

## **FIRE RISK TRANSFER AND THE NIGERIAN ECONOMY (1999-2019)**

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### **ABSTRACT**

This study was conducted to assess fire risk transfer and its impact on the Nigerian economy over the period 1999 to 2019. It was borne out of the incessant fire outbreaks in the country in recent times which has led to an increase in fire risk premiums in the Nigerian insurance industry. The specific objectives were to investigate the trend of fire risk premium and real gross domestic product (RGDP) and assess the impact of fire risk premium on RGDP in Nigeria. The ex-post facto research design was adopted and the population consisted of all insurance companies covering fire risk as of 2019. Data were sourced from Nigeria Insurance Digest, the Central Bank of Nigeria statistical bulletin and the National Bureau of Statistics covering the selected years. The dependent variable for the study was RGDP while fire risk premium, exchange rate and money supply were independent variables. The trend analysis revealed that fire risk premiums increased at a faster rate than RGDP. while the regression analysis indicated a positive significant relationship between fire risk premiums and RGDP, and negative relationships between exchange rate and RGDP, as well as between money supply and RGDP. It was recommended that fire risk transfer should be encouraged for individuals and organizations to enhance its continued contribution to economic growth.

**Keywords:** *fire, risk transfer, premium, RGDP, Nigeria*

## 1. INTRODUCTION

The risk of fire is a global threat. Losses occurring from fire disasters both directly and indirectly are on a gradual increase. Alabi *et al.* (2021) state that urbanization and the increasing human population have given rise to increased environmental pressure, which has initiated a continued incidence of disasters in developing nations. Urban planners and fire responders have had to deal with increased occurrences of fire disasters occurring in residential dwellings, business centers and markets, etc. Oladokun and Ishola, (2010) in Alabi *et al.* (2021) have argued that the global concentration of economic activities coupled with government renewal efforts in upgrading and clearing projects in crowded business areas and marketplaces have not been very effective at curbing the occurrence of fire disasters in Nigeria.

During fire outbreaks, there could be loss of lives, destruction of property, breakdown in production and sometimes a fall in supply. Enu *et al.* (2018) iterate that these can lead to a fall in government revenue and subsequently the gross domestic product (GDP). As victims of fire incidents mostly rely on the government for reinstatement which in developing countries, is either not obtainable or insufficient, the need for fire risk transfer to an insurance company that is better suited to handle the loss is inevitable. Fire disasters take a toll on the economy of the country. According to Alabi *et al.* (2021), reports from the world fire statistics center (WFSC) indicate that fire disaster-related losses led to a reduction in the global nation's GDP.

In Nigeria, GDP has experienced random fluctuations over the years. Post-colonialization, the country attained a GDP per capita of \$93 with a growth rate of 4.32% in 1960. From then on, it grew steadily till 1981 when it experienced a spike recording \$2,180 with a growth rate of 149.34% after which it reduced to \$1,223 in 1983 (Bawa, Abdullahi and Ibrahim, 2016). This reduction was marked by a recession with a GDP per capita of \$1,223 declining by 33.69% (Macrotrends, 2021; CBN, 2022). At the onset of the democratic dispensation in 1999 and between 1999 and 2008, the country's GDP per capita increased considerably. Anyiwe and Aigbokhaevbolo (2006) and Ubi and Udah (2014) are of the view that the democratic setting led to better economic growth than previous military governments. By 2019, GDP per capita had increased to US\$2,230 recording an increase of 9.97% as against that of 2018. The economy of 2020 which was baldly influenced by the COVID-19 pandemic led to a decline of 5.95% in GDP per capita to US\$2,097 (Shuaibu *et al.*, 2021; CBN, 2022).

