# Interest Rate as a Determinant of Housing Prices in Lagos State, Nigeria

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## ABSTRACT

*The study investigates the roles of interest rate in determining housing prices in Lagos Nigeria. Data on prices of houses in the study area were collected using structured questionnaire. Two hundred and forty seven copies of the questionnaire were administered on the registered Estate Surveyors and Valuers, out of which 230 were duly filled and returned for analysis. Mortgage lending rates between 1989 and 2008) were obtained from the Statistical Bulletin of the Central Bank of Nigeria (CBN). Trend analysis and correlation analysis were used for data analysis. The results show that there is a relationship between the prevailing interest rate and housing prices in the study area while the correlation analysis also shows that the relationship between interest rate and housing prices is significant at 5% for block of flats and detached house and 10% for duplex. The study further reveals that fluctuation in mortgage lending rates leads to corresponded change in the prices of the residential property and that when there is high rate of interest in the lending policy of the economy, there is always a corresponding increase in the prices of the property and vice-versa. Consequently, it is recommended among others that financial institutions should reduce their lending rates to affordable rate.*
*Keywords: Interest rate, cost of capital, housing prices, financial institutions*

## INTRODUCTION

Housing which is one of the basic needs of man is a special type of asset that serves a dual role, both as consumer goods and investment goods. Its development involves high capital outlay and occupies a unique place in the life of human beings. The desire and dream of almost everyone is to own his or her own house but the means of achieving it is sometimes hampered by lack of sufficient funds and has therefore contributed to the rise in the shortage of housing accommodation (Balchin, 1989 and Ajayi, 1996). The success of any housing development rests solely on the availability and adequacy of finance (Ajayi, 1996). A developers who desires to own an accommodation can hardly finance the project out of their equity capital due to their low level of income, hence the percentage of people committing their personal funds of life savings to building their own houses is quite low which sometimes makes them unable to complete the project due to the lack of sufficient funds thereby making them resort to seeking financial assistance in form of debt financing

by obtaining loan from banks, mortgage institutions and other financial institutions (Balchin, 1989). Sometimes, they stop the project midway or alter the plan in an attempt to save cost. Financial inadequacies do make some developers resort to procuring inferior materials which often result in reduction of the durability of the houses constructed.

Since Nigeria's independence, various governments, in its bid to stem this trend embarked on a lot of programmes and policies aimed at providing low-cost housing as well as, owner occupier housing to cater for the needs of the public but all these efforts have not really stemmed the tide. Government in a bid to provide citizens with access loans to develop their own houses promulgated the National Housing Decree No. 3 of 1992 aimed at providing a pool of funds (contribution by government, insurance companies, and banks) for the construction, purchase or rehabilitation of their own housing needs. The law also requires the contribution of 2.5% of workers basic salaries over a period of time to be eligible to qualify for the mortgage loan. This gave rise to the re-structuring of the Federal Mortgage Bank of Nigeria (FMBN) as well as, the establishment of the Primary Mortgage Institutions (PMI).

The stipulated conditions by most of these financial institutions have pronounced effect on housing development which has obstructed the affordability of mortgage loan by developers (Federal Mortgage Bank of Nigeria, 2006). Therefore, the amount of money available to individuals and developers determine the quantity, quality and the market value of the housing property (Ajayi, 1996). Tsatsaronis and Zhu (2004) express that a house being the largest single asset of most households whose value is linked to residential real estate represents an important component of the aggregate portfolio of financial intermediaries. The behaviour of these house prices, therefore, influences not only business cycle dynamics through their effect on aggregate expenditure but also the performance of the financial system, through their effect on the profitability and soundness of financial institutions (Tsatsaronis and Zhu, 2004).

