
Muideen Adejare Isiaka¹, Lydia Ebehirhmhen Okoh²
¹,²Department of Economics, Accounting & Finance, Bells University of Technology, Ota, Ogun State, Nigeria.

Abstract: This research work analysed the performance of collective investment schemes in Nigeria. It examined empirically the variability of the performance across different types of funds and across time using weekly Net Asset Value data from 2014-2018. The data was extracted from Securities and Exchange Commission journal (SEC) database. The research made use of descriptive statistics, regression analysis and ANOVA test. The results indicated that the weekly performance was not significantly different among the six types of funds, viz: Ethical Fund, Balanced Based Fund, Bond Fund, Equity Based Funds, Real Estate Fund and Money Market Fund. It is recommended that this study be replicated at ECOWAS or Sub Saharan African level.

Keywords: Mutual Funds, Bond fund, Real Estate Fund, Money Market Fund, Collective Investment Schemes, Year Effect, Month Effect

I. INTRODUCTION

According to Section 153 of the Nigeria’s Investments and Securities Act (ISA) No. 29 of 2007, Collective Investment Scheme (CIS) includes all investment schemes managed by an investment company that enables public to invest money or other assets, hold a participatory interest, share the risk and benefit according to a predetermined basis. A collective investment scheme, mostly mutual fund, enables investors to pool their money resources together in order to participate in capital markets through buying into a diversified, professionally managed portfolio.

Since the growth of CIS in the recent decades, it has played a significant role in the area of providing for retirement income, as increased responsibility is placed on the average citizen, this role will likely increase in the foreseeable future in meeting critical needs such as education, retirement and health care. CIS has made it possible for small companies or individual investor to own a diversified portfolio of investment with larger companies. [1] noted that, CIS exist in several markets, both emerging and developed such as the UK and most of continental Europe, the USA, Australia, China, Japan, Turkey, Greece and several other countries. In Africa, the largest and most developed CIS industry is in South Africa. In Nigeria the concept of mutual funds is still relatively new to many potential investors in the country. We believe that awareness is gradually building up following the emergence of more mutual funds and unit trusts. However, analysts hold that investments in mutual funds in Nigeria are so far on a small scale with a value of a few billions of Naira compared with the situation in advanced country such as the United States of America where there are thousands of mutual funds that meet their investment objectives. Investments there run into trillions of dollars as they provide safe options for wealth creation.

To [2]a well-constructed and developed mutual fund market has the capability to enhance the Nigerian economy for example, by extending capital market activities to the grassroots thereby allowing for more participation by the citizenry, organize pooling of funds for investment purposes, persuade small private enterprises to get more involved in the activities of the capital markets for long-term funds, generate profit/income capital appreciation for investors, it gives investors edge against risks as the investment policy is usually diversified over various asset classes. The CIS helps strengthen demand for Securities and provide retail investors with access to professional management of the funds. The scheme is considered to be beneficial for the development of the Nigerian capital market and gives assurance to investors with regards to the management of their funds. By imbibing a saving/investment culture, buying and selling of securities is made possible this would help boost liquidity. There is no doubt that all these benefits would bring about growth and development in Nigeria. Therefore, there is no contention that the benefits derivable from collective investment schemes if properly harnessed could be the needed catalyst to the development of the country. The need to act in this direction has become more important now than at any other point in the nation’s strides towards development.

Despite these benefits, the Nigeria’s Collective Investment Schemes market remains underdeveloped. For instance, there were only 202,059 unit holders in 2012, while the funds had a Net Asset Value (NAV) of ₦104.85 billion. As of June 2014, there were 38 fund managers in the country with just six of those accounting for 75% of the funds under management [3]. To [4], the problems that plague the industry include insufficient data points to help investors adequately evaluate the performance and value of the available mutual funds, as retail investors have little knowledge about mutual funds in Nigeria and inadequate review of the performance of the few.
existing funds. This study partly fills this gap by conducting analysis of the performance of collective investment schemes in Nigeria.

