INFLATIONARY HEDGING CAPACITY OF HOUSE PRICE RETURNS IN EMERGING ECONOMY OF NIGERIA

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Abstract: Property asset as a protective devise against the risk of inflation is investigated in the Capital city of Nigeria (Abuja). Five residential housing zones were selected for the study. the general use of ordinary least squares by the previous studies has been faulted on the ground that it can only offer short term inflationary characteristics in the housing market. This study further identified inflationary hedging capacity of house return by examining both short run and long run inflationary characteristics in Abuja housing market. The study utilized Ordinary least squares (to show short run inflationary characteristics), Augmented Dicker Fuller (ADF) to test is used to test for the stationarity in the data, Engle Granger cointegration to establish long run relationships and cointegrating regression analysis to establish long run inflationary characteristics in Abuja Housing Market. The result* FMOLS *revealed that housing markets failed to provide a complete hedge across all the markets against dirt of inflation within a possible short run. The result of cointegating regression revealed that housing market provide a complete hedge across all the market in the long run, and the overall market influence is between 88.2%-72.1%.

Keywords: House price returns, actual inflation, expected inflation, unexpected inflation

Öz: Enflasyon riskine karşı koruyucu bir araç olarak konut sahipliği Nijerya'nın başkenti Abuja için araştırılmıştır. Araştırmada beş yerleşim bölgesindeki konutlar seçildi. Daha önceki çalışmalar kısa dönemde konut sahipliğinin enflasyon riskini en küçük kareler yönteminin kullanarak ve kısa dönem için araştırmışlardı. Bu çalışma kısa ve uzun dönemde konut getirilerinin ensflasyondan korunma kapasitesini araştırmaktadır. Çalışma kısa dönem enflasyonist etkiyi ölçmek için en küçük kareler yöntemini, ADF durağanlık testini ve uzun dönem etkisini ölçmek için de Engel Granger koentegrasyon testini kullanmıştır. Sonuçlar kısa dönemde konut piyasasının enflasyondan korunma sağlamadığını ortaya koymuştur. Koentegrasyon regresyon sonucuna göre, uzun döenmde konut piyasasında tam bir korunma sağlandığı ve etkinin de 72,1 % - 88,2 % aralığında olduğu hesaplanmıştır.

Anahtar Kelimeler: Konut fiyat getirileri, gerçek enflasyon, beklenen enflasyon, beklenmeyen enflasyon

INTRODUCTION

The linkage between inflationary trends and movement in property returns is based on the fact that real property price is highly sensitive to change in economy in real term, property asset provide a refuge to investor when monetary policy changes either positively or negatively such that as inflation rises property return increases and they are both positively related (Wong *et al.,* 2003; Miregi & Obere, 2014). Property asset is a protective devise against inflationary risk, and it is said to be hedged against inflation when a certain measure of immunization against a change in consumer price index (CPI) is provided within the country's economy over a period (Arnason *et al*., 2013; Miregi & Obere, 2014). The concept in this perspective is construed to mean a persistent or constant increase in general consumer price level, and it is a measure of change in current and old consumer prices expressed as percentage. Also, three perspective areas of inflation in the economy such actual, expected and unexpected inflation have received attention of real estate investors in emerging economy like Nigeria. CPI (Consumer Price Index) is referred to as the official measure used to determine inflation, and at the same time a proxy used to denote actual inflation in the economy, and it is referred to as year on year change in CPI (Consumer Price Index) on all items including interest on mortgage bonds (Kwangware, 2010). The 90-days Treasury bill rate (TBR), are often and commonly adopted as a proxy used for expected inflation, and it often is derived from Livingston survey and Autoregressive Integrated Moving Average (ARIMA) as used in some previous studies (Kwangware, 2010; Oluwasegun & Dabara, 2013). The actual inflation minus expected inflation gives a figure which has been used in several studies as proxy for unexpected inflation (Terahni *et al.,* 2012; Dabara, 2015, Umeh & Oluwasore, 2015).

In an emerging economy like Nigeria that is characterized by speculation and economic instability, the risk of inflation rate has become an issue to real estate investors, in that, the risk of inflation rate is capable of depreciating or eroding real estate income flows thereby lead to loss of investment (Odu, 2011; Dabara, 2014; Umeh & Oluwasore, 2015). Property asset contained inflationary protecting characteristics as it provides refuge against the risk of inflation from eroding the value of real estate returns (Case 1992; Umeh & Oluwasore, 2015). House price return measures turnover on housing investment, and it exposed to risk of inflation (Odu, 2011), and the study also clearly stated that risk of inflation is far higher than return on real estate investment. Furthermore, Peyton (2011) is of view that risk of inflation erodes the value of corporate investment earnings and batters consumers' purchasing power in an emerging economy. Traditionally, property asset provide an hedge against dearth of inflation but the menace of economic recession which recently bedeviled Nigeria economy has therefore made the complete hedging capacity of real estate to be doubted due economic volatility and instability created by 2016 economic recession. It is on this basis the study emerges to examine the extent to which house price return has been partially, completely or perversely hedged against inflation in the Nigerian economy. The study focused on Abuja property market, in that, Abuja serves as the first heating-point of economic policy

and due to its high quality of housing infrastructure, the city has been considered best in the quality of housing investment in Nigeria (Belo & Agbatekwe, 2002). The aim of the study is to determine inflationary hedging capacity of house price return in a growing economy of Nigeria. The study showed movement in price return characterized by general price level in the economy, and the co-movement between inflation rates and house price returns is dependent on general economy performance. The level of influence of inflation rate is determined by the ability of property market forces to keep properties in habitable condition. The study has demonstrated the typical condition of property market's capacity to stand in face of rise and fall in general price level, also the market has been positively affected in long run and negatively affected in the short run.

1. LITERATURE REVIEW

The study of inflation hedging capacity of real asset is based on quantity theory of money propounded by Irving Fisher (1930) who expressed the equation as changes in quantity of money produces direct and proportionate change in the price level (MV=PQ). Application of mathematical method of substitution to re-express the equation as returns on the amount of houses exchanged over a period (PQ) while general price level within the economic is depicted by MV over a period time. Therefore the house price return is expressed as function of inflation rates (actual, expected and unexpected inflation) as follows: R_t = f(A-actual, E-expected and U-unexpected inflation), where inflation is determined by quantity of money in circulation and house price is determined by consumer price level of goods and services within the economy. Several studies have applied this theory across different countries in different economic environment and tested for its capacity to bring out real characteristics of inflationary hedge in real property market and stocks investment market (Fama & Schwert, 1977; Umeh & Oluwasore 2015). The results from previous studies have provided basis to improve on this area of study, the previous studies are therefore summarily reviewed chronologically as follows:

Fama and Schwert, (1977) studied inflationary characteristics of property asset returns in U.S. between 1953-1971. The study adopted ordinary least square regression analysis to hedging capacity of asset investment, the study discovered that private residential estate and government debt instrument provided a complete hedge against expected and unexpected inflation, perverse hedge was found in common stocks against expected and unexpected inflation. The study appeared to be incomplete as characteristics of actual inflation was not included which could have provided vital information about current market inflation hedging capacity and the use of OLS cannot provide for long run dynamism in the market. Rubens, Bond and Webb (1989) analysed inflationary capacities of residential, commercial and farmland also in the US. The study utilized simple regression (Odinary Least Squares-OLS) to determine the inflation hedged capacity of real estate returns. The result provided that real estate investment in residential properties were poorly hedged against expected inflation but provided a complete hedge against the dirt of actual and unexpected inflations, commercial properties seemed to be hedged completely against expected inflation and failed to hedge both actual and unexpected

within short period. Return on farmland seemed to have hedged against only expected inflation but failed to hedge actual inflation in the market while perversely hedged against unexpected inflation. Sing and Low (2001) in their study in Singapore commercial market, it is discovered that commercial market does only provided a complete hedge against inflation, but market rate of return increases faster than rate of inflation. Sim and Choe (2002) in the study of inflationary nature of housing stock returns carried out in Korea. The study discovered that housing market in the study area provided an effective hedge against different types of inflation but stock market failed to provide hedge. Voigtländer and Demary (2009) studied inflationary characteristics in America and Europe real estate market. The result found out that real estate failed to provide hedge against inflation and investor is exposed to the dirt of inflation. This finding is contrary to that Sing and Low (2001) and the finding at same time is also contrary to that of Sim and Choe (2002). Zhe (2010) in the study carried out in Hong Kong housing market between 1993 and 2009 on hedging capacity of real state housing in the city, the study employed simple regression to determine ordinary least squares, the study found that office and domestic real estate provided a better hedge against expected and unexpected inflation while quarterly analysis provide a complete hedge. Leung (2010) carried out a study that establish the inflation hedging capability of shops, office spaces and industrial properties in Australia between1984 and 2008. Returns data on commercial properties were sourced from the PID (Property Investors Digest). The use of ordinary least square model revealed that property asset provide an effective hedge against both unexpected and expected inflation. Amonhaemanon *et al.,* (2013) studied hedging capacity of real estate in Thailand after post inflation crisis between 1987-2011. The study utilized panel analytical approach and the result revealed that real estate housing provide an effective hedge against dirt of actual and unexpected inflation at quarter and last period. This finding is consistent with Leung (2010). Therefore the finding of studies carried outside the Nigeria provided mostly employed the use OLS which cannot adequately cater for long run dynamism.

