Effects of Macroeconomic Variables on Residential Property Investment in Abuja Metropolis, Nigeria

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Abstract- ***To ensure that the market is properly positioned, an assessment of the forces that drives the value chain is paramount. The study is geared towards examining the effects of macroeconomic variables on residential property investment performance in Abuja metropolis, Nigeria by assessing the risk- return performance of the investment; examining the trend in macroeconomic variables; establishing linkages between macroeconomic factors; and examining the effect of macroeconomic factors on residential investment performance. Both primary and secondary sources of data were utilized. The study analysed 722 rent and sale transactions sourced primarily from Registered Estate Firms to determine the sales and rents returns, and data on macroeconomic factors were collected secondarily from Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) for the study period (2001-2015). Results showed that base on risk-return performance analysis of Gwarimpa market; is considered the most performed market with stable and steady return having the least unit of risk at 35% and 43% with comparable average return at 11.05 and 12.5% for 3B/R and 4B/R respectively. The macroeconomic variables which included: the Annual Growth rate in Real GDP over the period of study falls within 2.35-8.38%, with lowest and highest real GDP observed in 2015 and 2010 respectively, the Annual Interest rate falls within 11.0-25.01%, it was observed that there was a continuous fall in interest rate from 2003 to 2008. The also result suggested that between 18.2%-83.6% and 16.2%-79% variations in three bedroom and four bedroom returns across the nine residential markets out of the twelve were significant influenced by macroeconomic indicators while three markets were not significantly influenced. The study therefore conclude that macroeconomic policy has significant effect in Abuja residential market performance in nine markets though the remaining three markets were insignificant to influence the performance.***

Indexed Terms- ***Macroeconomic variables, residential property, market performance, total returns***

I. INTRODUCTION

It is far evidently obvious that macroeconomic factors influence property returns and these dynamics of property return occurs when change, and slow adjustment of return to changes in macroeconomic policy creates a lag time, which generally makes property market to exhibit low price fluctuation. Besides, house rent sluggishness leads to irrational exuberance bubble or influences in the property market during economic booms. Unexpected changes in macroeconomic factors such as money supply, gross domestic product (GDP), interest rate, etc. affects property returns with a lag which consequently leads to instability in property investment depending on the speed of transmission mechanism: which relies on the efficiency and effectiveness of the institutional framework of Nigeria which includes the speed of administrative process, credit supply and land availability for investment and so on.

Conversely, property return also exhibits feedback reaction to macro economy, the reappraisal effect is that increasing nominal rent also causes wealth effect which raise consumption, and decreasing house rent might shrink consumption. Over the years, some Scholars have tried to establish the link between property returns and macro-economic factor with attendant success. In Europe [12], [5], [8] [18], in America [1], [11], [7], in Asia [16], [17], [9] and in Africa as developing continent [25], [10], [7], [13],

[1], [21], [20]. These studies established both short and long run relationships between macroeconomic factors and property return, and the influence of these economic factors on property return. The interaction between macro economy and residential property market indicated that GDP, inflation, interest and exchange rates are the major macroeconomic factors that influence property returns, and the existence of long run relationship between macroeconomic factors and property market has always been found [7], [18], [10], [14]. Therefore, since real property market is an aspect of global investment market, global macroeconomic determinants have become a focal point of study.

Real property investment is the giving up of a capital sum to acquire landed property in return for periodic income or benefits. Real property investment as an aspect of investment portfolio has therefore expressed interdependency with economy, and inseparable in making global investment decisions [18]. Property returns as a measure of property investment performance is a key in property market [26]; [24]. Property return as a performance indicator in the property market is influenced by several factors, including macroeconomic factors. These economic parameters otherwise known as macroeconomic factors dictate the direction and magnitude of demand and supply of space in the property investment market [1], [27]. [28], submitted that in the periods of macroeconomic instability, disequilibrium in property investment market tends to be exogenous, that is, caused by various conditions of national economic fluctuations. Volatility in property investment market is therefore influenced by these macroeconomic factors which invariably lead to upward and downward trend in property investment return. Property investment cycles are related to the periods of excess demand and excess supply in real estate market, which are described as rigid and soft markets respectively within the property market, and they are primarily affected by macroeconomic policy of national, regional and local economy [1], [4], [2]. Earlier studies on Nigeria residential property market [13], [14], [13], [21], [20] utilized nominal rent or direct rental from property market, this particular study however used total returns in performance measurement of property investment in Abuja.

II. METHODOLOGY

2.1 Research Design

The data for the study were sourced from National Bureau of Statistics (NBS) and published Central Bank of Nigeria (CBN) annual bulletin. A model was used to measure the performance property investment. To determine this return, data on annual rental values and capital values of residential property were sourced directly from Estate surveyors and Values through structured questionnaires. The study utilized both descriptive and inferential methods of analysis, and various tests of statistics were also employed for the study.

2.2 Population for the Study

Study population for the study consists of residential investment properties in Abuja Metropolis, Nigeria. The annual rental values and the corresponding capital value of residential property investments were sourced primarily from firms of Registered Estate surveyors and Valuers in Abuja. Population comprises of annual data on macroeconomic indices in Nigeria. Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) provided information on macroeconomic indices, and these are real GDP, interest rate, inflation rate, exchange rate, employment and unemployment rates.

2.3 Sources of Data for the Study

The data for the study were sourced from primary and secondary sources. The nature of data required and sources are presented in table 1 below.

Table 1: Sources and Types of Data Collected for the Study

Data Collected	Sources of Data
Rental values and actual sales prices of properties	Primary Data (Firms of Registered Estate Surveyors and Valuers)
Real GDP, interest rate, inflation rate, and exchange rate.	Secondary Data (Central Bank of Nigeria)
Employment and Unemployment rates.	Secondary Data (National Bureau of Statistics)

The study is based on 95% confidence level; therefore, the level of significant or maximum acceptable error due to human imperfection was estimated using:

$$\text{Significance Level} = \frac{100-\text{level of confidence}}{100}$$

$$\text{significance level} = \frac{100-95}{100} = 0.05 \quad (1)$$

2.4 Sampling Techniques and Sample Size

The primary data for this study was collected through field survey. The survey required the selection of firms of Estate surveyors and Valuers in Abuja to give information on rental and capital values of residential property types, and property attributes.

The current Directory of Nigeria of Institution of Estate Surveyors and Valuers (NIESV 2018) put the figure of active Estate surveyors and Valuers firms at 190 from which the relevant information on residential property investment were obtained. Therefore, the study sampled 110 firms who have information on Abuja property Market since year 2000. Also the study employed multi-stage sampling technique and at each stage of delineated residential market, systematic random sampling was adopted to select properties that have required data for the study. Systematic random sampling involved the selection of residential property units of the sample at a fixed interval on sampling frame with the first number selected at random.

2.4.1 Sample Size Determination

The sample size for each residential sub-market in Abuja was quantitatively determined using the model developed by Frankfort-Nachmias (1996) for sample size determination as follows:

$$n = \frac{Z^2 pqN}{e^2(N-1) + Z^2 pq} \quad (2)$$

Where N = population size

n = sample size

p = 95% confidence level of the target population

q = 1- p

e = Acceptable error Z = 1.96(the standard normal deviation at 95% confidence level)

2.5 Methods of Data Collection

The data were collected through field survey using structured questionnaires, Registered Estate surveyors and Valuers information and Annual published statistical bulletins of Central Bank of Nigeria (CBN) and National Bureau of Statistics (NBS) from the period of 2001-2015.

2.6 Data Analysis

2.6.1 Descriptive Analysis of total return from each of the markets was done using geometric mean, standard deviation, coefficient of variation and Sharpe ratio to determine performance of investment.

Annual holding period of return (total return) was determined as follows:

$$Total\ Return = \frac{(CV_t - CV_{t-1}) + NI}{CV_{t-1}} \quad (3)$$

Where CV_t is capital value at end of the year, CV_{t-1} is the capital value at the beginning of the year and NI represents net income or rental value.

Measure of volatility in property investment was also determined using standard deviation expressed as follows:

$$S.D = \frac{\sqrt{\sum(X_1 - \bar{R})^2}}{N} \quad (4)$$

Where X_1 is individual observation and $\bar{R}$ is the mean and N is total number of observation.

Coefficient of variation was adopted to measure the risk-return ratio of various property investments

across the markets in order to determine the profitable market at minimum risk at higher average return. in other word, it measures the relative performance of property investment with respect unit of risk taken in relation to average return. It is given as follows:

Cv. =

$\frac{\text{S.D}}{\bar{\text{R}}}$ Where S. D is standard deviation and $\bar{\text{R}}$is the me

(5)

Sharpe ratio: This measures performance on basis of the risk-adjusted return with reference to free-risk yield (coupon rate) required by a prudent investor. It is therefore used to rank the residential investment options. The study adopted free-risk yield on Federal Government Bond (FGB) to determine risk adjusted return across the markets. Risk adjusted return can be determined as follows:

$$sharpe\ index = \frac{\bar{R}-RF}{S.D} \quad (6)$$

$\bar{R}$ is mean; RF is the free risk return on government bond given by Central Bank of Nigeria at 10.35% in maturity between 2014-2017and SD is standard deviation.

Geometric Mean: this measures average growth in return over the periods of study.

$$Av.Annual\ Rate\ of\ Return = \left(\sqrt[n]{(1+X_1\ )(1+X_2)\dots(1+X_n)}\right) - 1 \quad (7)$$

Where X represents annual holding period of return (AHPR) and n represents number of year under study

Regression Analysis: Single equation regression model was employed to examine the influence of macroeconomic variables on property returns. It therefore determines the amount of variation in property returns that due to the influence of macroeconomic variables. The model is described as follows:

$$Y = C + \beta_1 GDP_{t-n} + \beta_2 INF_{t-n} + \beta_3 INT_{t-n} + \beta_4 EXCH_{t-n} + \beta_5 EMP_{t-n} + \beta_6 UNEMP_{t-n} + U_{t-n} 3.8$$

Where Y is property returns, C is constant, β is coefficient, GDP is gross domestic product, INF is inflation rate, INT is interest rate, EXCH is exchange rate, EMP is employment rate, UNEMP is unemployment rate and t-n is the number lags applied to independent variables to reflect the delayed in response of property returns

III. RESULTS

3.1 Total Returns on Three Bedroom Properties

The result of the percentage total returns on three bedrooms is shown in Figure 1 and 2 below; the returns revealed positive annual return over a given period.

The results in Utako, Area 1 and Area 10 as shown in figure below revealed that Utako had the highest return in 2001 at 38.32%, and maintained two-digit rate of returns in 2001, 2002, 2007 2008 2011 and 2013 (Figure 1); Area 1, the highest return was made in 2002 at 43.25%., and maintained two-digit rate of return from 2001 to 2006, also in 2009 and 2010 while in Area 10, the highest return was made in 2002, and maintained two digit return from 2001 to 2003, 2005, 2007, 2009-2012 and 2015. Therefore, double or two digit periods represented a good performance in the market (Figure 1).

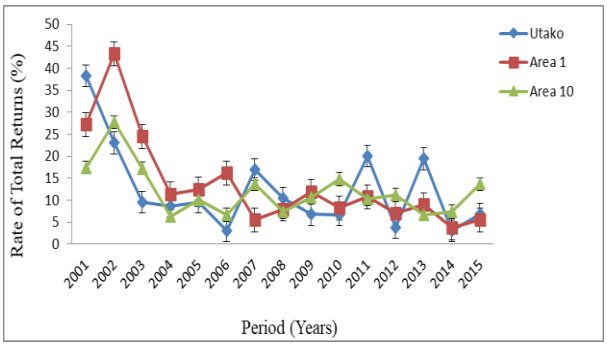

Figure 1: Rate of Total Returns (%) on Three Bedroom Properties in utako, Area 1 and Area 10

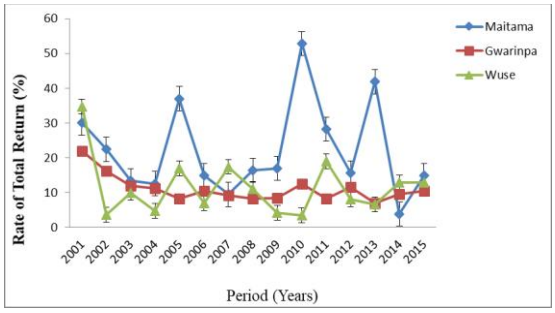

Figure 2: Rate of Total Returns (%) on Three Bedroom Properties in Maitama, Gwarinpa and Wuse

Returns on property investment in Maitama maintained highest returns in 2010 at 52.79% (Figure 2), and also maintained two-digit rate of returns across the year except 2014, this is due to the political chase game that took the better part of 2014; however, this nonetheless indicated an attractive return in the market (Figure 2). In Gwarinpa, the highest return was made in 2001 at 21.93%, and also maintained two-digit rate of return from 2001 to 2004, 2006, 2010 and 2015. The result of 2001 was its ability to accommodate both the poor and the rich at the return of democracy to Nigeria in 1999. In Wuse areas, the highest return was made in 2001 at 34.66%, and maintained two-digit rate of return in 2001, 2003, 2005, 2007, 2008 2009, 2014 and 2015, it is also another district that can take both the upper and middle class (Figure 2).

3.2 Descriptive Analysis of performance of Three Bedroom properties

The result of descriptive analysis of three bedroom residential markets in selected areas of Abuja is shown in Figure 3.

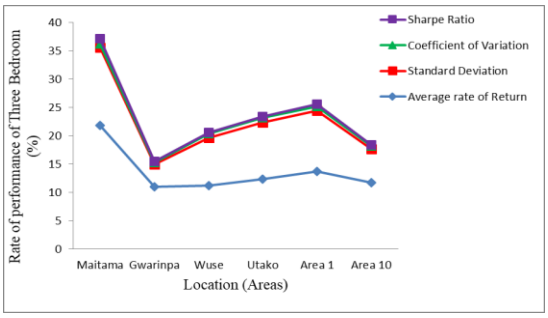

Figure 3: Descriptive Analysis of performance of Three Bedroom Residential Property Investment Returns in Selected area

The result of descriptive analysis of three bedroom residential markets in selected areas of Abuja revealed that Maitama three bedrooms markets had the highest level of volatility in the rate of return at 63%, Gwarinpa market showed the least volatility, Wuse areas had 35% (Figure 3). On the basis of average mean return, Maitama exhibited highest return, Gwarinpa, Wuse, Utako, Area 1 and Area 10 markets have almost the same average return between 11.05% - 13.77 (Figure 3). On the basis of risk to coefficient of variation, Gwarinpa is the least risky at 35% as compared with other markets; this indicates that Gwarinpa market is the most desirable investment market that offers a comparable average return at lowest risk during this period of study. On the basis of Sharpe index, Maitama market is performing more than other markets. However, this implies that Gwarinpa market has the most stable and steady return as it offered a minimum risk relative to average return and performed better, as such, it is considered the most highly performed three-bedroom residential market.

3.3 Total Returns on four Bedroom Properties

The results on the rate of return on four bedrooms property investments in selected areas of Abuja are shown in Figure 4 and 5.

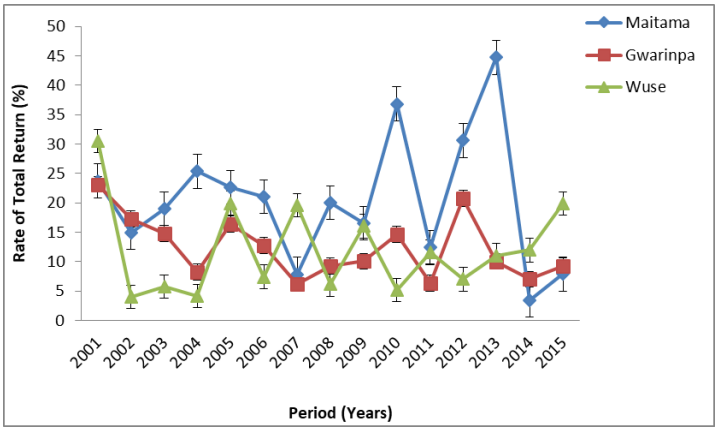

Figure 4: Rate of Total Return (%) on Four Bedroom Properties in Selected Areas of Abuja

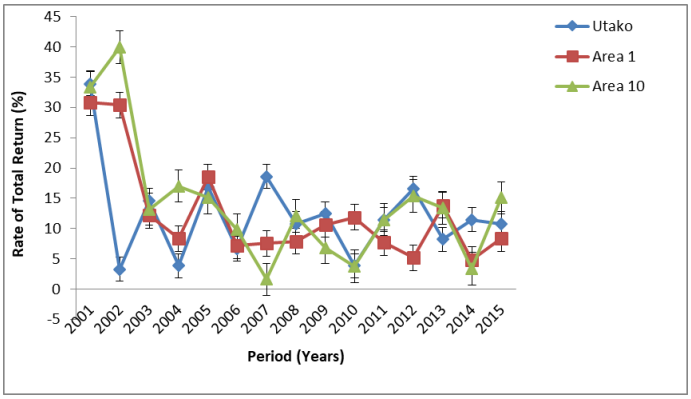

Figure 5: Rate of Total Return (%) on Four Bedroom Properties in Selected Areas of Abuja

