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THE INFLUENCE OF GDP ON RENTAL GROWTH OF RESIDENTIAL PROPERTIES IN EDE, NIGERIA

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Changes in rental values may occur in response to changes in economic conditions at all levels of an economy. Against the backdrop of recent unstable GDP growth rates in Nigeria, this study evaluated the influence of GDP on rental growth rates of residential properties in Ede, Nigeria with a view to providing information that will aid better understanding of the dynamics of residential property market for investment decisions. It analyzed the magnitude of growth in rental values of five residential property types comprising tenement room, one room self-contained, room and parlour self-contained, two bedroom flat and three bedroom flat to determine whether significant difference exist in the growth rates across the five property types; the extent of variation in the rental values of the properties types in Ede caused by GDP growth; and also, the relationship between GDP growth rates and rental growth rates of residential properties in the study area. The study utilized both primary and secondary data. Primary data used for the study was collected through structured questionnaire administered on landlords who rented their properties within the study period and comprised rental values of five residential property types between 2002 and 2017. Secondary data for the study comprised Nigeria's GDP figures between 2002 and 2017. Descriptive and inferential statistical techniques such as frequency table, chart, ANOVA and linear regression were used to analyse the data. The results revealed a mean yearly growth rates of 17.03%, 17.01%, 16.57%, 19.86% and 20.83% for tenement room, one room self-contained, room and parlour self-contained, two bedroom flat and three bedroom flat respectively; and the mean rental growth rates across the selected residential property types at 95% confidence level are not significantly different $F(4, 70) = 0.345$ $P = .847 > .05$. Furthermore, during the period under study, GDP values were found to have a strong positive relationship with rental values of residential properties in the study area and accounts for about 73%, 75%, 82%, 76% and 83% of variation in rental values of tenement room, one room self-contained, room and parlour self-contained, two bedroom flat and three bedroom flat respectively. The study however found no statistically significant relationship between GDP growth rates and rental growth rates of residential properties in the study area. Consequently, the study concluded that GDP growth rates do not have significant influence on rental growth rates of selected residential properties in Ede during period understudied.

Keywords: growth, influence of GDP, Nigeria, residential properties, rental value, trend

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INTRODUCTION

Residential properties have continued to attract the interest of real estate investors and developers (Okorie, 2015). Rental value has been observed as the key parameter for measuring the performance of real property investment (Hoesli & MacGregor, 2000; Boon and Higgins, 2007). Changes are likely in rental values and these changes may occur in response to changes in economic conditions at all levels of an economy. According to Born and Pyhrr (1994) and Apergis (2003), macroeconomic policy of national, regional and local economy affects values of property investment and indeed the performance of the property market. Giussani et al. (1993) and Ting (2017) posited that macroeconomic parameter such as money supply, inflation, interest, GDP significantly influence investor's decisions and also determine returns from real property investments. The close link of property investment market to macroeconomic factors is documented in a number of studies conducted at different time. Results from these studies suggested that macroeconomic factors influence property rental movements and return. These studies include Ervi, 2002; Peng and Hudsin-wilson, 2002; Nzalu, 2003; Peng, Tan and Yiu, 2005; Joshi, 2006; Eldelstein & Tsang, 2007; Sinbad & Mhlanga, 2009; Kwangware, 2010; Ojetunde, Popoola and Kemiki 2011; Ojetunde, 2013; Udoekanem, Ighalo and Nuhu, 2014; Lu and Tang, 2014; Udoekanem et al., 2015; Ting, 2017; Wahab et al., 2017. These empirical studies found that GDP is one of the major macroeconomic factors that influence rental values in the property market. Participants in property market such as investors and developers often use rental value as an indicator to appraise the viability of their investment in real property (Udoekanem, Ighalo and Nuhu, 2014). Dabara, et al., (2012) observed that factors that negatively affect the values of real property injure ownership motives and discourage subsequent investment. Besides, one of the important characteristics of real property investments is income (rental) and capital growth (Johnson, Davies and Shapiro, 2000; Karakozova, 2005 and Kivilahti and Vitanen, 2006). Rental growth has remained the major expectation of property investors from 1960 onwards due to the advent of inflation into the property markets worldwide (Crosby, 1983; Crosby, 1984; Baum and Crosby, 1995 and Wyatt, 2007).

The residential property investment market in Ede, Nigeria has become very active in the recent past. This might not be unconnected to the increased economic activities occasioned by the siting of several tertiary educational institutions within the metropolis which has led to the influx of staff, students, businessmen and people providing support services who chose to live close to their employment centers. This development has resulted in increased demand for residential property with the attendant increase in the rental values of residential properties within the area. Consequently, investors and professionals in the real estate industry need to have better understanding of the pattern of rental movements and of the characteristics of the residential property submarket in the city. This becomes necessary as renting remains an essential component of a healthy housing system of a nation (Dabara, Olatoye and Okorie (2012). More so, there has been in recent years a growing interest in modeling the role of macroeconomic factors in property market performance. In fact, Wahab et al., (2017) observed the pressing need for institutional investors to measure the influence of macro economy on the performance of real property investment.

The Nigeria's economy has been characterized by fluctuating macroeconomic statistics which depicts the unstable nature of the economy (Udoekanem, Ighalo and Nuhu, 2014). The GDP growth which measures the overall performance of an economy is not left out. GDP is said to be a monetary price for goods and services produced within a country on a specific time period. An increasing GDP suggests increase in wealth and quality of living for citizens. The improved economic status brings about more people being proper employed, leading to increased demand for suitable accommodation with a corresponding increase in rental value. Jian and Zhang (2012) observed that an increased trend on GDP will strengthen the real estate value. Nigeria's GPD growth rate has been observed to be unstable in the recent past and this could be a source of concern among real estate investors. It is against this background that this study is undertaken with the aim of evaluating the nature of relationship existing between GDP growth rates and the rental growth rates of residential property in Ede, Nigeria with a view to providing information that will aid better understanding of the dynamics of residential property market in the metropolis. The questions this study seeks to find answers to include among other: What were the magnitudes of growth in rental values of residential properties in Ede from 2002 to 2017? Is there any significant difference in rental growth rates across the residential property types from 2002 to 2017? What is the extent of variation in the rental values of the residential properties types in Ede caused by GDP growth? And is there any relationship between GDP growth rates and the rental growth rates of residential properties in the study area?

LITERATURE REVIEW

Results on empirical studies conducted around the world have shown that real property market's growth and Gross Domestic Product (GDP) growth have inseparable relationship and that rental value and rental change in properties is influenced by GDP growth. D'Arcy, McGough and Tsolacos (1994) examined the determinants of office rents in twelve European cities over the period, 1982-1993 and the study concluded that Gross Domestic Product (GDP) and unemployment rates are the most important determinants of office rents across those twelve European cities. This finding is consistent with the result obtained by McGough, Olkkonen and Tsolacos (1998) and D'Arcy, McGough, and Tsolacos (1998).

Similarly, Giussani, Hsia and Tsolacos (1993) examined office rent determinants across European cities. The study also examined the relationship between office rental value and economic activity using cross section and time-series analysis. The study investigated office rental trends for some of the largest cities in Europe and used annual data for the period 1983 - 1991 to test the changes in rental values and fluctuations in economic activity. Their findings suggest that European rental values are determined by particularly gross domestic product (GDP). Hui and Yu (2006) and Keogh (1994) also found that Gross Domestic Product (GDP) is the most significant explanatory variable for rental values.

In the Nigerian scene, Ojetunde (2013) examined the long term relationship between Nigerian residential property market and macro economy using annual data from 1984 to 2011. Multi- equation regression was adopted for data analysis. The result showed the microeconomic variables such as real GDP, inflation, exchange rate and interest rates have long term relationship with residential

property rents in Nigeria. The result further revealed that real GDP and exchange rate forecasted 31.4% of the variation in residential property rent. This result is in conformity with the earlier submission in Ojetunde, Popoola and Kemiki (2011).

Udoekanem et al., (2015) on the other hand examined the determinants of commercial property rental value in Wuse commercial district of Abuja, Nigeria between 2001 and 2012. The study adopted single equation regression. The result also revealed that real GDP and vacancy rate respectively account for 74% and 83% of variation in office rent. The study concluded that GDP and vacancy rate are the major drivers of rental change in Wuse market. This finding is congruent to the findings in Udoekanem, Ighalo and Nuhu, (2014).

Wahab et al., (2017) studied the effect of macroeconomic variables in Abuja residential property market. The study employed Augmented Dicker Fuller (ADF) test and co integration regression to analyze time-series data on annual macroeconomic indices and total property returns index from 2001 to 2015. The result further showed that between 18.2% - 83.6% and 16.2% - 79% variation in 3B/R and 4B/R property returns respectively across the seven out of twelve residential markets were significantly influenced by macroeconomic indicators. The study concluded that real GDP, exchange rate, inflation, interest rate and employment rate were found to have a significant influence on property return across the nine markets.