II. LITERATURE REVIEW

The collective investment fund can be defined as a way of pooling money alongside other investors together in order to benefit from the advantage of working together. According to [5], it is a plan into which investors contribute their fund which is to be managed by professional managers who share the profits from the investment and managing such funds and property. To [6], mutual fund schemes help by the pool of funds to provide opportunities for professional diversification of the collection to ease risk and increase discounts on large brokerage commission. It also assists in the absolute control of the investment. The professionally managed Mutual fund or collective investment schemes which was established in 1774 by a Dutch merchant named Abraham van Ketwich, also known as Adriaan van Ketwich, has evolved through many development and hardship. To [7] collective investment scheme is imperative and attractive because they offer exposure to a number of stocks in a single investment plan. As the number of mutual funds managers increase nowadays and at varying percentages, the need for CIS is imperative to the national growth and economy for proper management and control.

Collective investment schemes can either be open-ended or closed-ended. The open ended schemes constantly issue shares after the initial public offer while the closed-ended schemes do not constantly reissue new units and its price is determined by the forces of demand and supply. Other types of collective investment schemes include real estate investment scheme, venture capital fund and specialized fund. To [8] having a single portfolio of assets is efficient if no other portfolio of asset offers higher expected profits with the same risk. Investment then becomes imperative as the need to increase present asset and satisfy future needs as they arise.

Several studies have examined the economic importance of capital market activities in general and collective investment schemes in particular especially in relation to GDP (see [9], [10], [11], [12]). [10] examined the emerging stock market performance and economic growth using Vector Autoregressive (VAR) model and obtained a result that stock market and economic performance are positively and significant related. He also presumed that macroeconomic activity is the main basis for any shift in stock prices in the long run and that the leading economic indicator of future economic growth in Iran is the stock market in the short run. [11] postulated that there exist a long-run relationship between the stock market performance and economic growth for both monthly and quarterly series India with time series data from April, 1996 to March, 2009 using Granger causality test and Engle-Granger cointegration test. [2] specifically examined the performance of mutual funds in Nigeria for 37 mutual funds on the Nigerian Stock Exchange using monthly time series data from January 2012 to December 2015. They used Sharpe ratios, Treynor ratios and Jensen’s Alpha measure to analyse the data and the results indicated that the market generally generated negative risk premium.

While examining unit trust scheme and mutual fund [13] noted both schemes are suitable investment option in mobilizing investible funds from small savers. The conclusion was based on the analysis of data collected through a survey among critical participants in the Nigerian stock market including stock brokers, bankers and investors through a random sampling method and a questionnaire. They concluded that there is poor patronage and lack of awareness of the scheme in the Nigerian stock market. In [14], the author examined the performance of pension funds investment management in Nigeria by using the Sharpe ratio to determine the degree of the pension fund portfolio that realise returns more than the benchmarks of risk-free and stock market returns. The author found a negative and significant monthly average Sharpe ratio, this however indicate that the pension fund portfolio is underperforming in Nigeria. [12] examined managed fund in an assessment its contribution to capital market development and economic growth in Nigerian using collective investment scheme from SEC quarterly magazine for the period 2000-2013. Using Ordinary Least Square estimate, the author observed that there was a difference in the mean for MFNAV, GDP and MCAP which indicates that the Managed Fund, GDP and Market Capitalization exhibit significant variation in terms of magnitude and for Nigerian Capital Market and Economy to grow, mutual funds which makeup managed fund should be encouraged in the Nigerian capital market. It is clear that most of the previous studies established that collective investment schemes have potentials to contribute positively to the development of capital market in Nigeria.

III THEORETICAL FRAMEWORK AND METHODOLOGY

Many researchers and finance expert have used several models to empirically determine returns on securities. Some of these models include the Williams Sharpe’s Capital Asset Pricing Model (CAPM), Steve Ross’s Arbitrage Pricing Theory (APT), the Eugene Fama’s Efficient Market Hypothesis (MM) and the Modified Market Model (MMM). Capital Asset Pricing Model (CAPM) is known to be too deterministic; Arbitrage Pricing Theory (APT) is known with too many unknowns while Eugene Fama’s Modified Market Model (MMM) believes to be the market model and can be sensitive and assumed model for expected returns [15]. Efficient Market Hypothesis became controversial when some anomalies were detected in the stock market such as January effect, weekend effect or Monday effect, size effect among others (see [16], [17], [18]).

This study adapts the methodology that has been used to analyse efficiency and anomaly in stock performance to the study of collective investment schemes. This methodology is influenced by [19] and [20]. To evaluate the profit or expected returns of a particular investment scheme, the study calculated
returns on a weekly basis based on the frequency of data from the Security and Exchange Commission. Actual unadjusted returns of each fund was evaluated using the holding period return by considering both unit price and daily profits or returns as follows.

\[
R_t = \frac{NAV_t - NAV_{t-1}}{NAV_{t-1}}
\]

Where \( R_t \) is the weekly returns for week \( t \); \( NAV_{t-1} \) is the Net Asset Value in the immediate previous week and \( NAV_t \) is the Net Asset Value for the current week. The estimated weekly returns are analyse using descriptive statistics that include line graph, histogram and measures of central tendency and measures of dispersion.

The estimated model is specified as follows:

\[
R_t = a_0 + \alpha_{\text{equity}}t + \alpha_{\text{restate}}t + \alpha_{\text{3mmarket}}t + \alpha_{\text{4bond}}t + \alpha_{\text{5balanced}}t + \epsilon_t
\]

Where \( \alpha_{\text{equity}} \), represent Ethical Fund which is omitted to avoid dummy trap and multicollinearity in the regression. In addition to the regression analysis, descriptive statistics of each year returns are presented. ANOVA test was also conducted to test significance difference in mean returns among the 6 Fund types.

For the year effect, the estimated model is specified as follows:

\[
R_t = \beta_0 + \beta_1y2014_t + \beta_2y2015_t + \beta_3y2017_t + \beta_4y2018_t + \epsilon_t
\]

Where \( y2014 = 1 \) for 2014 and 0 otherwise \( y2015 = 1 \) for 2015 and 0 otherwise \( y2017 = 1 \) for 2017 and 0 otherwise \( y2018 = 1 \) for 2018 and 0 otherwise \( \beta_0 \) is the intercept the regression.

\[
R_t = \phi_0 + \phi_{\text{jan}} + \phi_{\text{mar}} + \phi_{\text{apr}} + \phi_{\text{may}} + \phi_{\text{jun}} + \phi_{\text{july}} + \phi_{\text{aug}} + \phi_{\text{sept}} + \phi_{\text{oct}} + \phi_{\text{nov}} + \phi_{\text{dec}} + \epsilon_t
\]

Where \( \phi_{\text{jan}} \), represent February which is omitted to avoid dummy trap and multicollinearity in the regression. In addition to the regression analysis, descriptive statistics of each year returns are presented.

For this study, the main source of data is from the Securities and Exchange Commission (SEC). Data were extracted weekly from January 2014- November 2018. The variables are defined as follows:

**Equity Funds**: these are mutual funds that are invested principally in stocks. Equity funds require the portfolio manager to invest the shareholder’s cash in ownership of businesses.

**Bond Funds or Fixed Income Funds**: These are funds invested primarily in bonds and other debt instruments. These are funds that invest solely in fixed income investments examples are bonds, certificates of deposit. This type of fund owns fixed income securities such as treasuries; corporate bonds etc. The types of bonds include government bond, corporate bond, municipal bond and convertible bond.

**Ethical Funds**: This can be described as funds which are marketed to certain investment companies. For example, individual that have moral objection to smoking can decide to buy shares in a mutual fund that refrains from tobacco companies.

**Real Estate Funds**: This can be defined as a type of mutual fund that focuses on investing in shares offered by public real estate companies.

**Balanced based Funds**: These are funds that consist of a variety of income, gains, capital. Balanced based funds involve investing in a variety of income-producing securities which can be fixed income or equities.
**Money Market Funds**: this is a kind of mutual fund which invests only in highly liquid cash and cash equivalent securities that have high credit ratings. It is a type of fund that invests in short term debt securities such as commercial paper, treasury bills etc.