The insurance company has made tremendous contribution to the growth of the GDP in Nigeria (Ukpong and Acha, 2017; Fashagba, 2018). The gross premium income of the insurance industry is an essential indicator of the growth of the insurance industry and its contribution to economic growth. It is also a pertinent gauge of the continuity and sustainability of the industry showing the resilience of the market even in periods of economic uncertainties (Ukpong and Acha, 2017; Ukpong, 2019). In Nigeria, the gross premium income of fire risk transfer has maintained a steady and positive trajectory in the insurance company in the past decade; recording ₦19.8 billion in

2010; ₦33.3 billion in 2014, ₦31.7 billion in 2015, ₦38.2 billion in 2016, ₦41.4 billion in 2017, ₦45 billion in 2018, and ₦52.9 billion in 2019 (NAICOM, 2018, 2019).

Frequent fire disasters in Nigeria in recent times have led to an upsurge in premiums arising from fire risk transfer in the insurance industry (Momoh and Ajiboye, 2018; NAICOM, 2018; 2019). Early scholars of insurance and economic growth, such as Ward and Zurbruegg (2000), Adams, *et al.* (2000), Skipper (2001), Webb *et al.* (2002), Kugler and Ogoghi (2005) discovered that insurance impacts positively on economic growth through mobilization of domestic savings, efficient management of risks, mitigation of losses, promotion of financial stability, indemnification of unexpected losses, financial intermediary service and promotion of strategic investments in productive assets; by providing surety to investors and other contractual claimants. Through fire risk transfer, insurance companies pool premiums, indemnify, form reserve funds, enhance internal cash flow and promote financial intermediation. With the mitigating role played by fire insurance in the transfer of fire risk, and the rise in fire risk premium income, it raises the question whether fire risk transfer makes a significant contribution to the growth of the economy. This forms the crux of this study.

The aim of this study is to assess fire risk transfer and its effect on the Nigerian economy. The specific objectives are to:

- (i) Investigate the trend of fire risk premiums and real gross domestic product (RGDP) over the period 1999 to 2019.
- (ii) Assess the impact of fire risk premiums on RGDP over the period 1990 to 2019.

This study is based on the hypothesis that there is no significant impact of fire risk premiums on the Nigerian economy. Findings from this study will be of significance to insurers, policymakers, the government and the public at large. Aside from aiding insurers and policymakers in policymaking and regulation, it would also assist the government in making decisions regarding the operationalization of fire insurance in Nigeria. As fire is one of the disasters in which the government is apprehensive, a study of this nature which reveals the extent to which fire insurance impacts the economy, would guide the government in making decisions that would promote the culture of insuring property against the risk of fire. Lastly, this study can be used as a guide and a good reference material for further research on the subject.

This paper is structured as follows: after the introduction is the literature review in section 2, which comprises the conceptual, theoretical and empirical reviews. This is followed by section 3, which is the methodology. Here, the research design and model specification are explained. Data analysis is carried out in section 4 while section 5 is the conclusion and recommendation.

## 2. LITERATURE REVIEW

### 2.1 Concept of Fire from Insurance Parlance

Fire, in insurance parlance, is defined as the actual ignition of something, which ought not to be on fire. Such ignition must be accidental or fortuitous (CII, 2004; Nyce, 2007). Momoh and Ajiboye (2018) opine that fire outbreaks are mostly caused by negligence, which could range from direct actions such as lighted cigarettes left to burn, to ancillary actions such as poor installation or other forms of electrical fire. Rubaratuka (2013) and Alabi *et al* (2017) mention human and machine errors as one of the major causes of fire outbreaks. Fire can also be prompted by natural or environmental factors such as bush burning, lighting or excessive heat. This can occur as a result of improper disposal of waste materials susceptible to spontaneous combustion e.g. oily wastes from wood finishing or polishing; or accumulation of organics materials such as wood chip and other combustible materials close to where it can easily be ignited with fire (Twum-Barima, 2014; Agyekum *et al.*, 2016). Structural fire can also occur as fire involving the structural components of buildings or any kind of construction work. (Rubaratuka, 2013; Agyekum *et al.*, 2016; Alabi *et al.*, 2017).

#### 2.1.1 Concept of Risk Transfer

Risk transfer is a risk management and control strategy that entails the shifting of pure risk through a contractual agreement from one party to another (Xin and Huang, 2013; Onyele and Ariwa, 2019). It is targeted at placing responsibility for the risk on a designated party or parties with the ability to control or insure against that risk (Mutenga and Straikouras, 2007). Fadun (2013) defines risk transfer as a medium by which insurers shift the cost of the risk away from the insured to an external party in return for premium paid to the insurer.

Fire risk is the likelihood of harm, damage or injury occurring to individuals or property as a result of fire. It can be considered as an insurance agreement that is made to guard against losses caused by fire. (Oloke *et al.*, 2020). Risk transfer is one of the primary functions of insurance. Through the instrumentation of an insurance contract, an intentional arrangement is made between the policyholder or insured and the insurance company where the latter takes responsibility for the financial risks of the former (Mutenga and Straikouras, 2007). Onyele and Ariwa (2019) affirm that insurance is a suitable risk transfer mechanism for the underwriting and management of risk. Other forms of risk transfer mechanisms include hold-harmless agreements and reinsurance. In fire risk transfer, the risk of loss from fire is transferred to the insurance company. In the case of loss or destruction of the subject matter of insurance (such as building or property), by fire, the insurance company undertakes to replace it through indemnification by replacement or repair (Oloke *et al.*, 2020).

Fire risk transfer aids the reduction of both the frequency and severity of fire losses. It brings about proper recognition and adoption of fire safety measures, education and application of knowledge

in the principles of fire insurance business (Xin and Huang, 2013), greater initiatives aimed at reducing losses of life and/or property from fire and a general improvement in risk assessment, enhanced use of data, design and price coverages for fire risk (Kelly *et al.*, 2017). These have encouraged and expanded the cover for fire insurance, which has led to an increase in premium and a boost to the sector. To aid the transference of fire risk and for accepting to cover the risk, the insurance company charges a fee as consideration, known as the premium. Ward and Zurbruegg (2000) in Haiss and Sumegi (2008) assert that the collation of premiums received enables insurers reduce the negative outcomes of economic activities leading to the exploration of new scientific and technological possibilities thereby boosting economic growth and development. This study is based on the gross premiums received by insurance companies for the transfer of fire risk received by them.

## 2.2 Theoretical Review

This study is based on the theory of financial intermediation which was first proposed by Gurley and Shaw (1960) based on informational asymmetry and agency theory. Leland and Pyle (1977) further define the act of financial intermediation as a coalition that deals with the distribution of information. Diamond and Dybvig (1983) assert that financial intermediaries act as authorized agents of depositors and are capable of achieving scale economies. They are of the view that savers entrust their funds to these intermediaries, which are in turn invested in projects considered viable whereby the depositors are able to withdraw their funds as previously agreed upon.

Benston and Smith Jr. (1976) and Fama (1980) in Mayowa (2020) consider the argument of transaction cost as another approach to financial intermediation. Their argument is based on the differences of technologies used by participants in the intermediation process who exploit the scale economy at the level of transaction technologies. This comprises the transfer costs for the amounts of foreign exchange, research, evaluation and monitoring of assets together with qualitative transformation, liquidity and opportunities for diversification of placement. Guttentag and Lindsay (1968) base the theory of financial intermediation on the creation, saving and financing of the economy. This is operationalized through the provision of a payment system for the exchange of goods and services; the provision of a mechanism for the pooling of funds to undertake large-scale indivisible enterprises; the creation of an appropriate medium of transferring economic resources across geographic regions and industries when needed (Merton, 1995; and Allen and Santomero, 1997).

## 2.3 Review of Empirical Works on Fire Risk Transfer

Fadun (2013) studied insurance as a formidable risk transfer technique for curtailing uncertainties related to the banking system in Nigeria. In a survey of twenty randomly selected commercial banks, using a quantitative approach, the author ascertained that the purchase of insurance promoted banking operations in Nigeria. Onyele and Ariwa (2019) investigated the effect of risk transfer in the Nigerian insurance industry through the period 1988 to 2018. Using the risks of fire,

accident, motor vehicle, employers' liability and marine insurance as mechanisms of risk transfer, the Johansen test carried out revealed the presence of a long-run relationship between the mechanisms of risk transfer and the growth of the insurance industry. Alao, *et al.* (2020) proposed a model of fire safety management for fire risk assessment of office complex in Nigeria. The application of the model indicated that there is higher fire risk arising from non-compliance with standard fire safety procedures.

Momoh and Ajiboye (2018) studied the economic benefits of fire insurance on major commodity markets within Ibadan, the Oyo state capital. Their findings revealed that the effects of fire outbreak have been curtailed by fire insurance, which has helped in reducing the economic burden of losses both on the owners of property and the government. Oloke *et al.* (2020) analyzed the exposure of urban neighbourhoods to fire risk in Ibadan. Findings showed that fire outbreak is generally triggered by human activities, negligence, faulty electrical equipment and power surge. Enu, *et al.* (2014) assessed the benefits of fire insurance and consequences of non-compliance in Ghana. Using the convenience sampling technique, it was discovered that most Ghanaians do not have a fire insurance policy mostly as a result of inadequate sensitization on the benefits of fire policy. They are also plagued by the unreliability of insurance operations, unemployment, property loss etc. These factors have lessened the patronage of fire insurance and subsequent lower contribution of the policy to the economic development of the country (Enu, *et al.* 2014).

### 3. METHODOLOGY

This study is based on a quantitative approach and the ex post facto research design is adopted as it is based on already existing data that cannot be manipulated. The population is made up of all the fifty-five (55) registered insurance companies in Nigeria providing fire insurance as of 2019. Time series data for the period 1999 to 2019 were obtained from various publications of the Nigeria Insurance Digest, statistical bulletins of the Central Bank of Nigeria (CBN) and the National Bureau of Statistics. The start date of 1999 reflects the beginning of a democratically elected government in Nigeria, which introduced the era where the monetary policy of the country began to be managed by a civilian government. The end date of 2019 was chosen to restrict the study to the pre-COVID era in order to avoid the discrepancies in the economy that was brought about by COVID-19 and its attendant downturn in economic activities. Variables used for this study are supported by the literature on which the study is based, economic theories, other empirical studies and the peculiarities of the Nigerian economy.

Thus, the variables used for this study are operationalized as follows:

Dependent variable – real gross domestic product (RGDP). This is the measure of the country's gross domestic product after adjustments have been made for inflation measured at 2010 constant market prices.

Independent variables – these are: fire risk premium (FRP) which is the gross premiums obtained by insurers on fire policies; exchange rate (EXR) which is the price of a country’s money in relation to that of another country (the US dollar as used here); and money supply (MONS). The variant of money supply used for the study is broad money (M3) which entails all currency in circulation, traveler’s checks, demand deposits at commercial banks held by the public together with other checkable deposits (Akinwunmi, 2017).

**3.1 Model Specification**

The functional model used for this study, which is also consistent with the theoretical and empirical reviews, is given as follows:

$$RGDP = f(FRP, EXR, MONS) \dots\dots\dots (i)$$

Where,

RGDP = real gross domestic product

FRP = fire risk premiums

EXR = exchange rate, and

MONS = money supply

Using the natural logs of the variables, the model is further given as:

$$LRGDP = f(LFRP, LEXR, LMONS) \dots\dots\dots (ii)$$

Econometrically, equation (ii) can be represented as:

$$LRGDP = \beta_0 + \beta_1LFRP + \beta_2LEXR + \beta_3LMONS + \mu \dots (iii)$$

Where,

L = natural log of the variables

$\beta_0$  = constant parameter,

$\beta_1, \beta_2, \beta_3,$  = estimated coefficients of the independent variables

$\mu$  = error term

Apriori expectation:  $\beta_1, \beta_2, \beta_3, \neq 0$

Data are analyzed using the descriptive, trend and regression analysis.

**4. DATA ANALYSIS**

**4.1 Descriptive Statistics**

The raw data is used for the descriptive statistics in order to provide a more realistic interpretation. The real gross domestic product (RGDP) and money supply (MONS) are measured in billions of naira, fire risk premiums (FRP) is in millions of naira and exchange rate (EXR) is measured in percentage. Table 1 is the table of descriptive statistics.

Table 1: Descriptive statistics

	<b>RGDP</b>	<b>FRP</b>	<b>EXR</b>	<b>MONS</b>
<b>Mean</b>	9974661.	17953.73	173.0819	12481.64
<b>Median</b>	49856.10	16536.19	151.5100	10928.00
<b>Maximum</b>	70354214	41333.48	362.0000	33586.70
<b>Minimum</b>	22449.41	3189.460	21.89000	699.7400
<b>Std. Dev.</b>	24923315	11794.47	91.22810	10706.20
<b>Skewness</b>	2.041869	0.480711	0.894099	0.471920
<b>Kurtosis</b>	5.170424	2.035426	2.903023	1.926399
<b>Jarque-Bera</b>	18.71421	1.622894	2.806176	1.788020
<b>Probability</b>	0.000086	0.444215	0.245837	0.409012
<b>Sum</b>	2.09E+08	377028.4	3634.720	262114.5
<b>Sum Sq. Dev.</b>	1.24E+16	2.78E+09	166451.3	2.29E+09
<b>Observations</b>	21	21	21	21

Source: Authors' computation from Eviews 9

As shown in Table 1, the mean RGDP for the observation is ₦9,974,661, the mean fire risk premium is ₦17,953.73; mean exchange rate is 173.08% while the mean money supply is ₦12,481.64. The maximum value of RGDP generated within the study period is ₦70,354,214 while the minimum value is ₦22,449.41. Exchange rate has a maximum value of 362.0 percent and a minimum value of 21.89 percent.

All the variables are positively skewed with money supply having the least skewness of 0.472. This implies that the variables have long right-tails with a tendency for higher values than the sample mean. Fire risk premiums, exchange rate and money supply with kurtosis value of less than 3 are platykurtic with a more flattened curve. RGDP is leptokurtic with a kurtosis value of 5.17. This implies that the RGDP curve is slim or long-tailed. The Jarque Berra statistics tests the hypothesis that the data are normally distributed. A Jarque Berra probability greater than 0.05 represents a normal distribution. Thus, FRP, EXR and MONS are all normally distributed.

## 4.2 Trend Analysis

In line with the first objective of the study, a trend analysis was carried out to observe the trend of fire risk premiums and RGDP. To ensure a more robust analysis, the trend of exchange rate and money supply over the period of study was observed as well and is presented in Figure 1.

