The Effect of Insurance Reforms on the Performance of Insurance Industry in Nigeria

*Nathaniel, Emmanuel Nna and Jeremiah, Victor Okon

Department of Business Management, Faculty of Business Administration, University of Uyo, Uyo, Akwa Ibom State

* Author to whom correspondence should be addressed. Email: nathanielemmanuel23@gmail.com

Article history: Received 24 September 2021, Revised 23 October 2021, Accepted 25 October 2021, Published 23 November 2021.

Abstract: This study investigated the efficacy of insurance reforms on the performance of insurance industry in Nigeria. Prior to the reforms in insurance sector, insurance contribution to Gross Domestic Product (GDP), Gross Premium and Underwriting Profit Margin were poor and inadequate. The objective of this study was to find out the potency of insurance reforms on the growth rate of Gross Domestic Product (GDP) in Nigeria and to assess the Underwriting Profit Margin and Gross Premium of selected insurance firms in Nigeria. The study adopted a descriptive approach and data were collected from secondary sources. Simple regression model was used in testing the hypothesis. The result of the hypothesis revealed that insurance reforms have increased Gross Domestic Product (GDP) in Nigeria and also that the Underwriting Profit Margin and Gross Premium of Insurance firms have improved after the reforms. Above, all it was established that there is a significant relationship between insurance reform and the Underwriting Profit Margin of insurance firms in Nigeria. Findings of the study revealed that the reforms have increased insurance penetration, improved products distribution and increased the capital base of insurance firms in Nigeria. The study recommend that there should be an effective enforcement mechanism put in place to check compliance and activation of legal reforms and regulatory framework as these would benefit the players and other stakeholders in the insurance industry.

Keywords: Insurance, Reform, Performance, Underwriting and Profit-margin
1. Introduction

Over the years, Government has put in place measures to regulate the activities of insurance practitioners in the industry. The one hundred and four (104) insurance companies were given until February 28, 2007 to raise their capital thresholds by factor of over 100%. This led to a spate of mergers and acquisition but when there has settled, 71 stronger companies emerged (Chiejina, 2006). Potentially, Nigeria has the biggest insurance market in Africa, but weakness in the industry meant that most of the large insurance business was underwritten by foreign companies. The domestic industry is poised not only penetrate deeper into the domestic market but also to expand to other regions of the continent.

Government reforms in insurance industry was through the recent recapitalization and consolidation to restore confidence of the public in the market and also enhance international competitiveness of local operators. Consequently, the principal objective of the reforms was to have emergence of bigger and stronger players in the industry with enhance capital. The major setback from the assessment however, is the inability of the insurance industry to make their shares more attractive to high net worth individuals and corporate bodies due to poor public perception of the industry, high cost of accessing funds from the capital market, lack of awareness of available products, high cost of insurance product, lack of innovation in the industry, insincerity in term of claims settlement, among others hindered the full realization of the insurance industry’s reform. The main objectives of this study was to examined the benefits of insurance reforms to all the stakeholders as well as to ascertain to what extent the reforms has helped to solve problems of low patronage and non-payment of claims by insurance firms in Nigeria.

1.1. The Performance of Insurance Industry in Nigeria after the Reform

According to Versi (2008), insurance industry in Nigeria has become more vibrant with great potential having increased its market capitalization to #670 billion. NIA (2010) reported that insurance firms in the post consolidation era have been repositioned with greater capacity to deliver more efficient services. In a report on Nigerian market made available by NAICOM, the reform in Nigeria brought greater confidence to investors with #200 billion injected into the sector including foreign direct investments. According to NAICOM, market capitalization stood at #30 billion before the reforms exercise in 2007. There is no doubt that insurance is crucial to the development of any economy hence, it becomes difficult for any economy to grow beyond the growth of its insurance industry (NIA, 2010). NAICOM opined that the reforms was of immense benefit to insurance industry, for instance, the industry’s Gross premium income grew from #76 billion in 2005 to #150 billion within three years.
Available Statistics from (NIA, 2010) indicated that it further grew from #150 billion in 2005 to #427 billion in 2008,

Representing 12.54 percent within the reviewed period. Insurance density also grew from 4.3 percent in 2006 to 6.9 percent in 2008 while the industry's global ranking improved from 65 in 2006 to 61 in 2008.