Bello (2004) in the study carried out in Lagos on hedging capacity of residential housing estate and share properties between 1996 and 2000. Data for the study was analyzed by regressing the inflation rates and rate of returns using Ordinary least Square regression model. The result indicated that while residential properties have a strong inflation hedging characteristics against expected inflation but failed to be effectively hedged against actual and unexpected inflation. Share's properties provided a complete hedge capacity while partially against savings account capacity; the time frame used for this study was observed to be five years. Odu, (2011) studied the analysis of the ability commercial properties to hedge inflation in Lagos metropolis within the period 1999 and 2010; the result of simple regression (Ordinary Least Square model) employed to determine inflationary hedging capacity of return on commercial properties investment indicated that commercial properties' showed a perverse hedge against real (actual) inflation, while Ikeja and it market environment showed a complete hedge. Osagie, Gambo, Anyakora and Idowu (2012) examined commercial (office and shop) hedging ability against inflation in Lagos city, Nigeria between 1998 and 2008. The study employed the usage of mult-equation technique to establish both short and long runs' dynamic capacity of rental values. The result indicated that office property does not provide good hedge in the short run, but provides good hedge over long run period; while shop property does

not hedge against inflation both periods (long and short runs). The period of short run of the study seemed to have affected outcome this study in that the methodology for long dynamism required long span period and the use direct rent cannot adequately show characteristic of inflation due to rent review clause. Ogunba, Obiyomi and Dugeri (2013) analysed hedging capacity commercial property investment in Ibadan between 2000 and 2010. Simple regression was employed to determine least squares characteristics of the data employed, the result revealed that commercial property investment was poorly and perversely hedged against actual and unexpected inflation respectively, and provided a good and effective hedge against expected inflation. This study focuses only commercial and failed to consider residential properties in the study area. Dabara (2014) correlated inflation with return on commercial property investment in Akure between 2002 and 2012. Unit root test was carried out through Philip-perron and regression analysis. The result of the test revealed that commercial property in Akure provided a perverse hedge against actual and expected inflation while unexpected inflation is perversely hedged. Umeh and Oluwasore (2015) studied the hedging ability of residential property investment between 2002 and 2014 in Ibadan metropolis. The result of simple regression through ordinary least squares (OLS) model revealed that residential investment failed to hedge against actual inflation in the market but provide a complete hedge expected inflation, provided partial hedge against unexpected inflation.

From foregoing, it is evidence that the use of Ordinary Least Square (OLS) is predominant among the previous studies and it is common method used to analyse the inflationary characteristic in real estate investment, but this method only cater for short run hedging characteristic. It failed to incorporate long run dynamism in property market. The short period employed by the majority of the existing studies seemed to have affected the outcome their studies, in that, the methodology for long dynamism required long span period. None of the existing studies has been able to establish and compare hedging capacity real estate by taking into consideration both short run and long run dynamics, which this study intends to address. This study will firstly estimates OLS characteristics and secondly estimates Fully Modified Ordinary Least squares (FMOLS) characteristics of real estate market in Abuja, Nigeria. This study intends to address inflationary hedging capacity of housing market in both short run and long run. Also the study period extends further than previous studies to capture current development in the economy (e.g recent recession and down turn in Abuja residential market in 2016 and 2017) and the property market. The use of house price returns has found suitable and appropriate as it is based on the fact inflation affect house price of properties more than direct rent in that, house price is not fixed for a period of term unlike rent that is fixed under period term and condition.

