonstrating lack of stock picking talent by fund managers. Also, Mahmuda and Abdullahi (2017) investigated the performance of certain MF schemes in Nigeria within the period 2015 to 2017 while employing commonly used performance measures. They reported that the funds generated positive Treynor and Sharp ratios but negative Jensen Alpha and concluded that the selected funds provided superior risk adjusted returns but surprisingly that fund managers lacked good asset selection talent.

Meanwhile, Cuthbertson and Nitzsche (2013) found no empirical support for the influence of market prediction capability and security selection for MFs'success in Germany. Similarly, Kowowsky, Timmermann, Wermers, and White (2001) aver that many US funds that adopt growth strategy have stock picking ability.

However, using conditional performance evaluation methodology, Ferson and Schadt's (1996) conclusion is:"conditional measures" helped in reducing the likelihood of perverse timing performance. Hence, Ferson, and Qian (2004) provided support for significant restrictive timing performance when the interest rates were rising. Ntozi-Obwale, Fletcher and Power (2009) also provided evidence to support timing capability by managers of growth and income trusts during relatively high or low dividend yields and when interest rates were high among managers of balanced trusts.In Kenya, Kamau and Maina (2019) investigated the influence of portfolio diversification on the financial performance of MFs in Nakuru County. Employing both descriptive and inferential statistics, and regression analysis on primary data, they found that the influence of portfolio diversification in bonds and financial performance of MFs is strong, positive and statistically significant. Similarly, they found the relationship between diversification in shares and financial performance of MFs to be positive, 'moderate' and significant.

The above reviews of the literature on MFs performance indicate the lack of consensus among scholars that MF managers have the capacity to successfully outdo the market portfolio benchmark return.By the same token, findings on managers' market prediction and asset selectivity capacities are mixed. Therefore, further research to investigate MFs performance is desirable to guide investors (especially in Nigeria) inmaking wise investment decisionsin mutual funds (collective investment schemes) to assist in the attainment of their investment goals.

RESEARCH METHODS

The samplesfor this study comprise of 95 Nigerian mutual funds (collective investment schemes) that operated between January 1, 2019 and December31, 2019. The samplesare inclusive of 85 mutual funds in operation as at December 31, 2019 and 10 mutual funds that exited within the period of study. The inclusion of mutual funds (collective investment schemes) that failed to survive throughout the study period helped to avoid the likelihood of survivorship bias in the sample. The samples under consideration are non-exchange traded mutual funds. The useof this set of data is justified on the basis that only a few numberof MFs are exchange traded in Nigeria. As at January 2019, only four MFs with a capitalization of 5.007 billion naira traded on the exchange and by December 31, 2019 the number remains at four but with a total capitalization of 5.166 billion naira; compared to 85 non-exchange traded funds with a net asset values of over 750 billion naira. Hence the outcomes of this endeavor would be of high interest to Nigerian investors.

The Securities and Exchange Commission (2020), the authority that controls capital market in Nigeria, classified the 95 MFs into the following seven categories - ethical funds, money market funds, equity based funds, bond funds, fixed income funds, real estate funds,

and mixed funds. It is notedthat a few mutual funds switched between fund categories within the period of study.

The data extracted from the mutual funds are the monthly sub-total of Net Asset Values (NAV) of each of the seven fund types (fund portfolios) from31st January, 2019 to 31stDecember, 2019. The data were sourced from the capital market data site of SEC, Nigeria at www.sec.gov.ng.

Monthly treasury bill rates served as risk-free rates and were obtained from Central Bank of Nigeria (CBN) statistical bulletin. Each fund type was assumed as a separate portfolio. The monthly portfolio return was computed from monthly net asset values of each mutual fund type.Also, average monthly market return was calculated from the bench mark index, monthly allshare index of the Nigerian Stock Exchange.The beta of each portfolio was computed from the monthlyportfolio return and the monthly market return while excess portfolio return and excess market return were derived by deducting the monthly risk-free rate from the monthly portfolio return and the monthly market return respectively.

