Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.3, No.11, 2012

INFLATION-HEDGING POTENTIAL OF NIGERIAN BREWERY STOCKS

E. Chuke Nwude
Department of Banking and Finance, Faculty of Business Administration, University of Nigeria Nsukka, Enugu Campus. e-mail:chukwunekenwude@yahoo.com, 08034738615.

Abstract
Inflation is an ill-wind that blows no one any good. It is an important variable in investment decision. In inflationary period, investors are usually jittery because not only that their invested capital and expected income are at risk of extinction, the possibility of maintaining the value of the investment to command the expected purchasing power is heavily threatened. To combat this monster called inflation and protect the purchasing power of investment income, the investor should properly examine his potential investment assets to make sure such can offer him the security of his capital and income in real terms. Against this background, this study sets to examine the inflation-hedging potentials of investment in equity stocks of quoted brewers in Nigeria between 2000 and 2011. The study applied real rate of return on equity and regression analysis to find the stocks that provide positive real return and offer inflation-hedging potentials respectively. The findings revealed that in terms of real return based on shareholders' funds and total return to equity, all the firms were not susceptible to adverse effect of inflation but when based on dividend yield all the firms offered no significant hedge against inflation.

1.0 Introduction

The influence of inflation is one of the major problems encountered in investment decision especially in high inflationary economies where purchasing power degenerates fastly. In most advanced economies, the rate of inflation is moderated to a single digit level but in developing economies like Nigeria it is mostly in 2-digit state. Because of the negative effects of inflation, any nation with good government always makes efforts to postpone the emergence of inflationary tendency on the economy. This is because once inflation takes on the way, a chain of reactions is set in motion as there will be rising prices of any conceivable goods and services, real profits or earnings from investments dwindle and the urge to differ present consumption to future for investment purpose will wane, prices of real and financial assets will shoot up to the roof top. The purchasing power of the income of the citizens and residents will be messed up as it cannot command enough respect in every free-market economy. Here in Nigeria inflationary pressure is dense and persistent and the nation is yet to break out from this vicious circle. The rate of inflation in Nigeria on a year-on-year basis was 13% as at December 1991, rose to 46% by December 1992, 72.8% as at December 1995 and progressively declined to 6.9% in 2000 but rose to 10.8% as at December 2011(CBN Statistical Bulletin, 2011). Griffith(1976) spotted raging inflationary pressure as at 1974 on some industrialized economies like Britain, France, Italy, Holland, Belgium, Japan, and the United States of America to the level of 20, 14, 20, 10, 13, 24, 12 percent respectively. Bello (2000) traced the cause of inflation in Nigeria economy to low output, rapid growth of liquidity, rising cost of funds, continued depreciation of the local currency Naira and rising cost of transportation brought about by higher adjustments to fuel pump price and related tariff.

This economic scenario has being exerting adverse effect on the quantity and quality of real returns on most investment assets. In spite of this, equity investment in banking stocks continues to attract large chunk of investors in the Nigerian stock market. The main reason for this attraction is the belief that stock market investment acts as a better inflation-hedge than most other investment assets. This constitute the research questions which are, Is this belief right or wrong? Is there any evidence to support this assertion from the Nigerian Stock Market? In providing answers to these questions, the remainder of this paper is structured as follows: the next section provides a summary of the previous work and the section that follows deals with the methodology employed in the empirical analysis. The penultimate section takes care of the empirical results and its discussion, while the last section provides the summary of findings, concluding remarks and recommendation.

2.0 Literature Review

It is a common belief that investment in common stocks is a good hedge against inflation. The empirical evidence for this belief originated from the work of Irving Fisher (1930) which proposes that expected nominal interest rates should move in tandem with expected inflation. Fama and Schwert (1977) exemplified how the Fisher (1930) proposal could be used to test the inflation hedging characteristics of investment assets. Thereafter, many studies have towed the line of Fama and Schwert (1977) in determining the inflation hedging characteristics of some investment assets. With a quarterly data set covering the period 1976 and 1986 at the

property sector level and treasury bill rate as a measure of expected inflation, Limmack and Ward(1988) used the Fama and Schwert (1977) framework and found that all commercial property sectors hedge against inflation and that only the industrial sector hedge against unexpected inflation. Brown(1991) used monthly Investment property databank returns from 1987 to 1990 to give evidence that property provides a hedge against both expected and unexpected inflation. Hoesli and Matysiaic (1996) and Tarbert (1996) used cointegration approach on the examination of the inflation hedging capacity of UK commercial property and found that the UK commercial property does not exhibit short term hedging characteristics but in the long run show a positive correspondence between property return and expected/unexpected inflation.

Miles (1996) compared real returns on various types of investment in United Kingdom over a period of fifty years and found that most tangible asset-commodities(with the exception of gold), houses, land and equities-generated real returns above the average for all the assets classes with the highest return generated on equities. The assets whose returns are set in nominal terms such as bonds, bank and building society deposits had the least performance over the period. Hoesli et al (1995) show that real estate has poorer short term hedging characteristics than shares but better hedging characteristics than bonds. Newell (1996) examined the inflation hedging characteristics of Australian commercial property between 1984 and 1995 and found that both office and retail property provided a good hedge against actual, expected and unexpected inflation in Ten Australian cities studied. Hoesli (1994) used monthly, quarterly, annual and five- year data on common stocks and real estate in Switzerland for the period between 1943 and 1991 and discovered that Swiss real estate provides a better hedge against inflation than common stocks. Hamerlink and Hoesli (1996) employed hedonic and autoregressive models to show that Swiss stocks, bonds, real estate and real estate mutual funds are positively related to expected inflation and negatively related to unexpected inflation.

Hartzell et al (1987) carried out study on inflation hedging potential of residential property, commercial property, farmland, REITs, commingled real estate funds and stock exchange listed property firms and report significantly positive coefficients for expected and unexpected components of inflation. Park et al (1990) study on United States of America equity REITs report significantly negative coefficients to both expected and unexpected inflation. Fogler (1984) reports positive impact of including real estate in portfolios of United States of America stocks and bonds. With causality and cointegration analysis on the relationship between inflation and property returns Barkham et al (1996) observe that in the short run, changes in expected and actual inflation affects returns from investments in property. Bello (2005) splitting inflation into actual, expected, and unexpected and applying the Fisher (1930) model and static regression analysis in assessing inflation hedging attributes of ordinary shares, real estate, and Naira-denominated time deposits between 1996 and 2002 discovered that the extent of hedging against actual inflation was highest in ordinary shares, very weak in Naira-denominated time deposits, and non-existent in real estate. However, hedging against expected inflation was seen only in real estate and Naira-denominated time deposits.

From the works of Fisher and Webb(1992) and Newell (1996), the consensus from the results of these studies is that while property is likely to be a hedge against inflation, definitive details concerning whether property is an inflation-hedge are still unclear. Moreover none of these studies has handled a sectoral analysis of the brewery sector.

3.0 Methodology

Like most of these previous studies, this study followed the methodology of Fama and Schwert (1977). The form of regression equation typically used in this regard is $Rit = \alpha it + \beta It + eit$, where Rit represents nominal return on the ith asset during period t, αit is a constant, β is inflation hedging coefficient, It is the inflation rate during period t, while eit is a random disturbance. The decision rule for β is as follows: An asset is a complete hedge against inflation if the value of β is not significantly less than 1. An asset is a partial hedge against inflation if the value of β is between 0 and 1. An asset has zero hedge against inflation if the value of β is not significantly different from zero. An asset has a perverse hedge against inflation if the value of β is negative. The inflation-hedging potential of each brewery stock was assessed against actual inflation. In previous studies, measures of actual inflation have generally been derived from the consumer price index (CPI) percentage change, while proxies available to estimate the level of expected inflation include economic variables at the time such as short term interest rate, for instance 90-day Treasury Bill rates as in Fama (1995), Fama and Schwert (1977), Hoesli(1994), Limmack and Ward (1988). Others include survey-based inflation forecast as in Newell (1995a, 1995b), Newell and Boyd (1995) and Park et al (1990); autoregressive integrated moving average(ARIMA)-based inflation estimates as in Brown(1991), Fama and Gibons (1982), Hartzell et al (1987), Limmack and Ward (1988). The unexpected inflation is usually computed as the difference between the actual inflation and the estimates of the expected inflation. In this study, the actual inflation proxy that was used is CPI percentage change.

