International Journal of
Financial Management and Economics

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Responsiveness of capital formation to the insurance industry in Nigeria

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Abstract
Adopting the ordinary Least Square Regression method and measuring the impact of insurance on capital formation in Nigeria, it was found that insurance contributed significantly to capital formation within the period studied. It is evident that the insurance sector contributes largely to the process of financial intermediation which is a veritable instrument for the growth of any economy.

Keywords: Premium, capital formation, insurance business, Nigerian, ordinary least squares

1. Introduction
Mobilization of savings from surplus economic units and channeling same to deficit economic units like the business sector is an important function of financial intermediaries such as insurance companies in any economy. This mobilization of funds cuts across all income levels and geographical areas, adequately, timely and at the minimal cost. (Bodie, Kane and Marcus, 2005). In Nigeria, following the Insurance Act of Nigeria 2003 section 25 (2), Insurance companies raise funds by selling policies and taking in savings deposits adequately investing these deposits in various forms of insurance investment as provided for ensuring that there is risk reduction, transfer and indemnity which are offered to their customers/policy holders. From all these, insurance companies profit from the difference or spread between the aggregate of the mobilized premium/savings and the return on the various investments on one side, and the cost of indemnity on the other side. Specifically, Insurance companies are different from other businesses in that both their assets and their liabilities are overwhelmingly financial in nature but the investments can specifically and collectively translate into growth in capital formation in any economy. Owing to the extent of insurance investment and the volume of funds they mobilize, it logically follows that, insurance companies has the capacity to influence capital formation in any economy.

In Nigeria and many other developing economies, it is obvious that insurance and its related activities are at a very pedestrian level of development. Most often it appears that they are totally inexistent. From the origin of modern insurance traceable to the advent of British trading companies in the region down to the first insurance agency in Nigeria which came into force in 1918 when the Africa and East trade companies introduced the Royal Exchange Assurance Agency; there has been a gradual and slow level of the growth of the insurance industry in Nigeria, particularly between 1921 and 1949, Jegede, (2005). In 1960, the number of indigenous insurance companies were twenty five (25) while four (4) were foreign insurance companies. As at September 2005, there were one hundred and four (104) insurance companies and four (4) reinsurance companies in existence before recapitalization (Ezekiel, 2005). The biggest development in the Nigerian Insurance Industry includes the National Insurance commission (NAICOM) seizing control of the largest insurer – NICON as a refurbished institution, established by the military administration in the country in 1997. This is a sharp contrast with the developed economies where it represents a very vital and vibrant segment of the financial system. This is to say that the effectiveness and efficiency of the insurance fund mobilization process as well as its channeling, scope and capacity differ reasonably from relative to other financial institutions in the economy, and also across financial systems and economies at large. As at date, very few studies have been carried out within the Analysis of the channel and economic implications of insurance fund mobilization in the capital formation process is not well documented in Nigeria.

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In the Nigerian context, investigation into the nature and extent of the relationship between insurance activities and fixed capital formation in the country have been quite sparse and sparser is any consensus among the scanty extant literature on by insurance companies and capital formation. This makes a finding arising from a study such as this to be of immense importance to the managers of Nigerian economy, investors, researchers and even financial analysts who may have interest in the intermediation disposition of insurance companies and the transmission effect on capital formation in Nigeria.

Objectively, this study investigates the elasticity of capital formation to the activities of insurance in Nigeria covering the period 1996-2010; the choice of the period is based on availability of data. Nigeria is of interest as this will make a case for enacting policies to move the insurance industry to the performance of its as is seen in other developed economies.

Apart from the introduction, the remaining parts of this paper are organized into four sections. Section two presents literature review and section three the methodology; Section four contains the findings and results while section five concludes

2. Literature Review
2.1 Conceptual Framework
2.1.1 Concept of Insurance
Insurance as a concept has been variously, distinctively and severally defined. Irukwu (1989) further defined insurance as a device for the transfer of some risks of economic loss from the insured who otherwise would have borne the risks to an insurer in return for a premium. It is seen as a medium designed to reduce the chance of a risk occurring or when it happens, reduces the extent of its damage and providing the affected person with compensation is a form of insurance (Ogwo, Eche, Ibeabuchi, Nwite & Enwereuzor: 2000).

Isimoya (2013) sees insurance as a social scheme which provides financial compensation for the misfortune and its effects. By this, the policy holders (ie insured) seek protections and coverage from the insurer (insurance firm) against the risks specified in the policy (Ubom, 2010). Lijadu (1999) [25] supported the assertion by describing insurance as the principle of charity put into an official form for business purposes in other to meet financial requirements.

Regardless the definition, insurance has come to be a vital part of the financial and business system with such policy coverages as life, accident, motor vehicle, fire, group, fidelity guarantee even retirement and social insurance scheme.

2.1.2 Concept of capital formation
Capital formation is defined as the process of building investable assets of value, the increase in wealth or the creation of further wealth. