

## Implication of Sustainability Reporting of Trade Openness Operations to Insurance Business Activities, 1996 -2023: Econometric Evidence from Nigeria

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### Abstract

**Research Objective:** This study investigated the implications of sustainability reporting on trade openness for insurance business activities in Nigeria from 1996 to 2023. Specifically, it examined the impact of trade openness on insurance premium, insurance investment, and insurance assets.

**Methodology:** The study adopted an ex-post facto research design, sourcing data from the Central Bank of Nigeria Statistical Bulletin (2023). Augmented Dickey-Fuller tests were used to determine the diagnostic treatment of variables, and the normality of distribution was confirmed using the Jarque-Bera test. Ordinary Least Squares (OLS) regression analysis was conducted, using Real Gross Domestic Product (GDP) as a proxy for insurance business activities, while insurance premium, insurance investment, and insurance assets served as explanatory variables.

**Findings:** The results revealed that trade openness positively but non-significantly impacted insurance premium (10%, p-value = 0.22), insurance assets (9%, p-value = 0.21), and insurance investment (4%, p-value = 0.75) in Nigeria. These findings suggest that while trade openness contributes positively to insurance business activities, its effects are not statistically significant.

**Conclusion:** Trade openness, as an indicator of international trade capacity, significantly influences the growth potential of insurance business activities. Increased openness fosters a conducive environment for insurance activities to thrive, enhancing economic growth.

**Recommendation:** The study recommends that the government adopt enhanced sustainability reporting measures to maximize the positive impacts of trade openness on insurance business activities. These measures are crucial for capacity building and promoting economic growth in Nigeria.

**Key words:** Trade openness, Insurance activity, Insurance premium, Insurance investment, Insurance Assets.

## **1.0 INTRODUCTION**

Insurance sector plays a crucial role in trade and commercial business activities which help to mitigate risk and protect lives and properties of the insuring public against uncertainties. From the infrastructural perspective, it promoted financial and social stability, mobilized the channel of saving, supported trade, commerce and entrepreneurial activities and protected the lives and properties of Individuals (UNCTA, 2007). Insurance is foremost a commercial activity and its development contributes to international trade balance. Some important categories of Insurance business like general insurance such as Marine insurance, aviation insurance and civil liability insurance contribute greatly to trade and trade openness of the country.

Trade openness is seen as a content to which a country engages international trade without restrictive barriers. Indeed, more open economies allow for enhanced international trade and integration with international markets (Yanika, 2013). Trade openness is the flexibility of a host country and how accessible international trade is to foreign investors (Gupta et al., 2020).

Exports and imports, as components of trade, measure a country's trade openness to the rest of the world. The two metrics help countries to focus on their areas of comparative advantage just as they enhance industry competitiveness, innovation and help countries have access to the global markets. Importation means bringing in goods made in another country into a country while export is sending out goods made in a country into another. When a country is importing goods, this represents an outflow of funds from that country and it is not healthy to the nation's economy.

Nigeria is believed to be an import-dependent nation. Home page Business (2022) provide reports on the National Bureau of Statistics (NBS) in relation to Nigeria international business, it stated that in 2020, the country recorded its first annual trade deficit in four years as imports exceed exports by N7.37 trillion, 2021 Nigerian records N1.94 trillion foreign trade deficit. By 2022, Nigeria's total trade stood at N11,722.44 billion of which total exports stood at N6,359.61 billion and total imports amounted to N5,362.83 billion. In 2023, Nigeria's total trade stood at N26,801.95 billion. Exports were valued at N12,693.62 billion while imports amounted to N14,108.33 billion. This implies a negative trade balance as the Nigerian economy is still import-driven and depends largely on exports of petroleum and some agricultural products to meet foreign exchange earnings to an extent. When a country imports more and exports less, it can distort a nation's balance of trade and devalue its currency. Nigerian currency is devaluing every day coupled with increase in fuel and other local items which are barely affordable to the citizens to buy. Importation is becoming very hard for a lot of importers, for they need to triple the amounts they use in importing goods, while the individuals and business are hitting Pillars to pole trying to make ends meet. A lot

of foreign businesses have left Nigeria because of its harsh business environment. Insurance industry is also facing a lot of changes.

Indeed, insurance is foremost a commercial activity, and its development contributes to the development of international trade through improving the structure of the trade balance. The most important aspect of insurance is non-life insurance that is mainly used in international trade: insurance of goods (cargo insurance), insurance of means of transportation (CASCO insurance), and civil liability insurance. Transit-transport insurance, as well as export credit insurance, is often historically connected with the pattern of international trade (Outreville 2013, 16). Since the post Sap era numerous insurance companies have sprung up. However their relevance and impact on the growth of the economy have been questioned. This is due to various reasons such as loss of focus on their traditional function of insuring risk and pay claims or due to the state of the economy that left the masses with no option rather than securing foods and other basic needs for them to survive, importation has dropped because of currency devaluation and the country exportation is yet to be diversified, both internally and externally purchased of insurance products is seriously affect because of the nation economy state. Therefore the aim of this study will be focused the implication of trade openness on insurance business activities and the specific objectives are:

- (a) To examine the impact of trade openness on insurance premium in Nigeria
- (b) To measure the impact of trade openness on insurance investments in Nigeria
- (c) To determine the impact of trade openness on insurance assets in Nigeria.

However, Insurance penetration is one of the parameters used to assess the level of development of insurance activities relatively to size of the economy and thus this study seek to find the scientific answer to the questions " what are the implication of sustainability reporting to trade openness to insurance premium , investments and assets in Nigeria between 1999 -2023.

## **2.0 REVIEW OF RELATED LITERATURE.**

### **Conceptual Review**

#### **Sustainability Reporting**

Umoren & Ukpung (2022) sees sustainability reporting as the practice of measuring, disclosing and being accountable to internal and external stakeholders to achieve the goals of sustainable development. Similarly, Umoren & Ukpung (2022) define sustainability accounting as the sub- branch of accounting which handles the activities, methods and systems of the business to record, analyze and report first, the financial effects caused by environmental and social factors and second, the ecological and social effects of a defined economic system which insurance business activities dwell. It is not just reported generation from collected data; instead, it is a method to internalize and improve an organization's commitment to sustainable development in a way that can be demonstrated to both internal

and external stakeholders. According to Akpan & Simeon (2021), by making these disclosures, companies make stakeholders aware of how they are integrating the principles of sustainable development into their organizational goals and daily operations.

Sustainability reporting represents a potential mechanism to generate data and measure the progress and contribution of companies towards global sustainable development objectives. It can also help companies and organizations measure their performance in all dimensions of sustainable development, set goals, and support the transition towards a resource-efficient and inclusive green economy

### **Trade Openness**

Trade openness is one measure of the extent to which a country is engaged in the global trading system. Trade openness is usually measured by the ratio between the sum of exports and imports and gross domestic product (GDP). Imports and exports, trade volume are concepts for measuring trade openness. Export is part of international trade where goods produced in one country are transported to another country for sale or trade and as a crucial element of a country's economy. It stimulates economic growth of exporting countries (Gruzina et. al., 2021). Trade openness is good for countries that use their comparative advantage to engage themselves in international trading. They formulate the policy to get maximum returns from international trading with other countries. It may take place in a country or involve two or more.

It usually involves some great numbers of risk caused by change in exchange rate, government policies, judicial system, and financial market. The more a country engages in trade openness, the higher the economic growth, thereby increasing efficiency and productivity.

#### **2.1.2. Insurance activity.**

Insurance activities entails the implementation of contract both life and non-life or reinsurance. It relates to the main hazard covered by insurers. Managing risk is providing financial protection against potential loss. The activity also includes underwritten, product creation and claim processing and policy and regulations by the regulatory body. The key activities of Insurance Company include underwriting, channel maintenance (agency/ broker/ digital) and investing (Linkedin,2016). Lawsider (2024) defined Insurance activities undertaking liability by the insured, under a contract of Insurance, to pay, manage or compensate to the insured contingent upon the happening of an insured event.

#### **2.1.2. Insurance premium**

Insurance premium is the amount paid by the insured each month (or each year) to keep the insurance policy active. The premium amount is determined by many factors, including risk, coverage amount and more depending on the type of insurance policy protection covered against by the policyholder. Insurance company's strength lies in the fact that huge amounts

are held in trust for the benefit of the policy holders. Every premium represents a risk that is covered behalf of one policy holder in effect, therefore, these vast amounts collected from the individual policyholder represent pooling of risks, the funds collected are well managed and they are used to provide compensation and benefits, the risk occurred within the policy year. Most insurance companies generate revenue in two ways: Charging premiums in exchange for insurance coverage and then reinvesting those premiums into interest-generating assets. Solomon (2018) suggested that the main source of working capital for insurance companies are premium and a major outlet is investment of such premium in long term investments.

### **2.1.3. Insurance Investments**

Igbodika et al (2016), investment is the act of deciding to invest money in an asset or instrument that has a particular amount of risk and the potential for long-term growth. An insurance manager's definition of "investment" is converting cash, insurance funds, and reserves into a form of property from which a return on investment is expected, either immediately or in the future, as part of the regular course of business. This type of investment focuses on applying funds that are intended or urgently required for spending or payment of insurance claims and other benefit payments. On a short or long-term basis, the insurance industry generates cash that must be invested based on the company's situation and its business classifications. In order to meet the insurer's first and most crucial requirement of paying claims as they arise, further investment in the insurance industry is needed. Because a specific rate of return on its investments was projected while calculating premiums and the nation's economic growth, the entire revenue of the insurance company will fall short of what it needs to satisfy its promises if funds are not invested.

### **2.1.4. Insurance Assets**

An asset is an item that has financial value. In the context of insurance, many people purchase insurance policies in order to protect certain assets. People who own assets can experience financial losses if their assets are damaged, stolen, or lost (Solomon, 2018). Insurance policies reimburse people for asset related losses as long as they are covered by the policy. Assets that people commonly purchase insurance for include cars, houses, businesses, cash and investment, securities, business interruption and many others. Many homeowner's policies will offer coverage for other assets in the house in addition to covering the house itself. Perils that assets may be covered against include theft, fire damage, water damage, natural disasters and accidents. If an asset has insurance protection, then it is said to be an 'insured asset' without insurance coverage, an asset that is damaged or destroyed can represent a substantial financial loss for a person. However, protection of insurance asset are important because they provide financial protection against losses and damages and enhanced financial security

## **2.2 Empirical Review**

Chimaobi, Afamefu & Ebere (2015) assess the implications of insurance to foreign direct investment inflow in Nigeria. Multiple linear regression techniques and correlation matrix

tests were employed to measure the extent to which foreign direct investment was influenced. The result showed that insurance premium (IP), asset size of insurance industry (AS), and total investment of the industry (TI) impacted significantly and positively on foreign direct investment inflow in Nigeria. The study recommends effective risk transfer mechanisms and financial intermediation, to give the investor confidence in the risk management strength of the host country.

Umar, Hawwa & Yahaya (2021) explore the relationship between trade openness and economic growth in Nigeria. The study used augmentative Dicker-fuller (ADF) and Philip Perron(PP) unit root test within the period of 1980-2020. The result shows that there is no positive and significant long-run impact of export and exchange rate on economic growth, while negative impact of import on economy like agriculture and manufacturing sector. It recommends that the government should refocus its policies towards the external sector and make exports more favorable.

Victor (2019) assesses the impact of trade Openness on economic growth among ECOWAS countries using secondary data from 1975-2017. Nonstationary heterogeneous dynamic panel model through the application of pooled mean Group (PMG) and mean Group (MG) was used though PMG estimator was preferred. Result shows that trade openness has a positive effect on growth in ECOWAS countries in the long-run but mixed effect in the short run. It therefore recommends that ECOWAS member countries improve cooperation among economic actors by using export consortia so as to help SMEs in the region to access international markets.

Relwendé (2018) Assess Insurance development and international trade in developing countries. 52 developing countries were analyzed over the period of 1990 to 2014. . The sample is made up of 28 low- and lower-middle-income countries (53.84%) and 24 upper-middle-income countries (46.16%) use the PMG estimator of Pesaran, Shin, and Smith (1999) for this econometric specification. The results from the pooled mean group estimator indicate that the countries with a better developed insurance sector have a comparative advantage in international trade in the long term.

Muhammam, Muhammad and Momn (2023) studied trade openness and public innovation as a causality analysis. The countries' studies were chosen using the world intellectual property organization's (WIPO) Global Innovation index. 134 countries were selected but narrowed down to 127 due to the lack of comprehensive datasets for each selected. These countries are divided into two categories: 49 developed and 78 underdeveloped. This classification of countries was made using the human development index (HDI) from the World Population Review (2020). From 2009 to 2020. This study uses empirical modeling to discuss the relationship between innovation, tariffs, and trade openness. The study's findings indicate that trade openness, innovation, and tariffs are linked in developing countries more than in

developed countries due to the difference in economic perspectives and policies, which disprove the idea of the tariff being ineffective for developed nations.

Timothy and Itode (2021) examined the impact of trade openness and human capital investment on economic growth in Nigeria from 1981 to 2020. The times series data for the study were mainly sourced from the Central bank of Nigeria and Statistical Bulletin. The unit root test, Johnson co-integration test and Error Correction Mechanism (ECM) were employed to examine the influence of trade openness and human capital investment on economic growth in Nigeria from 1981 to 2020. The ECM result above shows that the regressors explained about 43 percent of the systemic variation in economic growth during the period of investigation into *ceteris paribus*. The study recommends that the Government should ensure prudent utilization of funds allocated to capital projects in education and health through proper monitoring and evaluation.

Lionel, Noble et Al. (2022) evaluate the question: does trade openness influence the performance of small and medium enterprises in Nigeria? A re-evaluation of the evidence. It employs a two-pronged analytical framework on time series data spanning 1981 to 2019. The autoregressive distributed lag (ARDL) and Toda-Yamamoto causality test was also used to provide additional evidence on the direction of causality among the policy variables. The study investigated the short-run and long-run effects of trade openness on SMEs' Performance. Causality test results indicate that variations in exchange rate, infrastructure, labour force and foreign direct investment influence the performance of SMEs. The paper recommends the creation of enabling environments that guarantee formidable enterprise performance amidst open trade.

Thorsten and Ian (2022) studied the determinants of life insurance consumptions across Countries. The study uses both cross-sectional and panel estimation techniques to explore the empirical relation between life insurance consumption and the potential determinants identified by theory. The data collected was of 63 countries in the case of Life Insurance from the period 1980-1996 and the observation is one per country. The results indicate that variation in Life Insurance Density across countries and time can be explained by differences in the income level, the average years of schooling and inflation.

Muhammad et al (2018) investigate the short and long-run cointegration with the causal nexus between financial developments, trade and output growth in Nigeria. The study employs the annual frequency data over the period of 1980 to 2016 and the data is obtained from the World Development Indicators (The World Bank, 2018). The study used the Autoregressive Distributed Lag (ARDL) model. The non-Granger causality analysis was also employed to determine the direction of causality between the variables. The result shows that financial instability retards growth significantly while financial liberalization indicates positive impact, but insignificant effect on growth. The study concluded that there is a long-run nexus between financial development and economic growth in Nigeria. It

recommends that proactive measures need to be established to sustain economic growth in the country through enhancing productivity levels, encouraging savings culture and economizing resources to promote capital accumulation.

Countries (2000-2015). The paper attempts to contribute to existing empirical studies on the implications of the degree of trade openness for total and individual factor productivity growth in 27 OECD countries over the 2000-2015. The data used was obtained from various issues of Economic Outlook published by the Organization for Economic Cooperation and Development (OECD), World Development Indicators, and International Financial Statistics published by International Monetary Fund (IMF). The study used a growth-accounting model based on the concept of the aggregate production function in growth form. The result shows that investment, employment and government consumption growth rates have a positive and statistically significant impact on economic growth. The empirical results support the view that higher degree of trade openness would result in higher export expansion and could contribute positively to total factor productivity and economic growth. Various researchers has been carried on impact of Trade openness on economic growth.(Brueckner and Lederman,2015; Cooke, 2010; Jafari et al.,2012) but there is scarcity of scientific investigation on how trade openness affect insurance business activity in Nigeria, for these reasons this study will tend to assess the implication of trade openness to insurance business Activities in Nigeria.

### **2.3 Theoretical Review.**

#### **2.3.1 Absolute Advantage Theory (AAT)**

The theory of absolute advantage was propounded by Adams Smith in 1776. The theory states that countries should specialize in the production of goods which they have absolute advantage in. It uses absolute advantage to refer to a country with a production cost that is lesser than another.. He argues that the remaining cost should be used for free , which will benefit both countries. The theory of absolute advantage has been a bedrock on which international trade depends.

#### **2.3.2. Comparative Advantage Theory**

The comparative advantage theory was propounded by David Ricora in 1817. The theory strengthened the understanding of the nature of trade and acknowledged its benefits. It is a framework that focuses on adopting a systematic and consistent approach to manage the country's export of goods in which its relative cost advantage is greater than its absolute cost advantage when compared with other countries. This study is anchored on these theories because the study is interested in pinpointing those facts that makes countries to engage in international trade.

## **3.0 METHODOLOGY**

### **Research Design**

The researcher used exposit facto design. This is the type of design involving events that have already taken place. Onwumere (2009) states that data already existing are used since there will be no attempt to control or manipulate the variables. The variables are noted with ex post facto. Hence, a set of regression will be applied on the three hypotheses with the aim of measuring the impact of the business environment on the performance of insurance business in Nigeria.

### Model Specification

In this study, a stock flow model of Kiguel and O'connel (1994) was adopted. Also, the model used by Degafe (2001) was integrated, the model used by pinto (1991) was highly lightened and finally, the model used by Ismaila (2016) was re-modified. The model used by (Ismali (2016) was

$$LRGDP_1 = B_0 + B_1 LMz_1 + B_2 LEXR_1 + B_3 LNINS_1 + B_4 LINF_1 + B_5 L79 + e$$

where LR GDP = Real Gross Domestic Products

LM2 = Broad Money Supply

LEXR = Exchange rate

LTGE = Total government expenditure

INS = Insurance business

INF = inflation rate

Then, the model for the study is derived by modifying the above model so that insurance business will be endogenize in the independent variable. However, the researcher adopted and modified the above model.

Thus:

$$LNTOP_t = B_0 + B_1 LNTINSP + B_2 LNTINSINV_1 + B_3 LNTINSA_1 + et$$

Where TO = Trade openness , INSP = Insurance premium, INSINV = Insurance Investment

INSA = Insurance assets. e = Error terms/Disturbance term

B<sub>1</sub>, B<sub>2</sub> B<sub>3</sub> B<sub>4</sub> B<sub>5</sub> = Coefficient of the parameter estimates. Bo = intercepts of the coefficient.

## 4.0 DATA PRESENTATION AND ANALYSIS

### DATA PRESENTATION

| YEAR | TOP    | INSP      | INSING    | INSA      | IMP        | EXP          | GDP       |
|------|--------|-----------|-----------|-----------|------------|--------------|-----------|
| 1996 | 0.0621 | 11,688.25 | 22,915.20 | 28,934.93 | 562,626.60 | 1,309,543.40 | 22,799.69 |
| 1997 | 0.0758 | 10,941.58 | 34,910.20 | 37,928.18 | 845,716.60 | 1,241,662.70 | 23,469.34 |
| 1998 | 0.0799 | 11,688.25 | 36,737.80 | 41,451.22 | 837,418.70 | 751,856.70   | 24,075.15 |