2. METHODOLOGY

The study utilized both primary and secondary sources of data. Primary source of data includes sales prices indices of properties from registered estate surveyors and valuers between 1999-2017. Secondary data comprises of annual inflation indices (actual, expected and unexpected inflation) from National Bureau of Statistics (NBS)

for a period between 1999-2017.The sample size adopted for each of residential areas Abuja city was quantitatively determined using the model developed by Frankfort-Nachmias (1996). The model used purposely when the population is too large. The model is therefore used to sample residential sales transactions as presented in table 1. The equation 1 is adopted to determine house price returns from residential investment. This model for sample size determination is described in equation 1.

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

Where N - population size, n - sample size, p at 95% confidence level of the target population

q = 1-- p, e = Acceptable error Z = 1.96

$$HPR = \frac{P_t - P_{t-1}}{P_{t-1}} \qquad 2$$

Where HPR is house price returns indices, P_t is house price at end of period t, P_{t-1} is the house price beginning of period t. The study utilized both ordinary least squares regression (OLS) and conintegrating regression using Fully Modified Least Squares (FMOLS) to establish both short and long run inflationary characteristics of house prices respectively. FMOLS used to estimates relationships in cointegration analysis by modifying ordinary least squares (OLS) to account for both serial correlation and endogeneity in the regressors. It is therefore asymptotically related to methods like Johansen (1988). FMOLS identifies long-term relationship just like Johansen method and used to test for cointegration by examining stationarity test through Augmented Dicker Fuller (ADF). The study applied Augmented Dicker Fuller (ADF) unit root test to determine the extent of stationarity of the data. The test of stationarity of the series was carried out for the study in order to detect the presence of unit root (non-stationary) or not, and to determining the order of integration of the variables in the model.

$$\Delta Y_t = \beta_0 + \beta_1 Y_{t-1} + \sum_{i=1}^{k} \pi_i \Delta Y_{t-1} + U_t \qquad 3$$

Where Y_t represents vector of time series, t represent time, U_t represents the error terms and π represents the coefficient matrix of the variables, Δ represents differences in variables. The decision rule for hedging capacities of real estate is described in Table 1.

Table 1: Decision Rule

Hedges in Real Estate	Decision rule
a complete hedge against inflation	If β is not significantly less than 1 (i.e. between 1 and 0.5)
a partial hedge against inflation	If β is significantly less than 1 (i.e. between 0.4 and 0.1)
zero hedge against inflation	If β is not significantly different from zero. 0.001-0.000
a perverse hedge against inflation	If β is negative

3. RESULTS AND DISCUSSION

Figure 1 showed the trend in actual, expected and unexpected inflation rate in between period 1999-2017. The trend showed annual rise and fall in inflation rates in Nigeria, while actual and expected inflation exhibited annual positive rise and fall over the period, unexpected inflation rate exhibited negative and positive rise and fall over the period. A negative rise and fall in unexpected inflation indicated that the 90-days Treasury bill rates on Federal government bond which often used as a proxy for expected inflation, performed better than other interest rates in capital market over given period, while the positive rise and fall in unexpected inflation rates indicated otherwise. The positive rise and fall in actual inflation showed positive rise and fall in interest rate in both money and capital market that is reflected in consumer price index over a period.