The study period covers 2000-2011. The returns on equity were compiled from the ordinary shares of the three active quoted breweries on the Nigerian Stock Exchange(NSE) using their annual reports and accounts from

2000-2011. The return on equity was computed under four models namely; 1) return on equity based on PAT/Shareholders' funds, 2) return on equity based on sum of dividend yield and capital gain yield, 3) return on equity based on dividend yield before tax, and 4) return on equity based on dividend yield after tax. This segregation becomes necessary in order to capture the inflation potential of the stocks in terms of return on equity based on 1) what the enterprise earns on shareholders' funds at its disposal, 2) sum of earnings of dividend yield and capital gain yield, 3) return that enters into the pocket of the shareholders before tax, 4) net return that enters into the pocket of the shareholders after tax.

4.0 Results and Discussions

Tables 4.1 to 4.4 show the four categories of nominal return on equity of the subject firms from 2000 to 2011.

Table 4.1 : Actual Inflation Rates(%)and Nominal Return on Equity based on shareholders'funds(%)

Year	Inflation Rates	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	6.90	28.97	171.14	17.11
2001	18.9	32.42	55.32	18.00
2002	12.9	29.31	-125.06	34.89
2003	14.0	43.69	228.35	28.08
2004	15.0	46.80	79.52	18.00
2005	17.9	26.66	63.21	28.79
2006	8.2	35.52	30.37	30.07
2007	5.4	33.79	9.04	43.87
2008	11.6	32.18	2897.94	79.74
2009	12.5	42.95	100.77	59.93
2010	13.7	40.17	-236.44	60.46
2011	10.8	44.50	11.31	48.97
AVE	12.32	36.41	273.79	38.99
STD	4.087	6.91	835.36	19.92

Source: Inflation rates from CBN statistical Bulletin 2011 and ROE computed from Annual Reports of the Breweries

Table 4.2 : Actual Inflation Rates(%)and Nominal Return on Equity based on Dividend and Capital gain Yields(%)

Year	Inflation Rates	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	6.90	75.46	-24.24	33.08
2001	18.9	42.01	96.00	32.34
2002	12.9	29.25	43.88	24.98
2003	14.0	69.06	-41.13	19.39
2004	15.0	78.11	-3.61	64.55
2005	17.9	-19.74	10.00	-45.80
2006	8.2	24.92	-1.14	9.40
2007	5.4	11.94	14.94	14.50
2008	11.6	-0.11	661.00	24.50
2009	12.5	6.95	-60.45	3.80
2010	13.7	42.54	79.73	48.45
2011	10.8	40.63	13.49	30.37
AVE	12.32	33.42	65.71	21.63
STD	4.087	30.82	192.84	26.92

Source: Inflation rates from CBN statistical Bulletin 2011 and ROE computed from Annual Reports of the Breweries

Table 4.3 : Actual Inflation Rates(%)and Nominal Return on Equity based on Dividend Yield before Tax(%)

Year	Inflation Rates	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	6.90	8.96	0	6.66
2001	18.9	8.38	0	7.60
2002	12.9	8.69	0	5.96
2003	14.0	6.78	0	2.68
2004	15.0	4.31	0	0.59
2005	17.9	3.20	0	1.84
2006	8.2	3.51	0	3.20

2007	5.4	2.78	0	3.83
2008	11.6	3.77	0	10.23
2009	12.5	11.18	0	3.80
2010	13.7	4.76	0	5.21
2011	10.8	3.82	0	3.48
AVE	12.32	5.85	0	4.59
STD	4.087	2.82	0	2.68

Source: Inflation rates from CBN statistical Bulletin 2011 and ROE computed from Annual Reports of the Breweries

Table 4.4 : Actual Inflation Rates(%)and Nominal Return on Equity based on Dividend Yield afterTax(%)

Year	Inflation Rates	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	6.90	8.06	0	5.99
2001	18.9	7.54	0	6.84
2002	12.9	7.82	0	5.36
2003	14.0	6.10	0	2.41
2004	15.0	3.88	0	0.53
2005	17.9	2.88	0	1.66
2006	8.2	3.16	0	2.88
2007	5.4	2.50	0	3.45
2008	11.6	3.39	0	9.21
2009	12.5	10.07	0	3.42
2010	13.7	4.28	0	4.69
2011	10.8	3.44	0	3.13
AVE	12.32	5.26	0	4.13
STD	4.087	2.54	0	2.41

Source: Inflation rates from CBN statistical Bulletin 2011 and ROE computed from Annual Reports of the Breweries

A test was carried out to find out if these brewery stocks provide positive real return on equity over the period. Using the Fisher model, the return on equity in real term is given by the model, R = (1+NR)/(1+IR) – 1, where NR represents nominal rate of return on equity, IR represents inflation rate, and R represents real rate of return on equity. Applying the Model, the real rate of return on each of the stocks has been computed and displayed in Table 4.5 to Table 4.8 showing the four classes of return on equity.