**IV. MAIN RESULTS**

**A. Analysis of Performance of Collective Investment Schemes**

The monthly aggregate returns of Collective Investment Scheme between January and May 2014 were highly volatile. This is followed by periods of reduced volatility between the middle of 2014 to August 2015. However, the rest of 2015 is full of high volatility. Consequently, the fluctuations in 2016 were higher between the first half of the year comparing to the rest of the year.

![Figure 1: Trend of Monthly Aggregate Returns of CIS (January 2014-November 2018)](image)

It is instructive to state that the beginning of year 2017 marked the extreme fluctuations in weekly aggregate returns of CIS, and this continued to the end of the first quarters of the year. In the same vein, the fluctuation started to reduce little by little from the beginning of the second quarters of the year till December when the fluctuation died away gradually. The first quarters of 2018 is characterised with mid fluctuations. Meanwhile, the second and third quarters of 2018 were full of extreme fluctuations in the monthly returns of this scheme. Furthermore, the fluctuation in returns in the second half of 2018 was relatively moderate comparing to what was experienced in the first half of the year.

**B. Analysis of Type Effect**

The variability in performances over types of funds is presented thus: The estimated results are as follows: 0.44% is the mean value for Ethical Fund, 0.92% for Balanced Based Fund, 0.37% for Bond Fund, 0.40% for Equity Based funds, 0.52% for Real Estate Fund and 2.66% for Money Market Fund. Bond Fund registered least performance.

<table>
<thead>
<tr>
<th>Funds</th>
<th>Obs</th>
<th>Mean</th>
<th>Std.Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethical Fund</td>
<td>256</td>
<td>0.004</td>
<td>0.128</td>
<td>-0.628</td>
<td>1.689</td>
</tr>
<tr>
<td>Balanced Fund</td>
<td>256</td>
<td>0.009</td>
<td>0.155</td>
<td>-0.548</td>
<td>1.126</td>
</tr>
<tr>
<td>Bond Fund</td>
<td>256</td>
<td>0.004</td>
<td>0.087</td>
<td>-0.358</td>
<td>0.637</td>
</tr>
<tr>
<td>Equity Funds</td>
<td>256</td>
<td>0.004</td>
<td>0.118</td>
<td>-0.334</td>
<td>0.712</td>
</tr>
<tr>
<td>Real Estate Fund</td>
<td>256</td>
<td>0.005</td>
<td>0.107</td>
<td>-0.488</td>
<td>0.855</td>
</tr>
<tr>
<td>Money Market Fund</td>
<td>256</td>
<td>0.027</td>
<td>0.259</td>
<td>-0.658</td>
<td>2.122</td>
</tr>
</tbody>
</table>

This connotes that returns on Money Market Fund is the highest, followed by Ethical Fund. In the same vein, the estimated results of returns on Equity Based Fund, Bond Fund were negative while Money market Fund, Real Estate Fund and Balance Based Fund were positive.

<table>
<thead>
<tr>
<th>Source</th>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>MS</td>
</tr>
<tr>
<td>Between groups</td>
<td>.0222</td>
</tr>
<tr>
<td>Within groups</td>
<td>.023450922</td>
</tr>
<tr>
<td>Total</td>
<td>.035981216</td>
</tr>
<tr>
<td>Bartlett’s test for equal variances:</td>
<td>chi2(5) = 417.4669 Prob&gt;chi2 = 0.000</td>
</tr>
</tbody>
</table>

For the ANOVA Test carried out above, the prob>f (0.4993) is greater than 0.05. Therefore, we accept that there is no significant difference in the performance of each type of mutual funds.

To Table 3 result, money market has the highest value of 1.64%. This means that investment in money market will yield more returns compared to other types of fund. Balanced Based Funds 0.35% and Real Estate Funds also have positive returns but Equity Fund (-0.03) and Bond Funds (-0.06) have negative returns. This implies that it would not be advisable to invest in such funds for that particular period.
C. Analysis of Year Effects

The variability in performance over types of funds on annual basis are as follows: 0.68% in 2014, 1.39% in 2015, 0.11% in 2016, 1.20% in 2017 and 1.09% in 2018.

