THE RELATIONSHIP BETWEEN RESIDENTIAL LAND PRICES AND HOUSE PRICES IN LAGOS STATE, NIGERIA

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ABSTRACT

This study focused on the relationship between residential land prices and house prices in Lagos State, Nigeria. It examined whether high land prices in urban areas cause high property prices or whether high property prices leads to high land prices. Lagos was considered in the study as one of the cities in Nigeria with glaring high land and landed property transactions. The hypotheses are based on neoclassical theory of land rent and Ricardiant rent theory. The study was an applied research to establish relationships and test existing theories in practical setting. Land and house prices were collected from records of land and house sales in 19 different locations from published records of professional estate surveying and valuation firms and property development companies in the study area. The prices of house (dependent variables) were regressed against land prices (independent variables) using correlation regression model and one sample t-test was used to test the hypotheses. It was found that land prices influenced house prices significantly but there was no relationship to show that high house prices influence land prices. This shows a significant departure from Ricardiant rent theory. The study therefore recommends that government should facilitate ease of access to land so as to enhance housing affordability to the citizenry as a social commodity by deregulating land market.
Keywords: *land prices, house prices, price relationship.*

INTRODUCTION

House prices have escalated dramatically over the past decades, across different metropolitan cities across the globe such as Sydney (Abelson, 1997), Taiwan (Lin, 1993), UK (Eve, 1992), US (Potepan, 1996) and in major cities of Nigeria (Onibokun, 1986; Nubi, 2000). The boom in house prices is a big concern to policy makers due to its impact on the local and business community. Aspiring home owners worry that the price escalation may price them out of the market, while businessmen worry that it would increase business and reduce their ability to compete. It is therefore not surprising that policies have been implemented in an attempt to control the price escalation and make housing more affordable. Since the quantity, timing and pricing of land supply are regulated by the state, it is not surprising that the government policies have been blamed for the booms and busts experienced in the housing markets. In particular, high land prices (due to planning restrictions) are often cited as the main cause for escalating housing prices in the major cities in Nigeria, This flows from a neoclassical land rent theory (Needham, 1981) that the

prices of housing are high. The logic is that the price of a product is determined by its production costs, of which land forms part. Evans (2004) contends that when land has alternative uses, it must receive its due remuneration like any factor of production. Hence an increase in the price of land would cause a corresponding hike in the price of the product (housing). Others however, countered that land prices are determined by demand, not supply on the basis that the residual valuation is employed by most developers to formulate their land bids, Grigson (1986), for example, argues that "house prices determine land prices not the reverse, because the builders estimate of the selling price offered largely determine his bid for the piece of land". This view, which he claimed is shared by a number of economists and practitioners, is consistent with the Ricardo (1913) and Von Thunen (1826) cited in Evans (2004).

Ricardo land-price theory held that high land prices are a result (not caused) of high property prices. Ricardo based his theory on differences in fertility. Ricardo started his analysis by assuming a newly settled country with "an abundance of rich and fertile land, a very small proportion of which is required to be cultivated for the support of the actual population. He then argued that no payment of rent could be associated with their use. Rents arise on these lands only when increase in population number and in the demand for market is necessary for society to bring the less fertile lands into use. Von Thunen (1826) in Evans (2004) observes that when crops produced for a Central city market are grown on lands with similar levels of fertility, the lands located nearest the city enjoy a definite rent advantage over those located at greater distance.

Direwett (1993) cited in Cho and Ma (2006) asserts that the housing industries is emotionally and financially sensitive to land prices since the decision to buy land is the most crucial in the housing development process. Omirin (2003) holds that land determines the form in which housing is offered as a commodity for consumption. She further opined that the cost of some particular land, most especially in Lagos limits the extent to which they can provide affordable homes to the vast majority of urban dwellers. A number of studies have examined the causes for the rapid increase in house prices focusing on the demand side, house prices as a function of demographic factor, income, mortgage interest, rate and housing stock, cost of labour and building materials (Engel and Grangers, 1987; Bible and Panel, 1998; Nubi 2000; Chen and Patel, 1998).

Cho and Ma (2006) observe that there is a long - term negative relationship between housing values and interest rates in the Korean housing market. A few studies have also examined the issue from the supply side, focusing on the effect of land supply on construction starts and house prices. Eve (1992), examine house prices in England between 1970 and 1990, reported that up to 35 - 40% of house price increases in certain areas could be attributed to land supply constraints. He further maintained that supply of land, which is constrained by the broader planning system, affects housing production starts and consequently, house prices. In the same vein Nubi (2000) posits that the land question constitutes a major problem to housing production. He posits that cost of land and documentation account, in most cases, for about half of what is required for housing development in Nigeria. Hannah, Kim and Mills (1993) similarly contend that a substantial

part of the rapid price escalation experienced in the Korean housing in the 1980s has resulted from an under - allocation of land for residential use. Peng and Wheaton (1994) also observe that house prices and land supply were inversely related in Hong Kong between 1965 and 1990. They observe that land supply restrictions in Hong Kong did not lower housing output due to the capital - land substitution in the housing production. They further argued that in a rational market, any anticipated higher future rents are capitalized into higher current housing prices.