Table 4.5 : Real Return on Equity based on Shareholders' funds(%)

Year	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	20.65	153.64	9.55
2001	11.37	30.63	-0.76
2002	14.53	-122.20	19.48
2003	26.04	188.03	12.35
2004	27.65	56.10	2.61
2005	8.26	39.50	10.08
2006	25.25	20.49	20.21
2007	26.94	3.45	36.50
2008	18.44	2586.33	61.06
2009	27.07	78.46	42.16
2010	23.28	-220.00	41.13
2011	30.42	0.46	34.45
AVE	21.66	234.57	24.07

Source: computed from Annual Reports of the Breweries

Based on enterprise return on shareholders' funds Guinness generated positive real return on equity over the 12-year period which range between 30.42% in 2011to 8.26% in 2005, and this resulted into an average positive real return of 21.66 percent over the period. Similarly, International Breweries exhibited series of real rate of return on equity between 2586.33 and 0.46 percent and an average positive real return of 234.57 percent over a 12-year period, with negative real returns in years 2002 and 2010. Except in year 2001 when Nigerian Breweries recorded -0.76 percent real return, it provided positive real returns in other 11 years which ranged between 61.06 and 2.61 percent, giving an average of 24.07 percent for the period.

Table 4.6 : Real Return on Equity based on Dividend and Capital Gain Yields (%)

Year	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	64.13	-29.13	24.49
2001	19.44	64.84	11.30
2002	14.48	27.44	10.70
2003	48.30	-48.36	4.73
2004	54.88	-16.18	43.09
2005	-31.40	-5.98	-53.68
2006	15.45	-8.63	1.11
2007	6.20	9.05	8.63
2008	-10.49	581.90	11.56
2009	-4.93	-64.84	-7.73
2010	25.36	58.07	30.56
2011	26.92	2.43	17.66
AVE	19.03	47.55	8.54

Source: computed from Annual Reports of the Breweries

From the perspective of dividend and capital gain yields Guinness has an average of 19.03 percent for the period and provided reasonable positive real returns in all the years except in 2005, 2008, and 2009 when the global financial meltdown was rampaging Nigerian capital market. Nigerian Breweries towed the same line of Guinness with an average of 8.54 percent and positive real returns in all years excerpt in 2005 and 2009. International Breweries exhibited series of positive and negative real rate of return on equity as can be seen in table 4.6 above with an average of 47.55 percent for the 12-year period.

Table 4.7 : Real Return on Equity based on Dividend Yield beforeTax(%)

Year	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	1.93	-6.45	-0.22
2001	-8.85	-15.90	-9.50
2002	-3.73	-11.43	-6.15
2003	-6.33	-12.28	-9.93
2004	-9.30	-13.04	-12.53
2005	-11.79	-14.53	-12.96
2006	-4.33	-7.58	-4.62
2007	-2.49	-5.12	-1.49
2008	-7.02	-10.39	-1.23
2009	-1.17	-11.11	-7.73
2010	-7.86	-12.05	-7.47
2011	-6.30	-9.75	-6.61
AVE	-5.60	-10.80	-6.70

Source: computed from Annual Reports of the Breweries

Assessment based on dividend yields both before and after tax shows that the return on equity in terms of cash reward to equity holders yielded negative real returns. This shows that dividends received are not good hedge against inflation in the real sense of it and this may be the reason why people try to sell off when price appreciates.