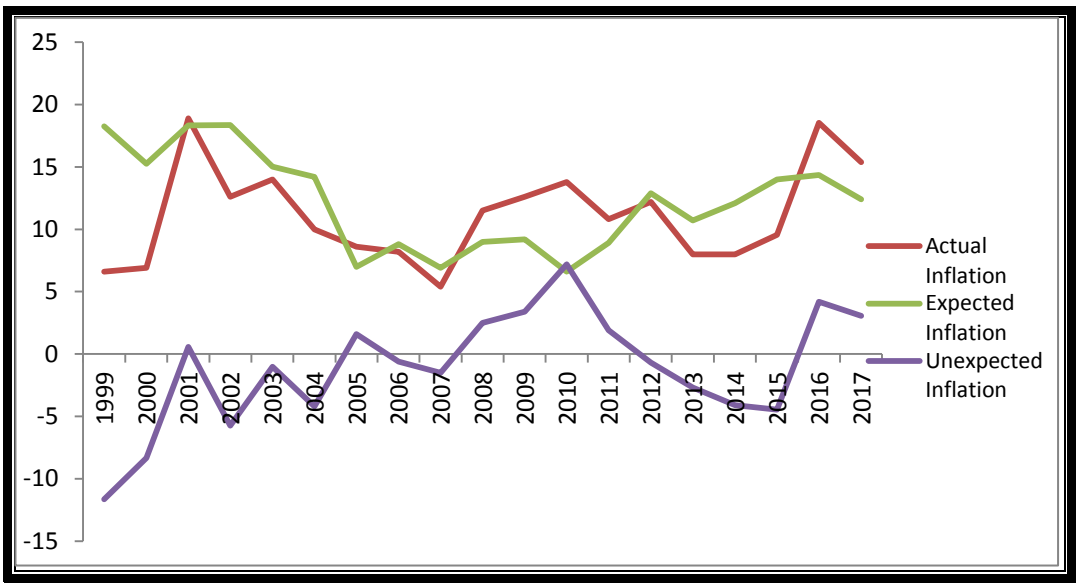

Figure 1: Trends in actual, expected and unexpected inflation rates in Nigeria

Figure 2 showed the trend residential property price index in selected residential zones in Abuja. The price indices of residential properties across zones were cumulated to form single index for each zone. Trend analysis revealed that there is an upward movement across residential property types in selected location over a given period. Maitama residential market index exhibited a volatile upward movement between 2009-2013, and became stable for rest of the period, this showed a high market demand which overlapped other market locations, while other locations also showed little upward but steady rise (2009-2013), the implication is that period of sudden rise in maitama and little rise in other location showed better economic condition in the capital city of Nigeria but more pronounced in Maitama than others due to choice of location.

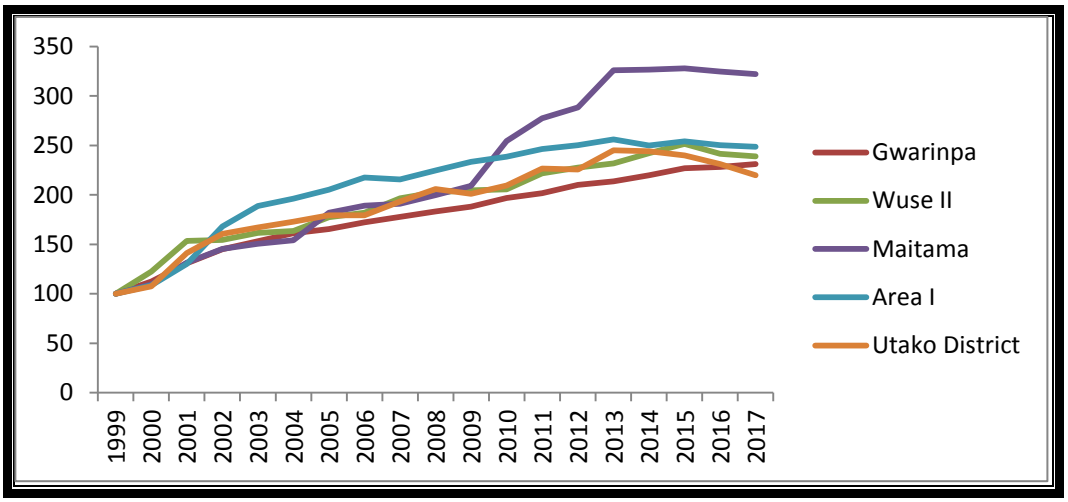

Figure 2: Trend in property price index across selected locations

Table 2 showed the short run dynamic inflation characteristics using Ordinary Least Square (OLS). The short run hedging status revealed that Gwarinpa Property market is perversely hedged against actual and unexpected inflation and completely hedged against expected inflation over the period of study. Wuse II property market is perversely hedged against actual and unexpected inflation but partially hedged against expected inflation over the period. Maitama property market is perversely hedged against actual and expected inflation, and partially hedged against unexpected inflation over the period. Area 1 property market is completely hedged against actual inflation, perversely hedged against unexpected inflation and partially hedged against expected inflation. In Utako district, the property is partially hedged against actual and expected inflation, and perversely hedged against unexpected inflation.

Table 2: Results of hedging capacity of house price (OLS Estimates)

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	Hedging Status
	B	Std. Error	Beta		
GWARINPA					
(Constant)	-.193	3.200		.953	
Actual Inflation	-.024	.223	-.022	.958	Perverse hedged
Unexpected Inflation	-.339	.199	-.382	.107	Perverse hedged
Expected Inflation	.640	.220	.606	.010	Complete Hedged
WUSE II					
(Constant)	9.423	8.588		.289	
Actual Inflation	-.189	.712	-.078	.793	Perverse hedged
Unexpected Inflation	-.577	.589	-.286	.342	Perverse hedged
Expected Inflation	.361	.576	.150	.540	Partial hedged
MAITAMA					
(Constant)	-148.584	64.246		.034	
Actual Inflation	-.811	1.041	-.233	.779	Perverse hedged
Unexpected Inflation	.952	.862	.330	.104	Partial Hedged
Expected Inflation	-.918	.802	-.267	.268	Perverse hedged
AREA 1					
(Constant)	-7.809	8.881		.392	
Actual Inflation	1.331	.736	.502	.089	Complete Hedged
Unexpected Inflation	-1.052	.609	-.479	.103	Perverse Hedged
Expected Inflation	1.126	.571	.431	.065	Partial Hedged
UTAKO					
(Constant)	2.521	10.758		.818	
Actual Inflation	.320	.891	.110	.725	Partial Hedged
Unexpected Inflation	-.441	.738	-.183	.559	Perverse Hedged
Expected Inflation	.401	.688	.140	.568	Partial Hedged

Table 3 showed the result of unit root test conducted through Augmented Dicker Fuller (ADF) on all the variables employed for the study. The result of ADF unit root test revealed that actual, expected and unexpected inflation were stationary at first-order difference, only price return indices across the markets were stationery at level. The implication of this test is that the time series data employed for this study is suitable and appropriate for further analysis. Technically, it implies that the time series variables have no unit root.

Table 3: Stationarity or Unit Root Test

Variables	Critical ADF (0.05)	Computed A DF t-Statistics	Prob.*	Order of Integration
Δ Actual inflation	-3.081002	-3.301672	0.0336	I(1)
Δ Expected Inflation	-3.065585	-4.496336	0.0033	I(1)
Δ Unexpect inflation	-3.052169	-3.410913	0.0254	I(1)
Gwarinpa (PRI)	-3.040391	-4.977604	0.0010	I(0)
WuseII (PRI)	3.040391	-3.179963	0.0383	I(0)
Maitama (PRI)	-3.052169	-3.298794	0.0315	I(0)
Area 1 (PRI)	-3.040391	-4.189778	0.0051	I(0)
Utako (PRI)	-3.040391	-3.058157	0.0484	I(0)

Table 4 reveal the result of engle grager cointegration test of long run relationship between property market price return and inflationary characteristics. The tau- statistic and z-statistics reject null hypothesis of no cointegration among the variables at 5%. The tau-statistic and z-statistics reject null hypothesis of no cointegration among the variables at 5%. With a given sample size probabilities and critical values, therefore there is evidence of two or more cointegrating equations using z-statistics across the market locations. In other word, there is long run relationship between property market price return and inflationary characteristics

Table 4: Engle Granger cointegration test

Market	Dependent	tau-statistic	Prob.*	z-statistic	Prob.*
Gwarinpa	Gwarinpa	-2.788999	0.5690	-9.781263	0.6847
	Actual Inflation Index	-3.966153	0.1572	-22.99094	0.0128
	Expected Inflation Index	-3.967177	0.1570	-23.02874	0.0125
	Unexpected Inflation Index	-3.966982	0.1570	-23.00275	0.0127
Wuse II	Wuse II log	-5.031218	0.0328	-21.57113	0.0265
	Actual Inflation Index	-2.997301	0.4827	-237.2358	0.0000
	Expected Inflation Index	-2.831086	0.5502	-10.73025	0.6058
	Unexpected Inflation Ind	-3.414011	0.3116	-14.03251	0.3347
Maitama	Maitama	-3.097602	0.4340	-12.92028	0.4215
	Actual Inflation Index	-3.710072	0.2192	-21.74768	0.0244
	Expected Inflation Index	-3.709665	0.2193	-21.76610	0.0241
	Unexpected Inflation Ind	-3.709003	0.2195	-21.78867	0.0239
Area 1	Area I	-1.914700	0.8925	-6.128298	0.9183
	Actual Inflation Index	-3.120588	0.4244	-20.89848	0.0362
	Expected Inflation Index	-3.121053	0.4242	-20.91729	0.0359
	Unexpected Inflation Ind	-3.124515	0.4228	-20.92103	0.0358
Utako	Utako log	-6.325493	0.0041	-25.24900	0.0032
	Actual Inflation Index	-3.634060	0.2504	136.5624	1.0000
	Expected Inflation Index	-2.285808	0.7795	-7.293682	0.8606
	Unexpected Inflation Ind	-3.487525	0.2957	-98.06533	0.0000