Risk-Adjusted Performance Measures

The Net Assets Values (NAV) of each fund type formed the basis for the computation of fund portfolio return and it is computed by means of the following formula:

$$Rp = \left(\frac{NAV_t}{NAV_{t-1}}\right) \quad \text{.....(1)}$$

Where,

Rp- monthly return on MF portfolio,

NAV_t- Net Asset Value in current period t,

NAV_{t-1} - Net asset value in previous period, t-1.

Similarly, market portfolio return is computed from the benchmark monthly allshare index values using the following formula:

$$Rm = \left(\frac{ALLSHAREI_t}{ALLSHAREI_{t-1}}\right) \quad \text{.....(2)}$$

Where,

Rm- monthly market return,

$ALLSHAREI_t$ - Allshare index in current period t,

$ALLSHAREI_{t-1}$ - Allshare index in previous period, t-1.

Furthermore, return on fund portfolio and market return are applied in the computation of standard risk adjusted performance measures commonly employed in empirical literature. In this study, the Sharpe ratio, Treynor ratio, the Jensen alpha, information ratio, and Treynor and Mazuy model were employed to compute risk- adjusted performancecriteria for the fund portfolios. These are introduced below:

Sharpe ratio. The Sharpe ratio is also referred to as volatility ratio. It was developed in 1966 by William Forsyth Sharpe. The ratio measures per unit return from an investment. It is an indication of the safety of investor's money in mutual funds by bearing total risk. It shows the return the investor is rewarded with against the risk taken. Sharpe ratio also gives an indication of how efficient fund managers are in generating return and in diversifying their portfolio of investments. The ratio assesses portfolio performance vis-à-vis return and diversification. A higher Sharpe ratio is an indication of a better fund portfolio's performance with regards to the risk taken. A high Sharpe is indicative of superior performance.

The Sharpe ratio is presented symbolically below:

$$Sp = \frac{Rp - Rf}{\sigma p} \quad \text{.....(3)}$$

In a nutshell, Sharp ratio is the average of excess return divided bystandard deviation of excess return.

Where, Sp, is Sharpe ratio, Rp is average monthly return on portfolio, Rf is risk free rate and σp is total risk of fund portfolio return.

Treynor Ratio: The ratio is a risk-adjusted measure of portfolio performance which relates return to risk. It uses market risk (measured by beta) to divide average excess return from an investment. Treynor (1965) ratio measures an investment's capacity to compensate investors against market risk. A higher Treynor ratio implies that an investment provides a higher return for a unit ofthe market risk assumed. A high Treynor ratio for MFs return indicates superior performance, whereas, a low ratio is an indication of poor market performance. The ratio isstated symbolically, below:

$$Tp = \frac{Rp-Rf}{Bp} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(4)$$

Where, Tp is Treynor ratio, Rp is portfolio return, Rf is risk-free rate and Bp is portfolio beta (systematic or market risk).

Jensen Alpha. Jensen's alpha is otherwise known as Jensen's performance index, Itmeasures portfolio performance risk-adjusted return beyond or below the expected rate of return (as estimated by CAPM) in relation to the risk taken. Jensen's alpha represents the premium between actual portfolio return and the estimated benchmark index return vis-à-vis the level of systematic risk. The ratio is an indicator of the risk adjusted portfolio performance in terms of overall market return. A positive alpha value implies that the fund outperform the market return while a negative alpha denotes a below market performance. A positive value for alpha demonstrates that MF manager'sbeats market performance with their asset selection talent.

Jensen derived his ratio from the CAPM. Jensen's alpha is represented by the econometric model below:

$$Rp - Rf = \propto + \beta(Rm - Rf) + \in \text{ and } Rp \propto + Rf + \beta(Rm - Rf) \quad \ldots\ldots\ldots(5a)$$

Where, Rp-Rf is excess portfolio return, Rm-Rf is excess market return, $\propto$ is the intercept of the linear model. $\propto$is an indication of the fund manager's asset selectioncapacity. A positive $\propto$ value is an indication that the fund's return beat market returnwith superior stock selection ability while a negative $\propto$ value indicates poor performance implying poor stock picking skill and that the fund performs below the market.