Table 4.8 : Real Return on Equity based on Dividend Yield afterTax(%)

Year	GUINNESS BREW	INTERNATIONAL BREW	NIGERIAN BREW
2000	1.09	-6.45	-0.85
2001	-9.55	-15.90	-10.14
2002	-4.50	-11.43	-6.67
2003	-6.93	-12.28	-10.17
2004	-9.67	-13.04	-12.58
2005	-12.07	-14.53	-13.11
2006	-4.66	-7.58	-4.92
2007	-2.75	-5.12	-1.85
2008	-7.36	-10.39	-2.14
2009	-2.16	-11.11	-8.07
2010	-8.28	-12.05	-7.92

2011	-6.64	-9.75	-6.92
AVE	-6.12	-10.80	-7.11

Source: computed from Annual Reports of the Breweries

The positive average returns exhibited by these breweries from the tables 4.5 and 4.6 above indicate some degree of protection against actual inflation. However, Brown(1991) and Newell(1996) opine that the above basis of analysis is insufficient to conclude that each of these firms is an effective hedge against inflation. Consequently methods such as regression analysis and cointegration approach have been variously suggested in the literature to determine the degree of protection against inflation offered by investment assets.

Regression Analysis

The regression equation used to determine the degree of protection against inflation is $R = \alpha + \beta CPI + e$, where R represents Real return in time t, CPI represents percentage change in consumer price index in time t (i.e actual inflation estimate), β is the inflation coefficient which determines the inflation attributes of each of the banks, while α is a constant. The regression equation, $R = \alpha + \beta CPI + e$ was used to assess the inflation-hedging performance of these firms against the actual inflation. The analysis is presented in Tables 4.9 to 4.12 below.

Table 4.9: Inflation-hedging performance of the Stocks based on return on Shareholders funds

Asset Class	β	E	R	R^2	F	t	DW	Mean	σ	Constant
1. Guinness	**.079**	**0.534**	**.047**	**.002**	**.022**	**.148**	**1.686**	**36.41**	**6.91**	**35.439**
2. International	**-12.380**	**64.510**	**.061**	**.004**	**.037**	**-.192**	**2.217**	**273.79**	**835.36**	**426.275**
3. Nigerian brew	**-.879**	**1.515**	**.180**	**.033**	**.336**	**-.580**	**.714**	**38.99**	**19.92**	**49.818**

Source: Regressed from table 4.1 above

While Guinness returns moved slightly in the same direction with inflation, International and Nigerian Breweries returns moved in opposite direction as can be depicted from the beta coefficients in table 4.9 above. One can infer that Guinness offered small hedge against actual inflation while International and Nigerian Breweries have perverse hedge against actual inflation. The extent of perverse inflation hedging was highest in the ordinary shares of International Breweries with β = -12.38.

Table 4.10: Inflation-hedging performance of the Stocks based on dividend and Capital Gain

Asset Class	β	E	R	R^2	F	t	DW	Mean	σ	Constant
1. Guinness	**-.468**	**2.379**	**.062**	**.004**	**.039**	**-.197**	**1.472**	**33.42**	**30.82**	**39.187**
2. International	**1.481**	**14.912**	**.031**	**.001**	**.010**	**.099**	**2.380**	**65.71**	**192.84**	**47.463**
3. Nigerian brew	**-.743**	**2.070**	**.113**	**.013**	**.129**	**-.359**	**2.471**	**21.63**	**26.92**	**30.776**

Source: Regressed from table 4.2 above

From table 4.10, the strength of inflation hedging was highest in the ordinary shares of International Breweries with β = 1.481 and lowest though perverse in the ordinary shares of Guinness with β = -0.468. Nigerian Breweries and Guinness have perverse partial hedge against inflation as the β-coefficients are not up to 1. Hence two of the three firms namely Nigerian Breweries and Guinness which constitute 67 percent of the population provided perverse partial hedge against inflation over the period while one, that is, International Breweries making up 33 percent of the population offered strong positive hedge against inflation.

Table 4.11: Inflation-hedging performance of the Stocks based on Dividend Yield before Tax

Asset Class	β	E	R	R^2	F	t	DW	Mean	σ	Constant
1. Guinness	**.103**	**.216**	**.150**	**.023**	**.230**	**.480**	**1.355**	**5.85**	**2.82**	**4.571**
2. International	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3. Nigerian brew	**-.057**	**.207**	**.088**	**.008**	**.078**	**-.278**	**1.481**	**4.59**	**2.68**	**5.298**

Source: Regressed from table 4.3 above

From the angle of dividend yield before tax, Guinness stood the best of the three in terms of hedge against actual inflation. International Breweries had nothing to show in terms inflation hedge based on dividend yield before tax, while Nigerian Breweries had perverse hedge.

