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The Effect of Increasing Cost of Capital on the Profitability of Real Estate Development in Benin City, Nigeria

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ABSTRACT
The cost of capital in the country has displayed steep increase in recent times as interest rates have continued to rise. This in turn has affected the profitability of real estate development. The huge capital commitment in real estate development often times drive developers to exploiting other sources of capital, apart from equity, which will incur a cost that has to be financed by part of the profit from such investment, thereby affecting the profitability of the development to the developer. This research examined the effect of increasing cost of capital on the profitability of real estate developments in Benin City, Nigeria. In carrying out investigation, questionnaires were administered to selected real estate developers who developed for income generating purposes, as well as structured interview with the officials of Central Bank of Nigeria. Data collected were analyzed using the simple percentage analysis to determine the relative strength of responses drawn and the annual repayment model to determine cash flow from real estate development. It was revealed that cost of capital created negative rate of returns which implied that the increasing cost of capital reduces the profit level of real estate development in Benin City property market. The study therefore concluded that the increasing cost of capital in Nigeria affects the profitability of real estate development negatively. However, the Federal Government of Nigeria was advised to revitalize the National Housing Fund Scheme in order to boost investors' opportunity of accessing loans and manage interest rates as a way of stimulating the economy to starve off inflation.
Keywords: Real Estate Development Cost of Capital, Profitability, Annual Repayment Model, Benin City, Nigeria.

1.0 INTRODUCTION

Real estate development is arguably the safest investment in the world as it provides the investor a wide range of benefits which includes profit, prestige, collateral for bank facility, etc. Though, an attractive investment option, one wonders why many nations of the world experience shortage in supply of real estate developments.
Real estate developments are capital intensive by nature, they require a considerable amount of capital to execute them; hence, only a very small percentage of the development sum/cost is normally provided from savings. It is therefore necessary for investors and the society in general to have basic knowledge on the cost of such capital in terms of interest rates.
The huge capital requirement/cost for real estate developments have discouraged quite a number of investors; while the bold and unwavering lot have found wisdom in seeking professional advice and preparation of detailed viability reports in other to maximize profit and avoid unnecessary capital wastages.
The estate surveyor and valuer usually offers professional advice to enlightened investors as regards the best investment option in an area with special consideration to the cost of capital, the period within which they will be recouped and the expected profit from such real estate investment.
Generally, interest rates have a profound effect on the value of income producing investments.
Mortgage rates influence property values and profitability of real estate developments. Interest rates have become major influence on capital flow, the supply and demand for capital, and the investors rate of return on investment i.e. investment on real estate development.
In the face of global economic turmoil, unstable inflation rates, etc; increasing interest rates can drive property prices in variety of ways. This study therefore examined the effects of increasing cost of capital on the profitability of real estate development in Benin City, Nigeria.
The study examined the effect of increasing cost of capital on real estate development in Benin City.
Although the essence of the study examined the effect of increasing cost of capital on the profitability of real estate developments in Benin City, the research was limited to income generating real estate investments around Ekenwan Road, Ugbowo, Sakponba, Sapele/GRA in Benin City.

2.0 REAL ESTATE DEVELOPMENT/INVESTMENT

The word "Development" covers a very wide spectrum. It will therefore be out of place and misleading to define development in a single and precise sentence.
Aibangbee (2003), defined development in relation to land, as the process of carrying out the constructional works which are associated with a change in the use of land or of the land with its buildings or with a change in

the intensity of the use of land or with a re-establishment of an existing use. Such works would include the alteration, erection or re-erection of buildings and also the construction of roads and sewer, the building of river walls or the laying out of playing fields. The word is also used to describe such land and works jointly when constructional facilities like water, electricity, telephones, access roads, etc, on bare land before the actual construction of any structure on the site is also termed development. The essential characteristic and common factor in each of the activities listed above is that it goes through a process which is aimed at satisfying the need for usable space and transforming space from its existing form to a different state with a view to satisfying existing or projected needs or demand and it is a production process or a phase in the production process. It is the process or range of processes that is generally referred to as property development.

