

Trend of Macroeconomic Factors Influencing Commercial Property in Abuja, Nigeria

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doi: <https://doi.org/10.37745/ijcecem.14/vol12n24470>

Published August 26, 2024

Citation: Jibrin Y., Ufere J.K., Mohammed M.I., and Toro H.S. (2024) Trend of Macroeconomic Factors Influencing Commercial Property in Abuja, Nigeria, *International Journal of Civil Engineering, Construction and Estate Management*,12(2),44-70

Abstract: *In recent time changes in rent invariably affect every type of real estate although in varying degrees. The aimed of this paper is to investigate the trend of macroeconomic factors influencing commercial property in Abuja. The study adopted quantitative design and questionnaire survey was used for data collection. The study adopted simple random sampling technique and SPSS software version 22 was used for data analysis and the results were presented in tables. Commercial properties under the management of Estate Surveyors and Valuation in Abuja metropolis was served as target population. The study indicates that the macroeconomic indicators considered in the study, namely gross domestic product (GDP), inflation rate, interest rate and exchange rate are all increasing, but at different rates. This suggests that the economy is growing, but that there are also some inflationary pressures and that the central bank is tightening monetary policy in an attempt to bring inflation under control. The rising exchange rate suggests that the domestic currency is becoming more valuable relative to other currencies, which can make exports more expensive and imports cheaper. However, the fact that the indicators are rising at different rates suggests that the growth is not uniform and that there are some challenges that need to be addressed. For example, the rising inflation rate suggests that there is some pressure on prices. This could be due to a number of factors, such as increased demand for goods and services, supply chain disruptions, or rising energy costs. The central bank may need to take steps to address inflation, such as raising interest rates. Macroeconomic indicators significantly influence rental value of commercial properties causing about 73.7% change in rental value of commercial properties. Central banks should monitor inflation closely and take steps to bring it under control if necessary. This could involve raising interest rates or other monetary policy tools. Policymakers should work to address the underlying causes of inflation and unemployment. This could involve measures such as increasing competition in the economy, improving education and training programs, or investing in research and development.*

Keywords: macroeconomic, factors, influencing, commercial, property, inflation

INTRODUCTION

Real Estate refers to property, buildings and land including air above it and ground below it and any other thing on it, movable or immovable (Simbolon & Purwanto, 2018). According to Brueggman (2019), Real estate is categorized into three; residential property, commercial property, and industrial property. Rental value has been observed as the key parameter for measuring the performance of real property investment (Hoesli & MacGregor, 2015; Mohamed, 2021). Changes are likely in rental values and these changes may occur in response to changes in economic conditions at all levels of an economy.

However, all over the globe, the success of real estate investments is considered very critical due to the vital role it plays in the socio-economic development of countries. The commercial property, a sub-sector of real estate investment, remains a critical asset that guarantees adequate covering provision to nations. According to Ezeokoli, Komolafe, & Olukolajo (2019), Macroeconomic factors are the leading factors that portend the present-day trends in the economy. Further posited by Ezeokoli et al (2019), that macroeconomic factors have no direct nexus with the investment; nonetheless, they shape the conduct of such investment. Macroeconomic factors comprise GDP, money supply, inflation, interest and exchange rates, level of employment and unemployment, trade balance, among others.

The effects of the macroeconomic indices on rental values of property investment have been the primary source of debate among real estate investors. Ezeokoli et al. (2019) asserted that property investors generally, have frights concerning the safety of their investments. The investors' fear is amplified by the dearth of information in Africa and other emerging property markets. Over the years, commercial property investment performance has been anchored to noneconomic factors such as locational, neighborhood and physical factors (Yusuf & Ismail, 2015; Samy, 2018) with little or no attention on economic factors. As a result of the information gap, investors in many African countries cannot effectively price and manage risks in the property market. Therefore, this paper will intends to investigate the trend of macroeconomic factors influencing commercial property in Abuja.

LITERATURE REVIEW

Macroeconomic factors are defined as the larger aspect of the economy such as inflation, gross domestic product, national income, per capita income, exchange rates, interest rates, unemployment level, financial crisis (Gautam & Gautam, 2021). The effects of macroeconomic factors cover a wider populace and indicate how the country's economy operates (Lynn, 2013). Macro-economic factors reside in general environment because of which organizational control over the macroeconomic variables remain low (Febriyatari, Masbar & Nasir, 2019) which

increases the need of managerial efficiency (Lawa, Zogli, and Dlamini, 2021; Ngweshemi,& Isiksal, 2021) to overcome challenges and to grab opportunities induced by environmental factors

Internal macroeconomic factors

The following empirical pieces of evidence are discussed below on the financial performance and various firm's internal and macroeconomic variables.

Return of assets

The proxy of financial performance as a dependent variable has been taken in the study as returns of assets (ROA). Several pieces of literature have confirmed the use of ROA as the dependent variable. Lopez-Cabarcos, Pineiro-Chousa and Quinoa-Pineiro (2021) noted that ROA is part of a managerial performance to generate profit from the use of assets held in the business. The general insurer acts as an underwriter whose financial performance would be affected by the quantum of funds invested in the assets that earn a return and its magnitude. Chen and leverage is negative and significant with profitability. However, Kerim, Alaji and Innocent (2019) have observed that debt finance exerts a positive influence on firm's profitability. Adams, Upreti and Chen (2019) took 29 listed firms (excluding listed banks and insurance companies) which have been operating at the Nairobi Securities Exchange from 2006 to 2012. They posited that low leverage ratio has a better influence on financial performance (ROA).

Asset growth rate

Asset growth rate is described as the changes in total assets of an organization between the current and previous year to the previous year. As higher asset growth rate put the insurance company's vulnerability to high risk, it is insignificant to financial performance (Kerim, *et al.*, 2019).

Volume of capital

Volume of capital is expressed as total capital of an organization to total assets. (Kerim, *et al.*, 2019) observed that financial performance is backed by injecting more capital to the insurance business leading to economies of scale by opening more branches.

Underwriting risk

The insurers undertake to accept default risk when people and properties are covered. Meher and Zewudu (2020) argued that income from underwriting insurance and return on investment are the proxies of financial performance. Underwriting return has a positive relationship on investment that would increase the financial performance of the life insurance companies (Akotey, Sackey, Amoah, & Manso, 2013).

Liquidity

Liquidity is the capacity of an organization to meet the immediate financial obligation, and it is expressed as current assets to current liabilities. Shawar and Siddiqui (2019) found that

profitability is driven by more liquid assets, whereas Asare, Alhassan, Asamoah & Ntow-Gyamfi (2017) had an opposite view between liquidity and financial performance. Further, liquidity ratio is not found significant with returns of assets being proxy of short term financial position of the firm (Meher and Getaneh, 2019).

External Macroeconomic Factors

It is seen that whenever a country experiences economic growth, more people and properties are covered as a shield by the insurers. The returns of insurance companies are dependent on various macroeconomic indicators of economic growth. Beck and Webb (2003) observed that the profitability of association of specific internals and macro factors on the financial performance of Ethiopian insurers.

Size of the company

Size refers to the creation of more branches that results in an increased volume of business, thereby increasing assets. The size of the insurance companies, gross premiums written, and capital have a positive relationship on financial performance (Tsvetkova, Bugaev, Belousova & Zhukova, 2021). However, Adams and Buckle (2013) argued that financial performance is not affected by size. Shawar and Siddiqui (2019) have stated that larger firms are more profitable because they have achieved the economies of scale.

Leverage ratio

When the insurance company inducts debt capital to the business, it is leading to financial leverage because of a tax shield, although the company can succumb to default risk. Hemrit (2020) revealed that the debt ratio has a significantly negative impact on the firm's performance measures (ROA and ROE). Ejigu (2016) conducted a study on insurance companies in Ethiopia for the insurance companies is positively affected by economic growth vis-a-vis macroeconomic factors.

Market share

Market share is a place of an entity in the market with respect to its competitors and described as the gross premium to total premium of the industry as a whole. Morara and Sibindi (2021) has concluded that the financial performance of non-life insurance companies is influenced by GDP per capita and market share of foreign-owned companies.

GDP per capita

GDP per capita refers to the change in the trend of a nation's living standard of the people of a country. Akande, Samuel and Iyodo (2020) analyzed the determinants of profitability of the insurance sector within the macroeconomic context and found GDP per capita as a significant factor affecting the insurance sector as economic growth improves the level of income and living standard of the people and as a result purchasing power of the people increases. Sognon (2019) explored that an index for a healthy economy is reported in the form of GDP growth. They

explained that the performance of the insurance industry is dependent on the overall economic development of the country.

Inflation

Inflation is the measurement of price rise of goods and merchandises for a particular period of a country, which hinders economic growth. Abdeljawad, Dwaikat and Oweidat (2020) posited that premiums are directly affected by the inflation rate in the country. Meher and Getaneh (2019) argued that the performance of the firm is insulated from the effect of macroeconomic factors like GDP per capita and inflation. Thus, the insurance sector would succumb to financial distress in the event of unprecedented claims due to national catastrophes. Further, empirical studies have confirmed that financial performance is dependent on various firms' internal and macroeconomic factors. So, the study of financial performance of insurance sector is relevant as a part of risk savers strategy, whereas the remaining profitability, in the long run, would boost the confidence of the society, communities, and policy regulators. The explanatory variables consist of firm's specific internal factors such as the size of the company, asset growth rate, underwriting risk, volume of capital, leverage ratio, liquidity, and three macro factors like GDP per capita, market share, and inflation. The return of assets has been taken as the proxy of financial performance.

Theoretical Review

The study the effect of macroeconomic factors on commercial property rental value cannot be exhausted without considering the underpinning theories behind it. The macroeconomic theories reviewed and that will guide this study include; The Theory of Inflation, The Theory of Interest Rates and Exchange Rates and GDP.

Macroeconomic Theories

Economic theory postulates that GDP, inflation, and interest rates as well as other macroeconomic indicators constitute valuable determinants or predictors of stock market performance. However, several schools of thoughts have offered theoretical explanations for stock market performance (Igoni, Orlu & Ezirim, 2020). Prominent among the theories is Arbitrage pricing theory. The Arbitrage Pricing Theory approach tries to explain the performance of stock market by positing that behavior of the stock market is influenced by some macroeconomic variables. The theory takes into account systematic factors common across all class of asset. The idea behind this theory is that stock market performances are generated by a number of common factors, for which different securities have different sensitivities in the market (Ocran, Sheefeni & Oduro-Afriyie, 2022). The theory asserts that stock market performance is influenced by several independent factors. The central thesis of APT is that more than one systematic factor affects long-term average performance in the stock market. However, the problem with this is that the theory in itself provides no indication of what these factors are, so they need to be empirically determined. By implication, the theory itself does not tell the investor what these factors are. Arbitrage pricing theory directly relates value of the security to fundamental macroeconomic factors driving it and

by extension, measures the performance of market. Existing literature suggests that a wide range of macroeconomic factors may be relevant. However in emerging stock markets, there is argument that not all of these macroeconomic factors are either relevant or appropriate (Igoni, Onyejiaku, Egbo, Ifediora, Njoku & Onwumere, 2020). The main empirical strength of the APT is that it permits the researcher to select whatever macroeconomic factors that provides theoretical explanation for particular sample at hand, Afful, & Opoku (2020) argues that good investment managers identify important factors in the economy and market place and assess the extent to which different securities will respond to changes in those factors. There is no reason to assume or believe that a good factor for one period will be a better one for the next period. So do risk and prices which are associated with various factors as well as also the sensitivities of securities to those factors.

Extensive research has shown that more than four factors are relevant; Chipeta (2020) contend that the number of stocks in the market or portfolios determines number of factors which are important (Rathnasiri, 2021). The behavioral school of finance holds that market might fail to reflect, economic fundamentals under three conditions. When all three apply, the theory predicts that pricing biases in financial markets can be both significant and persistent. The first condition is irrational behavior. It holds that investors behave irrationally when they don't correctly process all available information while forming their expectations of company's future performance. Second is systematic patterns behavior, which holds that even if individual investors decide to buy or sell without observing economic fundamentals, the impact on share prices would be limited. Various scholars have evaluated the existing determinants of stock prices. The relationship between macroeconomic variables and stock market performance has necessitated divergent opinions among scholars Macroeconomic variables are relied upon to explain the price of stock. In a claimed by (Rathnasiri, 2021) that stock market performance influences economic growth in Turkey.

Jagotra, Singh and Singh (2019) evaluate the relationship between New Zealand stock market performance and seven macroeconomic variables between 1990 and 2003. The results demonstrated significant long term relationship between macroeconomic variables and on New Zealand's stock market performance. However, the Granger causality test results show that the stock market does not promote the macroeconomic variables. Kaur and Chaudhary (2022) investigates the relationship between economic growth and stock market performance in India between 1991 and 2005. Johansen Multivariate Co-integration and Granger Causality test were applied. The results indicate significant long run and causality relationships between the variables of study. However, the Granger causality test results show that the stock market does not promote the macroeconomic variables. Kaur and Chaudhary (2022) investigates the relationship between economic growth and stock market performance in India between 1991 and 2005. Johansen Multivariate Co-integration and Granger Causality test were applied. The results indicate significant long run and causality relationships between the variables of study. Alam (2020) after employment of Granger causality test as well as Johansen's Co-integration to study relationship

between some macroeconomic variables and stock market in India, the results confirm prevalence of significant long run relationship between GDP and stock market performance. Rathnasiri et al. (2021) results indicated significant relationships between industrial production and stock market performance, while insignificant relationships prevail in interest rate of Malaysian.

Again, Naik (2013) employed five macroeconomic variables; industrial production, inflation, money supply and interest rate to examine stock market performance in India. Johansen's Co-integration and Error Correction Models were employed. The results provide compelling evidenced of statically significant long run relationship between GDP and market capitalization was statistically significant effect. Igoni Ogiri and Orlu (2020) utilized Error Correction Model (ECM) and Johansen's Co-integration to evaluate the nature of long run relationship between macroeconomic variables and stock market performance in the USA. Index of industrial production, interest rate, trade rates, consumer price index, unemployment rate and money supply were employed as macroeconomic aggregates. Index of industrial production and interest rate were observed to have significant influence over stock market performance. Teker and Alp (2014) studied the relationship between interest rate and stock market performance in four emerging markets of Turkey, Brazil, China and Hungary. The Augmented Dickey-Fuller (ADF) and Phillips-Person (PP) Unit Root tests were utilized to evaluate stationary of data variables. The results indicate that Hungary markets demonstrated significant relationship between stock market and interest rate, while Chinese markets indicate a lower support. Further, the results provide evidence to show that every other stock market performance Granger cause treasury bill rates. Teker and Alp (2014) analyze the nature of long run relationship between macroeconomic variables in Botswana Stock Market Performance. The study employs Error Correction Model and Johansen's Co-integration to examine quarterly information from period 1998 to 2012. The study utilized GDP, long-term loan costs, money supply, external reserves, inflation and exchange rate. The results demonstrate that the selected macroeconomic variables significantly influence stock market performance in Botswana. Teker et.al (2014) examined the relationship between macroeconomic variables and Indian Stock Market. Granger Causality test was employed to determine the nature of causal relationship among the variables of study based on monthly data over the period 2011 to 2012. The macroeconomic indicators include index of industrial production, money supply, interest rate, remote institutional speculation, exchange rate, unrefined petroleum cost and Gold cost. The results indicate that index of industrial production significantly promotes Indian stock market performance. In the same (Teker et al., 2014) evaluated the relationship between stock market performance and selected macroeconomic variables in India. Monthly information from 1997 to 2011 was secured for the macroeconomic variables. They include exchange rate, index for industrial production (IIP), interest rate, money supply and oil price. The study employed ADF and PP unit root tests, Regression, ARCH model, Granger Causality and Johansen Co-integration tests to evaluate the data. Inflation and exchange rates were found as significant variables on the performance of the stock market. Explored the dynamic relationship between interest rate and

stock market performance in Sri Lanka. Time series data for the period 2007 to 2013 was utilized in the study.

Theory of Inflation

Inflation is the sustained increase in the price of goods and services in a country. It is a lagging indicator, as it is the result of economic growth or decline. Romer (2015) defined inflation as an increase in the average price of goods and services in terms of money. He went ahead to suggest that there are many potential sources of inflation. The Price level can rise as at a result of increases in the money supply, increases in interest rates, decrease in output and decreases in money demand for a given real income and nominal interest rate. Bhattacharjee and Das (2021) explained that all investors make their decisions by considering how inflation will affect their investment returns. The lenders and investors must be persuaded that the interest rate commitments are sufficiently high to compensate for any expected loss in purchasing power during the period that the investment or loan is outstanding. Tunio, Soomro and Bogenhold (2017) noted the effects of inflation as redistribution of income and wealth among different groups and distortion in the relative prices and outputs and employment for the economy.

Theory of interest rates

Rate of interest is the per cent of premium paid on money at one date in terms of money to be in hand one year later. Therefore, the rate of interest is at times called the price of money; and the market in which present and future money are traded for that price, or premium, is called the money market (Odiche & Udeorah, 2020). They also investigated the effects of inflation on interest rates. They went ahead to define nominal rate as a function of the real rate of interest and expected rate of inflation. Keynesian inflation gap model accounted that inflation would cause the nominal interest rates to rise in response to money market disequilibrium. The nominal rate was affected by the change in the price level rather than the rate of inflation.

Theory of GDP

The Gross Domestic Product (GDP) is one of the primary factors used to measure the healthiness of a country's economy. It is also used to determine the standard of living of individuals in an economy. However, Gross Domestic Product could be defined as the market value of all officially recognized final goods and services produced within a country in a given period of time. This implies that Gross Domestic Product takes into account the market value of each good or service rather than adding up the quantities of the goods and services directly. Gross Domestic Product is important in an economy because it is used to determine if an economy is growing more quickly or more slowly. Also, it is used to compare the size of economies throughout the world. Again, the Gross Domestic Product is used in the comparison of relative growth rate of economies throughout the world. For instance, the Federal Reserves in the United States uses it as one of the factors of whether the economy needs to be restrained or stimulated.

Commercial properties

According to Bravo, Ayuso and Holzmann, R. (2019) Commercial property refers to real estate property that is used for business activities. Commercial property usually refers to buildings that house businesses, but it can also refer to land that is intended to generate a profit, as well as larger residential rental properties. The designation of a property as a commercial property has implications on the financing of the building, the tax treatment and the laws that apply to it. Commercial properties investments are income producing properties that generate a profit either from capital gain or rental income. Commercial property investment is basically properties used for business transaction or occupied as administrative offices (income producing properties). Commercial properties investment re attributed to location, functionality and space which tend to locate in areas of cheap expanse of land that are; accessible from the city centers; or along transport routes like railway, water ways, and road network; and easily serviced with utilities (August & Walks, 2018). Commercial property investments include office buildings, industrial property, medical centers, hotels, retail stores, malls, farmland, filling station, multifamily housing buildings, warehouses, and garages. Commercial property includes malls, grocery stores, office buildings, manufacturing shops and much more. The performance of commercial property, including sales prices, new building rates and occupancy rates, is often used as a measure for business activity in a given region or economy (Cao, 2015). For the United States as a whole, Moody's provides the Moody's/RCA Commercial Property Price Indices (CPPI), which measures the price changes in commercial real estate across the country. Essentially, the major commercial real estate development in Nigeria involves any property or building used for a profit-making purpose such as malls, office building, and residential buildings among others (Guironnet, Attuyer & Halbert, 2016). Commercial real estate development in Nigeria is a business process encompassing activities that range from the renovation or conversion of existing buildings for commercial needs and acquisition of land to develop a commercial purpose property.

Determinants of Rental Values

Brueggerman and Fisher (2017), in his book on Real estate finance and investments, suggested that market rents for properties depend on the economic base as well as the supply and market forces for space by tenants. They also mentioned that market rent depends on changes in the demand for space as well as expected changes in the supply of space. Factors that may affect rent include the outlook for the national economy, the economic base of the area in which the property is located, the demand for the type of space provided by the property in the location being analysed and the supply of similar competitive space.

Real GDP

Gross domestic product (GDP) is the monetary value of all goods and services produced in a country. The data is widely used to compare the differences between two economies and forecast their growth. Moynihan and Titley (2015) suggested that economic growth refers to the increase

in the quantity of goods and services the whole economy can produce over and above what was produced the prior year. This implies increase in real output of the economy over time.

Citizens' demands for better living standards make governments strive to achieve faster rates of growth. Economists prefer to measure the rate of economic growth by how much national income had increased each year, in a country. The benefits that come with economic growth and increased output may include high level of consumption of goods and services that includes more houses being rented and even extra money buys essential niceties of life. This comes with increased income.

Interest rates

Interest rates provide an indication of the availability and cost of capital, and also they are considered as predictors of economic conditions, Weiner and Fuerst (2015). There are a few using interest rates as a variable to examine office rental movements. Allen, Barnes and Lynch (2016). High interest rates will discourage development decisions, and then rental values will increase. However, none of these empirical studies shows that interest rates have a significant effect on rental value. Interest rates can also indicate directions of monetary policy and the dampening effect of high interest rates on economic activity and well established.

Inflation

Inflation is an increase in the average price of goods and services in terms of money. The lenders and investors must be persuaded that the interest rate commitments are sufficiently high to compensate for any expected loss in purchasing power during the period that the investment or loan is outstanding, Brueggeman and Fisher (2017). Inflation can arise as at a result of increases in the money supply, increases in interest rates, decrease in output and decreases in money demand for a given real income and nominal interest rate (Romer, 2016). Barro (2016), in his research on Inflation and growth, cited that business and households are thought to perform poorly when inflation is high and unpredictable.

METHODOLOGY

The exploratory and descriptive research designs were utilised in this work since it used an objective approach to learn more about its context and issues. Given that this paper collected and analysed numerical data, a quantitative study approach is thought to be the most suitable for it. In this paper, a survey research approach was used employing a questionnaire as the data gathering tool. The study took place in the Abuja Metropolitan Area. Registered estate surveyors and valuers practicing in Abuja metropolis were the study's target respondents. According to the sample size determination chart by Krejcie and Morgan (1970), the sample size for this study was 260. For this paper, the proportionate sample random sampling procedures were used.

RESULTS**The trend of Macroeconomic Factors in Abuja, Nigeria**

Year	Quarter	GDP	Inflation Rate	Interest Rate	Exchange Rate
		(₦m)	(%)	(%)	(₦)
2010	1 st	12.58347833	12.80	19.03	150.08
	2 nd	12.93453067	13.10	17.65	151.27
	3 rd	14.30443844	13.80	16.66	152.62
	4 th	14.78981674	13.70	15.74	152.63
2011	1 st	13.45071668	13.00	15.81	155.21
	2 nd	13.75773202	12.30	15.76	155.66
	3 rd	14.81961926	11.40	15.87	156.70
	4 th	15.48297381	10.80	16.75	162.27
2012	1 st	13.91550603	10.90	17.28	157.72
	2 nd	14.32304777	11.30	16.93	162.33
	3 rd	15.64543473	11.90	16.37	157.78
	4 th	16.04590451	12.20	16.54	157.33
2013	1 st	14.53542095	11.40	16.61	158.63
	2 nd	15.09676355	10.40	16.56	160.02
2014	1 st	15.4386795	8.20	16.69	164.61
	2 nd	16.08462231	8.00	16.50	162.82
	3 rd	17.47912758	8.00	16.44	162.93
	4 th	18.15035645	8.00	15.88	180.33
2015	1 st	16.05060138	8.20	16.90	197.07
	2 nd	16.46334191	8.40	17.24	196.92
	3 rd	17.97623459	8.70	17.02	197.00
	4 th	18.53375207	9.01	16.96	196.99
2016	1 st	15.94371454	9.75	16.82	197.00
	2 nd	16.21854241	11.37	16.78	231.76
	3 rd	17.55544169	13.45	17.09	305.23
	4 th	18.21353729	15.70	17.09	305.22
2017	1 st	15.79796583	17.32	17.43	306.40

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	2nd	16.33471927	17.58	17.59	305.72
	3rd	17.76022817	17.17	17.88	305.89
	4th	18.59806707	16.50	17.71	306.31
2018	1st	16.09665419	15.60	17.35	305.74
	2nd	16.58050807	14.37	16.78	305.87
	3rd	18.0813421	13.16	16.59	306.27
	4th	19.04143759	12.10	16.17	306.92
2019	1st	16.43455265	11.40	14.92	306.92
	2nd	16.93143489	11.30	15.80	306.95
	3rd	18.49411417	11.27	15.15	306.92
	4th	18.49411417	11.40	14.99	306.95
2020	1st	16.43455265	11.62	14.71	326.63
	2nd	16.93143489	11.90	15.65	361.00
	3rd	18.49411417	12.44	11.55	381.00
	4th	18.49411417	13.25	11.35	381.00

Table 1Trend in Macroeconomic Factors

Source: www.cbn.gov.ng and www.tradingeconomics.com, 2021

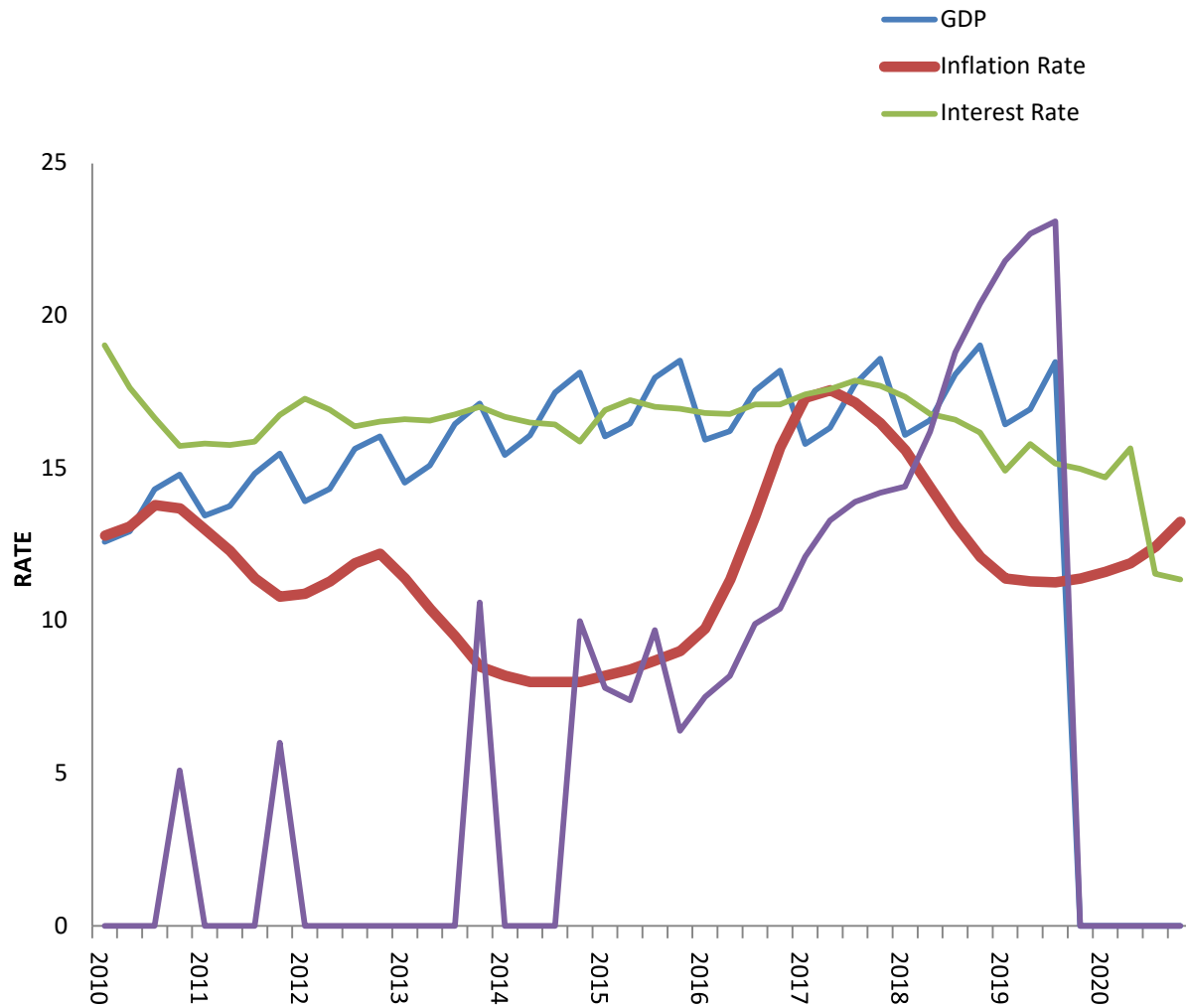


Figure 1 Trend in macroeconomic factors-A

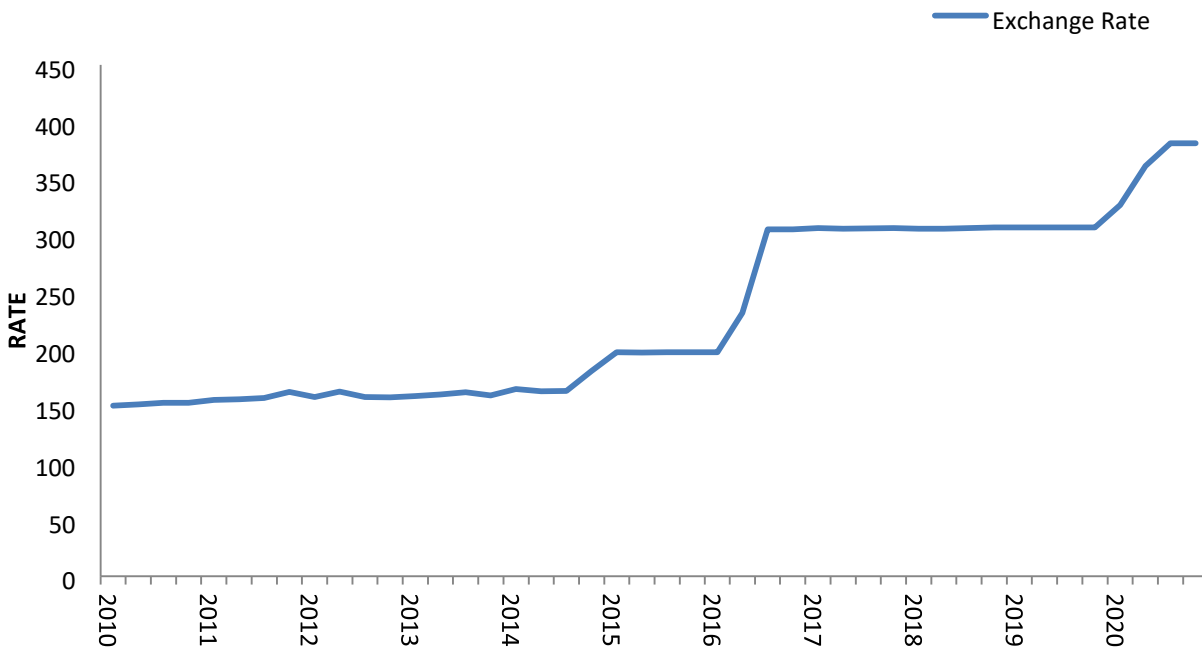


Figure 2 Trend in macroeconomic factors-B

Table 4 shows that five macroeconomic factors comprising Gross Domestic Product (GDP), Inflation Rate (all items), Interest Rate (prime lending rate), Exchange Rate (Interbank Foreign Exchange Market) and Unemployment Rate form the independent variables for this study whose effects on rental value of commercial properties (dependent variable) were analysed. Each of the independent variables was assessed on a quarterly basis and the respective trends from the first quarter of 2010 to the fourth quarter of 2020 as analysed below. Looking at the trend in inflation rate and exchange rate, it can be drawn that inflation rate in the last 6 quarters (2019 to 2020) is on the rise having meandered through the years. While exchange rate has been on a steady increase since the last 21 quarters (2015 to 2020) as illustrated in Figures 2 and 3 respectively. The observed instability in growth of the macroeconomic factors as proclaimed by Olatunji *et al* (2017) and Abdulmalik & Udoekanem (2022) has been affirmed by this study, especially in GDP as rightly pointed by Olatunji *et al* (2017).

The average rental value of commercial properties between the periods of 2010 – 2020 in Abuja

Table 2: The average rental value of commercial properties from 2010 – 2020 in Aguiyi Ironsi Road Abuja, Nigeria

Year	Quarter	Type of Properties		Rent (₦/m ²)
		Shops	Offices	
2010	1 st	6,000	6,000	7,125
	2 nd	6,000	6,000	7,125
	3 rd	6,000	6,000	7,125
	4 th	6,000	6,000	7,125
2011	1 st	6,000	6,000	7,438
	2 nd	6,000	6,000	7,438
	3 rd	6,000	6,000	7,438
	4 th	6,000	6,000	7,438
2012	1 st	6,000	6,000	7,438
	2 nd	6,000	6,000	7,438
	3 rd	6,000	6,000	7,438
	4 th	6,000	6,000	7,438
2013	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2014	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2015	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2016	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2017	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813

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2018	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2019	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813
2020	1 st	6,500	6,500	8,813
	2 nd	6,500	6,500	8,813
	3 rd	6,500	6,500	8,813
	4 th	6,500	6,500	8,813

Source: Estate Surveying and Valuation Firms, 2021

Table 2 shows rental value for commercial properties per square meter in Aguiyi Ironsi Road, from which the average used in this study derives. The figures in Table 2 were derived from rental data obtained from various Estate Surveying and Valuation Firms within the study area. Rental values for shops properties in the various commercial axes sampled were collected, and the mean annual rent per square meter from rental figures collected in each of the axes was computed for the years 2010 to 2020 to arrive at the data in Table 2. Rental values for commercial space have been on a steady increase for the past decade with little stagnation at certain quarters, but have no history of decline within the time scope of this study.

Table 3: The average rental value of commercial properties from 2010 – 2020 in Ahmadu Bello Way Abuja, Nigeria

Year	Quarter	Type of Properties		Rent (₦/m ²)
		Shops	Offices	
2010	1 st	8,750	8,750	7,125
	2 nd	8,750	8,750	7,125
	3 rd	8,750	8,750	7,125
	4 th	8,750	8,750	7,125
2011	1 st	10,000	10,000	7,438
	2 nd	10,000	10,000	7,438
	3 rd	10,000	10,000	7,438
	4 th	10,000	10,000	7,438
2012	1 st	10,000	10,000	7,438
	2 nd	10,000	10,000	7,438
	3 rd	10,000	10,000	7,438
	4 th	10,000	10,000	7,438

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2013	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2014	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2015	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2016	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2017	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2018	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2019	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813
2020	1 st	11,250	11,250	8,813
	2 nd	11,250	11,250	8,813
	3 rd	11,250	11,250	8,813
	4 th	11,250	11,250	8,813

Source: Estate Surveying and Valuation Firms, 2021

Table 3 shows rental value for commercial properties per square meter in Amadu Bello Way, from which the average used in this study derives. The figures in Table 3 were derived from rental data obtained from various Estate Surveying and Valuation Firms within the study area. Rental values for shops properties in the various commercial axes sampled were collected, and the mean annual rent per square meter from rental figures collected in each of the axes was computed for the years

2010 to 2020 to arrive at the data in Table 3 Rental values for commercial space have been on a steady increase for the past decade with little stagnation at certain quarters, but have no history of decline within the time scope of this study.

Table 4: The average rental value of commercial properties from 2010 – 2020 in Aminu Kano Crescent Abuja, Nigeria

Year	Quarter	Type of Properties		Rent (₦/m ²)
		Shops	Offices	
2010	1 st	7,500	7,500	7,125
	2 nd	7,500	7,500	7,125
	3 rd	7,500	7,500	7,125
	4 th	7,500	7,500	7,125
2011	1 st	7,500	7,500	7,438
	2 nd	7,500	7,500	7,438
	3 rd	7,500	7,500	7,438
	4 th	7,500	7,500	7,438
2012	1 st	7,500	7,500	7,438
	2 nd	7,500	7,500	7,438
	3 rd	7,500	7,500	7,438
	4 th	7,500	7,500	7,438
2013	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
	4 th	10,000	10,000	8,813
2014	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
	4 th	10,000	10,000	8,813
2015	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
	4 th	10,000	10,000	8,813
2016	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
	4 th	10,000	10,000	8,813
2017	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813

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2018	4 th	10,000	10,000	8,813
	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
2019	4 th	10,000	10,000	8,813
	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813
2020	4 th	10,000	10,000	8,813
	1 st	10,000	10,000	8,813
	2 nd	10,000	10,000	8,813
	3 rd	10,000	10,000	8,813

Source: Estate Surveying and Valuation Firms, 2021

Table 4 shows rental value for commercial properties per square meter in Aguiyi Ironsi Road, from which the average used in this study derives. The figures in Table 4 were derived from rental data obtained from various Estate Surveying and Valuation Firms within the study area. Rental values for shops properties in the various commercial axes sampled were collected, and the mean annual rent per square meter from rental figures collected in each of the axes was computed for the years 2010 to 2020 to arrive at the data in Table 4. Rental values for commercial space have been on a steady increase for the past decade with little stagnation at certain quarters, but have no history of decline within the time scope of this study.

Table 5: The average rental value of commercial properties from 2010 – 2020 in Malabo Street Abuja, Nigeria

Type of Properties				
Year	Quarter	Shops	Offices	Rent (N/m²)
2010	1 st	6,250	6,250	7,125
	2 nd	6,250	6,250	7,125
	3 rd	6,250	6,250	7,125
	4 th	6,250	6,250	7,125
2011	1 st	6,250	6,250	7,438
	2 nd	6,250	6,250	7,438
	3 rd	6,250	6,250	7,438
	4 th	6,250	6,250	7,438
2012	1 st	6,250	6,250	7,438
	2 nd	6,250	6,250	7,438
	3 rd	6,250	6,250	7,438

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	4 th	6,250	6,250	7,438
2013	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2014	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2015	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2016	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2017	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2018	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2019	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813
2020	1 st	7,500	7,500	8,813
	2 nd	7,500	7,500	8,813
	3 rd	7,500	7,500	8,813
	4 th	7,500	7,500	8,813

Source: Estate Surveying and Valuation Firms, 2021

Table 5 shows rental value for commercial properties per square meter in Malabo street, from which the average used in this study derives. The figures in Table 5 were derived from rental data obtained from various Estate Surveying and Valuation Firms within the study area. Rental values for shops properties in the various commercial axes sampled were

collected, and the mean annual rent per square meter from rental figures collected in each of the axes was computed for the years 2010 to 2020 to arrive at the data in Table 5 Rental values for commercial space have been on a steady increase for the past decade with little stagnation at certain quarters, but have no history of decline within the time scope of this study.

The effect of macroeconomic factors on commercial property rental value in Abuja

Determining the effects of macroeconomic trend on commercial property rental value is the core theme of this research work. Following the research question developed in this regard and the variables involved, standard multiple regression analysis was conducted to determine the effects of macroeconomic indicators on commercial property rental value in Abuja.

Table 6: Effect of Macroeconomic Factors on Average Property Rental Value in Abuja

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	df	F	Sig.
1	0.893a	.797	.737	0.86511	5 163	13.335	0.000 ^b

Table 6 above shows the regression model summary and ANOVA result. The model produces R value of 0.893 and R square value of 0.797 with F-Statistics of 13.335 which shows a highly significant .000 which means that p is less than 0.05 which really means ($p < 0.005$). This reveals that the model as a whole predict about 79.7% of the variance in average rental value. In Table 6, it can be seen from the Analysis of Variance that the average rental value in Table 6 is significant (Sig. = 0.000, i.e. $p < 0.05$). Thus, it can be inferred that macroeconomic indicators have statistically significant effect on the average rental values of shops properties in the study area. Generally, the entire macroeconomic factors have significant effects on the average rental value of commercial properties in the study area. The macroeconomic factors are unanimously responsible for about 73.7% change recorded in rental value of commercial properties in the study area.

The influence of macroeconomic indicators proves positive as revealed by some previous studies (Naseer, Khan, Popp & Olah, 2021). However, there tend to be variation in the level of change contributed by each macroeconomic factor. A reduction in the rate of change caused by the macroeconomic factors was observed. For instance, in Udoekem *et al* (2015), GDP and Vacancy Rate accounted for about 74% and 83% change in rental value of commercial properties, which this study found to be currently 73.7% for the macroeconomic elements under consideration. This significant influence is also consistent with findings of Ojetunde *et al* (2015) and Ojetunde (2017).

Table 7 Contribution of Macroeconomic Factors on Average Property Rental Value in Abuja

Model	Standardized Coefficients	t	Sig.	Correlations			Part ²	
				Beta	Zero-order	Partial		Part
(Constant)			.001					
GDP	.129	3.835	.653	.522	.779	.157	.071	.504
1	Inflation Rate	-.639	-3.334	.004	-.062	-.629	-.364	.133
	Interest Rate	.325	2.092	.052	-.186	.452	.229	.052
	Exchange Rate	1.243	3.769	.002	.666	.675	.412	.170

Table 7 specified that standardized predicted values verses standardized residuals showed that the data met the assumption of homogeneity of variance and the residuals were approximately normally distributed. Therefore, beta coefficient shows that the GDP, inflation rate, interest rate and exchange rate are the significant determinant of average rental value of commercial shops as indicated by the standardized beta coefficient of 0.129, 0.-639, 0.325 and 1.243 and a t-statistics of 0.653, -3.334, 2.092 and 3.769 which are significant at 0.522, .004, 0.52 and 0.002 significance level. As GDP increases by one standard deviation, then there was an increase on average rental value by 0.129 standard deviation. As inflation rate increases by one standard deviation, then there was an increase on average rental value by 0.-639 standard deviation; also a change or increase in interest rate viewing by one standard deviation, the average rental value change or increase by 0.325 standard deviation. Also, as exchange rate increases by one standard deviation, then there was an increase on average rental value by 1.243 standard deviation. But, the P value on Table 8 shows that the inflation rate and exchange rate have a statistically significant effect on average rental value with P-value 0.004 and 0.002 < 0.05. The GDP and interest rate of the contributing variables have statistically insignificant impact on average rental value with P-value 0.522 and 0.052 > 0.05. On the contrary, exchange rate has a positive relationship with average rental value of shops commercial properties i.e., rental value of commercial properties increase in the study area as exchange rate increases. Contrary to the erstwhile assertion of Udoekanem *et al* (2015) which revealed that GDP alone is responsible for 74% change in rental value of commercial properties in Abuja. The unique contribution of inflation rate is also a proof that it remains a disincentive to the purchaser and an incentive to the investor in real estate as posited by Giussani *et al* (2014); and Bello, Ogunba and Ogedengbe (2017).

CONCLUSION

The paper concludes that the economy is growing, but that there are also some inflationary pressures and that the central bank is tightening monetary policy in an attempt to bring inflation under control. The rising exchange rate suggests that the domestic currency is becoming more valuable relative to other currencies, which can make exports more expensive and imports cheaper. The conclusion of this paper finding is that macroeconomic indicators have a significant impact on the rental value of commercial properties. This means that changes in macroeconomic indicators, such as GDP growth, inflation, interest rates and exchange rates, can lead to changes in the average rental value of commercial properties. This is important information for both landlords and tenants. Landlords should be aware of the impact of macroeconomic indicators on rental values so that they can set their rents accordingly. Tenants should also be aware of this impact so that they can budget for potential changes in their rent. Policymakers can use macroeconomic indicators to influence the rental market for commercial properties. For example, if policymakers want to encourage investment in commercial property, they can lower interest rates or implement other policies to stimulate economic growth. Conversely, if policymakers want to discourage investment in commercial property, they can raise interest rates or implement other policies to slow economic growth. Landlords should be aware of the impact of macroeconomic indicators on rental values so that they can set their rents accordingly. For example, if landlords expect that rental values are likely to increase in the future, they may want to set their rents higher today. Conversely, if landlords expect that rental values are likely to decrease in the future, they may want to set their rents lower today.

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