In a subsequent study also on the Hong Kong market, Tse (1998) holds that the true effects of land supply on house prices are not so straight forward because the influence of land supply on house prices through the housing production chain is partially diminished because the new land supply may be absorbed into the developers' land bank. Employing the Granger causality test, his empirical tests, however, did not reveal any causality between land supply and housing prices in Hong Kong. The studies by Hannah, Kim and Mills (1993); Peng and Wheaton (1994); and Tse (1998) have focused primarily on the relationship between land supply and house prices. Only indirect inferences are made on the actual relationship between land prices and house prices. Studies in Taiwan by Wu (1994) and Hwang (1994) in Chan and Patel (1998) have not explained the short run price volatility around the long-run trends neither have they explained sufficiently well the dynamic behaviour of house prices. Chan and Patel (1998) observed that a possible reason for the failure of existing house price models may also result from a misunderstanding of the actual relationships between house price and its determinants.

The relationships between house price and its determinants are complex because of their nature, or when the housing market environment is in a state of flux. Maclennans (1994) cited in Chan and Patel (1998) holds that '....the housing market is a large sector of the economy and it is highly possible that housing market and the economy interact. Although the feedback mechanism is possible, it is not very clear. It is not only important to determine a timing relationship, but also a direct relationship between house price and its aggregate determinant series. Zhou (1997) examining the relationship between sales and prices of existing single-family homes, finds that there exists a bidirectional causality relationship between the two variables. In particular, price affects sales significantly, while sales affects price weakly. In this system, house prices have a direct influence on land prices, while the influence of land prices on housing prices is more indirect.

As Evans (2004) notes, any increase in the supply of land for housing may take years to affect prices since planning permission has to be obtained first. Hence we would expect the price effect to be weaker from land to housing markets as compared to price movements flowing from the housing market to the land market. The essence of this work is to find out if there is any influence of land price on the kind of structures being put on such lands. This research work will contribute to the existing knowledge in contemporary Nigeria by examining empirically the dynamic relationship between the housing and land prices in Lagos with highest rate of high profile land and property transaction. It is frequently suggested that high land prices cause high house prices. A common causality confirms an implicit adding up theory of price determination in house price, adding up land costs,

construction costs, and builder's profit. Ricardiant rent theory variants would dispute that conclusion by arguing for a residential view of land prices. Prices, it argues, depend on the profitability of housing development (Ball, 1983 in Evans, 2004). It is therefore pertinent against this background to ask the question: Do high land prices contribute to high property prices? Or is it high house prices which result in high land prices?

METHODOLOGY

This study is an applied research concerned with establishing relationships and testing theory in a practical setting. The study focuses on the relationship between residential land and housing market which assumes a correlational study approach. In order to carry out this research the absolute values of land prices and house prices were used instead of cost/ m^2 in order to avoid inaccurate adjustment for differences in quality and material of finishes. Data regarding the prices of lands and cost of houses put on such lands were collated; the areas from which those data were collected were also put into consideration. The study area for the research is Lagos State, Nigeria. Nineteen (19) different locations were considered with their respective land prices and house prices. The residential land prices and house prices were easily captured by direct sales published by property papers of professional practicing firms of estate surveyors and valuers and property development companies. The data collected were used to regress house prices against land prices. The correlation regression model is employed to detect the relationship between land price and house price. Descriptive statistics, ANOVA test and Pearson Moment Correlation were employed using SPSS 15. One sample t-test was used to test the hypothesis

RESULTS AND DISCUSSION

Table 1: Land prices and house prices used for the research

Area	Land sq.m measurement	Land Price (N)	House Price (N)
Ajah	900	15,000,000	35,000,000
Ikeja	800	25,000,000	80,000,000
Ikeja	648	7,500,000	55,000,000
Ikorodu	684	3,000,000	17,000,000
Ikorodu	684	1,000,000	7,000,000
Lekki I	988	100,000,000	115,000,000
Lekki I	1169	70,000,000	130,000,000
Lekki I	900	75,000,000	100,000,000
Ikoyi II	1815	260,000,000	450,000,000
Ikoyi	1350	200,000,000	250,000,000
Magodo	700	55,000,000	160,000,000
Magodo	877.44	35,000,000	70,000,000
Victoria Island	2000	400,000,000	5,500,000,000
Victoria Island Crown Estate	1750	250,000,000	950,000,000
Lag. Epe exp. way Crown Estate	700	30,000,000	65,000,000
Lag. Epe exp. way	648	28,000,000	45,000,000
VGC	1000	110,000,000	160,000,000
VGC	900	110,000,000	120,000,000
Mainland Park	648	1,500,000	15,000,000

Source: Fieldwork, 2011

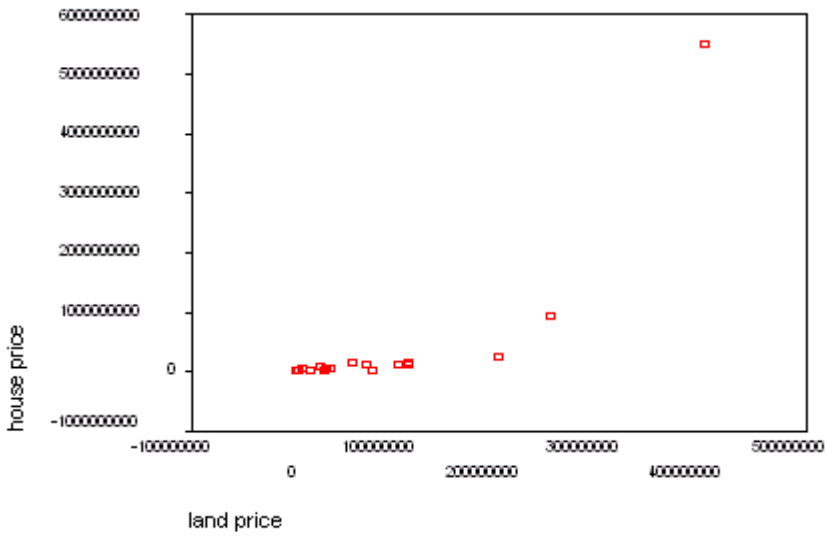

Figure 1: Scatter plot of land and house prices in the selected are

The scatter plot reveals a close relationship between land price and house price. The descriptive statistics shows a mean land price of 93, 473, 684(+SD) 109,460, 352 and mean house price of 431, 894, 444(+SD)1, 282, 816, 236. The correlation value is at r_{cal} (0.833), which implies that there is a significant relationship between land price and house price. The regression equation that shows the relationship between land price and house price is significant. The r^2 value is found at 0.693. This by implication means land price is responsible for Hypothesis Testing. The percentage value of the land price compared to the house price was calculated and the result was used to carry out a one - sample t-test to show that if the percentage ratio of land price is higher than 35%, the influence of land price is significant but if the percentage is less than 35% house price is significant.

Table 2: Percentage of Land prices to House prices

Land price (N)	House price (N)	Percentage (%)
15,000,000	35,000,000	42.85%
25,000,000	80,000,000	31.25%
7,500,000	55,000,000	13.63%
3,000,000	17,000,000	17.64%
1,000,000	7,000,000	14.28%
100,000,000	115,000,000	86.95%
70,000,000	130,000,000	53.84%
75,000,000	100,000,000	75.0%
260,000,000	450,000,000	57.77%
200,000,000	25,000,000	80.0%
55,000,000	160,000,000	34.37%
35,000,000	70,000,000	50.0%
400,000,000	5,500,000,000	7.27%
250,000,000	950,000,000	26.31%
30,000,000	65,000,000	46.15%
28,000,000	45,000,000	62.22%
110,000,000	160,000,000	68.75%
110,000,000	120,000,000	91.66%
1,500,000	15,000,000	10.0%

Source: Field Survey, 2011

The result above shows that the value of t_{cal} (1.74) is greater than the t-tab (1.26), under this condition the null hypothesis is rejected and the alternative hypothesis is accepted which means that there is significant influence of the land price on house price. 69.3% of the variation in house price. It appears land prices induce house prices in the study area. The study shows a significant departure from Ricardian theory of land rent that the price of a product of land (in his case corn) determines the price of land and not land determining the price of the product (corn). The research substantiated the assertion made by: Needham (1981) that the prices of land are high because land prices are high; Nubi (2000) that cost of land and perfecting land title account in most cases for about half of what is required for housing development; Omirin (2003) that cost of some land, most especially in Lagos limits the extent to which they can provide affordable homes to urban dwellers. Evans (2004) contends that' land has alternative uses; it must receive its due remuneration like any other factor of production. Hence, an increase in the price of land would cause a corresponding hike in the price of the product (housing)'.

The empirical result shows that house and land prices are integrated, meaning that they are related to each other in the long term. The rate of convergence to long-run equilibrium relation is more rapid in the land market than in the house market. There is significant influence of land prices on house prices. It is not wrong to say that high land prices cause high house prices, based on the data from the study area; it is incorrect to attribute rising land prices to high house prices. One weakness of such studies, however is that the short-term relationship between the two markets is usually ignored.

CONCLUSION AND RECOMMENDATIONS

There are a number of policy implications arising from this study. The general implication is that the high land prices are a reflection of defective land administration system obtainable in the country. The study reveals that land prices have corresponding influence on the housing market. Access to land is mainly governed by our land policies enshrined in the Land Use Act of 1978. The cardinal aim of the Act was to make land more accessible for public and private use but ended in creating more administrative bottlenecks. It is therefore pertinent for government to facilitate ease of access to land as a way of providing affordable housing to the citizenry as a social commodity by deregulating land market. Furthermore, worthy of note is the fact that any government policy aimed at tackling price volatility in the housing market will be incomplete if the supply and pricing of development sites are ignored.

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