The word "Development" with regard to real estate had been variously defined as follows:

The Town Planning Act, 1962 Section12 defines development as the carrying out of building engineering works, mining or other operations on or under land or in making of material changes in the use of any building or other lands.

In socio-economic term, development is a progressive transformation of the society.

According to section 12(2) of the British Town and Country Planning Act of 1947, development is the carrying out of building, engineering, mining or other operation in, on, over or under land; or the making of any material change in the use of any building or other lands.

CAP 155, Laws of Nigeria 1948, defined development to include only building or re-building operations and any use of land or any building that was last used.

Section 96 of the Lagos State Urban and Regional planning Board Edict No. 2 of 1998, defined development as the making of any material change in use of any land, building, structure, or conversion of land, building structure from it's established or approved use and or the placing or display of advertisement on the land, building or structure.

According to Emoh (2004), property development is a form of investment which involves the application of capital and other resources to create a new product. It is an investment that entails foregoing present consumption in anticipation of future/long term benefit. This is an activity in which capital is sunk either for provision of new physical structures or for the re-development of old ones. The chief motive behind such venture may vary from the security or regular inflow of income over a number of years to the provision of lump sum capital to facilitate the take off, of another project and further allow for the enjoyment of the special attribute of investment in land which is the joy of ownership and meeting of social needs.

Aibangbee (2004) opined that property development is a multi-disciplinary and term activity and can be viewed as the use of land in its broadest sense to obtain a satisfactory environment, taking into consideration the social and economic needs of the society; it involves creativity and covers a wide range of processes. Property can be looked upon primarily as a usable commodity and property development as the process of producing that commodity. Property development embraces the various processes that take place through the allocation of resources in land in various forms or phases to achieve optimum utility of profitability.

According to the Nigerian Urban and Regional Planning Decree No. 88 of 1992, property development is defined as the carrying out of any building, engineering, mining or other operation, in, on, over land OR, the making of any environmental significant change in the use of any land or demolition of building including the felling of trees and the placing of free standing erection used for display of advertisement on land.

Kuye (2008), said that property development is the process of dividing raw land into plots, installing street and preparing for construction of the improvement, the process of carrying out construction works with a change in the use of the land or with a re-establishment of an existing use. Such works would include the alteration, erection, or re-erection of building and also the construction of river and sewer, the building of river wall or the laying of planning fields among others.

According to Aibangbee (2003), property development is an act of generating latent values in land or of creating benefit thereof by incurring on it cost in the form of labour, capital or management skill. Property development could then be regarded as an improvement made upon land, which may be either bare but ripe for development or partly developed, or one which there is an obsolete structure. In concrete terms, property development can be said to mean the carrying out of works involving a change in the physical structure, and in the type and intensity of use of an existing real property.

Investment in real property may either be in the form of financial investment or real investment. Financial investment in real estate involves acquiring land, building and similar estate assets in order to derive from them rents or other annual income. Real investment involves the creation of new assets which may be broadly identified with property development. Almost any work to a property or changes in the management or use of premises can have the effect of modifying its usefulness and income earning capacity and the term "development" may apply to the whole range of such innovations, however small (Emoh, 2004).

Thus real estate development involves mainly putting land into more profitable uses by the construction of new building, alteration of existing buildings to enhance efficiency in the present uses or to meet changing needs, tastes and demand.

Real property may be acquired by auction, by tender, by private treaty or by takeover bid, or by purchase. Investment in real property can also take the form of "Sale and Lease back". The principle of Sale and Lease back involves the outright sale of one's interest in a real property as a means of obtaining finance. The same property sold is then taken on leasehold basis by the seller.

Real estate development because of its peculiar characteristics requires colossal amount of money to be executed. The enormous amount of money involved makes it difficult most times for equity capital only to be used in its development. Thus, real estate investors/developers often seek and obtain credit facilities to fund real estate development to completion. Without credit facilities, very large and choice real estate development would be difficult to accomplish. Thus, ready availability of debt funds is necessary for efficient operation of real estate development in any economy.