Therefore,

$$\propto = Rp - \{Rf + \beta(Rm - Rf) + \in\} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(5b)$$

Where, β (beta) is coefficient for systematic risk, and $\propto$ is risk adjusted performance. $\in$is random error term. The final econometric and panel data form of the above model is:

$$Rp_{it} = \propto_i + Rf_{it} + B_i(Rm_{it} - Rf_{it}) \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots(5c)$$

Where, Rp_{it}- average return of mutual fund i in time t, $\propto_i$- Jensen's ratio or alpha index,
Rf_{it}- the average market risk-free rate in time t,
B_i- beta coefficient of MF portfolio
Rm_{it}- average market return in time t.
E_i- stochastic error term, i

Information Ratio (IR). The IRis also a risk-adjusted performance criterion for comparing managerial activeness skills of fund managers. It indicates the persistence or consistenceof a fund's/manager'sperformance. A high IR denoteshigh capacity of fund managers to generate additional or excess return more efficiently and persistently by taking on additional risk, while a low ratio indicates otherwise.Symbolically, the IR ratio is denoted as follows:

Information ratio, $IR=\frac{Rp-Rm}{\sigma p-\sigma m}$ ……..(6)

Where,

Rp- return of the fund portfolio, Rm is market portfolio return (bench mark index return), $\sigma p - \sigma m$ is the tracking error (standard deviation of market return subtracted from standard deviation of portfolio return).

Treynor and Mazuy Model. The TM model estimates the selectivity and market timing skills of investment managers. Treynor and Mazuy (1966) supposed that fund managers can beat the market where they have the capacity to actively predict changes in stock market activities. They adapted Jensen's model by inserting a 'quadratic term' for evaluating market timing capacity of managers. The TM model is presented below:

$Rp - Rf = \propto + \beta\,(Rm - Rf) + \gamma(Rm - Rf)^2 + \in$ ……(7)

Where,

Rp-Rf - Excess portfolio return; Rm – Rf- Excess market portfolio return, $\propto$ is the selectivity intercept, an indication of manager's selectivity or stock picking skills, γ (gamma) indicates manager's market timing ability, β indicates adjustment for public information effect.

Where γ(gamma) value is positive and statistically significant, MFs managers have superior market timing skill, an indication of superior fund performance. A negative gamma value implies fund managers' poor market prediction capacity. A negative and statistically significant gamma value would indicate poor capacity of managers to predict the market in the wrong direction.

RESULTS AND DISCUSSIONS

This paper uses monthly net asset values (NAV) of non-exchange traded MFs to analyze the overall performance of seven MF types comprising of equity based funds (EQBFs), money market funds (MMFs), bond funds (BDFs), fixed income funds (FINCFs), real estate funds (RESFs), mixed funds (MXDFs) and ethical funds (ETHFs) that operate as collective investment schemes on the Nigerian capital market. The paper evaluates the operational capability of MF types (portfolios) and not the performance of individual investment schemes.

We adopt the commonly used risk-adjusted performance criteria in the literature - Sharpe ratio, Treynor ratio, Jensen alpha, information ratio, and the Treynor and Mazuy model in these analyses. Data were analyzed by means of Microsoft Excel worksheet and Eview 9.0 Econometric software. Table 1 below presents the summary of results of data analyses based four risk-adjusted performance criteria employed:

Table 1 column 3 below presents the outcomes of the calculation of Sharpe ratio. On the table, five fund types (portfolios), viz: FINCFs, BDFs, MMFs, RESFs, and MXDFs are top performers as they generate higher returns per unit of risk for investors. They produced positive sharpe ratios. Thus, the five MF portfolios provide reasonable level of safety for investor's money in the mutual funds by bearing total risk. Contrariwise, two fund types, ETHFs and EQBFs produced negative sharp ratios indicative of poor performance by the two types of MFs within the study period. Based negativeratios of ETHFS and EQBFs, it is more beneficial for an investor to invest in risk free assets such as treasury bills than to invest in the two types of mutual funds. Similarly, as inferred from the ratio, the FINCFs are capable of generating the highest risk-adjusted return for the investor.

Table 1 about here

On table 1 column 3 above, all the seven mutual fund types (portfolios) except one did not perform well with respect to market risk or systematic risk they assumed - they produced negative Treynor ratios. Therefore, based on the Treynor ratios, all MF portfolios examined failed to compensate investors against the market risk they took. Theoretically based on this ratio, it is not advisable for investors to put their money in all six MFs except MXDFthat generated positive return per a unit of market risk. The FINCFs exhibited worst performance perunit of market risk assumed.

Using Jensen alpha as performance evaluation measure, we find on the 5th column, that five fund types – RESFs, BDFs, MMFs, FINCFs and EQBFs generated positive Jensen alpha. This implies that these fund types produced higher return than the market return. That is, these fund portfolios outperformed the market bench mark demonstrating higher stock picking capacity of the fund managers. However, two funds, mixed funds (MXFs) and ethical funds (ETHFs) generated negative alpha values, an indication that the two fund portfolios provided return lower than market return thus suggesting very poor asset selection skills of their fund managers.Hence, based on this result, it is not worthwhile for an investor to invest in MXFsand ETHFs due to managers' poor ability to select such assets. With Jensen alpha measure, RESFs are the topmost performers.

Relying on Jensen alpha, the result shows that some fund portfolios investigated viz: RESFs, BDFs, MMFs, FINCFs and EQBFs outperformed the market benchmark index on the Nigerian financial market contrary to some earlier position held in the literature that MFscannot beat the market; and in line with Labao and Gomes (2015) who specifically found that Euro fixed-income funds can beat their benchmark on the Portuguese market; and this also agrees with Tripathy (2017) that reported that about ninety percent of funds examined produced returns that exceeded the market return within the study period.

Table 1, column 6 above present's data analysis results based on information ratio criterion. The computed information ratios indicate that, fivefundportfolios – FINCFs, ETHFs, BDFs, MXFs and RESFsgenerated positive information ratios (IR) indicating consistent performance. However, two mutual fund portfolios - money market funds and equity funds,returned negative IR indicative of lack of persistence in performance thus implying market inefficiency in the long run.Therefore, the results indicate that the following fund portfolios -FINCFs, ETHFs, BDFs, MXFs and RESFsall show promise of persistence ability to generate high return in the long run.Contrariwise, MMFs and EQBFs with negative IR suggest long run persistence in generating poor return.

The Treynor and Mazuy model's alpha, beta and gamma ratios are reported on the extreme right side column of Table 1.The alpha ratio indicatesmanager's selectivity or stock picking skills. Based on Treynor and Mazuy alpha, two fund categories, bond funds and fixed income funds have positive and significant alpha values (of 0.08 and 0.07 both being significant at 5% and 1% levelsrespectively) indicating superior stock selection capacity of bond funds and fixed income fund managers. This is an indication that certain fund portfolios, in this instance the BDFs and FINCFs,lend themselves to the capacity of fund managers to engage in stock selection.(Please note that this conclusion does not conflict with the preceding conclusion reached on the basis of Jensen alpha).Thus, managers of bond funds and fixed income funds can exercise superior selectivity skills. This finding concurs with that of Podobnik, et. al. (2017) in Slovenia who found that 50 percent of sampled funds produced positive and statistically significant alpha values; which were indicative of superior selection ability of their managers. This result however contradicts Bradfield (1998) who found no basis to support managers' asset selection ability in South Africa.