This particular importance from a policy perspective depicts the relationship between housing prices and the structure of mortgage finance markets. Since the purchase of a house requires external financing, the cost of mortgage credit and the conditions under which it becomes available plays a major role in shaping the pattern of house price dynamics (Balchin, 1989). Conversely, the servicing of outstanding mortgages, determined in part by the dynamics of house prices, has an impact on the financial health of lenders ability and willingness to extend credit. The pessimistic view of many researchers is that house price has been over valued in many countries and will face downward correction in the near future (Tsatsaronis and Zhu, 2004). Most literatures both in the developed and the developing countries have in one way or another dealt with issues on interest rates, inflation and the positive effect of their changes on the prices of property (Fisher, 1930; Megbolugbe and Cho, 1993, Fergus and Goodman, 1994; Tsatsaronis and Zhu, 2004; Donald, 2005) while none has been carried out on interest rate as a determinant of housing prices in Lagos State, Nigeria which this study aim to study. Megbolugbe and Cho (1993) carried out a study on housing prices in Hong Kong and concluded that housing price depend on housing demand and supply which can be influenced by household size and marital status.

In a similar development, Donald (2005) investigates the effect of interest rate and inflation on housing value, the study showed that interest rate and inflation affects the value of investment in several ways mostly inhibiting economic growth.

However, in developing countries such as Nigeria, research works have been carried out to examine the effect of macroeconomic variables on housing price/value determinants. Bello (2000) focuses on the determinant of residential property values in Lagos metropolis employing the nature and characteristics surrounding the property as independent variables without considering the effect of macroeconomic variable such as interest rate in determining the value of the property. Akereja (2004) studies property investment and the capital market in Lagos State and concluded that the availability of funds for property investment through financial institutions would pave way for rapid social economic development of Nigeria, but no mathematical model was employed for the findings. In another ocassion in 2003, Bello also assessed the effects of borrowing to finance investment; but the work only focuses on rental housing in Lagos State, without considering its effect on capital value of a property. This study, therefore, focuses on the fluctuation of interest rate as it affects the supply, demand and prices of housing in Nigeria.

## Interest Rate as Housing Macro-economic Indicator

Finance is crucial to any housing development and Nigeria is beset with twin problems of inadequate supply and extremely high cost of housing finance (Ughamadu, 1995). Falegan (1998) describes interest rate as the price for obtaining loanable funds and the return for parting with liquid funds. According to the study, prior to the Structural Adjustment Programme (SAP) in 1986, the level of interest rate was determined by the Central Bank of Nigeria and both deposit and lending rates were fixed by the Central Bank based on policy decisions while in 1987 the Central Bank of Nigeria introduced a market based interest policy which allowed banks to determine their deposit and lending rates.

Owoeye (2003) asserts that an increase in interest rate charge by banks makes the local currency to appreciate while the international currency depreciates. Friedman (1978) argues that when the rate of growth of money supply declines, the rate of change of real national income will not show any appreciable effect during which interest rates typically continue to rise at an accelerated pace. Garibaldi (1997) demonstrates that monetary policy has an asymmetrical effect on real output if prices are less flexible downwards than upwards and suggests that negative money-supply shocks and/or increases in interest rates reduces output more than how monetary expansions raises it.

Monetary policy may cause asymmetric output responses if asymmetric information in the banking sector produces binding credit constraints. Thus, it is argued that increase in money supply would result in higher construction activities, through a costly and time-consuming process. Moreover, the short-run effect of a monetary shock depends on whether banks think it to be transitory or permanent. A monetary shock is expected to influence asset markets before it affects output markets. NDIC (1999) opines that when the interest on loanable fund (cost of capital) is reduced, investors will have more access to bank credits for expansion which will lead to higher profit level (Owoeye, 2003). Agene (1991) asserts that as a result of relatively high interest rates in one currency such as dollars, the

result will be appreciation of that currency versus the remaining currencies. The rate of interest charged by banks determine exchange rate, in that a rise in interest rate in a country's economy attracts foreign investors thereby increasing the demand for local currency making it to appreciate. The relationship between interest rate and exchange rate tend to hold only in inflationary environments when changes in the nominal rate of interest are entirely the outcome of changes in the expected rate of inflation. On the contrary, the high lending rates of banks and instability in the foreign exchange market results in serious depletion of the nation's foreign exchange resources which have badly affected the industry with import dependence of about 60 percent of its raw materials (Jagboro and Owoeye, 2004).