There are many sources of finance for real estate investment. The sources could be internal or external. Internal sources are sources by which that estate will generate development funds internally without going to borrow for example rental incomes generated internally from the estate. External sources are finance brought from outside the estate that includes borrowed fund, consociate wealth, operators equity capital, etc.

However, sources of real estate finance can be broadly categorized as:

1. Informal or traditional sources
2. Formal or contemporary sources

There are several kinds of traditional sources of finance as discussed below:

i. Isusu system (small rotary credit association): This is an association of small group of people of the same class involved in mutual aid scheme. The primary thrust of the association is thrift and compulsory saving of certain amount of money among members at regular intervals and advancing the total sum to members in turn until every person has benefited. This system has survived up till today because of its popularity and effectiveness in assisting the members of the association raise reasonable investment capital.

ii Social Clubs and Associations: Social clubs are more or less social insurance or security schemes for members. Members of the association contribute money or raise funds through launchings and other income yielding ventures to embark on project of common interest such as ceremonial halls and development projects of social/charitable nature. These associations include: Age grade association, married women association, extended family men and women association, etc.

iii Local Money Lenders: Local money lenders provide quickest and easiest source of loans but at very high cost and burden. They usually charge high interest rates and require borrowers to deposit valuable security which they forfeit on default of repayment at agreed date.

Formal or Contemporary sources of real estate development finance can be categorized into two, namely:

i Equity capital
ii Debt capital

i. Equity Capital: This refers to that part of the estate capital contributed by the proprietor(s). The proprietor(s) owns the equity fund hundred percent and as such is not expected to pay interest on it. It represents the stake of the owners in that estate. There are several kinds of equity finance sources such as:

Personal and family savings: Personal and family savings have been a major source of real estate development finance in both rural and urban areas in Nigeria from the pre-historic time. Most investors use their family/personal savings in real estate developments. However, because of the huge capital outlay involved in real estate development, personal/family savings alone may not be enough to complete the project, thence, recourse is often had to debt finance.

Sale and lease back: **s**ale and lease back is an arrangement whereby the owner-occupier of a freehold or leasehold property sells his interest in the property to a purchaser (usually an institutional investor) on the understanding that the property is granted back to him on a lease which may represent an investment rate of return on capital (i.e. the purchase price).

Consociate wealth (finance): consociate wealth arises where two or more estate or proprietary land units are under the ownership of one proprietor who is at liberty to use income from one unit to invest in another unit. Consociate wealth enables an owner of proprietary land units to maneuver the resources of the units in a way that will lead to better development of the units for enhanced overall economic returns.

ii Debt Capital: Debt capital or finance represents borrowed fund which is external to the estate. It implies adopting funds from outside personal sources.

Investment in real estate generally involves heavy initial capital outlay which is beyond the financial resources of most people in the society. Therefore, without real estate credit facility, many property owners would not have been able to attain their position.

The foregoing scenario necessitates the need for debt finance which can be sourced from:

Banks: The Nigeria banking industry has different types of banks which offer peculiar services in the economy. Banks includes commercial banks, Industrial and development banks, primary mortgage institutions, micro finance banks, among others. Before now, commercial banks do not lend for real estate development but with the emergence of mega banks, they are expected to lend a certain percentage of their loan on long term basis to real estate in accordance with central bank of Nigeria regulation.

Insurance Companies: Insurance companies provide hedge against risks and spread the liability and burden of risks when they occur on several people as evidenced in the regular premium which the insured has to pay. However, the Act regulating insurance business in the country requires that not less than ten percent of the assets of non – life insurance companies shall be invested in real property while for the life assurance companies the minimum shall be twenty – five percent. The companies may invest such funds directly in real estate development projects on their own or indirectly as loans to real estate developers and building societies on mortgage basis.

Building societies and saving and loans: These are associations of real developers which primarily aim at providing finance for housing development. Their rate of interest is usually very low compared to the rates of interest in money markets; examples include state housing development corporations, etc.

Contractors financing: This is an arrangement whereby the contractor (i.e. a real estate development company) undertakes in the building contract agreement, to executive the building construction in accordance with the approved building plan and to be paid at certain stages or on completion of the development. The contractor reserves the right to retain control of the property until he has been repaid the agreed cost of developing the property.

