

THE EFFECTS OF MACRO-ECONOMIC VARIABLES ON PRIVATE RESIDENTIAL HOUSING DEVELOPMENT IN MINNA, NIGER STATE)

J.E Idiake

Department of Quantity Surveying
Federal University of Technology
Minna

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ABSTRACT *This paper examines the effects of macro-economic variables on housing development in Nigeria taking Minna, Niger State as the study area. Based on some national economic review data obtained from Power Holding Company of Nigeria, Federal Office of Statistics, Niger State Ministry of Lands and Survey, and Niger Urban Development Board Minna, the relationship between rate of housing development and variables such as rate of change in exchange rate, population, interest rate and inflationary trends were studied. Using the simple Regression Analysis Technique and working at 95% confidence limit, an extrapolation was made of the possible statistical linear relationships existing between rate of housing construction and some economic variables. The research showed R-square of 83.29%, 16.10%, 0.26% and 90.25% for actual houses constructed each year over the period under review against, Exchange rate, inflation, interest rate and population growth respectively. The study revealed inadequacy in housing provision over the period under review. It was suggested that encouragement of private (internal and external) investors in infrastructural development should be adopted. In addition, democratic governance should adopt a free market strategy so as to allow market forces determine economic growth.*

INTRODUCTION

The economic features of housing construction

The construction of public and private buildings and other types of construction projects invigorate the national economy. In many countries, the yardstick for the measurement of national progress hinges on the degree of contributions of the construction industry to the nation's economic, social and political advancement. The importance of construction, housing inclusive in a nation's economy is based on three of its characteristics: firstly, its size, secondly, its potential to provide predominantly investment goods and thirdly that government is the client a for larger part of its works. In spite of the damage to efficiency of sudden stops and starts in its load, because of its size and importance, successive governments are accused of using the construction industry as a regulatory instrument of the economy. (Hildebrandt, 1975).

MACRO-ECONOMIC VARIABLES

Macro-economic variables are factors such as exchange rate, inflation, interest rate and population. These are discussed as follows:

Exchange rate

Exchange rate expresses the national currency's quotation in respect to foreign ones. Thus, the exchange rate is a conversion factor, expressed in a multiplied or a ratio term, depending on the direction of conversion. In a slightly different perspective, the exchange rate is a price. Further more, it is the amount of one currency that must be paid in order to obtain one unit of another currency, (Wonnacott, 1982; Valentino, 2001).

The external value of a country's currency could change when the market value of the exchange rate is determined in the global foreign exchange markets, where the forces of demand and supply are at work. This results when the exchange rate can freely move,

assuming any value that private demand and supply jointly establish. In this case it becomes flexible without government getting involved in the buying and selling. In the freely floating regimes, a loss in currency value is conventionally called "depreciation" whereas an increase of currency's international value is known as "appreciation" (Bowden, 1986).

Inflation

Inflation is the pervasive and sustained rise in the aggregate level of prices measured by an index of the cost of various goods and services. Repetitive price increases erode the purchasing power of money and other financial assets with fixed values, creating serious economic distortions and uncertainty. To curb demand – pull, inflation and others, the first and best method is to increase the total output of goods and services in order to satisfy the excess demand, however, this is not always feasible in a full-employment economy. In the short run, at least a second alternative of a reduction in total spending must be undertaken. Measures to reduce total spending include built in stabilizers and monetary policy. Other measures include (i) holding taxes and decreasing spending (ii) increase taxes and hold or decrease spending (iii) decrease taxes and increase spending and borrowing. (Mogbo, 2001; Encarta, 2004).

Interest rate

An interest rate is the rental price of money. It is the profit over time due to financial instruments. In loan structure, the interest rate is the difference in percentage between money paid back and money got earlier. Loan arrangement depends on the economic performance, perspective and expectations of potential loan recovers as well as the overall economy, (Brown, 1984).

Population

Population whether human or animal, constitutes collection of data modified by increase (birth and immigration) and loses (death and emigration). Population theories or concepts involve the effort to explain the lives of populations in their economic, social and

political environments. According to the most consistent doctrine each nation should wish to have a large population since such a large population would provide a "supply" of labour, market and army for effecting expansionist policies. Modern demographers and economist viewed population size and environmental resources, age distribution and social security, and development of human capital as complimentary elements in arriving at population theories and policies. Until recently, the social aspects of population in terms of quality of life i.e. food supply and shelter have received less attention, but now have come to be seen as important. (Encarta, 2004).