Broadly speaking, one of the key factors that affect the values of real property is the state of the economy (Nguyen, 2017). GDP is an economic indicator that measures the overall health of the economy. Specifically, GDP measures the total production of goods and services produced in a country and include products for current consumption and the production of capital goods as an investment for future production (National Association of Home Builders, 2001). Housing is a major part of both current consumption and private investment. Output of the housing sector for consumption consists primarily of the services of shelter and security provided by the existing housing stock. The payment of rent by tenants in rental housing is counted as part of consumer spending on services (National Association of Home Builders, 2001). As a country's GDP is increasing, it is more productive which leads to more people being employed. This increases the wealth of the nation, its population and standard of living of the citizens. With improved economic status, citizens are alleviated from low standard of living into proper employment with suitable shelter (Agarwal, 2019). Changes in economic status therefore, can greatly influence a person's ability to rent a particular residential property. This is because the higher the purchasing power, the more the rates of consumption of goods including residential property. This creates a higher demand for residential property which again pushes prices up. Jian and Zhang (2012) further posited that as an economic pointer, an increased trend on GDP will strengthen the real estate value. Conversely, when the GDP is sluggish, so is real estate value.

Most of the literature reviewed particularly from the Nigerian context showed that GDP has an explanatory influence on rental values of real property. These studies aside from been conducted outside the study area currently being examined, the studies only established the relationship between GDP and rental values. No previous empirical study from the literature on the relationship between GDP

growth rates and rental growth rates of residential properties in the study area was found. It is against this background that this study seeks to look beyond rental values to further analyze the relationship between GDP growth rates and rental growth rates of residential property in Ede, Nigeria.

METHODOLOGY AND DATA

The study employed both primary and secondary data. The primary data for the study comprised annual data on rental levels for five residential properties types. The residential property types includes: tenement (single rooms with shared toilet and kitchen facilities); one room 'self-contained' (a room with toilet and kitchen facilities attached); room and parlour 'self-contained' (a bedroom and sitting room with kitchen and toilet facilities attached); two and three bedroom flats respectively. These residential property types were considered for this study because they are predominant in the study area (Dabara et al, 2018). Other category such as duplex was excluded from this study and this could be one of the limitations of this study. The areas covered for this study includes: Agbale, Agip, Allahu Lateef, Country home, Okeresi and Oke-gada, in Ede (these areas covered both prime locations and non prime locations in Ede). The study period is from 2002 to 2017. The population for this study consisted landlords in Ede. The choice of this population was based on preliminary investigations which revealed that data on rental value of residential properties covering the study period were not readily available in estate firms in the study area; hence, the need to request for such information from landlords who rented out their residential properties within the study period. The absence of a well documented rental data is another limitation of this study. In order to obtain rent data directly from the aforementioned respondents, questionnaire survey was conducted. A comprehensive list of the respondents (landlords) is not available to the researchers; therefore, a total of three hundred and eighty five (385) questionnaires in line with sample size suggested in Cochran (1977) for infinite population (taking 95% confidence level with ±5% precision) were administered to the respondents by means of random sampling technique; however, only two hundred and eighty seven (287) questionnaires were retrieved representing 74.5% response rate. The questionnaire was structured to elicit information on the types and location of property, age of property and rental values of the property. The secondary data comprised Nigeria's GDP figures for the period 2002 - 2017 and was sourced from the database of Central Bank of Nigeria (CBN). The study utilized descriptive and inferential statistical techniques for data analysis. Charts were used to describe the pattern of annual growth rates across the five residential property types, ANOVA was used to determine whether significant difference exist in rental growth rates across the residential property types while regression model was used to establish the nature of relationship existing between GDP and rental growth rates in line with previous studies such as Dabara Lawal, Adebowale Ankeli & Gambo (2016), Okorie (2015), Udoekanem et al., (2015) and Dabara, Olatoye & Okorie (2012).

RESULT AND DISCUSSION

This section presents analysis of data collected from the study area and the discussion of results. The analysis was structured to analyze the rental trend in five

residential properties types in Ede between 2002 and 2017, the magnitudes of growth in rental values of the residential properties, the extent of variation in the rental values of the residential properties types caused by GDP growth and the relationship between GDP growth rates and the rental growth rates of residential properties in Ede. The rental values of the residential properties were sourced from landlords who rented their properties between 2002 and 2017, the GDP values for the period 2002 to 2017 were gotten from the Central Bank of Nigeria. These data units were used to determine the relationship between GDP growth rates and the rental growth rates of residential properties in the study area. The average annual rental values of the five dominant residential property types in the study area and the GDP values within the study period are presented in Table 1. The rental value data obtained from the respondents covered both prime and non prime locations of Ede. These rental value data were averaged per annum to give a general picture of the property rental market in the Ede.

Table 1: Average annual rental values of residential properties in ede and gdp values (in naira) from 2002 to 2017

Year	Tenement room	A room self-contained	A room and parlor self-contained	Two bedroom flat	Three bedroom flat	*GDP Values (' 000)
2002	2400.00	3000.00	4800.00	5600.00	7000.00	28957.71
2003	3600.00	4200.00	6500.00	8000.00	10000.00	31701.44
2004	3800.00	4600.00	6800.00	9000.00	12000.00	35020.55
2005	4800.00	5400.00	7000.00	10000.00	14000.00	37474.95
2006	5000.00	5600.00	7500.00	11500.00	18000.00	39995.50
2007	5400.00	6200.00	9600.00	14000.00	22000.00	42922.41
2008	5500.00	6800.00	10500.00	15500.00	25000.00	46012.52
2009	6000.00	7000.00	11500.00	17000.00	28000.00	49856.10
2010	6600.00	7800.00	14000.00	20000.00	34000.00	54612.26
2011	7200.00	8400.00	15000.00	24000.00	38000.00	57511.04
2012	8000.00	10000.00	20500.00	28000.00	48000.00	59929.89
2013	11000.00	15000.00	25000.00	38000.00	65000.00	63218.72
2014	14500.00	18000.00	28000.00	43000.00	78000.00	67152.79
2015	18000.00	23000.00	36000.00	68000.00	90000.00	69023.93
2016	22000.00	27000.00	40000.00	75000.00	108000.00	67931.24
2017	23000.00	28000.00	42000.00	77000.00	115000.00	68496.92

Source: Field survey 2018
*Source: * Central Bank of Nigeria*

The rental values of all the selected residential properties were increasing over the period under study (see Figure 1). Table 1 showed that the rental value of tenement rooms in Ede increased from 2,400 per annum in year 2002 to 23, 000 naira per annum in 2017. Similarly, the rental value for a room self-contained increased from 3,000 naira per annum in year 2002 to 28,000 naira per annum in 2017. Also, rental value of a room and parlour self-contained increased from 4,800 naira per annum in the year 2002 to 42,000 naira per annum 2017. The 2 bedroom flat was also observed to have increased from 5,600 naira per annum in 2002 to 77,000 naira per annum in 2017. The same applies to 3-bedroom flat as the rental value had increased from 7,000 naira per annum in 2002 to 115,000 naira per annum in 2017. This continuous general increase in the rental values of residential properties in the study area is consistent with the observations in Dabara et al., (2018) and could be attributed to the state of the Nigerian economy. The table further revealed steady

increase in the Nigeria's GDP value from 2002 to 2015 (from 28,957,710 naira to 69,023,927 naira approximately). The GDP however declined to 67,931,236 naira in 2006 but slightly improved to 68,496,920 naira in 2017. In order to illustrate the trends in rental values and GDP values, series of index numbers were further computed for both variables as shown in table 2 below. The trends are shown in figure 1 below.

Table 2: Indexes of residential properties' rents in ede and gdp values between 2002 and 2017 (2002=100)

Year	Tenement room	A room self-contained	A room/parlor self-contained	Two bedroom flat	Three bedroom flat	GDP growth rate
2002	100.0	100.0	100.0	100.0	100.0	100.0
2003	150.0	140.0	135.4	142.9	142.9	109.5
2004	158.3	153.3	141.6	160.8	171.4	120.93
2005	200.0	180.0	143.9	178.7	200.0	129.4
2006	208.3	186.7	156.3	205.5	257.1	138.1
2007	225.0	206.7	200.0	250.2	314.2	148.2
2008	229.2	226.7	218.0	277.0	357.0	158.9
2009	250.0	233.3	239.6	303.8	399.9	171.2
2010	275.0	260.0	291.7	357.4	485.6	187.5
2011	300.0	280.0	312.6	428.9	542.8	197.4
2012	333.4	333.3	427.2	500.4	685.6	205.7
2013	458.4	500.0	521.0	679.1	928.4	217.0
2014	604.3	600.0	583.5	768.5	1114.0	230.5
2015	750.1	766.7	750.2	1215.3	1285.5	237.0
2016	916.8	900.0	833.6	1340.4	1542.6	233.2
2017	958.5	933.3	875.2	1376.1	1642.6	235.2

Source: Analysis of surveyed data, 2018

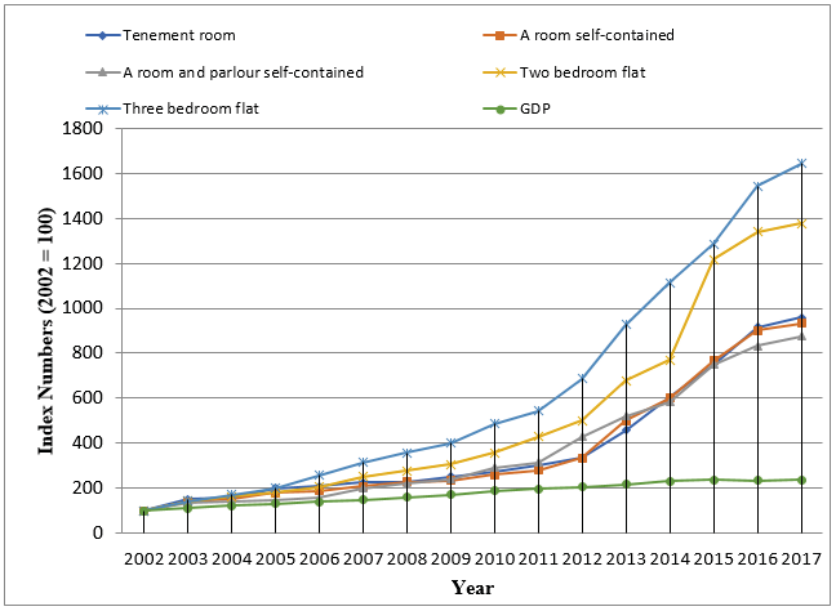

Fig. 1: Graphical Trend of Average Rental Values of Residential Properties in Ede and Nigeria GDP Values from 2002 to 2017

Table 3: Yearly growth rates of residential properties' rents in Ede and GDP between 2002 and 2017

Year	Tenement	A room self-contained	A room and parlor self-contained	Two bedroom flat	Three bedroom flat	GDP growth rate
2002	-	-	-	-	-	-
2003	50.00	40.00	35.42	42.85	42.85	9.5
2004	5.56	9.50	4.62	12.50	20.00	10.44
2005	26.31	17.39	10.29	11.11	16.67	7.0
2006	4.17	3.70	7.14	15.00	28.57	6.7
2007	8.00	10.71	28.00	21.74	22.22	7.3
2008	1.85	9.68	9.38	10.71	13.36	7.2
2009	9.09	2.94	9.52	9.68	12.00	8.4
2010	10.00	11.43	21.74	17.64	21.43	9.5
2011	9.09	7.69	7.14	20.00	11.76	5.3
2012	11.11	19.05	36.67	16.67	26.32	4.2
2013	37.50	50.00	21.95	35.71	35.42	5.5
2014	31.82	20.00	12.00	13.16	20.00	6.2
2015	24.14	27.78	28.57	58.14	15.38	2.8
2016	22.22	21.74	11.11	10.29	20.00	-1.6
2017	4.55	3.57	5.00	2.67	6.48	0.8

Source: Analysis of survey data 2018

Table 3 revealed that rental values of all the selected properties grew on a yearly basis. The growth rates vary from year to year and from one property type to the other ranging from 1.58% to 58.14% during the period under consideration. Tenement recorded its lowest growth rate of 1.58% in 2008 and the highest growth rate of 50% in 2003. Likewise, a room self contained had its lowest growth rate 3.57% in 2007 while its highest growth rate was 50% in 2013. A room and parlour self contained on the other hand, recorded 4.62% in 2004 as its lowest growth rate and had 36.67% in 2012 as its highest growth rate. Similarly, two bedroom flat had its lowest growth rate of 2.67% in 2017 and the highest growth rate of 58.14% in 2015. Finally, the three bedroom recorded 6.48% in 2017 and 42.85% in 2003 as its lowest and highest growth rates respectively. Tables 3 further showed that Nigeria GDP growth rates were unstable during the period and vary from year to year with a lowest rate of -1.6% in 2016 and highest rate of 10.44% in 2004.

Table 4: Descriptive statistics for yearly rental growth rates of residential properties

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Tenement room	15	17.0273	3.69273	3.69273	1.85	50.00
A room self-contained	15	17.0120	3.51328	3.51328	2.94	50.00
A room/parlour self-contained	15	16.5700	2.87493	2.87493	4.62	36.67
Two bedroom flat	15	19.8580	14.72960	3.80317	2.67	58.14
Three bedroom flat	15	20.8307	9.49105	2.45058	6.48	42.85
Total	75	18.2596	12.58290	1.45295	1.85	58.14

Source: Analysis of survey data 2018

Table 4 presents mean, maximum and minimum of yearly rental growth rates of all the selected residential property types. The table revealed a mean of yearly growth rate of 17.03%, 17.01%, 16.57%. 19.86% and 20.83% for tenement, a room self contained, a room and parlour self contained, two bedroom flat and three bedroom respectively during the period under study. This implies that the mean of

yearly growth rates differ across the five residential property types in the study area within the study period.

Table 5: Result of ANOVA for yearly rental growth rates of residential properties

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	226.425	4	56.606	.345	.847
Within Groups	11489.954	70	164.142		
Total	11716.379	74			

Source: Analysis of survey data 2018

Analysis of variance (ANOVA) test was employed to determine whether the difference that in the mean yearly rental growth rates across the property types were significant. The results show that the mean of yearly rental growth rate across the five selected residential property types at 95% confidence level are not significantly different $F(4, 70) = 0.345$ $p = .847 > .05$.

Table 6: Result of regression analysis on the influence of GDP on rental values

Statistics Property types	R	R2	Std. Error	F	Sig.
Tenement room	.854	.730	.065	37.869	.000
A room self-contained	.864	.746	.080	41.048	.000
Room/parlour self-contained	.908	.824	.101	65.555	.000
Two bedroom flat	.869	.755	.229	43.145	.000
Three bedroom flat	.911	.830	.280	68.324	.000

Source: Analysis of survey data 2018

In line with the findings of earlier studies, Table 6 reveals a strong positive correlation between GDP values and rental values of residential properties. The correlation coefficients between GDP values and tenement room, a room self-contained, a room and parlor self-contained, two bedroom flat and three bedroom flat are 0.854, 0.864, 0.908, 0.869 and 0.911 respectively, and all are significant at 0.000 levels. This therefore implies that as the GDP values increase, the rental values of tenement, a room self-contained, a room and parlor self-contained, two bedroom flat and three bedroom flat also increase translating to increased returns to the investors.

The table also shows that GDP values accounts for about 73%, 75%, 82%, 76% and 83% of variation in rental values of tenement room, one room self-contained, room and parlour self-contained, two bedroom flat and three bedroom flat respectively. The F-statistic shows the significance of the regression models. The F-statistic are 37.869, 41.048, 65.555, 43.145, 68.324 and all are significant at $p = 0.000$. This implies that the model fits the data utilized and consequently can be used as a basis for predicting the rental values of residential properties in the study area.

Table 7 shows there is no statistically significant relationship between GDP growth rates and rental growth rates of residential properties in the study area within the period under consideration. A very weak positive correlation was found between GDP growth rates and rental growth rates of all selected residential properties. It can be seen From Table 7 that the correlation coefficients (R) are 0.004, 0.072, 0.073, 0.045 and 0.308 for tenement room, one room self-contained, room and parlour self-contained, two bedroom flat and three bedroom flat respectively. Although

the correlation between the growth rates of GDP and three bedroom flat (.308) is higher than those of the other four property types, all the correlations however, are not significant (with p values >.05).

Table 7: Result of regression analysis on the influence of GDP on rental growth rates

Statistics Property types	R	R^2	Std. Error	F	Sig.
Tenement room	.004	.000	1.197	.000	.988
A room self-contained	.072	.005	1.136	.068	.798
A room/parlour self-contained	.073	.005	.930	.069	.797
Two bedroom flat	.045	.002	1.232	.027	.873
Three bedroom flat	.308	.095	.756	1.367	.263

Source: Analysis of survey data 2018

These suggest that a unit increase in GDP growth rates resulted in an insignificant increase in rental growth rates of the residential properties in the study area during the period understudied. The presence of very weak positive correlations between GDP growth rates and rental growth rates of residential properties could be attributed to the type of lease structure inherent in the rental submarket. Residential tenants generally have long-term leases that cannot be changed in the middle of economic changes. Furthermore, the F-statistic of .000, .068, .069, .027 and 1.367 (with p values > .05) suggest the regression models are not significant. This implies that GDP growth rates can be used as a basis for predicting the rental growth rates of the selected residential properties in the study area.