Pension Funds: with the inauguration of Nigerian pension's funds board, pension funds will begin to serve as significant providers of long term finance for capital investment as obtainable in developed countries. The main objective of the fund is to adopt a more comprehensive social security scheme for Nigerian private sector employees. It is hoped that the fund managers will make available the idle funds mobilized from private sector employees and their employers for financing long-term real estate investments.

Property companies: These can be public or private in nature. Where they are private, they invite funds from the public in form of tenders and the issuance of shares. If it is the government on the other hand, this can be through taxation. Both of them could use their own capital in development and at times, borrow, securing their loans on their assets. They could also lend out their money on mortgage basis.

2.1 REAL ESTATE PROFITABLITY AND COST OF CAPITAL

Real estate investment profitability is anchored on the returns which are income generated or the capital gain achieved from the investment being converted to a percentage of the capital outlay.

According to Emoh (2004) it is the amount of money earned over the investment period per the amount invested. The percentage is normally calculated on an annual basis. If the property is acquired for letting, the returns will be the possibility of capital appreciation.

The initial yield on an investment is the current net income expressed as a percentage of the capital value. The current income is normally known or can be estimated, and therefore the capital value of the investment depends on the yield which investors are prepared to accept.

Investors seek the highest rate of return on their capital. They may accept a low initial yield because of the long term prospects of the investment. To some extent, the yield reflects the investor's view about the future risks attached to the investment. The higher the risk, the higher the yield and problems associated with an investment and vice versa (Emoh, 2004).

According to Emoh (2004), the investment returns can be measured with the aid of the internal rate of return (IRR), Net Present Value (NPV), profitability index, etc. However, profitability index finds in ratio, the naira amount difference between the sum of present values of all future cash flows and the amount of initial investment.

The advantage of using profitability index to measure property investment opportunities is that as a ratio, it allows you to measure the proportion of Naira's returned to Naira investment, and therefore allows you to easily compare present value and initial investment on any number of investment opportunities.

Capital for an investment is simply money. It is the financing for the investment or the money used to operate and buy assets. Cost of capital is the cost of obtaining that money or financing for the investment. The cost of capital is simply the rate or interest rate it costs the investment to obtain financing.

An investment's cost of capital is simply the cost of money the investor uses for financing. If an investor only uses current liabilities and long term debt to finance his projects, then he uses debt and the cost of capital is usually the interest rate on that debt.

One component of the cost of capital is the cost of debt financing. For large investment, debt usually means large loans while for very small investments; the debt can mean trade credit. For either, the cost of debt is the interest rate the investor pays on the debt.

Another component of the cost of capital is the cost of equity financing if the investor is a public investor.

Return on capital is the amount of profit earned out of an investment as compared to the amount of capital invested. The key to cost of capital for an investment is that an investment return on capital must always equal or exceed the cost of capital for any project in which the investor wants to invest. In other words, the investor's investment rate of return (return on capital) must equal or exceed their financing rate of return cost of capital in order for the investment to be profitable.

Real estate development/investment has been seen as a form of investment which involves the application of capital and other resources to create a new product which could be in the form of residential property, commercial property, industrial property, etc.

Many investors venture into real estate development for shelter, boom and prestige, social/profit, continuity and investment and the essential factors of such ventures are land, capital, materials, labour, and entrepreneur.

However, different property developers exist, such as private developers which include individuals who build for owner occupation, individual or group of individuals who build for investment purpose etc, and public developers which consist of government and their agencies. A developer can invest in property development either directly – when an investor or the owner of a project undertakes the development by himself by financing and employing the professionals in the construction industry directly; or indirectly – when an investor or the owner of a project undertakes the development through someone else other than himself.

In the course of the investment, the development will undergo the conceptualization state, site identification stage, development appraisal stage, land assembly stage, assessment of demand stage, and the design of development programme stage.

Furthermore, it was gathered that finance is the key to the investment decision and the various methods of project finance included, equity finance, bridging finance, contractor finance, syndicate housing finance, mortgage finance and others.