NDIC (1999) also describes interest rate as the income to capital because of the part it plays in production (Owoeye, 2003). Borrowing and lending are indispensable activities in any advanced economic system. There are three vital interest rates in Nigeria which are the rediscount rate, the lending rate, and the call money rate. The rediscount rate exerts great influence on the other two and by law all interest rates in the commercial banking system are linked to it. The rediscount rate determined by the Central Bank of Nigeria (CBN) is the rate at which it will discount commercial bills and the rate has usually been 11% above the treasuring bill rate. The lending rate is mutually agreed upon among banks, but its upper and lower limits are set by the C.B.N.

Falegan (1998) is of the view that interest rate affects the vital operating costs of a business, changes in interest rate therefore exert a significant impact on investment. According to the study, most developments are undertaken by developers' borrowed savings that attract payments for their use in form of interest charges. The decision to develop is therefore the relationship between the rate of net return and the rate of interest. Under such situation, investment is likely to be encouraged where the prospective net return is more than the interest on the money to be borrowed. However, where it is less, development and low rate of interest tends to encourage development as material prices reduce. Oladapo (1992) observes that across the nation, many good and profitable real estate projects and housing have either been put on hold or abandoned half way because of general scarcity of capital or because of sky rocketing cost of borrowings.

Expressing further, Oladapo (1992) opines that in the period of high interest rates when tender figures level are generally high, both the client and the contractor bear the burden, but when the rate is 'normal' there is the tendency for tender figure level to get reduced, resulting in both the client and the contractors reaping the benefits. Delayed payment, sudden rise in interest rates when they happen may disrupt contractors' planned income and expenditures. In the era of high interest rate, profit margin of construction companies is considerably reduced, as there is less construction activities, the result lead to reduction in housing supply which can lead to high price of available houses. Raftery (1998) notes that owing to the inefficient domestic resources for construction financing, the local financial markets in Asia are often unable to meet the financing requirement of the construction sector. Therefore under competitive conditions, the level of interest rates and not the supply of construction loan is the crucial factor constraining construction activities.

Fisher (1930) asserts that interest rates are made up of three components viz

future time preference, risks and inflation expectations. According to the researcher, the simple way to drive this interest rate is to add a premium into the best lending rate. This rate represents the cost of capital, which is used to guarantee the investor that the rental income can cover the cost of borrowing. In his hypothesis, Fisher (1930) puts that interest rate tend to be 'high' when prices are rising and 'low' when prices are falling. Mills and Hamilton (1984) in another development employed the user cost concept to account for gains from inflationary expectations other than only the cost of interest associated with holding housing capitals. The study concludes that the real cost of the housing is the key element of home purchase, because high interest rates tend to add the real burden of debt payments. According to Harris (1989), housing price is affected by real interest rates.

Muecllbauer and Murphy (1997) reveal that demographic changes and interest rates were two important factors causing the U.K housing price boom in the late 1980s. This was done by examining the dynamics of housing prices in 130 US metropolitan areas. Jud and Winkler (2002) state that real housing price appreciation is strongly influenced by the growth of population, income changes, construction costs and interest rates. Tse (1996) in the study about local market suggests that a declining real interest rate tend to stimulate housing prices, and reveals the possible effect of falling interest rates on local property markets in the inflationary period. The study, however points out that falling interest rate sometimes play a supporting role.

**Highlights on the Study Area**
Lagos State is located in the South- Western coast of Nigeria along the Bight of Benin. Lagos State encompasses an area of 358,862 hectares or 3,577sq.km representing 0.4% of Nigerian territorial land mass (Lagos State Government of Nigeria, 2011). The State is bounded in the North and East by Ogun State of Nigeria, in the West by the Republic of Benin, and in the South by the Atlantic Ocean, Lagos State is the most populous conurbation in Nigeria. With a population of about 7,937,932, it is currently the third most populous city in Africa after Cairo and Kinshasa, and currently estimated to be the second fastest growing city in Africa but 7th fastest in the world (Lagos State Government of Nigeria, 2011). Politically, Lagos State which has its capital in Ikeja was created on the 17th of May, 1967 and by virtue of the (State Creation and Transitional Provision) Decree No 14 of 1967, which restructured Nigeria into twelve States. Although, it is one of the smallest States in the country, yet, it accommodates the highest population of people (Lagos State Government of Nigeria, 2011).

Lagos is the economic and financial capital of Nigeria, where many housing developers have their head offices for business because of the high demand for housing by the teeming population. The State also has the highest number of both mortgage and other financial institutions where the developers can borrow money for housing development. In spite of the movement of the seat of the central government to Abuja, Lagos still serves as the busiest city in the country housing the headquarters of most commercial concerns, two airports and waterways (*http/www.lagosstate.gov.ng*). Due to the high demand of housing in Lagos State, the State is considered as the study area for this work.

**METHOD**

Primary and secondary data were both employed for this study. The instrument for the primary data collection was the self administered questionnaire; the questionnaire was used to gathered information on the prices of the houses from the practicing Estate Surveyors and Valuers in Lagos State. The sampling frame for the study comprises all the 276 Estate Surveyors and Valuers in the study are (NIESV directory, 2009). Using Kothari (2004) formula, the sample size for the is given as 247. Thus, a total of 247 copies of the structured questionnaire were randomly administered out of which 230 were successfully filled and returned representing 93.1% return rate. The secondary data used were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin between 1989 and 2008. The information collected were analyzed using trend analysis to examine the trends in prevailing mortgage lending rates and housing prices for the period under investigation. Correlation analysis was used to assess the relationship between the prevailing interest rate and housing prices in the study area.

**RESULTS AND DISCUSSION**

This section is devoted to the analysis of trends of interest rate and housing prices of residential houses in the study area. In determining the movement (increase or decrease) of interest rate and housing prices in the study area, a time frame of twenty years (1989-2008) was adopted. In order to determine how interest rate and housing prices have changed over this period under review, trend analysis was carried out to determining this movement. Table 1 shows the index value of housing prices of residential houses. The index value was gotten by dividing the mean value by the based value (first year value) for each of the property examined. Table 2 shows the interest rate for the years under review. Chart 1 to chart 4 reveal that house prices followed a gradual movement from 1989 to 2000 for the three types of houses under consideration.

During these periods however, there was a decrease in housing price in 1991, 1994, 1997 and 2000 due to low/reduction of interest rate recorded in the same years. However, there was a sharp increase in the prices between 2001 to 2008 which can be attributed to the level of inflation being experienced in the various years coupled with the rate of urbanization witnessed in the study area. This led to high demand of accommodation which is not consistent with supply. This resultant effect could be attributed to the increase in government spending coupled with wage increment leading to a corresponding increase in the cost of services which also affected prices of the houses. It was observed that the interest rate movement (trend) is not stable during the period under review. It witnessed a zigzag movement throughout the period. The highest was recorded in 1993 and least in 1997. When the interest rate is high, the profit margin of housing developer is considerably reduced as evident from the charts 1 to 4. The implication of this is the possible reduction of housing supply with attendant high prices of the available ones. Conversely, a reduction in interest rates as shown on the charts 1 to 4 leads to a rise in aggregate demand for housing thereby leading to an increase in construction activities. In order to determine the relationship between interest rate and housing price (HP), the relative importance of

independent variable (interest rate) in predicting the housing price has been examined. This is done by looking at the coefficient of correlation between the dependent variable, that is, housing price (table 1) and independent variable (interest rate). The larger the absolute value of the correlation coefficient, the stronger the linear association. Table 3 shows these for all classes of housing property and the independent variable.

**Table 1:** Index value of residential properties in Lagos State

| Years | Block of flats | Detached house | Duplex |
|---|---|---|---|
| 1989 | 1 | 1 | 1 |
| 1990 | 1.3 | 1.17 | 1.23 |
| 1991 | 1.28 | 1.15 | 1.23 |
| 1992 | 2 | 2 | 1.17 |
| 1993 | 3.4 | 2.92 | 2.77 |
| 1994 | 3.2 | 2.75 | 2.62 |
| 1995 | 3.8 | 3.25 | 3.08 |
| 1996 | 4.4 | 3.83 | 3.69 |
| 1997 | 4.3 | 3.75 | 3.54 |
| 1998 | 4.74 | 4.33 | 4.15 |
| 1999 | 5.4 | 4.83 | 4.17 |
| 2000 | 5.2 | 4.75 | 4-62 |
| 2001 | 8 | 6.83 | 6.92 |
| 2002 | 8.08 | 6.92 | 7.63 |
| 2003 | 10.38 | 8.67 | 8.31 |
| 2004 | 11.34 | 10.54 | 11.69 |
| 2005 | 12.08 | 13.04 | 14.77 |
| 2006 | 17.26 | 16.66 | 17.69 |
| 2007 | 18.96 | 20 | 19.39 |
| 2008 | 20.72 | 22.63 | 21.23 |

*Source:* Field survey, 2011

**Table 2: Interest rates**

| Years | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
|---|---|---|---|---|---|---|---|---|---|---|
| interest rate | 21.20 | 23.00 | 20.10 | 20.50 | 28.02 | 15.00 | 14.25 | 13.55 | 7.43 | 10.09 |
| Years | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
| interest rate | 14.30 | 10.44 | 10.09 | 15.57 | 11.88 | 12.21 | 8.68 | 8.26 | 9.49 | 12.70 |

*Source:* Central Bank of Nigeria Statistical Bulletin 2008.

**Chart 1:** Trend analysis for interest rate and block of flats
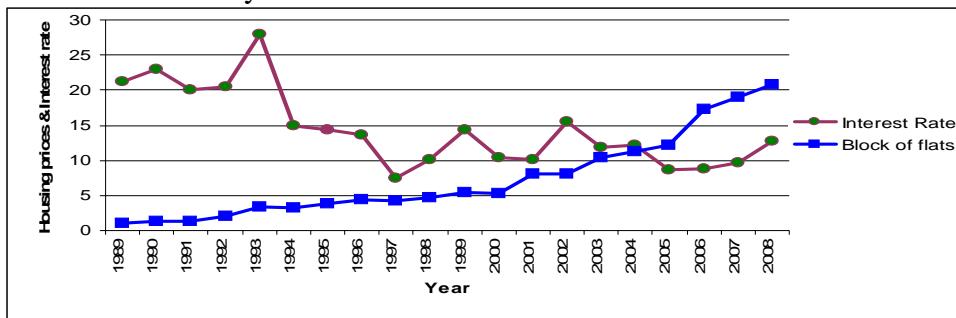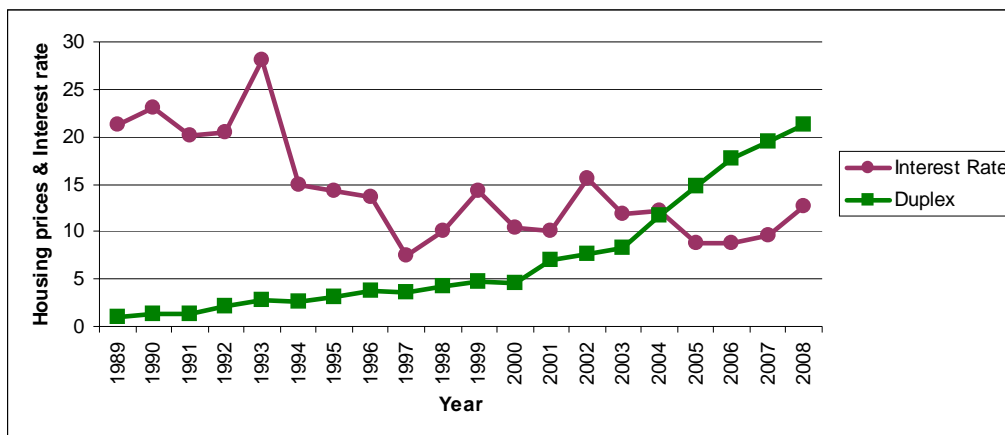


*Source:* Field survey, 2011

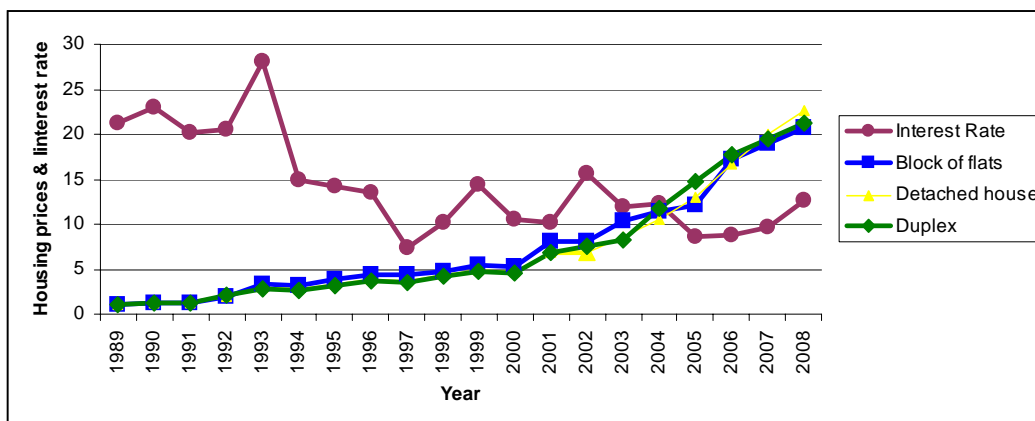**Chart 2:** Trend analysis for interest rate and detached houses
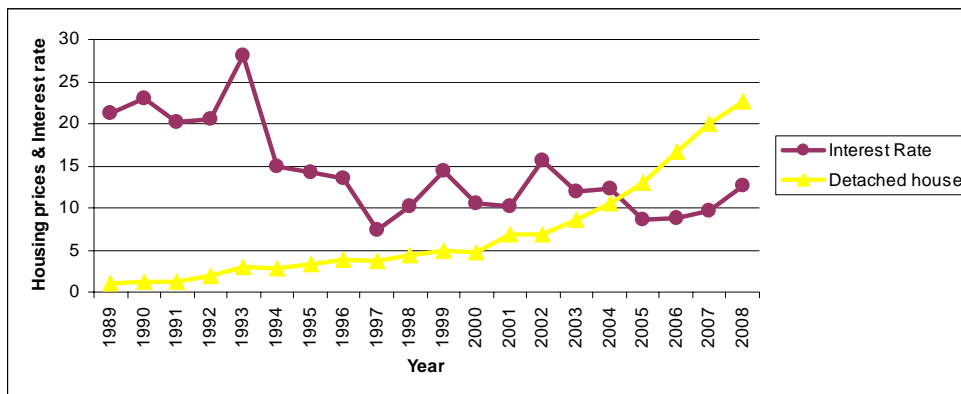


*Source:* Field survey, 2011

**Chart 3:** Trend analysis for interest rate and duplex



*Source:* Field survey, 2011

**Chart 4:** Trend analyses for interest rate, block of flats, detached houses and duplex



*Source:* Field survey, 2011

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**Table 3:** Pearson correlation coefficient between housing price and the interest rate

| Variable | Definition of Variable | Correlation Coefficients Housing price | | |
|---|---|---|---|---|
| | | Block of flats | Detached houses | Duplex |
| HP | Housing price | 1 | 1 | 1 |
| $X_1$ | Interest rate | -0.540* | -0.556* | -0.611** |

*: Correlation is significant at 0.05 level
**: Correlation is significant at 0.01 level
*Source:* Field survey, 2011

*The correlation coefficient for block of flat, detached houses and interest rate are -0.540 and 0.556 respectively (both significant at 5% level) while the result for duplex and interest rate is -0.611 (significant at 10% level).*

## CONCLUSION AND RECOMMENDATIONS

This study shows that fluctuation in mortgage lending rates leads to corresponding change in the prices of the residential property and that when there is high rate of interest in the lending policy of the economy, there is always a corresponding increase in the prices of the property and vice-versa. The study also examines the degree of relationship between interest rate and all the three types of houses (block of flats, detached houses and duplex) and revealed that the relationship for block of flats is -0.540 while detached house is at -0.556 connoting that both were significant at 5% level while that of duplex is -0.611 thereby being significant at 10% level. Having established the fluctuation in the interest rate with respect to corresponding change in the price of the residential property, it suffices to recommend that there is need for the financial institutions to reduce their lending rates to affordable rate, and re-engineer the housing finance system to suit the finance situation of developers, by making long-time loan accessible to developers with reduced interest rate. The number of housing supply in the market depends on the amount developers can borrow from financial institutions for housing development and the total amount borrowed from financial institutions will depend on the prevailing interest rate.

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