The result revealed that Maitama had the highest return in 2013 at 44.73%, and maintained a two-digit return from 2001-2006, also from 2008-2013. In Gwarinpa, the highest return was made in 2001 at 23.15%, and also maintained a two-digit from 2001 to

2003, 2005, 2006, 2009, 2010, 2012 and 2013. In Wuse area, the highest return was made in 2001 at 30.52%, and the annual return maintained two-digit in 2001, 2005, 2007, 2009 and 2011 also from 2013 to 2015 (Figure 4). In Utako, the highest return was observed in 2001 at 33.89%, and also maintained two-digit annual return in 2002, 2003, 2005, 2007, 2008, 2009, 2011, 2012 2014 and 2015. In Area 1, the highest return was made in 2001 at 30.84%, and the return also maintained two-digit from 2001 to 2003, 2005, 2009, 2010 and 2013. In Area 10, the highest return was made in 2002 at 39.98%, and the returns maintained two-digit annual returns from 2001 to 2005, 2008, 2011, 2012, 2013 and 2015 (Figure 5). Therefore, double or two digit periods represented a good performance in the market.

The result of descriptive analysis of four bedroom residential market in selected areas of Abuja is shown in Table 2.

Table 2: Descriptive Analysis of performance of Four-Bedroom Residential Property Investment Returns

	Descriptive Analysis			
Location	Average Rate of Return (%)	Standard Deviation (%)	Coefficient of variation (%)	Sharpe ratio
Maitama	20.91	10.93	52	1.01
Gwarinpa	12.50	5.39	43	0.42
Wuse	11.21	7.69	67	0.14
Utako	12.07	7.98	66	0.25
Area 1	12.35	8.85	72	0.26
Area 10	13.57	10.80	77	0.34

The result of descriptive analysis of four bedroom residential markets in selected areas revealed that in Area 10, four bedroom markets showed highest level of volatility in the rate of return at 77% while Maitama exhibited highest and incomparable average rate of return at 20.91%. Gwarinpa, Wuse, Utako, Area 1 and Area 10 have comparable average return between 11.21%-13.57. On the basis of risk –return ratio (coefficient of variation), Gwarinpa is the least risky market at 43% as compared with other markets, this indicates that Gwarinpa market is the most desirable investment market that offers higher return in relative to risk. On the basis of Sharpe performance indicator, Maitama market outperformed others. Therefore, it can be said that Gwarinpa has the most stable and steady return as it offered minimum risk relatively to average return and performed better. As such, it is considered the most highly performed four-bedroom residential market.

Table 3: The Performance of Residential Property Investment markets in Selected Areas of Abuja

Property Type and Location	Average Returns (%)	Risk (%)	Risk-return	Ranking	Sharpe Index	Ranking
Maitama 4B/R	20.91	10.93	0.52	4TH	0.97	1ST
Maitama 3B/R	21.89	13.75	0.63	5TH	0.84	2ND
Wuse 3B/R	11.18	8.50	0.76	9TH	0.10	12TH
Wuse 4/B/R	11.21	7.69	0.69	7TH	0.11	11TH
Gwarinpa 4B/R	12.50	5.39	0.43	2ND	0.40	3RD
Gwarinpa 3B/R	11.05	3.92	0.35	1ST	0.18	10TH
Utako 4B/R	12.07	7.98	0.66	6TH	0.22	8TH

Utako 3B/R	12.41	9.95	0.81	12TH	0.21	9TH
Area1 4B/R	12.35	8.85	0.71	8TH	0.23	7TH
Area1 3B/R	13.77	10.71	0.78	10TH	0.32	4TH
Area10 4B/R	13.57	10.80	0.80	11TH	0.30	5TH
Area10 3B/R	11.79	5.92	0.50	3RD	0.24	6TH

Table 3, shows risk-return ratio and Sharpe Index performance measurement indicators of residential properties' investment in selected area of Abuja, both three and four residential units were selected for the study due to insufficient data on other units types of residential properties. Performance measurement indicators were used to rank the various residential investment markets. The lower the value of risk-return ratio the better the investment option and otherwise, the higher the value sharpe ratio the better the investment option. On the basis of both risk-return ratio (coefficient of variation), Gwarinpa three and four bedrooms were ranked first and second respectively followed by Area 10 3B/R and Maitama4B/R. Utako is the least performing market. On the other hand, on the basis of Sharpe performance index (Risk-adjusted), Maitama (4B/R) and (3B/R) were ranked first and second respectively and followed by Gwarinpa (4B/R) and Area 1 (3B/R). Wuse (3B/R) was the least performing market on the basis of Sharpe performance index.

Table 4: Analysis of Variance in Returns on Residential Property Investment

Markets	Source of Variation	SS	Df	MS	F	P-value	F crit
3B/R	Between Groups	1288.1	5	257.64	3.1061	0.013	2.321
	Within Groups	6967.1	84	82.94			
	Total	8255.1	89				
4B/R	Between Groups	1050.2	5	210.05	2.64	0.029	2.322
	Within Groups	6683.3	84	79.56			
	Total	7733.5	89				

The analysis of variance in returns on residential property investment in Abuja as shown in Table 4, revealed that the F-statistics (3.1061) is significant at p-value (0.013) less than 0.05 level of significant, this indicates that variation in the returns across the study locations are statistically significantly different. On the other hand, analysis of variance on four bedroom property returns also revealed similar result that the F-statistic (2.6401) is significant since the p-value (0.029) is less than 0.05 level of significant. This shows that variation in four bedroom property returns in the study areas are statistically significant. The significant difference in mean across the areas may be due to locational factors.

Table 5: Macroeconomic Variables in Nigeria within the year 2001-2015

Year	Real GDP (%)	Inflation rate (%)	Interest rate (%)	Exchange rate ($)	Employment rate (%)	Unemployment rate (%)
2001	3.59	17.47	18.17	113.46	22.75	13.61
2002	3.14	24.76	25.01	126.89	-9.56	12.64

2003	7.07	23.81	20.70	137.01	8.89	4.81
2004	6.19	10.10	19.18	132.86	4.08	13.43
2005	6.89	11.61	18.06	128.95	4.46	11.91
2006	5.26	8.54	17.32	126.57	-14.68	12.32
2007	6.37	6.6	16.45	116.75	1.76	12.71
2008	5.28	15.1	15.27	131.21	-0.76	14.91
2009	5.59	13.9	19.56	148.14	-12.49	19.72
2010	8.38	11.81	15.73	149.18	0.34	21.1
2011	7.19	10.33	16.76	156.72	4.08	23.92
2012	6.68	12.02	16.53	155.76	-3.79	22.5
2013	7.67	8.01	17.05	155.7	1.23	12.65
2014	5.94	8	15.87	168.01	4.01	20.01
2015	2.35	9.55	11.0	197	3.47	9.9

Source: CBN (2015) Real GDP, Inflation rate, interest rate and exchange rate
NBS (2015) Employment rate and unemployment rate.

Table 5 shows the macroeconomic variables in Nigeria between 2001 and 2015. The Annual Growth rate in Real GDP over the period of study falls within 2.35-8.38%, with lowest and highest real GDP observed in 2015 and 2010 respectively. This indicated that the performance of Nigeria economy was at its peak in year 2010 and was at trough in 2015. The Annual growth rate Inflation over the period of study falls within 6.6-24.76% and was at its peak in 2002, that is a period of highest inflation rate in Nigeria and 2007 represented a best period (6.6%) with a general low price level. The Annual Interest rate in Nigeria over the period of study falls within 11.0-25.01%, it was observed that there was a continuous fall in interest rate from 2003 to 2008, which could not be maintained in 2009 probably because of global melt down and the highest interest rate in Nigeria was at peak in year 2002 and the lowest interest rate was observed in year 2015. The Annual Exchange Rate of one dollar ($1) to Naira over the period of study falls within N113.46-N197.00. 2015 represented a period of highest demand in dollar over the Naira at N197 for $1. Also naira gained major appreciation over dollar from 2004 to 2007 after which the Naira began a continuous depreciation from 2008 to 2011 and rose to its peak in 2015. The Highest Employment Rate in Nigeria was observed 2001 after which there was continuous decrease. Unemployment Rate in Nigeria was at its peak 2009 and was at lowest in 2003.

Table 6: Descriptive Analysis of Macroeconomic Variables in Nigeria

Variables	Mean	Std. Deviation	Minimum	Maximum	N
Real GDP	5.83%	1.72	2.35	8.38	15
Inflation	12.71%	5.46	6.60	24.85	15
Interest Rate	17.49%	3.01	11.02	24.75	15
Exchange Rate	N142.95/$1	21.85	113.46	197	15
Employment	3.52%	9.05	-14.68	22.75	15
Unemployment	15.08%	5.26	4.81	23.92	15

The table shows the descriptive statistics of macroeconomic variables over the period of study (2001-2015). The average growth rate in Real GDP was 5.83% over the period, and this growth is far behind the growth rate in inflation, interest and unemployment rates which grow at 12.7%, 17.49% and 15.08% respectively. This implies that average economic activities or domestic production has been

hindered by increase in inflation, interest and unemployment rates. The growth in Employment rate was 3.52% as compared with unemployment rate at 15.08%, and this suggested that there were wider gap between rate of unemployment and employment whereby employment fell below unemployment rate.

IV. DISCUSSION OF FINDINGS

The result of performance of 3B/R and 4B/R investments revealed that Maitama is the most volatile market at 13.75% and 10.93% respectively and offered the highest rate of return at 21.89% and 20.91% and also performed comparably with alternative investment in Federal Government Bond (FGB) at 0.89 and 1.01.Gwarinpa market performed better, it has the least unit of risk at 35% and 43% for 3B/R and 4B/R respectively, as compared with other areas and also offered a comparable average rate of return at 11.05% and 12.5% and is the least volatile at 3.9% and 5.39% deviation for 3B/R and 4B/R. This finding is consistent with [19] Maitama is also found to constitute significantly the major differences in 3B/R and 4B/R property returns across the study areas.

Real GDP, exchange rate, interest rate employment rate and inflation rate have been found to have positive influence on property return across the markets; this outcome is consistent with finding of previous empirical studies [2, 9, 7, 10]. There is evidence of joint significant influence of macroeconomic variables on 3B/R property return in Maitama, Wuse, Gwarinpa and Utako and evidence of joint significant influence of macroeconomic variables on 4B/R property returns in Maitama, Wuse, and Utako.

The result revealed that 3B/R and 4B/R property return in Area1 and Area 10 is not influenced by macroeconomic variables likewise in Gwarinpa, 4B/R property returns is not influenced by macroeconomic variables employed for the study.

V. CONCLUSION

The performance indices of residential property investment carried employing macroeconomic factor in six selected areas of Abuja has identified Gwarinpa as the most performed market and only a prudent investor can invest in such market because the market has the least risk per unit of investment and has comparable returns compared with other market, unlike Maitama, the most volatile market but has an attractive return only a high risk taker investor can invest in such market. The implication of investing in Maitama is that it may lead to loss of capital as the market is subject to unusual volatility. Wuse, Utako Area1 and Area 10 are identified as non-profitable markets characterized by high volatility and low return. The influence of macroeconomic variables in Abuja residential market property market showed that the real GDP, exchange rate, inflation, interest rate and employment rate have been found to have a significant influence on property return across the nine markets. Also the effect of macroeconomic variables is insignificant in three markets Viz: Area1, Area 10, and Gwarinpa 4B/R. Therefore the implication of this outcome is that property investors tend to have an increase in property returns whenever positive macroeconomic policy is made to secure the economy by improving GDP base, increasing exchange rate to encourage local demand, the increase in employment rate increases the purchasing power in housing market, increase in interest and inflation rates increase the housing rent and prices thereby positively influence the investor's return, property return is negatively influenced by negative policy-action that meant to increase unemployment in the economy, therefore any development in economy must be continuously monitored to determine how such development affect property return. Area1 and Area10, and Gwarinpa 4B/R property returns are artificial and not significantly influenced by macroeconomic variables.

VI. RECOMMENDATIONS

Base on the findings of this study, it is therefore recommended that the Nigeria Institution of Estate Surveyors and Valuers should develop a geographical information system database that will capture the rate of returns on residential property investment across residential markets in Abuja which will help investors to know the profitable area of investment.

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