Finally, real estate differs from other investment in that it lack central institution, imperfection of property market knowledge, uniqueness of individual property, indivisibility into smaller units for the purpose of sale and the fact that transactions are very costly, and time – consuming while it's advantage over other investment outlets lies in its profitability in many and real terms which may be measured in form of a percentage expression of the income generated or capital gain achieved being converted.

3.1 MATERIALS AND METHOD

This study employed the survey research design. The researcher adopted the design because he was interested in the study of a whole population through the study of a sample considered to be a representation of the whole population. The study sought the opinion of the various professionals involved in the area of real estate development which include: the Architects, the quality surveyors, builders and the estate surveyors and valuers, in the various segments in Benin City property market as well as the central bank of Nigeria (CBN). The conclusions reached in this design were accurate.

In view of the large size of the population of Benin City, it became impossible for the researchers to adopt the entire population for this research. For this reason, the researcher took a selected housing unit in the study area with common features and characteristics. A total of 200 (Two Hundred) housing units designed and for the same purpose were selected by the researchers in the study.

The targeted population of study consists of properties in the Benin metropolis, while information was obtained from firms of estate surveyors and valuers, architects, quantity surveyors, builders and other real estate investors.

The sample of the study was selected properties developed for income generating purpose within the study area between 2009 and 2013.

The study employed stratified sampling technique in selecting the sample population. This technique divides the population into homogeneous sub-groups which in this case are developed residential and commercial properties for letting/lease based on the objective of the study, then; the simple random sampling was employed to select the appropriate sample sizes for each stratum or sub-groups. It consists of residential and commercial properties.

The study employed the questionnaire method in data collection. This is because the questionnaire is effective in producing desired results in reaching out to a good number of real estate developers. The instrument was developed through the aim and objectives of the study and the research questions that arose. The questionnaire elicits information on rate of return on investment on properties, cost of financing real estate developments, etc. Also, structural interview was conducted on officials of the Central Bank of Nigeria (CBN) to elicit information on interest rate.

The research questionnaires were validated through its presentation to a panel of experts in the field of real estate investment and development. The experts examined the questionnaires carefully and where errors were found, they pointed them out and offered suggestions on improving the quality of the questionnaires. In addition, pilot

test was done and it was observed that the instrument measured what it was expected to measure before it was considered valid.

The researchers with the help of a field assistant administrated a total of 40 questionnaires to the sample population on different occasions. A total of 30 questionnaires were retrieved and analyzed appropriately. The questionnaires success rate averaged 75%.

The data collected for this study were analyzed using simple percentage and loan repayment method to test the relative strength of responses drawn from the respondents using the formula:

$$\frac{R}{N} \times \frac{100}{1}$$

Where R = Reponses and N = Number of respondents.

Financial leverage will be computed using the formula:

$$P = \frac{M(1+i)^n i}{(1+i)^n - 1}$$

Where:

- = payment per period (annually)
i = interest rate
m = mortgage loan
n = term in years

A total of 30 questionnaires retrieved were analyzed .

Table 1: Proportion of respondents who developed real estate for income generating purposes.

Response	Frequency of response	Percentage of response
Yes	30	100
No	-	-
Total	30	100

Table 1 above shows that 30 respondents, representing 100% of the total population under study develop real estate for income generating purposes. So the study is on the right track in determining the profitability of real estate as its profitability is hugely dependent on income generating capacity.

Table 2: Sources of funding real estate development.

Response	Frequency of response	Percentage of response
Equity Finance	10	33.33
Loan/Mortgage	8	26.67
Equity/Loan	12	40.00
Total	30	100

The table above shows that 33.33% of the real estate developers in Benin property market develop with equity without loan, 26.67% develop with loan while a larger proportion of 40% develop with a combination of loan and equity.

Table 3: Do you develop real estate for income generation

Response	Frequency of Response	Percentage of Response
Yes	12	40
No	18	60
Total	30	100

Table 4: Analysis of responses on increase in cost of capital of real estate.

Response	Frequency of Response	Percentage of Response
Yes	30	100
No	-	-
Total	30	100

Table 4 above shows that there is an increase in the cost of capital of real estate as 30 respondents representing 100% of the total respondent attested to this.

Table 5: Effect of increasing cost of capital on the profitability of real estate.

Response	Frequency of Response	Percentage of Response
Positive	-	-
Negative	30	100
Total	30	30

From the table above, it is revealed that increasing cost of capital affects the profitability of real estate negatively as 100% of the investors under study attested to this fact.

Table 6: Analysis of real estate development at Ekenwan Road between 2009 and 2013.

Year	Property type	Net Rent (N)	Capital value	Equity	Loan	Payback period
2009	Bungalow	N500,000	N14m	N10m	N40m	6yrs
2010	Block of flat	N600,000	N20m	N20m	-	-
2011	Twin Bungalow	N600,000	N22m	N17m	N5m	5yrs
2012	Shops (lockup)	N640,000	N18m	N14m	N4m	5yrs
2013	Shops	N700,000	N19.8m	-	-	-

Source: Analysis of field survey data, 2013.

Table 7: Analysis of real estate development at Ugbowo between 2009 and 2013.

Year	Property type	Net Rent (N)	Capital value	Equity	Loan	Payback period
2009	2No 3 bedroom flat	N240,000	N8m	N5m	N3m	3yrs
2010	4No flat	N800,000	N16m	N13m	N3m	4yrs
2011	Twin Bungalow	N360,000	N11m	-	-	-
2012	Shops (lockup)	N800,000	N12.3m	-	-	-
2013	Shops	N880,000	N13m	N10m	N3m	4yrs

Source: Analysis of field survey data, 2013.

Table 8: Analysis of real estate development at Sapele Road /GRA between 2009 and 2013.

Year	Property Type	Net Rent (N)	Capital value	Equity	Loan	Payback period
2009	4 bed room bungalow	N500,000	N24m	N4	N3	6yrs
2010	6No 2 bed room flat	N1,500,000	N32m	N26m	N6m	6yrs
2011	2No 2 bed room flat	N400,000	N13m	-	-	-
2012	2No 3 bed room flat	N400,000	N16m	N13m	N3m	5yrs
2013	8No (lockup) shops	N800,000	N18m	-	-	-

Source: Analysis of field survey data, 2013.

Table 9: Analysis of real estate development at upper Sokponba between 2009 and 2013

Year	Property type	Net Rent (N)	Capital value	Equity	Loan	Payback period
2009	Bungalow	N 600,000	N14m	-	-	-
2010	Office block	N 800,000	N29m	N20m	N9m	6yrs
2011	Block of 4 flat	N1,120,000	N26.6m	-	-	-
2012	Twin bungalow	N 360,000	N19m	N16m	N3m	5yrs
2013	Shops	N1,120,000	N16.8m	-	-	-

Source: Analysis of field survey data, 2013.

Table 10: Average real Estate Development between 2009 and 2013

Year	Average rent (pa)	Capital (N)	Equity (N)	Loans (N)	Payback period
2009	385,000	N15m	12m	3m	5yrs
2010	925,000	N20.5m	19m	5m	5yrs
2011	620,000	N18.3m	14.3m	3.6m	5yrs
2012	550,000	N16.3m	14.3m	3.6m	5yrs
2013	875,000	16.9m	10m	3m	5yrs

Source: Analysis of field survey data, 2013.

Table 11: Average mortgage lending rate in Nigeria between 2009 and 2013.

Year	Rate (%)
2009	18.40
2010	17.60
2011	16.75
2012	22.00
2013	23.00

Source: The Central Bank of Nigeria (CBN)

4.1 APPLICATION OF THE LOAN ANNUAL REPAYMENT MODEL

Where $P = \frac{m(1+i)^n i}{(1+i)^n - 1}$

P = payment per period (annual)
I = Interest rate
M = mortgage loan
N = term in years

This model will be used in comparing the return on real estate development where development is through mortgage financing and where it is on hundred percent equity financing.

Case I (2009)

Parameters:

Interest Rate	=	18.40% (I)
Net Rent	=	385,000 (NR)
Capital Value	=	15,000,000 (CV)
Loan	=	3,000,000 (M)
Equity	=	12,000,000 (E)
Payback Period	=	5yrs (N)

Annual Repayment

$$P = \frac{3000,000\ (1+0.184)^5 \times 0.184}{(1+0.184)^5-1}$$

$$= \frac{3000,000 \text{ X } 2.327 \text{ X } 0.184}{2.327-1}$$

$$= \frac{1284504}{1.327} = \text{N967,976}$$

TABLE 12: CASH FLOW IMPLICATION

WITHOUT LOAN (N)	WITH LOAN OF N3,000,000
Net Rent N385,000	N385,000
Less Debt Service	N967,976
Cash Flow N385,000	-N582,976
Return on investment N385,000 / N15,000,000 x 100/1 = 2.6%	- N582,976 / N12,000,000 x 100/1 = -4.9%

Source: Analysis of Field Data 2013.

Case II (2010)

Interest Rate	=	17.60% (I)
Net Rent	=	925,000 (NR)
Capital Value	=	N20, 500,000(CV)
Loan	=	N5, 000,000(M)
Equity	=	N19, 000,000 (E)
Payback Period	=	5years (N)

Annual Repayment

$$P = \frac{5000,000\ (1+0.176)^5 \text{ X } 0.176}{(1+0.176)^5-1}$$

$$= \frac{5000,000 \text{ X } 2.249 \text{ X } 0.176}{2.249-1}$$

$$= \frac{1979120}{1.249} = \text{N1,584,564}$$

TABLE 13: CASH FLOW IMPLICATION

WITHOUT LOAN (N)	WITH LOAN OF N5,000,000
Net Rent N925,000	N 925,000
Less Debt Service 0	N1,584,564
Cash Flow N925,000	- N 659,564
Return on investment N925,000 / N20,500,000 x 100/1 = 4.6%	- N659,564 / N19,000,000 x 100/1 = -3.5%

Source: Analysis of field data 2013.

Case III (2011)

Interest Rate = 16.75% (I)
Net Rent = N 620,000 (NR)
Capital Value = N18, 300,000(CV)
Loan = N 3,600,000(M)
Equity = N14, 300,000 (E)
Payback Period = 5years (N)

Annual Repayment

$$P = \frac{3{,}600{,}000\,(1+0.168)^5 \times 0.168}{(1+0.168)^5-1}$$

$$= \frac{3{,}600{,}000 \times 2.174 \times 0.168}{2.174-1}$$

$$= \frac{1314835}{1.174} = \text{N1,119,962}$$

TABLE 14: CASH FLOW IMPLICATION

WITHOUT LOAN (N)	WITH LOAN OF N3,600,000
Net Rent N620,000	N 620,000
Less Debt Service 0	N1,119,962
Cash Flow N 620,000	- N 499,962
Return on investment N620,000 / N18,300,000 x 100/1 =3.4%	- N499,962 / N14,300,000 x 100/1 = -3.5%

Source: Analysis of field data 2013.

Case IV (2012)

Interest Rate = 22% (I)
Net Rent = 550,000 (NR)
Capital Value = N16,300,000(CV)
Loan = N3,600,000(M)
Equity = N14,300,000 (E)
Payback Period = 5years (N)

Annual Repayment

$$P = \frac{3{,}600{,}000\,(1+0.22)^5 \times 0.22}{(1+0.22)^5-1}$$

$$= \frac{3{,}600{,}000 \times 2.703 \times 0.22}{2.703-1}$$

$$= \frac{2140776}{1.703} = \text{N1, 257,062}$$

TABLE 15: CASH FLOW IMPLICATION

WITHOUT LOAN (N)	WITH LOAN OF N3,600,000
Net Rent N550,000 Less Debt Service 0 Cash Flow N550,000	N 550,000 N1,257,062 - N 707,062
Return on investment N550,000 / N16,300,000 x 100/1 = 3.4%	- N707,062 / N14,300,000 x 100/1 = -4.9%

Source: Analysis of field data, 2013.

Case V (2013)

Interest Rate = 23% (I)
Net Rent = 875,000 (NR)
Capital Value = N16, 900,000(CV)
Loan = N3, 000,000(M)
Equity = N10, 000,000 (E)
Payback Period = 5years (N)

Annual Repayment

$$P = \frac{3{,}000{,}000\,(1+0.23)^5 \times 0.23}{(1+0.23)^5-1}$$

$$= \frac{3{,}000{,}000 \times 2.815 \times 0.23}{2.815-1}$$

$$= \frac{1942350}{1.815} = \text{N1, 070,165}$$

TABLE 16: CASH FLOW IMPLICATION

WITHOUT LOAN (N)	WITH LOAN OF N3,000,000
Net Rent N875,000 Less Debt Service 0 Cash Flow N875,000	N 875,000 N1,070,165 - N 195,165
Return on investment N875,000 / N16,900,000 x 100/1 = 5.2%	- N195165 / N10,000,000 x 100/1 = -2.0%

Source: Analysis of field data, 2013.

TABLE 17: SUMMARY OF RATE OF RETURN ON INVESTMENT

YEAR	RATE OF RETURN WITHOUT COST OF CAPITAL	RATE OF RETURN WITH COST OF CAPITAL
2009	2.6%	-4.4%
2010	4.5%	-3.5%
2011	3.4%	-3.5%
2012	3.4%	-4.9%
2013	5.2%	-2.0%

Source: Analysis of field data, 2013.

4.2 DISCUSSION OF FINDINGS

This study investigated the increasing cost of capital on profitability of real estate developments in Benin property market. The following findings are observed.

Firstly, the study revealed that real estate is mainly financed through a combination of equity finance and loan as shown in table 2 above where 40% of the data respondents attested to this. This implies that the developers in one way or the other incur cost in raising capital for their real estate development.
Secondly, cost on capital within the country of which the study area is a sub-set, fluctuates uncontrollably over the last 5years. The rate of interest on borrowed capital shows double digit which is a devastating phenomenon in financial investment. Table 11 shows that the rate of interest dropped in 2011 by 4.83% before reaching a period high of 23.00% in 2013 showing an increase of 37%.
Furthermore, real estate profitability showed a steady and remarkable growth as shown in table 17. It is observed that return on investment started from 2.6% in 2009, increased to 4.5% between 2010 before dropping to 3.4% between 2011 and 2012. However, the return soared in 2013 to 5.2%. But where there were high cost of capital the investments gave negative rate of returns which imply that the increasing cost of capital reduces the profit level of real estate development in Benin property market.

5.1 CONCLUSION AND RECOMMENDATIONS

Real estate development produces income by way of rent. This income and capital grow as a result of shortages of stock of accommodation as well as inflation in the economy. If the income and cost double as may occur under inflationary situation, profit also doubles at about the same proportion such that rent, costs, and capital values appreciate. However, using borrowed fund to amplify the outcome of equity investment create financial leverage. This leveraging is said to be favourable so long as the rate of return on real estate developments exceeds the cost of capital.
This study however, showed that the increasing cost of capital in Nigeria within the last 5 years create negative rate of return on real estate development as compared to 100% equity financing.
Because real estate development is capital intensive, and due to the poor state of the Nigeria economy, many real estate investors cannot finance their development solely through personal income as this could take their whole life thus, many resort to borrowing thereby creating a financial leverage in the development.
The bank lending rate creates a huge cost of capital and thus reduces the income flow from the investments which result in negative rate of return on investment. This study thereby concluded that the increasing cost of capital in Nigeria affects the profitability of real estate development negatively.
In line with the finding of this study, the following recommendations have been postulated;

(i) Federal Government should revitalize the functioning of the National Housing fund so as to give investors more opportunity of development through the scheme rather than relying on commercial banks.
(ii) The stringent terms and conditionality's for obtaining the National Housing fund loans should be ameliorated in order to give investors ease of accessing the fund.
(iii) The Federal Government of Nigeria through the Central Bank should move focus away from monetary policy and move towards managing interest rates as a way to stimulate the economy or starve off inflation as adopted by more advanced countries of the world.
(iv) Commercial banks should complement the Central Bank effort by granting quasi-subprime mortgage loan to reduce cost of capital.

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