Table 5 showed the result of cointegrating regression conducted on the variables. Result revealed that long run hedging capacity of housing price returns aross the markets using Fully Modified Ordinary Least Squares (FMOLS). In all the selected markets, house returns is completely hedged against actual and expected inflation and perversely against unexpected inflation. The overall influence of influence of inflation on house price return across the markets range between 88.2%-72.1%. Therefore, House price returns responds to long dynamism in the consumer price index more than the short run. It is completely more hedged in long run than short run.

Table 5: Cointegrating Regression Analysis (FMOLS Estimates)

Market	Variable	Unstandardized Coefficient	Std. Error	Beta	R-Square	Prob.	Hedging Status
Gwarinpa	(Constant)	126.023	21.549		.867	.000	
	Actual inflation $_{t-1}$	.628	.022	.984		.000	Complete Hedged
	Unexpected inflation$_{t-2}$	-.813	.238	-.115		.004	Perverse hedged
	Expected inflation$_{t-1}$	.629	.021	.990		.000	Complete Hedged
Wuse II	(Constant)	142.171	40.394		.854	.003	
	Actual inflation $_{t-1}$	.675	.040	.965		.000	Complete Hedged
	Unexpected inflation$_{t-2}$	-.948	.446	-.122		.050	Perverse hedged
	Expected inflation$_{t-1}$	.677	.039	.972		.000	Complete Hedged
Maitama	(Constant)	-148.584	64.246		.721	.034	
	Actual inflation $_{t-1}$	1.289	.064	.977		.000	Complete Hedged
	Unexpected inflation$_{t-2}$	1.265	.710	.087		.094	Partial Hedged
	Expected inflation$_{t-1}$	1.267	.083	.965		.000	Complete Hedged
Area I	(Constant)	236.231	72.039			.005	
	Actual inflation $_{t-1}$	.737	.072	.908	.874	.000	Complete Hedged
	Unexpected inflation$_{t-2}$	-1.972	.796	-.219		.025	Perverse hedged
	Expected inflation$_{t-1}$	.747	.074	.925		.000	Complete Hedged
Utako	(Constant)	155.567	60.472		.882	.020	
	Actual inflation $_{t-1}$	.653	.060	.929		.000	Complete Hedged
	Unexpected inflation$_{t-2}$	-1.068	.668	-.137		.130	Perverse hedged
	Expected inflation$_{t-1}$	.657	.059	.938		.000	Complete Hedged

Fully Modified Least Squares (FMOLS)

CONCLUSION

The analysis of the hedging capacity of house price returns has shown that real estate investment is long term real investment, and the returns must be secured against dirt of inflation. Nigeria is developing economy characterized frequent change in consumer price index. From the analysis, house price return could not effectively offer a complete hedged against dirt of inflation in short run, this finding is in line with that of Rubens, Bond and Webb (1989); the implication is that the housing market in Nigeria is yet to develop up to paper-backed securities' market

where property transaction on real estate could be carried out on securitized market. Also, the markets provide a complete hedged against actual and expected inflation in long run period, this finding is consistent with that of Sim and Choe (2002); Zhe (2010), and Leung (2010); the implication is that the real investors in Nigeria have to wait for given period before the real investment started yielding a secured return that completely hedged against inflation. The housing market in Nigeria could not effectively offer a complete hedge against unexpected inflation for both short run and the long run, due to the fact the Nigeria property market is still operating a direct property market system which does adjust immediately to sudden change in economy indicators such as inflation. Therefore, in order to have a secured property market that devoid of risk of inflation in Nigeria, the housing market must be securitized against the risk of inflation that is capable of eroding real estate returns and causing loss of investment. Conclusively, property market in Nigeria cannot be effectively hedged against inflation in short run but provide a good hedge in the long run.

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