CONCLUSION

This study analyzed rental growth rate across the five residential property types in Ede, Nigeria with the aim of determining the relationship between GDP growth rates and rental growth rate of the selected residential property types. It was found that the mean of yearly rental growth rate across the five selected residential property types were not significantly different F (4, 70) = 0.345 p = .847 > .05. Rental values of all the property types have very significant positive correlation with GDP values. However, there is no statistically significant relationship between GDP growth rates and rental growth rates of the selected residential. Consequently, GDP growth rates have been found to have no significant influence on rental growth rates of selected residential properties. The implication of this absence of a feedback relationship between GDP growth rates and rental growth rates of residential properties is that GDP growth rates can be used as a basis for predicting the rental growth rates of the selected residential properties in the study area and that both variables are not determined contemporaneously.

REFERENCES

Agarwal, P. (2019). Economic Growth Factors [online]. Available at http://www.intelligenteconomist.com/economic-growth/ (Accessed 26 May, 2019)

Apergis N. (2003), 'Housing Price and Macroeconomic Factor: Prospect within the European Monetary Union', International Real Estate Review, 6(1), pp. 63-74.

Baum, A. and Crosby, N. (1995) Property Investment Appraisal. 2ndedn. London: International Thomson Business Press.

Boon, F.N. and Higgins, D. (2007) 'Modelling the Commercial Property Market: An Empirical Study of the Singapore Office Market', Pacific Rim Property Research Journal, 13(2), pp. 176-193.

Born, W. and Pyhrr, S. (1994) 'Real Estate Valuation: The Effect of Market and Property Cycles', Journal of Real Estate Research, 4(3), pp. 455-485.

Brooks, C. and Tsolacos, S. (1999) 'The Impact of Economic and Financial Factors on UK Property Performance', Journal of Property Research, 16(2), pp. 139-152.

Crosby, N. (1983) 'The Investment Method of Valuation: A Real Value Approach', Journal of Valuation 2, pp. 48-59.

Crosby, N. (1984) 'The Investment Valuation Techniques: The Shape of things to come', The Valuer, 53(7), pp. 196-7.

Dabara, I D; Okunola A S; Odewande A G and Okorie A (2012) 'Assessment of the Rental Values of Residential Properties in Urban slums: the case of Osogbo, Osun State Nigeria' In: Laryea, S., Agyepong, S., Leiringer, R. and Hughes, W. (Eds) Procs 4th West Africa Built Environment Research (WABER) Conference, Abuja, 24-26 July 2012, pp. 1-7.

Dabara, I.D., Olatoye, O. and Okorie, A. (2012) 'An examination of the Tenancy Agreement as a Shield in Property Management in Nigeria', International Journal of Business Administration. 3(4), pp. 54-66. Available online at http://www.sciedu.ca/journal/index.php/ijba/article/view/1474/725

Dabara, D. I. Omotehinshe, O. J. Uwaezuoke, I. N. Soladoye, J. O. and Chiwuzie, A. (2018) 'Building Material Prices and the Rental Values of Residential Properties in Ede, Nigeria', Proceedings of the 18th African Real Estate Society (AFRES) Annual Conference, Abeokuta, Nigeria, 11th -15th September 2018, pp. 213-233

D'Arcy, E., McGough, T. and Tsolacos, S. (1994) 'Modelling the Determinants of Office Rental Values in Major European Cities', Discussion Papers in Urban and Regional Economics, Series C, 7(99), Department of Economics, University of Reading, Reading, England.

D'Arcy, E., McGough, T. and Tsolacos, S. (1998) 'An Econometric Analysis and Forecasts of the Office Rental Cycle in the Dublin Area', Discussion Papers in Urban and Regional Economics, Series C, 11(33), Department of Economics, University of Reading, Reading, England.

Edelstein, R. and Tsang D. (2007) 'Dynamics of Residential Housing Cycles Analysis', Journal of Real Estate Finance, 35 pp. 295-313.

Ervi, I. (2002) 'Rental Adjustment in the Office Market – Empirical Evidence from Hong Kong', Unpublished MSC Thesis, University of Hong Kong.

Gardiner, C. and Henneberry, J. (1988) 'The Development of a Simple Office Rent Prediction Model', Journal of Property Valuation and Investment, 7(1) pp. 36-52.

Giussani, B., Hsia, M. and Tsolacos, S. (1993) 'A Comparative Analysis of the Major Determinants of Office Rental Values in Europe', Journal of Property Valuation and Investment, 11(2) pp. 157-173.

Hetherington, J.T. (1988) 'Forecasting of rents' in: MacLeary, A. and Nathakumaran, N. (eds.) Property investment theory, UK: Spon.

Hoesli, M. and Macgregor B. (2000) Property Investment: Principles and Practice of Portfolio Management, Longman Essex.