Table 4.12: Inflation-hedging performance of the Stocks based on Dividend Yield after Tax

Asset Class	β	E	R	R^2	F	t	DW	Mean	σ	Constant
1. Guinness	**.093**	**.194**	**.150**	**.023**	**.230**	**.480**	**1.358**	**5.26**	**2.54**	**4.113**
2. International	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
3. Nigerian brew	**-.052**	**.186**	**.088**	**.008**	**.077**	**-.278**	**1.482**	**4.13**	**2.41**	**4.767**

Source: Regressed from table 4.4 above

From the angle of dividend yield after tax, Guinness stood the best of the three in terms of hedge against actual inflation, though with very weak index. International Breweries had nothing to show in terms inflation hedge based on dividend yield after tax, while Nigerian Breweries had very weak perverse hedge.

5.0 Summary of Findings, Conclusions, and Recommendations

In this study, attempt had been made to discover the inflation potential of the equities of the active stocks quoted in the Breweries sub-sector of the Nigerian Stock Exchange. The Fischer's model and regression analysis were employed as tools to capture the wanted potentials of the subject firms. In terms of real return using Fischer's model, and based on enterprise return on shareholders' funds Guinness generated positive real return on equity over the 12-year period which range between 30.42% in 2011to 8.26% in 2005, International Breweries had the highest average positive real return of 234.57 percent and Nigerian Breweries recorded an average of 24.07 percent over the 12-year period.

From the perspective of dividend and capital gain yields Guinness and Nigerian Breweries towed the same line of persistent generation of positive real return while International Breweries exhibited series of positive and negative real rate of return on equity in this regard. However International Breweries provided the highest average real rate of return on equity of 47.55 percent followed by Guinness with 19.03 percent and Nigerian Breweries with 8.54 percent for the 12-year period. Assessment of inflation hedging based on dividend paid using before and after tax bases provided perverse hedge against inflation.

Earlier studies conducted by Wurtzbach et al(1991) and Brueggeman et al (1992) indicated that the extent of inflation hedging is a function of the degree of the inflation, that is, whether high or low. However, in this study, one point that has been established is that from the stocks examined, in terms of return on shareholders' funds, Guinness offered small hedge against actual inflation while International and Nigerian Breweries have perverse hedge against actual inflation. In terms of total return on equity, two of the three firms namely Nigerian Breweries and Guinness which constitute 67 percent of the population provided perverse partial hedge against inflation over the period while one, that is, International Breweries making up 33 percent of the population offered strong positive hedge against inflation. From the perspectives of dividend yield before and after tax, Guinness stood the best of the three in terms of hedge against actual inflation, though with very weak index while Nigerian Breweries had perverse hedge.

References

Barkham, R. J.; Ward, C. W. R. And Henry, O. T. (1996) 'The Inflation-Hedging Characteristics of U.K Property'' Journal of Property Finance, Vol.7 No.1, 62-76.

Bello, O. M.(2000) 'Risk Management in the Process of Property Development Construction in Nigeria' Journal of the Federation of Construction Industry, Vol.15 No.3, 15-23.

Bello, O. M.(2005) 'The Inflation-Hedging Attributes of Investments in Real Estate, Ordinary Shares and Naira Denominated Deposits Between 1996 and 2002' Journal of Banking, Vol.1 No.1, 1-28.

Brown, P. (1990) 'United Kingdom Residential Price Expectations and Inflation' Land Development Studies, Vol.7, 57-67.

Brown, G. (1991) 'Property Investment and the Capital Markets' London, E&FN Spon.

Brueggeman, W.; Chen, A.; Thibodean, T. (1984) 'Real Estate Investment Funds: Performance and Portfolio considerations' AREUEA Journal, Vol.12

Brueggeman, W.; Chen, A.; Thibodean, T. (1992) 'Some Additional Evidence on the Performance of Commingled Real Estate Investment Funds: 1972-1991' Journal of Real Estate Research, Vol.7, 433-448.

Central Bank of Nigeria(2010) 'Central Bank of Nigeria Statistical Bulletin 2010' Abuja, Federal Government of Nigeria Press.

Fama, E. F.(1975) 'Short Term Interest Rates as Predictors of Inflation' American Economic Review, Vol.65 No.3, 269-282.