|      |        |            |              |            |               |               |           |
|------|--------|------------|--------------|------------|---------------|---------------|-----------|
| 1999 | 0.0652 | 14,597.28  | 50,395.70    | 50,131.65  | 862,515.70    | 1,188,969.80  | 24,215.78 |
| 2000 | 0.0951 | 22,531.46  | 54,296.60    | 61,600.00  | 985,022.39    | 1,945,723.30  | 25,430.42 |
| 2001 | 0.1147 | 28,981.29  | 66,343.00    | 78,060.48  | 1,358,180.33  | 1,867,953.85  | 26,935.32 |
| 2002 | 0.1304 | 37,765.89  | 79,855.10    | 85,255.73  | 1,512,695.33  | 1,744,177.68  | 31,064.27 |
| 2003 | 0.1386 | 43,441.81  | 123,192.40   | 124,267.37 | 2,080,235.27  | 3,087,886.39  | 33,346.62 |
| 2004 | 0.1442 | 50,100.83  | 154,119.20   | 141,222.03 | 1,987,045.27  | 4,602,781.54  | 36,431.37 |
| 2005 | 0.1808 | 67,465.56  | 184,235.20   | 203,113.12 | 2,800,856.33  | 7,246,534.80  | 38,777.01 |
| 2006 | 0.2059 | 81,583.75  | 257,859.30   | 307,542.61 | 3,108,519.32  | 7,324,680.63  | 41,126.68 |
| 2007 | 0.2255 | 89,104.89  | 379,914.50   | 427,497.16 | 3,911,952.63  | 8,309,758.32  | 43,837.39 |
| 2008 | 0.3417 | 126,470.30 | 427,571.40   | 573,154.46 | 5,605,232.11  | 10,441,487.81 | 46,802.76 |
| 2009 | 0.381  | 153,127.12 | 327,482.00   | 586,459.54 | 5,465,224.09  | 8,567,597.23  | 50,564.26 |
| 2010 | 0.3669 | 157,336.81 | 321,140.30   | 585,015.79 | 8,123,586.34  | 11,950,728.78 | 55,469.35 |
| 2011 | 0.4064 | 175,756.75 | 288,497.90   | 621,095.14 | 10,943,106.15 | 15,164,174.20 | 58,180.35 |
| 2012 | 0.4738 | 43,441.81  | 399,373.20   | 28,934.93  | 9,718,635.46  | 15,063,885.88 | 60,670.05 |
| 2013 | 0.5026 | 10,941.58  | 506,241.50   | 37,928.18  | 9,392,828.46  | 15,186,644.35 | 63,942.85 |
| 2014 | 0.527  | 11,688.25  | 566,931.90   | 41,451.22  | 10,491,555.47 | 12,924,989.08 | 67,977.46 |
| 2015 | 0.5426 | 14,597.28  | 651,630.30   | 50,131.65  | 11,020,975.63 | 8,801,427.15  | 69,780.69 |
| 2016 | 0.5949 | 22,531.46  | 737,189.40   | 61,600.00  | 9,678,528.17  | 8,783,295.43  | 68,652.43 |
| 2017 | 0.6621 | 28,981.29  | 824,892.20   | 78,060.48  | 12,938,561.19 | 16,750,073.75 | 69,205.69 |
| 2018 | 0.692  | 37,765.89  | 956,150.40   | 85,255.73  | 15,929,796.86 | 22,165,039.19 | 70,536.35 |
| 2019 | 0.7034 | 43,441.81  | 1,361,450.00 | 124,267.37 | 24,153,673.89 | 23,516,823.92 | 72,094.09 |
| 2020 | 0.5949 | 50,100.83  | 1,607,970.00 | 141,222.03 | 21,905,499.46 | 13,737,083.62 | 70,800.54 |
| 2021 | 0.6621 | 67,465.56  | 956,150.40   | 203,113.12 | 15,929,796.86 | 22,165,039.19 | 70,536.35 |
| 2022 | 0.692  | 81,583.75  | 1,361,450.00 | 307,542.61 | 24,153,673.89 | 23,516,823.92 | 72,094.09 |

|      |        |           |                  |            |               |               |           |
|------|--------|-----------|------------------|------------|---------------|---------------|-----------|
| 2023 | 0.7034 | 89,104.89 | 1,607,970.0<br>0 | 427,497.16 | 21,905,499.46 | 13,737,083.62 | 70,800.54 |
|------|--------|-----------|------------------|------------|---------------|---------------|-----------|

**SOURCES. CBN STATISTICAL BULLETIN.2023**

**LOG TRANSFORMATION OF THE VARIABLE AS A DIAGNOSTIC TREATMENT**

|      | LNTOP   | LNINSP  | LNINSINV | LNINSA   |
|------|---------|---------|----------|----------|
| 1996 | 2.7790  | 9.3663  | 10.0390  | 10.2728  |
| 1997 | 2.5796  | 9.3003  | 10.4605  | 10.5434  |
| 1998 | 2.5269  | 9.3663  | 10.5115  | 10.6322  |
| 1999 | 2.7302  | 9.5885  | 10.8276  | 10.8224  |
| 2000 | 2.3528  | 10.0226 | 10.9022  | 11.0284  |
| 2001 | 2.1654  | 10.2744 | 11.1025  | 11.2652  |
| 2002 | 2.0379  | 10.5678 | 11.28796 | 11.3534  |
| 2003 | 1.9761  | 10.6791 | 11.7215  | 11.7301  |
| 2004 | 1.9365  | 10.8217 | 11.9454  | 11.8580  |
| 2005 | 1.7103  | 11.1193 | 12.1239  | 12.2215  |
| 2006 | 1.5803  | 11.3093 | 12.4601  | 12.6363  |
| 2007 | 1.4894  | 11.3975 | 12.8477  | 12.9659  |
| 2008 | 1.0738  | 11.7477 | 12.9658  | 13.2589  |
| 2009 | 0.9648  | 11.9390 | 12.6991  | 13.2818  |
| 2010 | 1.0026  | 11.9661 | 12.6796  | 13.2789  |
| 2011 | 0.9004  | 12.0769 | 12.5724  | 13.3392  |
| 2012 | 0.7469  | 10.6791 | 12.8976  | 10.2728  |
| 2013 | 0.6879  | 9.3003  | 13.1347  | 10.5434  |
| 2014 | 0.6405  | 9.3663  | 13.2479  | 10.6327  |
| 2015 | 0.6113  | 9.5885  | 13.3872  | 10.82240 |
| 2016 | 0.5193  | 10.0226 | 13.5106  | 11.0284  |
| 2017 | 0.41233 | 10.2744 | 13.6230  | 11.2652  |
| 2018 | 0.3681  | 10.5391 | 13.7706  | 11.3534  |
| 2019 | 0.3518  | 10.6791 | 14.1240  | 11.7301  |

|      |        |         |         |         |
|------|--------|---------|---------|---------|
| 2020 | 0.5193 | 10.8217 | 14.2904 | 11.8580 |
| 2021 | 0.4123 | 11.1193 | 13.7706 | 12.2215 |
| 2022 | 0.3681 | 11.3089 | 14.1240 | 12.636  |
| 2023 | 0.3518 | 11.3975 | 14.2904 | 12.965  |

## SOURCES. LOG FORM OF THE VARIABLES

### Tests of Unit root using Philip and Peron

In an attempt to confirm the order of integration of the series under study thereby confirming their suitability for a linear combination in the form of a model, the unit root test following the form specified as Philip and peron was used. Table 4.2 below represents a summary of the unit root result that was stationary.

### Summary of Unit Roots Test Results

| Variable  | PP Statistic | Critical Values @ 5% | Probability Value | Inference |
|-----------|--------------|----------------------|-------------------|-----------|
| LNTOP     | -5.0368      | -.2.6534             | 0.0000            | I(0)      |
| LNTINSP   | -2.7775      | -2.9544              | 0.074             | I(1)      |
| LNTINSA   | -4.7861      | -3.5951              | 0.0038            | I(1)      |
| LNTINSINV | -4.2405      | -3.6032              | 0.0               | I(0)      |
|           |              |                      |                   |           |

Source: Author's e-view 9.0 output with data in Appendix One.

From the result of the **Philip and Peron Statistic** unit root test contained in table 4.2, All the variables are all integrated of order 1(1). Given these orders of integration, the ARDL Method was given and accepted. Also, all the variables were log transformed to bring down the data size and ensure linearity.

### Basic Descriptive Statistics/ Standard tests for Normality

The statistical properties of the data sets are seen as vital determinants of their behaviors when used in econometric analyses. On the basis of this, the researcher presented in this section, the basic descriptive statistics called Normality test of the variables under study.

### Basic Descriptive Statistics/ Standard tests for Normality

|      | LNTOP     | LNINSP   | LNINSINV | LNINSA   |
|------|-----------|----------|----------|----------|
| Mean | -1.278441 | 10.59332 | 12.54713 | 11.70783 |

|              |           |           |           |          |
|--------------|-----------|-----------|-----------|----------|
| Median       | -0.983811 | 10.67918  | 12.77344  | 11.54180 |
| Maximum      | -0.351830 | 12.07686  | 14.29048  | 13.33924 |
| Minimum      | -2.779009 | 9.300325  | 10.03956  | 10.27280 |
| Std. Dev.    | 0.844144  | 0.881244  | 1.268626  | 1.013893 |
| Skewness     | -0.464310 | -0.022628 | -0.427769 | 0.285183 |
| Kurtosis     | 1.724802  | 1.887225  | 2.041298  | 1.757057 |
|              |           |           |           |          |
| Jarque-Bera  | 2.903209  | 2.447035  | 2.926231  | 23181929 |
| Probability  | 0.004194  | 0.005043  | 0.001702  | 0.035892 |
|              |           |           |           |          |
| Sum          | -35.79636 | 296.6129  | 351.3197  | 327.8191 |
| Sum Sq. Dev. | 19.23963  | 20.96794  | 43.45416  | 27.75545 |
|              |           |           |           |          |
| Observations | 28        | 28        | 28        | 28       |