The Importance of Housing in National Development

The importance of housing in National Development and particularly in the Nigerian Economy cannot be over emphasized especially when it is viewed in respect to its contribution to the total gross fixed capital formation at current purchases value. Adequate housing contributes to the attainment of physical and moral health of nation and it is the most important for the physical survival of man after the provision of food. Housing stimulates the social stability, the work efficiency, the development of the individual, the family and the community. It increases the socio-economic standard of the people. It is well known that housing development has a multiplier effect on production, labour and income and therefore stimulates economic growth. The provision of employment in housing construction stimulates economic activities in other sectors by opening market for their products thus providing opportunities for small scale local enterprises, by which local employment and economics can be expanded. (Adeniyi, 1985).

The Effects of Deregulation and Inflation on Prices

Olabopo (1992) explained deregulated economy to mean an economy free of any form of intervention. It is the market forces that

the 'F' values tabulated. This showed that there were significant linear and non-linear relationships between the variables studied.

Studies two and three showed very weak correlations between the macroeconomic indicators tested, which are inflation rate, lending rate and numbers of houses built over the period being studied. In study two, there were no significant linear and non-linear relationships between the number of houses constructed and prevailing inflation rate. The R-square values for linear and non linear regression are 2.60%, 1.91%, 1.20% and 1.19% for linear, logarithm, quadratic and cubic models respectively. The probability values (P Values) for both linear and non-linear regressions range from 0.1305 to 0.3536, which are higher than the 0.05 level of significance. The negative linearity in the equation model shows that as the inflation rate decreases the number of houses constructed increases. Also correlation between the variables was low with 'F' values calculated lower than the 'F' values tabulated. This reveals that there were no significant linear and non-linear relationships between the variables tested.

The result in study three is not different from that conducted in study two. There were no significant linear and non-linear relationships between rate of housing development and lending interest rate. The R-square values for both linear and non-linear regression are 0.03%, for quadratic and cubic models respectively. The probability values (P values) for linear and non-linear range from 0.4119 to 0.8576, which are greater than 0.05, level of significance. Results from the analysis also revealed that correlation between the variables was very low with 'F' values calculated lower than the 'F' values tabulated, although the linear equation shows that as lending interest rate increases, the rate housing development increases. This might not be a true situation on ground. But a further transformation of the equation model showed a true picture of the situation on ground that as lending rate increases, the rate of housing development decreases. Also the non-correlation in the variables indicated that, the option to borrow funds to build is not given due

consideration by the populace perhaps due to high cost of borrowing fund.

CONCLUSION AND RECOMMENDATION

This research has shown that economic variables affect positively or negatively the rate of housing development. Considering the period under review, the levels of effect were not different in military or civilian eras. A high exchange rate will mean more money being converted to obtain more import of goods for housing development. This will invariably affect the building and construction budget, as more money would have to be allocated to the building and construction sector for the importation of construction materials. It all depends on the government to use her monetary and fiscal measures to control inflation and bring it low since it was discovered that a decrease in the rate of inflation favours growth in the rate of housing construction or development. The demand placed on the housing or building industry by the growing population is enormous. As investigated in the study, the rate of housing development is low in comparison to the population growth rate; therefore the government must encourage broad based participation in housing production and delivery. The democratic government of today stands to benefit from the analysis of this study if the following recommendations are adopted.

- i. To encourage or adopt an open market policy to allow market forces of demand and supply to determine economic growth especially as regards exchange rate policy.
- ii. To ensure stringent monetary and fiscal policies in controlling inflationary trend.
- iii. Cost of borrowing fund for housing development should reduce to an affordable rate for the populace.
- iv. The participation of private (internal and external) investors should be encouraged to meet the demand placed on the building industry by the growing population. The private finance initiative as well as the BOOT (Building, Own, operate and Transfer) and DBFC (Design, Build, Finance and Operate) system should be encouraged in housing production and delivery strategies in Nigeria with some modifications.