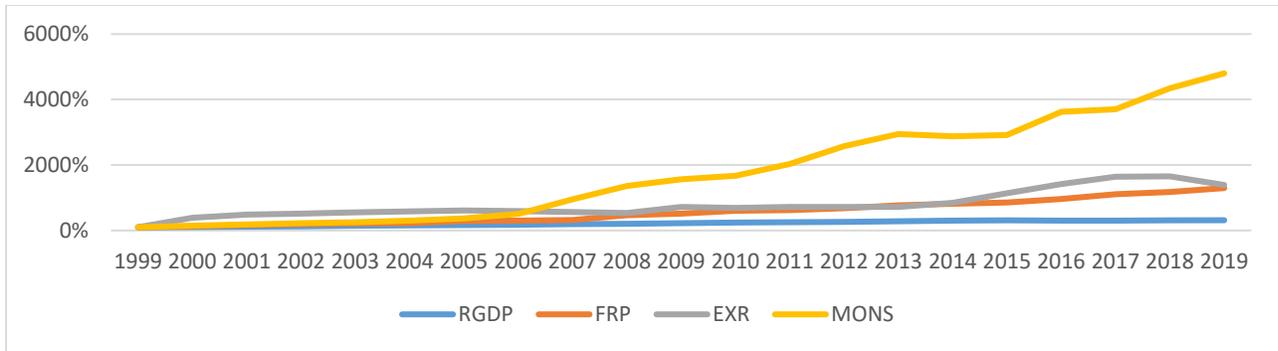


Figure 1: Trend analysis of RGDP, FRP, EXR and MONS

Source: Authors Computation using Excel, 2016

As shown in Figure 1, the trend analysis for fire risk premiums, RGDP, exchange rate and money supply over the period 1999 to 2019 can be observed. From the diagram, it can be observed that RGDP was almost stable only increasing at a very slow rate over the years of study. This reflects that there have been little changes in the contribution of factors of production over the period, in comparison with changes in fire risk premiums, exchange rate and money supply. This seeming stability can also be explained by the continued implementation of appropriate macroeconomic policies, which led to sustained growth in domestic output (Bawa, Abdullahi and Ibrahim, 2016).

The graph also shows that fire risk premiums increased at a faster rate than GDP though not as high as that of exchange rate or money supply. It maintained an almost stable rate from 1999 but then increased its growth rate from 2007. This may be attributed to the 2007 recapitalization of the industry, which led to an increase in insurance activities as a result of the increased capital base and better regulated activities. The upsurge in fire risk premiums within the period may be explained by increased public awareness, rapid expansion of the sector, strategic business acquisitions, improved visibility and better supervisory regulation. This boosted the performance of the sector as shown in the graph.

Exchange rate also maintained an almost stable growth up on till 2014 where it experienced a rise, got to a peak in 2017 and gradually dropped. The trend movements were influenced by hikes in import prices and domestic prices with a markup pricing by firms. Money supply had both the greatest rise as well as the greatest fluctuation over the years of study ending on a peak in 2019.

### 4.3 Unit Root Analysis

Using the natural log of the variables, a unit root test was carried out to check for the accuracy of the data for the intended analysis and to guard against spurious results. The natural log enables uniformity and simplicity of the computation process. Using the unit root analysis, a probability of less than 5 percent leads to a rejection of the null hypothesis of a unit root and implies that the data has no unit root and is suitable for the study. Unit root was checked using both the augmented dicker fuller (ADF) and Philip Perron tests and the result is given in Table 2.

Table 2: Unit root test

Variable	ADF			Phillip Perron test		
	Statistic	Probability	Order of Integration	Statistic	Probability	Order of Integration
<b>LRGDP</b>	-4.4375	0.0028	I(1)	-4.4379	0.0028	I(1)
<b>LFRP</b>	-4.8400	0.0012	I(1)	-4.6510	0.0017	I(0)
<b>LEXR</b>	-4.5505	0.0020	I(0)	-3.8615	0.0089	I(0)
<b>LMONS</b>	-4.4184	0.0432	I(1)	-2.7788	0.0308	I(1)

Source: Authors' computation from Eviews 9 output

Table 2 suggests that LEXR was stationary at the level, while LRGDP, LFRP and LMONS were stationary at the first difference using the ADF test. Most of the variables maintained similar results with the Philip Perron test, as LRGDP and LMONS were stationary on first differencing while LFRP and LEXR were stationary at the level. This result directs to the absence of a unit root among the variables, hence the absence of shocks in the model and the tendency for future statistical behavior to replicate past behavior. Data is therefore adjudged suitable for the study.

#### 4.4 Test of Hypotheses

Regression analysis was carried out to test for the hypothesis of no significant impact of fire risk premium on RGDP. Table 3 is a representation of the result.

Table 3 Regression analysis

Dependent Variable: LRGDP

Method: Least Squares

Sample: 1999 2019

Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
<b>LFRP</b>	2.092969	0.092112	22.72189	0.0000
<b>LEXR</b>	-0.246799	0.127274	-1.939110	0.0693
<b>LMONS</b>	-0.840781	0.083981	-10.01152	0.0000
R-squared	0.616930	Mean dependent var		4.662145
Adjusted R-squared	0.591682	S.D. dependent var		0.169232
S.E. of regression	0.069430	Akaike info criterion		-2.327348
Sum squared resid	0.081949	Schwarz criterion		-2.128391
Log likelihood	28.43715	Hannan-Quinn criter.		-2.284169
Durbin-Watson stat	1.509483			

Source: Authors' computation using Eviews 9

The regression analysis for the data is presented in Table 3. It indicates that a positive relationship exists between LFRP and LRGDP while LEXR and LMONS are negatively related with LRGDP. This denotes that fire risk premiums have a positive impact on RGDP. A probability of 0.0000

indicates a significant relationship which leads to the rejection of the null hypothesis of an insignificant impact on GDP. LMONS with a probability of 0.0000 also has a significant impact on the dependent variable while LEXR with p-value greater than 5 percent is insignificant. An R-square of 0.616 implies that based on the model, 61.6 percent of changes in RGDP are explained by changes in the independent variables while the remaining factors exist outside the variables used in the model. A Durbin Watson statistic of 1.51 which is just within the optimum range of 1.5-2.5 shows the absence of multi collinearity in the model. The researcher proceeded to test for the presence of serial correlations in the model and the result is presented in Table 4.

Table 4: Serial correlation LM test

**Breusch-Godfrey Serial Correlation LM Test:**

<b>F-statistic</b>	0.705957	Prob. F(2,15)	0.5093
<b>Obs*R-squared</b>	1.800019	Prob. Chi-Square(2)	0.4066

Source: Authors' computation from Eviews 9

The serial correlation LM test was adopted as a post-estimation test to test for the presence of serial correlation and heteroscedasticity in the model. Using a lag value of 2, an observed  $R^2$  probability of 0.41 was obtained, which is greater than the 0.05 threshold. We accept the null hypothesis of no serial correlation in the model and assert that the model can be adopted for future forecasts and policy formations.

## 5. DISCUSSION

The regression result indicated that fire risk premiums have a positive and significant impact on real gross domestic product. This is in corroboration with the works of Okoye *et al.* (2017) and Etale (2019). Their studies indicated that fire insurance management activities of the Nigerian insurance industry have a positive relationship with the growth of the economy. It also tallies with the financial intermediation theory as proposed by Guttentag and Lindsay (1968). The result of a positive impact of fire risk premiums on RGDP affirms the premise that the core functions of financial intermediation is that of managing uncertainty and risk both for the insurance company as an institution and as a boost to the economy (Webb, Grace and Skipper, 2002; Kugler and Ogoghi, 2005).

Exchange rate has a negative impact on RGDP within the years of study, which implies that an increase in exchange rate or depreciation of the naira observed in Nigeria today, not only has an adverse impact on the economy but also weakens the economic growth of the country. Shuaibu *et al.* (2021) and Ewubare and Ushie (2022) share this concern and attribute this effect to the large dependence of the economy on importation.

This study implies that the transfer of the risk of fire is an effective medium of risk diversification, which has created a positive impact on the Nigerian economy. Fire risk transfer reduces loss,

increases the appeal for recreation and tourism and encourages agricultural production as well as other sectors of the economy. Premiums received by fire insurers enhance post-disaster recovery. Such recovery can be in the form of the replacement of lost facilities and associated infrastructure, watershed and water quality mitigation and habitat restoration. Kelly *et al.* (2017) and Rahn (2009) opine that by mitigating the cost of rebuilding lost communities fire risk transfer aids the growth of the economy. Positive effects are generated from economic activity arising from insurance fire suppression and post-fire rebuilding. With the aid of insurance, fire risk transfer has stimulated economic development efforts, which has affected property values, tourism and economic development (Xin and Huang, 2013; Momoh and Ajiboye, 2018).

Our analysis also reveals that money supply has a significant negative relationship with GDP. Since the money supply used for the study was M3 also known as broad money and comprises all currency in circulation, traveler's checks, demand deposits at commercial banks held by the public together with other checkable deposits, the findings seem to indicate that an increase in its flow is detrimental to economic growth. This is however contrary to the works of Gatawa, Abdulgafar and Olarinde (2017), Adaramola, and Dada (2020). The authors argue that an increase in money supply implies that more money is available for borrowing in the economy, which is likely to reduce the price of borrowing funds. A reduction in the price of debt leads to an increase in rates of consumption and lending. The increased rates of consumption, lending and borrowing result in an increase in the total output of the economy and invariably, in the gross domestic product. According to Anwana and Affia (2018) and Doan-Van (2020), although the outcome of a positive relationship between money supply and economic growth is always predicted, it is not always the actual result as the long-term impact of an increase in money supply is hardly predictable. A misallocation of capital could result in wasteful and speculative investments leading to a contraction or economic recession which represents a significant decline in economic activity.

### **5.1 Theoretical Implications**

The theory of financial intermediation as proposed by Guttentag and Lindsay (1968) is based on the creation, saving and financing of the economy. It has been held that financial markets allow an efficient allocation of resources and intermediaries have no role to play. However, Guttentag and Lindsay (1968) hold that the provision of a mechanism for the pooling of funds facilitates large-scale indivisible enterprises and this mechanism aids the growth of the economy. As findings from our study indicate a positive and significant relationship between fire risk transfer and the growth of the economy, it, therefore, implies that insurance companies, as epitomized by Guttentag and Lindsay (1968), play an important role in the growth of the economy. They serve as intermediaries, aid in the transformation of savings from the household sector to the investment sector and enhance the overall development of financial markets and the economy at large.

### **5.2 Managerial Implications**

Insurance companies serve as financial intermediaries whose function includes providing risk management services to individuals and organizations alike. In this regard, they provide risk diversification options, risk transfer and loss mitigation. The transfer of fire risk, being one of the functions of insurance is a bonus to organizational management. Through this medium, the risk of unanticipated losses on productive assets is transferred and insurance mitigates the probability of organizational loss, while ensuring that the funds are available to managers for their managerial activities and to finance their investment options.

### **5.3 Limitations and Future Research Directions**

This study has been limited to fire insurance. For further study, the contribution of other classes of insurance such as motor vehicle, marine insurance and aviation insurance, to the Nigerian economy may be considered in order to create a more in-depth analysis and generate results that would promote the growth of the Nigerian insurance industry and the economy at large.

## **6. CONCLUSION AND RECOMMENDATION**

This study examined the impact of fire risk transfer on economic growth. The specific objectives were to investigate the trend of fire risk premiums and the real gross domestic product (RGDP) over the study period, and assess the impact of fire risk premiums on RGDP in Nigeria. The ex-post facto research design was adopted for the study using a population of fifty-five registered insurance companies in Nigeria covering fire risk as at 2019. With annual time series data over the period 1999 to 2019, the trend analysis indicated that GDP had a slow growth over the period of study. Fire risk premiums maintained an almost stable growth rate too, initially, but gradually picked up in 2007 and thereafter increased gradually. Exchange rate increased faster than RGDP and fire risk premiums with its peak in 2017. Money supply had the largest growth rate with an almost consistent increase after 2006. With the regression analysis, the authors discovered that fire risk premiums have a positive relationship with economic growth proxied by RGDP. Exchange rate had a negative relationship in line with the expectation, and contrary to expectation, money supply has a negative relationship with economic growth. The study implies that fire risk transfer aids economic growth and emphasizes the importance of the transfer of fire to the insurance company to enhance its contribution to the growth of the economy.

The authors recommend the following:

- i. Fire risk transfer should be encouraged for individuals and organizations to aid its continued contribution to economic growth.
- ii. There should be an effective utilization of fire risk premiums to enhance productivity and economic growth.
- iii. Regulatory bodies should put in place policies to enforce transparent and efficient management of fire risk premiums by insurers.

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