*Source: Author's e-view 9.0 output with data in Appendix One.*

Table above contains the basic measures of central tendency, spread and variations calculated on the different series of the dataset. All the variables are negatively skewed to the left showing the degree of their departure to the line of symmetry. Also, the Kurtosis of the distribution is less than 3 meaning that they are leptokurtic and are not peaked. Of particular interest is the Jacque-Bera (JB) statistics which is a test for normality. It is a combined test of Skewness (S) of zero (0) and a kurtosis (K) of three (3), which are signs of a Mesokurtic distribution. In this case, however, the JB statistics shows that the variables are tending to 3 which are signs of Mesokurtic. The assumption of normality is accepted by the JB statistics, as well as the (K) and (S) figures. This, however, does not affect the goodness of the data for the estimation in this study as the kurtosis of all the variables are between 2 and 3 and the Skewness above 0-1 which is consistent with the properties of most financial time series.

## MEASURING THE IMPLICATIONS OF TRADE OPENNESS TO INSURANCE BUSINESS OPERATIONS

Dependent Variable: LNTOP

Method: ARDL

Date: 08/22/24 Time: 14:23

Sample (adjusted): 1997 2023

Included observations: 27 after adjustments

Maximum dependent lags: 1 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (1 lag, automatic): LNINSP LNINSA  
LNINSINV

Fixed regressors: C

Number of models evaluated: 8

Selected Model: ARDL(1, 0, 0, 1)

| Variable     | Coefficient<br>t | Std. Error | t-Statistic | Prob.* |
|--------------|------------------|------------|-------------|--------|
| LNTOP(-1)    | 0.702144         | 0.137688   | 5.099533    | 0.0000 |
| LNINSP       | 0.097827         | 0.077701   | 1.259023    | 0.2218 |
| LNINSA       | 0.089431         | 0.070522   | -1.268127   | 0.2186 |
| LNINSINV     | 0.039100         | 0.125267   | -0.312130   | 0.7580 |
| LNINSINV(-1) | 0.206352         | 0.137451   | 1.501276    | 0.1482 |
| C            | -2.371660        | 1.267881   | -1.870570   | 0.0754 |

|                    |          |                       |          |
|--------------------|----------|-----------------------|----------|
| R-squared          | 0.981937 | Mean dependent var    | -1.22286 |
| Adjusted R-squared | 0.977636 | S.D. dependent var    | 5        |
| S.E. of regression | 0.120583 | Akaike info criterion | -1.19983 |
| Sum squared resid  | 0.305345 | Schwarz criterion     | -0.91186 |
| Log likelihood     | 22.19770 | Hannan-Quinn criter.  | -1.11420 |
| F-statistic        | 228.3209 | Durbin-Watson stat    | 1.926691 |

Prob(F-statistic) 0.000000

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\*Note: p-values and any subsequent tests do not account for model selection.

## RESULT INTERPRETATION

Result reveals that successive reporting of trade openness activities positively (10%) and non-significantly (0.22) impacted on insurance premiums in Nigeria. Also, successive reporting of trade openness activities positively (9%) and non-significantly (0.21) impacted on insurance assets in Nigeria and finally, successive reporting of trade openness activities positively (4%) and non-significantly (0.75) impacted on insurance investment in Nigeria. The goodness of fit of the model is good because the explained variation is 0.98 meaning the dependent variable had 98% reasonability in explaining the independent variable. The overall regression is significant and there is no visible sign of auto correlation since the Dublin Watson statistics is normal. The analysis yielded a good and statistical result and can be used in econometric analysis.

## IMPLICATION OF RESULT

From the above result. Trade openness positively and non-significantly impacted on insurance operations in Nigeria. Trade openness as an indicator of international trade capacity had a very serious impact and the more the level of openness, the more insurance business activities to prosper.

## 5.0 CONCLUSION

Based on the above, Sustainability reporting is one of the contemporary issues in insurance management and it emerged as a result of advancements in technology which brings an unprecedented footprint on the environment and society where companies' economic activities are carried out. In response to these footprints, reporting international trade impact on insurance business activities is very important in addressing capacity building and its impact on economic growth.

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