Table I Summary of Simple Regression Analysis

Variable		Type of analysis	Result of Experiment					Inference	Remark	
X	Y		Regressing equation	R ² %	F/Tab	Fcal	P value			
1.01 1.02 1.3 1.04	Exchange Rate	Number of houses constructed	Linear	N Houses = 867.99 + 10.97 Exrate	83.29		64.81	.0000	Very strong	SS
			Logarithm	N Houses = -226.22 + 479.00 Exrate.	76.94		43.37	.0000	Very strong	SS
			Quadratic	N House = 892.29 + 9.67 Exrate + 0.009 Exrate ²	83.36		30.05	.0000	Very strong	SS
			Cubic	N House = 1033.99 - 3.14 + 0.223 Exrate = 83.79 - 0.009 Exrate ³	83.79		18.96	.0001	Very weak	NS
2.01 2.02 2.03 2.04	Inflation Rate	Number of houses constructed	Linear	N House = 1919.35 - 10.12 infrate 16.69	16.69		2.60	.1305	Very weak	NS
			Logarithm	N House = -234.99 infrate 12.79	12.79		1.91	.1906	Very weak	NS
			Quadratic	N House = 1901.91 - 8.34 infrate - 16.72 0.025 infrate ²	16.72		1.20	.3336	Very weak	NS
			Cubic	N House = 476.23 - 2.684 infrate ² + 0.023 infrate ³ 30.26	24.65		1.19	.3553	Very weak	NS
3.01 3.02 3.03 3.04	Lending interest Rate	Number of houses constructed	Linear	N House = 1498.75 + 7.24 Lrate	0.26		0.03	.8576	Very weak	NS
			Logarithm	N House = 842.88 + 262.91 Lrate	0.56		0.07	.7916	Very weak	NS
			Quadratic	N House = 8995.73 + 867.27 Lrate 13.74 - 17.15 Lrate ²	13.74		0.95	.4119	Very weak	NS
			Cubic	N House = 8995.73 + 867.27 Lrate - 17.15 Lrate ² + 1.38 infrates ³	13.74		0.95	.4119	Very weak	NS
4.01 4.02 4.03 4.04	Population	Number of houses constructed	Linear	N House = - 13987 + 0.12 popln	90.25		111.113	.0000	Very strong	SS
			Logarithm	N House = - 181940.80 + 15600.27 popln.	90.28		111.47	.0000	Very strong	SS
			Quadratic	N House = -24287.36 + 0.281 popln - 6.205 - 07 popln ²	90.29		51.14	.0000	Very strong	SS
			Cubic	N House = -21215.99 + 0.205241 + 749.26 popln ² 90.29 - 1.68 E-12 popln ³	90.29		51.16	.0000	Very strong	SS

Source: Researcher's analysis of data 2005
 NS=Not significant, SS=Significant, Exrate=Exchange rate, infrate=inflation rate, Lrate=lending rate, popln=Population.

Table 1 Values o Actual Houses Built, Exchange Rate, Inflation, Interest Rate ad Population Growth

YEAR	ACTUAL HOUSES	EXCHANGE RATE	INFLATION	INTEREST RATE	POPULATION GROWTH
1990	842	7.99	7.5	27.70	117760
1991	932	8.35	13.00	20.80	122,031
1992	984	18.64	44.50	31.20	124,423
1993	1213	22.28	57.2	78.32	126815
1994	1432	22.00	57.0	27.00	131,786
1995	1321	73.71	72.80	20.74	136,757
1996	1684	80.85	29.3	20.88	141,728
1997	1568	82.12	8.5	23.32	146,873
1998	1681	84.40	10.00	21.34	152,018
1999	2348	94.61	6.60	27.19	157,162
2000	1880	102.09	6.90	21.55	162,307
2001	2310	111.89	18.90	21.34	167,452
2002	2465	120.98	12.00	29.94	173,018
2003	2229	128.81	14.00	22.47	184,331
2004	2124	134.15	15.00	21.59	189,958

Source: PHCN, Ministry of Lands Minna, F.O.S Lagos, Central Bank of Nigeria and National Population Commission.

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