Also, table 1, column 7 above equally shows the Treynor and Mazuy gamma ratios. Treynor and Mazuy γ (gamma) ratio indicates a fund manager's market prediction talent. From table 1 above, only the mixed funds have a positive and statistically significant gamma value of 22.5 (significant at 1 percent level). This suggests that managersof MXFs have superior market timing skill. However, with just one mutual fund type out of seven fund types investigated showing the existence of market timing capability, this cannot be regarded as a substantial evidence of MFs managers' capacity to predict the market on the Nigerian capital market. Nevertheless, the little evidence suggests that one fund type – the MXFs could lend themselves to manager'smarket timing ability and could be capable of superior performance if managed by managers with superior market timing skills. This conclusion tends to agree with the conclusion reached by Cuthbertson, et. al. (2010) that found no substantial basis to support successful market prediction capacity of UK MFs managers but contradicts Gudimetla (2015) who could not find selectivity and market prediction skills amongst MF managers in India.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Given the huge asset values managedby MFs and the robust growth potentials in thissub-sector of the Nigerian capital market, the need to investigate the performance of MFsin order to assesshow satisfactory the returns they generate compare with market bench mark returns, and to enquire into the managerial capacityof MF managers (vis-à-vis stock picking and market timing abilities)is imperative particularly in this country where there is a dearth of empirical works in this area. Motivated by the desire to guide Nigerian investors in making the right investment decision in mutual funds to help them realize their investment objectives, this study usesthe monthly sub-total of net assetvalues (NAV) of mutual funds, monthly treasury bill rates (as risk-free rates),and monthly allshare index of the Nigerian Stock Exchange (as the bench mark index) to assess the performance of 95 Nigerian MFs (collective investment schemes) grouped into seven (7) categories- EQBFs, MMFs, BDFs, FINCFs, RESFs, MXDFs and ETHFs by SEC, Nigeria.

Arising from data analyses conducted by means of Microsoft Excel spreadsheet and EView econometric software and deploying frequentlyadopted riskadjusted performance criteria in the literature,the following findings, in line with our objectives were made:

Based on Jensen alpha, the result shows that some fund types, viz: RESFs, BDFs, MMFs, MMFs, FINCFs and EQBFsbeat the market benchmark index on the Nigerian financial market; and secondly on the basis of the information ratio (IR), the FINCFs, ETHFs, BDFs, MXDFs and RESFs showed promise of consistence or persistence performance in the long run.

And froma juxtaposition of the two related findings above, it is deduced that three funds types – real estate funds RESFs, BDFs, and FINCFs beat the market benchmark index by generating returns above market return; and at the same time produced positive information ratios (IR) indicating consistency in performance.Thus, the findings show that the three fund types -real estate funds, bond funds, and fixed income fundsare capable of generating persistent returns above market returns to investors. Thus, we conclude that three out of the seven categories of funds investigated have the capacity to generate persistent and consistent above market returns.

Furthermore, adetailed analysis of the results shows that two fund types – bond funds and fixed income funds have positive and/or statistically significant values for all five risk-adjusted performance criteria employed in the analyses. In the same vein, equity fund reported negative, or the least risk-adjusted performance value for all five performance

criteria. Thus, bond funds and fixed income funds represent the best performing fund types (portfolios) within the period investigated on the Nigerian MF market while equity funds reported the worst performance.Hence, it is safe to conclude here that MF types (portfolios) and mutual funds' performance are highly related. The implication of this finding is that investors in mutual funds may seek to realize their profitability objective through the right choice of mutual fund type (portfolio) they invest their money in. However, since the study merely covered a one year period and the performance of MFscould be influenced by the state of the national economy within the period hence, the possibility that the finding is time and economic condition moderated should not be ignored. This is truesince certain types of financial assets may perform well or poorly based on the nation's economic condition.

Based on Treynor and Mazuy alpha, two fund categories, bond funds and fixed income funds generated positive and significant alpha values implyingsuperior stock selection capacity of MFmanagers. This infersthat certain fund types lend themselves to managers' stock picking ability.

Also, based on Treynor and Mazuy gamma ratio, mixed funds reported positive and significant gamma value thus indicating superior ability to time the market. However, with one mutual fund type out of the seven fund types exhibiting the presence of market timing capacity, it is not safe to conclude that adequate support exists for market timing skills amongst managers of MFs in the Nigerian capital market. Nevertheless, the little evidence suggests that mixed funds could lend themselves to MF manager's capacity to predict the market. Hence, it is concludedthus: In terms of managerial capabilities, fund managers appear to exhibit selectivity or stock picking ability while only little evidence exists to indicate market timing capacity.

In conclusion, the study avers that some mutual funds in Nigeria have the capacity to generate persistent and consistent returns above market returns, and that certain fund types cangenerate better returns per unit of risk taken than others. Furthermore, some MFs portfolios lend themselves to MF managers' stock picking or stock selection capacity while little evidence exists to confirmthat MFs portfolios lend themselves to managers' market prediction ability.

Recommendations

Sequel to the above findings, the study makes the following recommendations:

Mutual fund units holders whose investment objective is principally profitability could boost return by investing in funds that persistently generate above market returns.

Since mutual fund types and fund performance are highly related, investors (individual or institutional investors) could better achieve their investment objectives by investing in identified high performing funds.

In the same veins, professional fund managers, particularly new entrants who desireto quickly make a mark in the market can seek to enhance fund performance by creating fund portfolios that boost manager's stock picking capability as well those that consistently provide above market returns to unit holders.

Further work involving multi-periods study is advised in order to provide more robust results that overcome any probable limitation due to the scope ofstudy.

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TABLE 1
SUMMARY OF COMPUTED RISK ADJUSTED PERFORMANCE CRITERIA

S/NO.	FUND TYPE	RISK ADJUSTED PERFORMANCE MEASURES				
		Sharpe Ratio	Treynor Ratio	Jensen Ratio	Information Ratio	TRENOR & MAZUY MODEL
1	Equity Based Funds (EQBFs)	-0.16	-0.04	0.02	-0.22	ALPHA 0.05 BETA15.14 (10%) GAMMA 9.29
2	Money market funds (MMFs)	0.97	-0.10	0.15	-54.05	ALPHA 0.03 BETA 0.21 GAMMA 2.3
3	Bonds Funds (BDFs)	1.15	-0.19	0.18	2.32	ALPHA 0.08 (5%)* BETA-0.55 GAMMA-9.46
4	Fixed Income Funds (FINCFs)	1.46	-0.29	0.14	5.61	ALPHA0.07 (1%)** BETA-0.42 GAMMA-9.3
5	Real Estate Funds (RESFs)	0.20	-0.04	1.09	0.21	ALPHA 0.05 BETA -4.37 GAMMA7.67
6	Mixed Funds (MXFs)	0.18	0.01	-0.22	0.40	ALPHA 0.02 BETA1.94 (1%) GAMMA22.51 (1%)*

7	Ethical Funds (ETHFs)	-0.69	-0.03	-0.03	3.59	ALPHA -0.01 BETA 0.55 (5%) GAMMA-2.24

Source: Author's computations, February, 2020
KEY: * and ** indicate statistical significance at 5% and 1% levels respectively.

Brief Professional Biography of the Author

Dr. Sunday O. Igbinosa is an Associate Professor of Finance, and a former Head, Department of Banking and Finance, University of Benin, Nigeria. His teaching and research areas include: Corporate and Development Finance, Advanced Banking Processes and Management, Quantitative Techniques and Capital Market Studies. His teaching and research experience span over two decades in both private and public Universities in Nigeria. He is a Management Consultant to States and Corporate organizations; and an External Examiner to some Universities within and outside Nigeria, and an Examiner to Professional Examination bodies.