1.2. Problem Analysis

Over the years, government has put in place measures to regulate the activities of insurance practitioners in the industry. Insurance laws were enacted which provide the legal structure so that operators can develop specialist skills and competence for the type of business they choose. Insurance industry as one of the effective mechanism for risk management, financial intermediation as well as the channel for safeguarding the financial health of small and medium scale enterprises has witnessed some setback even after the reformation of the industry. The major setback from the researcher’s assessment however, is the inability of the insurance industry to make their shares more attractive to high net-worth individuals and corporate bodies due to poor public perception of the industry. The high cost of accessing funds from the capital market also constitute a set-back to the industry. Furthermore, lack of insurance presence in the rural areas, poor funding for the micro insurancescheme,lack of innovation in the industry among others hindered the full realization of the insurance industry’s reform. Thus, this paper investigated and ascertained how the reform has in practical sense affected the performance of insurance firms in Nigeria.

1.3. Objectives of the Study

The objectives of the study:
1) To find out the impact of insurance reforms on the Gross Domestic Product (GDP) in Nigeria.
2) To assess whether the underwriting profit margin of Selected Insurance Firms in Nigeria have improved after the reform.
3) To examine the benefits of insurance reforms to all the stakeholders.

1.4. Research Questions

In trying to find out the impact of insurance reforms on the performance of insurance firms in Nigeria, some questions were asked so as to enable the researchers to measure performance. These questions were:
1) Has the insurance industry’s reform impacted positively on the performance of firms in Nigeria?
2) Has the underwriting profit margin and change in Gross Premium performance of selected insurance firms in Nigeria improved after the reform?
3) Do all the stakeholders (the insured, insurer etc) benefit from the insurance industry's reform?

1.5. Hypotheses Development

**Ho:** Insurance reforms do not have positive effect on the Gross Domestic Product in Nigeria.

**Hi:** Insurance reforms have positive effect on the Gross Domestic Product in Nigeria.

**Ho:** There is no significant relationship between insurance reforms of life insurer and the Underwriting Profit Margin of Insurance firms in Nigeria.

**Hi:** There is a significant relationship between insurance reforms of life insurer and the Underwriting Profit Margin of Insurance firms in Nigeria.

**Ho:** The Underwriting Profit Margin and Gross Premium Performance of insurance firms have not improved after the reforms.

**Hi:** The Underwriting Profit Margin and Gross Premium Performance of insurance firms have improved after the reforms.

1.6. Scope and Limitations of the Study

The study aimed at assessing the impact of insurance reforms on the performance of insurance firms in Nigeria. National insurance commission (NAICOM) is still in the reform process in Nigeria, hence, the scope of this study centered within the recent reforms in insurance industry. This study has not been without some limitations. Some of the limitations are: financial constraints, unavailability of research materials and limited course of data collection. However, inspire of the limitations, the findings of this study still remains valid.

1.7. Definition of Keywords

**Insurance:** This is a contract between two parties by which one party in consideration of a price paid to him, adequate to this risk, becomes a security to the other by ensuring that he/she does not suffers loss, damage or prejudice in the happening of uncertain event (Tyagi, 2007).

**Premium:** The amount of money an insurance company charges for insurance coverage. This is the cost of insurance (Akinbola and Isaac, 2010).

**Underwriting Profit Margin:** This is the percentage difference between gross premium income and total expenses of insurance companies at the end of the financial period (Usman and Salami, 2008:78).

**Gross Premium:** This is the accumulated amount of money an insurance company charges for coverage at the end of the financial period.

**Reform:** To improve a system, organization or industry by making a lot of changes to it, so that it operates in a fairer or more effective way (Longman Dictionary of Contemporary English, 2007).

**NIA:** Nigerian Insurers Association. This is an association of insurance companies in Nigeria (Akinbola and Isaac, 2010).
RGDP: Real Gross Domestic Product. This entry gives GDP growth on an annual basis adjusted for inflation and expressed as a percent (Hofsetede, 1995).