Hui, E.C.M. and Yu, K. H. (2006) 'The Dynamics of Hong Kong's Office Rental Market' International Journal of Strategic Property Management, 10, pp. 145-168.

Jian, D. S. and Zhang, X. W. (2012). 'The Real Estate Economics', Shanghai: University of Finance and Economics, pp. 23-78.

Johnson, T., Davies, K. and Shapiro, E. (2000) Modern Methods of Valuation of Lands, Houses and Buildings. 9thedn. London: Estates Gazette.

Joshi, H. (2006) 'Identifying the Asset Price Bubble in the Housing Market in India' Research bank of India, 27(2), pp. 73-88.

Karakozova, O. (2005) Modelling and Forecasting Property Rents and Returns. Helsinki: Swedish School of Economics and Business Administration.

Keogh, G. (1994) 'Use and investment markets in British Real Estate' Journal of Property Valuation and Investment, 12(4), pp. 58-72.

Kivilahti, A. and Vitanen, K. (2006) 'Dynamics of the Commercial Property Markets in Finland', Paper presented at the XXIII FIG Congress held at Munich, Germany, 8th – 13th October, 2006.

Kwangware, B. (2010) 'The Impact of Macroeconomic and Financial Factor on the Performance of the Housing Property Market in South Africa', Department of Economics and Economic History, Rhodes University Conference, Grahamstorm.

Ling, D. and Naranjo, A. (1997) 'Economic Risk Factor and Commercial Real Estate Returns' Journal of Real Estate Finance and Economics, 14(3), p283-30.

Lu, X. and Tang, B. (2014) 'On the Determinats of UK Housing Prices', International Journal of Economics, 5(2), pp. 57-64.

McGough, T., Olkkonen, O. and Tsolacos, S. (1998) 'The Cyclical Behaviour of Office Rents in Helsinki', Paper presented at the Annual Conference of the European Real Estate Society Maastricht, Netherlands.

National Association of Home Builders (2001) 'Housing's Impact on the Economy', Report submitted to the Millennial Housing Commission [online]. Available at https:llgovinfo.library.unt.edu/mhc/papers/nahb.doc (Accessed 23 May, 2019).

Nguyen, J. (2017) Four Key Factors that Drive the Real Estate Market, [online]. Available at https://www.investopedia.com/articles/mortgages-real-estate/11/factors-affecting-real-estate-market.asp (Accessed 24 May, 2019).

Ojetunde I., Popoola N. and Kemiki O. (2011) 'On the Interaction between the Residential Property Market and the Macro Economy', Journal of Geography, Environment and Planning, 7(2), [online]. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2105998 (Accessed 10 November, 2018)

Ojetunde, I. (2013) 'Revisiting Interaction between the Nigeria Residential Property Market and the Macro Economy', Journal of Geography, Environment and Planning, 7(2), pp. 256-278.

Okorie, A. (2015) 'Housing Infrastructural Facilities as Determinants of Rental Values of Residential Properties in Osogbo, Osun State Nigeria', Journal of Research in Business Economics and Management (JBREM), 1 (1), pp.7-14.

Peng, R. and Hudson-Wilson S. (2002) 'Testing Real Estate Price Bubble: An Application to Tokyo Office Market', Proceedings of 7th conference in Seoul.

Peng W., Tan B. and Yiu M. (2005) 'The Property Market and the Macro Economy of the Mainland: A Cross Region Study Hong Kong', Institute for Monetary Research China.

Sinbad, M. and Mhlanga, R. (2009) 'The Interaction between Property Return and the Macro Economy', International Journal of Business and Social Research, 3(4), pp. 146- 152.

Ting, X. (2017) 'The Relationship between Interest Rates, Income, GDP Growth and House Prices', Research in Economics and Management, 2(1), pp. 30-37

Udoekanem, N. B., Ighalo J. I. and Nuhu, M.B (2014) 'Determinants of Commercial Property Rental Growth in Minna, Nigeria', EUL Journal of Social Science, 5(1), pp. 60-75.

Udoekanem, N.B., Ighalo J. I., Sanusi, Y. A. and Nuhu M. B. (2015) 'Office Rental Determinants in Wuse Commercial District of Abuja, Nigeria', University of Mauritius Research Journal, 21, pp.1-26.

Wahab, M.B., Adeogun , A.S., Morenikeji, G.B., Mammah, M. and Abdulkareem, S.O. (2017) 'Effect of Macroeconomic Factors on Residential Property Returns in Abuja, Nigeria', EUL Journal of Social Sciences, pp. 133-149.

Wyatt, P. (2007) Property Valuation in Economic Context. Oxford: Blackwell.