Table 4: Descriptive Statistics of Performance by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>306</td>
<td>0.0068</td>
<td>0.1302</td>
<td>-0.6281</td>
<td>1.6888</td>
</tr>
<tr>
<td>2015</td>
<td>312</td>
<td>0.0139</td>
<td>0.1797</td>
<td>-0.6578</td>
<td>2.1216</td>
</tr>
<tr>
<td>2016</td>
<td>318</td>
<td>0.0011</td>
<td>0.0337</td>
<td>-0.1306</td>
<td>0.1971</td>
</tr>
<tr>
<td>2017</td>
<td>312</td>
<td>0.0120</td>
<td>0.1812</td>
<td>-0.6578</td>
<td>2.1216</td>
</tr>
<tr>
<td>2018</td>
<td>288</td>
<td>0.0109</td>
<td>0.1882</td>
<td>-0.6578</td>
<td>2.1216</td>
</tr>
</tbody>
</table>

This implies that the highest performance was recorded in 2015 followed by 2017 and 2018 concurrently. However, the least performance was registered in 2016.

Table 5: ANOVA Results for Performance by Year

For the ANOVA Test, we reject the null hypothesis if the p-value or prob > f is less than 0.05. The result (0.8446) shows that there is no significant difference in the yearly performance of mutual funds both within and between the groups of funds.

Table 6: Regression Results for Performance by Year

The regression result for the yearly performance shows that CIS generally has positive returns with year 2015 (1.05) being the year with the highest performance result, followed by year 2017 (0.90) down to year 2018 (0.79) year 2014 (0.47) had the least but still a positive performance.

D. Analysis of Month Effects

In another perspective, the variability in performance of types of funds on monthly basis shows that the months of May and August are characterised with negative performances with the mean values of -0.0433% and -0.005% respectively.

Table 7: Descriptive Statistics of Performance by Month

<table>
<thead>
<tr>
<th>Months</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan</td>
<td>132</td>
<td>0.0000801</td>
<td>0.035449</td>
<td>-0.12949</td>
<td>0.163477</td>
</tr>
<tr>
<td>Feb</td>
<td>120</td>
<td>0.0300365</td>
<td>0.274706</td>
<td>-0.65784</td>
<td>2.121632</td>
</tr>
<tr>
<td>Mar</td>
<td>132</td>
<td>0.0018275</td>
<td>0.086454</td>
<td>-0.43194</td>
<td>0.734554</td>
</tr>
<tr>
<td>April</td>
<td>126</td>
<td>0.018224</td>
<td>0.199208</td>
<td>-0.64925</td>
<td>1.688766</td>
</tr>
<tr>
<td>May</td>
<td>132</td>
<td>-0.000433</td>
<td>0.039263</td>
<td>-0.12949</td>
<td>0.197083</td>
</tr>
<tr>
<td>June</td>
<td>132</td>
<td>0.0245018</td>
<td>0.258991</td>
<td>-0.65784</td>
<td>2.121632</td>
</tr>
<tr>
<td>July</td>
<td>132</td>
<td>0.0012979</td>
<td>0.026997</td>
<td>-0.13058</td>
<td>0.143377</td>
</tr>
<tr>
<td>Aug</td>
<td>132</td>
<td>-0.000005</td>
<td>0.096755</td>
<td>-0.64925</td>
<td>0.711476</td>
</tr>
<tr>
<td>Sept</td>
<td>132</td>
<td>0.0026258</td>
<td>0.038284</td>
<td>-0.12949</td>
<td>0.197083</td>
</tr>
<tr>
<td>Oct</td>
<td>132</td>
<td>0.022945</td>
<td>0.25799</td>
<td>-0.65784</td>
<td>2.121632</td>
</tr>
<tr>
<td>Nov</td>
<td>126</td>
<td>0.0011396</td>
<td>0.04544</td>
<td>-0.17751</td>
<td>0.247444</td>
</tr>
<tr>
<td>Dec</td>
<td>108</td>
<td>0.005676</td>
<td>0.107411</td>
<td>-0.64925</td>
<td>0.711476</td>
</tr>
</tbody>
</table>

Meanwhile, the highest performance was recorded in the month of February with the mean value of 0.30% followed by the month of June with 0.25% and October (0.23%) simultaneously. The months of May and August were observed to register poorest performances. This implies that the markets with negative return could not compensate investors for investing in risky portfolios rather than the risk-free investment. This may make capital market investment unattractive compared to the money market investment.

Table 8: Regression Results for Performance by Month

The regression result for the monthly performance shows that CIS has positive returns with the month of February (1.20%) being the month with the highest performance result, followed by the month of April (1.11%) and March (0.17%).
The regression result shows that monthly returns were highest in February as the coefficient of other Months were negative. Therefore, investors will not be willing to invest so much on these funds as it would not compensate them for investing in risky portfolios.

V. SUMMARY AND CONCLUSION

This section presents a summary of the major findings in this study based on empirical analysis of the performance of collective investment scheme in Nigeria. It is therefore expedient that these findings are summarised as follows; the weekly aggregate returns of Collective Investment Scheme between January and May 2014 were highly volatile. The first quarters of 2018 is characterised with mid fluctuations. Whereas, the second and third quarters of 2018 were full of extreme fluctuations in the weekly returns of this scheme. Furthermore, the fluctuation in returns in the second half of 2018 was relatively moderate comparing to what was experienced in the first half of the year.

Whereas, Bond Fund registered least performance. This connotes that returns on Money Market Fund is the highest, followed by Ethical Fund. In the same vein, the estimated results of returns on Equity Based Fund, Bond Fund were negative while Money market Fund, Real Estate Fund and Balance Based Fund were positive. The highest performance was recorded in the month of February with the mean value of 0.30% followed by the month of June with 0.25% and October (0.23%) simultaneously. The months of May and August were observed to register poorest performances.

Collective Investment Scheme has been widely embraced as a viable investment platform in Nigeria. This is premised on the notion that the investments have a capacity to generate higher returns in the future. However, an attempt has been made to examine that claimed in this study by analysing the performance of Mutual Funds in Nigeria alongside the variability in performance over types of funds and the variability in performance over months and year. Based on the estimated results in this study, it could be submitted that the unpredictable fluctuations in the returns of Collective Investment Scheme in Nigeria make the market to be highly volatile. This could serve as a discouragement to investors because volatility of the market increases the risk factor associated with such investment. Similarly, the variability in performances over types of funds shows that that returns on Money Market Fund is the highest whereas the reverse is the case of Bond Fund. Consequently, between 2014 and 2018, the most outstanding performance was registered in 2015 and the opposite followed in the following year. But on monthly perspective, February is the month that returns are the best in one hand while May and August are characterised with the poorest/loss of returns in the country.

VI. POLICY RECOMMENDATIONS

Based on the important findings that originated in this study, it is expedient that the following recommendations are made for the policy makers, investors, financial institutions regulators and future researchers:

1) Due to the high volatility in returns of Collective Investment Scheme in Nigeria currently, it is a matter of urgency that the monetary authorities should embark on policy measures that would eliminate the factors causing fluctuations in returns on investment in both money and capital market in the country. Also, it is important to state here that the best periods for investors to sell off their financial assets is the month of February. However, the best periods to acquire financial assets are the months of May and August respectively.

2) The need to have professional Fund Managers on board cannot be over emphasized. The fund managers help reduce a lot risks. They have experience about how the capital market works.

3) Fund managers in Nigeria need to be more proactive in order to select superior stocks which can generate positive returns. If this is followed through, it would increase the number of mutual funds in Nigeria, boost performance and increase the confidence of the investors.

VII. FURTHER STUDY

In order to further move the frontiers of knowledge, it is suggested in this study that further studies can still be carried out regarding this subject matter in ECOWAS or Sub Saharan African countries because the financial markets of majority of these countries are in the same level of development with similar economic structures. In the same vein, developing economies in Africa appear to face largely the same unique problems; hence, such an analysis could be done within the context of a panel data study.

REFERENCES


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