2. Insurance Reforms and Framework

2.1. Historical Development of Insurance Reforms in Nigeria

Africa was faced with a myriad of economic problems. Some of these were high inflation and unemployment, increasing poverty, low economic growth rate, high fiscal deficits, and huge balance of payment deficits, financial sector regression and the worsening terms of trade (Afolabi and Mamna, 1994). The introduction of Structural Adjustment Programme (SAP) in July 1986 was an attempt to set the macroeconomic policy framework right. One of the components of SAP was the reform of the financial sector, aimed at increasing its efficiency amongst others. Reforms and predicated upon the need for re-orientation and repositioning of an existing status quo in order to attain an effective and efficient state. Nnanna and Dogo (1998) opined that the financial sub-sector, which insurance belong needs to be reformed in order to enhance its compositeness and capacity to pay a fundamental role of financial investment. There is an indication that financial sector reforms are propelled by the need to deepen the financial sector and repositioning it for growth as well as being integrated into the global financial architecture and evolve an insurance sector that is consistent with regional integrated requirement, premium accumulated and international best practices (Versi, 2009).

Traditional insurance business continued in Nigeria until 1921 when modern insurance was introduced which was the emergence of the Royal Exchange Assurance Company Limited, hence insurance business was formally regulated in 1961. The sector underwent an indigenization process in the 1970s and in the 1980s, it was open to foreign competition. The announcement of new capitalization requirement for the industry took it through a reformation process in 2005/2006. This resulted in the consolidation of the industry and 59 insurance firms were recertified.

2.2. Insurance Reforms Process

Tajudeen, et al., (2009) pointed that the recapitalization in the insurance industry in Nigeria has gone through several reformation process by NAICOM. (NAI, 2010) stated the insurance reforms process as follows:

- Forced consolidation of banks
- Government had to take over Oceanic Insurance Company Limited and NICON Insurance plc.
- In 2005, insurers were forced to quickly raise their capital base requirement were raised as follows:
₦150 million to ₦2 billion (17 million dollars) for life insurers.

- N200 million to 3 billion for reinsurers

- In 2017, 49 insurance Companies were formed through mergers, but had to recertify in other to operate. In February 2007, government had to raise the capital requirement for life insurers from ₦150 million to ₦2 billion, for general insurers, it was raised from ₦200 million to ₦3 billion and then for reinsurers, it was raised from ₦350 million to ₦10 billion Naira.

**INSURANCE REFORM FOR LIFE AND NON-LIFE INSURERS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Life Insurer (₦)</th>
<th>Non-Life Insurer (₦)</th>
<th>Reinsurer (₦)</th>
<th>Number of Insurance Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>20 million</td>
<td>20 million</td>
<td>150 million</td>
<td>119</td>
</tr>
<tr>
<td>2002</td>
<td>20 million</td>
<td>20 million</td>
<td>150 million</td>
<td>117</td>
</tr>
<tr>
<td>2003</td>
<td>150 million</td>
<td>200 million</td>
<td>350 million</td>
<td>106</td>
</tr>
<tr>
<td>2004</td>
<td>150 million</td>
<td>200 million</td>
<td>350 million</td>
<td>107</td>
</tr>
<tr>
<td>2005</td>
<td>2 billion</td>
<td>3 billion</td>
<td>10 million</td>
<td>96</td>
</tr>
<tr>
<td>2006</td>
<td>2 billion</td>
<td>3 billion</td>
<td>10 million</td>
<td>59</td>
</tr>
<tr>
<td>2007</td>
<td>2 billion</td>
<td>3 billion</td>
<td>10 million</td>
<td>49</td>
</tr>
</tbody>
</table>


**2.3. Conceptual Framework**

It is important to note that there is no single definition for the term insurance. It is defined differently by different researchers depending on the angle from which they see it. But the clear thing we can see from the definition is that they all have a common idea that insurance gives protection against losses or it transfers the risk of one person or a party to another or it spreads the risk of one person or a group of people among several people (Akinbola and Isaac, 2010).

Tyagi (2007) described insurance to be a social device whereby uncertain risk of individuals may be combined in a group and therefore made more certain by small periodic contributions made by individuals in this group, out of which those who suffer losses from the group may be reimbursed. From the above definition, we can say that the idea behind insurance is to undertake peoples’ risk, that is, risk that involve economic factor and affect the financial status of a person or group of people. Thus, insurance demands a group of people faced with similar risk to come together and contribute to form a pool of funds. So anyone that falls victim of risk is compensated from the pool of fund (Tena, 2009).
2.4. Definition of Insurance Reform

According to Nnanna and Dogo (1998), Reform is defined as the improvement of an industry by making a lot of changes to it such that it operated in a more effective way.

In the view of Versi (2008), Insurance Reform means bringing in a lot of changes into the Nigerian Insurance Industry so that the insurance forms can better their performance. Niyi (2007) opined that mergers and acquisitions of some insurance firms will bring about efficient performance.

2.5. Theoretical Framework

The growth of selected insurance firms in Nigeria after the reform

2.5.1. Industrial and General Insurance Company Limited (IGI)

IGI is the largest and fastest growing privately-owned insurance company in Nigeria, with shareholders’ funds in excess of N10 billion and assets of N15 billion. The insurance reform has boasted their performance significantly (Versi, 2008).

2.5.2. Lead Way Assurance Company Limited

Founded in 1970, Leadway Assurance has been a leading player in the Nigerian insurance market priding itself for its close attention to relationships, including strong brokerage ties. The company attracts 80% of its business from Nigeria’s broker network. The company emerged from the recent recapitalization exercise greatly strengthened, attracting an equity injection of 14 million dollars from the International Finance Corporation (IFC) (Usman and Salami, 2008).

2.5.3. Sovereign Trust Insurance PLC (STI)

This insurance company commenced business in January, 1995 with an authorized share capital of 30 million and fully paid-up capital of 29 million following the acquisition and recapitalization of Grand Union Assurance Ltd. Currently, after the reform, the authorized share capital of 1.12 billion naira, having compiled by the NAICOM regime on capital adequacy to underwrite non-life risks, Sovereign Trust’s markets while consolidating gold ones (Musa, 2008).

2.6. Empirical Framework

In Mojekwu, Agwugbo and Olowokudejo (2001), dynamic factor model was applied to the Real Gross Domestic Product (RGDP) and the industry’s contribution to Gross Domestic Product (GDP) in Nigeria. The result showed that there is an underlying common trend between(RGDP) and insurance industry’s contribution to the GDP due to the reforms in the industry. It was also established that there is a positive relationship between insurance industry contribution to Real Gross Domestic Product (RGDP) and the insurance reforms. This findings support that of Tajudeen et al., (2008), who
also found in their studies that with the insurance reforms, the total insurance funds affect both capital formation and GDP growth in the short and long runs. The implication of the finding therefore remains that positive efforts be directed by government at growing the insurance industry in the country through progressive reforms in the industry to enhance investment, employment creation and improvement in the underwriting profit margin of insurance firms in Nigeria.

Omar and Owusu (2007) conducted a study on five life insurance firms in Lagos. The results showed that the insurance reforms have impacted positively on the underwriting profit margin and Gross Premium of the insurance forms in Nigeria. This was consistent with the findings of Abdulkadir (2008). In his study, he observed that the reforms have opened a new face in the insurance industry because the players in the industry will underwrite bigger risk, hence, increase their Gross Premium and profitability. Empirical study also carried out indicated that the recapitalization exercise brought about by the reforms has reduced drastically the number of insurance firms in Nigeria, making them to have a competitive edge for increased profitability and improves performance.

3. Research Methodology

The study adopted a descriptive research design, data were collected from secondary source, which include books, journals, articles, and past research works, CBN statistical bulletin, budget general ledger (BGL), insurance reports as well as interest. The data collected was analyzed using descriptive inferential statistical method by using regression statistical analysis method to measure performance of insurance companies after the reforms.

According to Udofia (2005) regression analysis enables the researcher to investigate the causal relationship between variables, measure effect of one variable on the other and predict values of the independent variable.

The formula for simple regression analysis is given as:

\[ Y = a + bx \]

Where: \( a = \bar{Y} - b\bar{x} \)

\[ B = \frac{\sum (X-\bar{X})(Y-\bar{Y})}{\sum (x-\bar{x})^2} \]

Where: \( Y \) = the value of the dependent variable

\( X \) = the value of independent variable

\( a \) = the \( Y \) intercept

\( b \) = the regression coefficient
Table 1: Insurance Industry Contribution to Gross Domestic Product in Nigeria

<table>
<thead>
<tr>
<th>Year</th>
<th>RGDP</th>
<th>Insurance industry Contribution to Gross Domestic Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>312183.5</td>
<td>1208.5</td>
</tr>
<tr>
<td>2002</td>
<td>329178.7</td>
<td>1366.6</td>
</tr>
<tr>
<td>2003</td>
<td>356994.3</td>
<td>1669.4</td>
</tr>
<tr>
<td>2004</td>
<td>433203.5</td>
<td>2467.8</td>
</tr>
<tr>
<td>2005</td>
<td>477533</td>
<td>2267.8</td>
</tr>
<tr>
<td>2006</td>
<td>52757.6</td>
<td>3080.9</td>
</tr>
<tr>
<td>2007</td>
<td>561931.4</td>
<td>4221.1</td>
</tr>
<tr>
<td>2008</td>
<td>5958821.6</td>
<td>8323.6</td>
</tr>
<tr>
<td>2009</td>
<td>634251.1</td>
<td>10085.9</td>
</tr>
<tr>
<td>2010</td>
<td>674889</td>
<td>11086.9</td>
</tr>
</tbody>
</table>


Table 2: Showing Underwriting Profit Margin of 10 Insurance Companies and Their Change in Gross Premium for 2010

<table>
<thead>
<tr>
<th>Companies</th>
<th>Underwriting profit margin (%) 2010</th>
<th>Change in Gross Premium (%) 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornerstone</td>
<td>33.73</td>
<td>37.34</td>
</tr>
<tr>
<td>Crystal life</td>
<td>24.86</td>
<td>87.01</td>
</tr>
<tr>
<td>Niger</td>
<td>45.76</td>
<td>113.88</td>
</tr>
<tr>
<td>Mutual benefit Assurance</td>
<td>66.64</td>
<td>40.77</td>
</tr>
<tr>
<td>Prestige</td>
<td>27.25</td>
<td>33.07</td>
</tr>
<tr>
<td>Sovereign trust</td>
<td>66.64</td>
<td>40.77</td>
</tr>
<tr>
<td>AIICO</td>
<td>35.68</td>
<td>59.85</td>
</tr>
</tbody>
</table>

Source: BGL Insurance Reports, January, 2011

From the formula:

\[ Y = a + bx \]

Where: \( a = Y - b \bar{x} \)

\[ b = \frac{\sum (X - \bar{X})(Y - \bar{Y})}{\sum (X - \bar{X})^2} \]

Where \( Y \) = The value of the dependent + Variable (underwriting profit Margin %)

\( X \) = The value of independent variable (change in Gross Premium %)

\( b \) = The regression Coefficient
4. Discussion of Findings

The data collected from secondary source were used to test the research hypothesis using a simple regression analysis. Thus, our research findings include:

I. Insurance Reform Contributes positively to the Gross Domestic Product (GDP) and Real Gross Domestic Product (RGDP) in Nigeria.

II. The Underwriting Profit Performance of insurance firms has improved after the reforms.

III. There is a significant relationship between insurance reform of life insurer and the Underwriting Profit Margin of insurance firms in Nigeria.

To reduce the bulkiness data in table 1, we use two digit numbers hence build the table below:

**Table 3: Insurance reform contributes positively to the gross domestic product (GDP) and real gross domestic product (RGDP) in Nigeria**

<table>
<thead>
<tr>
<th>RGDP (Y)</th>
<th>Insurance Contribution to GDP (X)</th>
<th>(Y-Ŷ)</th>
<th>(X- X̅)</th>
<th>(X-X̅)(Y-Ŷ)</th>
<th>(Y-Ŷ)²</th>
<th>(X- X̅)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>12</td>
<td>-17.5</td>
<td>-14.3</td>
<td>250.25</td>
<td>306.25</td>
<td>204.49</td>
</tr>
<tr>
<td>32</td>
<td>13</td>
<td>-16.5</td>
<td>-13.3</td>
<td>219.45</td>
<td>272.25</td>
<td>176.89</td>
</tr>
<tr>
<td>35</td>
<td>16</td>
<td>-13.5</td>
<td>-10.3</td>
<td>139.05</td>
<td>182.25</td>
<td>106.09</td>
</tr>
<tr>
<td>43</td>
<td>24</td>
<td>-5.5</td>
<td>-2.3</td>
<td>12.65</td>
<td>30.25</td>
<td>5.29</td>
</tr>
<tr>
<td>47</td>
<td>22</td>
<td>-1.5</td>
<td>-4.3</td>
<td>6.45</td>
<td>2.25</td>
<td>18.49</td>
</tr>
<tr>
<td>52</td>
<td>30</td>
<td>3.5</td>
<td>3.7</td>
<td>12.95</td>
<td>12.25</td>
<td>13.69</td>
</tr>
<tr>
<td>56</td>
<td>42</td>
<td>7.5</td>
<td>15.7</td>
<td>117.75</td>
<td>56.25</td>
<td>246.49</td>
</tr>
<tr>
<td>59</td>
<td>83</td>
<td>10.5</td>
<td>56.7</td>
<td>595.35</td>
<td>110.25</td>
<td>2314.89</td>
</tr>
<tr>
<td>63</td>
<td>10</td>
<td>14.5</td>
<td>-16.3</td>
<td>-236.35</td>
<td>210.25</td>
<td>265.69</td>
</tr>
<tr>
<td>67</td>
<td>11</td>
<td>18.5</td>
<td>-15.3</td>
<td>-283.05</td>
<td>342.25</td>
<td>234.09</td>
</tr>
<tr>
<td>Σ = 485</td>
<td>Σ = 263</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ŷ = 48.5</td>
<td>X = 26.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

First, we obtain “b”

\[
b = \frac{\sum(x- \bar{x})(y- \bar{y})}{\sum(x- \bar{x})^2}
\]

\[
b = \frac{834.5}{4486.1} = 0.19
\]

Then, we obtain “a” from:
a = \bar{Y} - b\bar{x} \\
a = 48.5 - 0.19 (26.3) \\
a = 48.5 - 4.997 = 43.50

A regression coefficient of 0.19 means that there is a positive relationship between RGDP and insurance industry contribution to GDP in Nigeria. To test for the significance of the b value of a regression equation, we make use of the t-test given by:

\[ t = b \sqrt{\frac{\sum(x-x)^2}{\Theta Y}} \]

where \( t = t_{-test} \) \\
\( \Theta = \) standard deviation \\
\( t = 0.19 \sqrt{\frac{4486.1}{1235}} \)
\( t = 0.19 \times 19.06 = 3.62 \) (calculated value)

where: \( \Theta Y = \sqrt{\frac{\sum(X-\bar{X})^2}{\Theta Y}} \)

\[ \Theta Y \sqrt{\frac{1524.5}{10}} = \Theta Y = 12.35 \]

The degree of freedom = N-2 = 10 – 2 = 8 \\
The table value = 1.96 at 5% (0.05) significant level

Since the calculated (t) value of 3.62 is greater than the table value of 1.96, we reject the null hypothesis and accept alternative hypothesis which state that insurance reform impact positively on the Gross Domestic Profit (GDP) and Real Gross Domestic Profit (RGDP) in Nigeria.

**Decision:** Since the insurance reforms ended in 2007, Data for 2010 (after the reforms) is used. To reduce the bulkiness of data in 1, we use two digit numbers, hence build table below:
Table 4: Underwriting Profit Margin and Change in Gross Premium for X and Y

<table>
<thead>
<tr>
<th>Underwriting Profit Margin (%) (Y)</th>
<th>Change in Gross Premium (%)</th>
<th>(Y-Ȳ)</th>
<th>(X- Ĵ)</th>
<th>(X- Ĵ)(Y-Ȳ)</th>
<th>(Y-Ȳ)²</th>
<th>(X-Χ)²</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>37</td>
<td>-9.29</td>
<td>-21.43</td>
<td>199.08</td>
<td>86.30</td>
<td>459.24</td>
</tr>
<tr>
<td>24</td>
<td>87</td>
<td>-18.29</td>
<td>28.57</td>
<td>-522.55</td>
<td>334.52</td>
<td>816.28</td>
</tr>
<tr>
<td>45</td>
<td>113</td>
<td>2.71</td>
<td>54.57</td>
<td>147.88</td>
<td>7.34</td>
<td>2977.88</td>
</tr>
<tr>
<td>66</td>
<td>40</td>
<td>23.71</td>
<td>-18.43</td>
<td>-436.98</td>
<td>562.16</td>
<td>339.61</td>
</tr>
<tr>
<td>27</td>
<td>33</td>
<td>-15.29</td>
<td>-25.43</td>
<td>388.82</td>
<td>233.78</td>
<td>646.68</td>
</tr>
<tr>
<td>66</td>
<td>40</td>
<td>22.71</td>
<td>-18.43</td>
<td>-436.98</td>
<td>562.16</td>
<td>339.61</td>
</tr>
<tr>
<td>35</td>
<td>59</td>
<td>-7.29</td>
<td>0.57</td>
<td>-4.16</td>
<td>53.14</td>
<td>0.32</td>
</tr>
<tr>
<td>∑ = 296</td>
<td>∑ = 409</td>
<td></td>
<td></td>
<td></td>
<td>664.89</td>
<td>1839.4</td>
</tr>
<tr>
<td>Ȳ = 42.29</td>
<td>ȳ = 58.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Then, we obtain “b” from:

\[ b = \frac{\sum (X-\bar{X})(Y-\bar{Y})}{\sum (X-\bar{X})^2} \]

\[ b = \frac{664.89}{5579.68} = 0.12 \]

We then obtain “a” from:

\[ a = Y - bx \]
\[ a = 42.29 - 0.12 (58.43) \]
\[ a = 42.29 - 7.01 = 35.28 \]

The regression equation of \( Y = a + bx \) becomes \( Y = 35.28 + 0.12 (x) \)

A regression coefficient of 0.12 means that there is a positive relationship between underwriting profit margin (%) for 2010 and change in Gross Premium (%) for 2010 of seven insurance companies understudy to test for the significance of the b value of a regression equation, we make use of the t-test given by:

\[ t = \frac{b \sqrt{\sum (X-\bar{X})^2}}{\theta Y} \]

Where: \( t = t\text{-test} \)
\( \theta = \text{standard deviation} \)
\[ t = 0.12 \sqrt{\frac{5579.68}{16.21}} \]
\[ t = 2.23 \text{ (calculated value)} \]

Where: \( \Theta Y = \sqrt{\frac{\sum (X-X)^2}{\Theta Y}} \)
\[ \Theta Y = \sqrt{\frac{1839.4}{7}} = \Theta = 16.21 \]

Degree of freedom = N-2 = 7 - 2 = 5
Table value = 2.01 at 5% (0.05) significant level

**Decision**: Since calculated (t) value of 2.23 is greater than the table value of 2.01, we reject Null and accept Alternative.

**Table 5**: Insurance Reforms of Life Insurer

<table>
<thead>
<tr>
<th>Underwriting Profit (Y) Margin (%) (Y)</th>
<th>Change in Gross Premium (%)</th>
<th>(Y-( \bar{Y} ))</th>
<th>(X- ( \bar{X} ))</th>
<th>(X- ( \bar{Y} )) (Y-( \bar{Y} ))</th>
<th>(Y-( \bar{Y} ))^2</th>
<th>(X- ( \bar{X} ))^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>33</td>
<td>37</td>
<td>-9.29</td>
<td>-1.14</td>
<td>10.59</td>
<td>86.30</td>
<td>1.30</td>
</tr>
<tr>
<td>24</td>
<td>87</td>
<td>-18.29</td>
<td>-1.14</td>
<td>20.85</td>
<td>334.52</td>
<td>1.30</td>
</tr>
<tr>
<td>45</td>
<td>113</td>
<td>2.71</td>
<td>0.16</td>
<td>0.43</td>
<td>7.34</td>
<td>0.03</td>
</tr>
<tr>
<td>66</td>
<td>40</td>
<td>23.71</td>
<td>0.16</td>
<td>3.79</td>
<td>562.16</td>
<td>0.03</td>
</tr>
<tr>
<td>27</td>
<td>33</td>
<td>-15.29</td>
<td>0.66</td>
<td>-10.09</td>
<td>233.78</td>
<td>0.44</td>
</tr>
<tr>
<td>66</td>
<td>40</td>
<td>22.71</td>
<td>0.66</td>
<td>15.65</td>
<td>562.16</td>
<td>0.44</td>
</tr>
<tr>
<td>35</td>
<td>59</td>
<td>-7.29</td>
<td>0.66</td>
<td>-4.81</td>
<td>53.14</td>
<td>0.44</td>
</tr>
<tr>
<td>( \Sigma = 296 )</td>
<td>( \Sigma = 409 )</td>
<td></td>
<td></td>
<td></td>
<td>1839.4</td>
<td>3.98</td>
</tr>
<tr>
<td>( \bar{Y} = 42.29 )</td>
<td>( \bar{X} = 58.44 )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Then, we obtain “b” from:

\[ b = \frac{\sum (X-\bar{X})(Y-\bar{Y})}{\sum (X-\bar{X})^2} \]
\[ b = \frac{35.84}{1.9} = 9.0 \]
Then, we obtain “a” from:

\[ a = Y - bx \]

\[ a = 42.29 - 9.0 \ (1.34) \]

\[ a = 42.29 - 12.06 = 30.23 \]

The regression equation of \( Y = a + bx \) becomes \( Y = 30.23 + 9.0 \ (x) \)

A regression coefficient of 9.0 means that there is a positive relationship between insurance reform of life insurer and the underwriting profit margin (%) of insurance firms in Nigeria. To test for the significance of this ‘b’ value of a regression equation, we make use of the t-test given by:

\[ t = \frac{b}{\sigma_Y} \]

Where: \( t = t \)-test

\( \sigma = \) standard deviation

\[ t = 0.12 \sqrt{\frac{3.98}{16.21}} \]

\[ t = 9.0 \times 0.50 \]

\[ t = 4.5 \ (\text{calculated value}) \]

Where: \( \sigma_Y = \sqrt{\frac{\sum(X - \bar{X})^2}{\sigma_Y}} \)

\[ \sigma_Y = \sqrt{\frac{1839.4}{7}} = \sigma = 16.21 \]

Degree of freedom = \( N-2 = 7 - 2 = 5 \)

Table value = 2.01 at 5% (0.05) significant level.

**Decision:** Since the calculated (t) value of 4.5 is greater than the table value of 2.01, we reject the null hypothesis and accept alternative hypothesis, which means that there is a significant relationship between insurance reform for life insurer and underwriting profit margin of insurance firms in Nigeria.

However, the implication of the findings is that with the reforms, the insurance industry in Nigeria offers prime investment opportunities, where our insurance firms can take advantage of such opportunities. Equally, untapped are the life insurance market that constitutes the predominant chunk of business volumes in most advance economics but has continually accounted for less than 20% in Nigeria. In all, insurance industry offers a vast array of premium investment opportunities such that, I recommend it above other sectors of the economy as an investment outlet.
5. Conclusion

Attaining the reforms in the industry is a significant aspect of any meaningful development policy. The study has shown serious impact of insurance reforms on the performance of insurance firms. The face of the insurance industry is changing and challenging. The new face presents opportunities, which will significantly transform the industry for the benefit of all the stakeholders. The reform has posed enormous challenges, but surmounting those challenges will give the industry an edge to compete with her foreign counterpart, increase gross premium and profit of insurance firms as well as insurance industry contributions to GDP and RGDP in Nigeria. The principal objective of the reform is to have emergence of bigger and strong players with enhanced capacity, restoration of confidence of the public, enhance the International Competitiveness of the local operators. The vision 2020 have this to say about the Nigerian Insurance Sector: “The Vision is to be the insurance industry of choice among the emerging markets, noted for high market capacity, transparency, efficiency and safety, to attain the position of one of the 20 largest insurance markets in the world by the year 2020”.

Conflict of Interest

We declare that there was no conflict of interest

ACKNOWLEDGEMENT

The researcher is grateful to the authors whose work were consulted and cited in this study and all the databases consulted in the course of this research

References