Fama, E. F. and Gibbons, M. (1982) 'Inflation Real returns and Investment' Journal of Monetary Economics, Vol.8, 279-323.

Fama, E. F. And Schwert, G. (1977) 'Asset Returns and Inflation' Journal of Financial Economics, Vol.8, 115-146.

Fisher Irving (1930) 'The Theory of Interest Rates' Macmillan.

Fisher, J. And Webb, B. (1992) 'Current Issues in the Analysis of Commercial Real Estate' AREUEA Journal, Vol.20, 211-228.

Fogler, H. R. (1984) '20% in Real Estate: Can theory Justify it?' Journal of Portfolio Management, Vol.10 no.2, 6-13.

Griffiths, B. (1976) 'Inflation: The Price of Prosperity' London, Wendenfeld and Nicolean.

Hamerlinks, F. And Hoesli, M. (1996) 'Swiss Real Estate as Hedge against Inflation: Evidence using Hedonic and Autoregressive Models' Journal of Property Finance, Vol.7 No.1, 33-49.

Hartzell, D. J.; Shulman, D. G. And Wurtzebach, C. H. (1987) 'Refining the Analysis of Regional Diversification for Income-Producing Real Estate' Journal of Real Estate Research, Vol.2 No.2, 85-95.

Hoesli, M. (1994) 'Real Estate as a Hedge against Inflation: Learning from the Swiss Case' Journal of Property Valuation and Management, Vol.12 No.3, 51-59.

Hoesli, M.; Matysiak, B.; MacGregor, B. And Nanthakumaran, N. (1995) 'The Short Term Inflation Hedging Characteristics of UK Real Estate' A paper presented at Cutting Edge Conference, Aberdeen, Scotland.
Hoesli, M.; Matysiak, B.; MacGregor, B. And Nanthakumaran, N. (1996) 'The Long-term Inflation Hedging Characteristics of UK Commercial Property' Journal of Property Finance, Vol.7 No.1, 50-61.
Limmack, R. And Ward, C. (1988) 'Property Returns and Inflation' Land Development Studies, Vol.5, 47-55.
Mengden, A. And Hartzell, D. J. (1988) 'Real Estate Investment Trust- Are They Stocks or Real Estate?' Stocks Research-Real Estate, Salmon Brothers Inc. New York.
Miles, D. (1996) 'Property and Inflation' Journal of Property Finance, Vol.7 No.1, 21-32.
Newell, G. (1995a) 'Inflation-Hedging Attributes of Australian Commercial Property' Australian Land Economic Review, Vol.1, 31-37.
Newell, G. (1995b) 'Is Canadian Real Estate A Hedge Against Inflation' The Canadian Appraiser, Vol.39, 25-27.
Newell, G. (1996) 'The Inflation-Hedging Characteristics of Australian Commercial Property: 1984-1995' Journal of Property Finance, Vol.7, 6-20.
Newell, G. And Boyd, T. (1995) 'Inflation-Hedging Attributes of New Zealand Commercial Property' in Newell, G. (1996) 'The Inflation-Hedging Characteristics of Australian Commercial Property: 1984-1995' Journal of Property Finance, Vol.7, 6-20.
Park, J.; Mullineaux, D. J. And Chew, I. K. (1990) 'Are REITs Inflation Hedges?' Journal of Real Estate Finance and Economics, Vol.3 No.3, 5-23.
Wurtzebach, C. et al (1991) 'The impact of Inflation on Real Estate Returns' Journal of Real Estate Research, Vol.6, 153-163.

This academic article was published by The International Institute for Science, Technology and Education (IISTE). The IISTE is a pioneer in the Open Access Publishing service based in the U.S. and Europe. The aim of the institute is Accelerating Global Knowledge Sharing.

More information about the publisher can be found in the IISTE's homepage: http://www.iiste.org

CALL FOR PAPERS

The IISTE is currently hosting more than 30 peer-reviewed academic journals and collaborating with academic institutions around the world. There's no deadline for submission. **Prospective authors of IISTE journals can find the submission instruction on the following page:** http://www.iiste.org/Journals/

The IISTE editorial team promises to the review and publish all the qualified submissions in a **fast** manner. All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Printed version of the journals is also available upon request of readers and authors.

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar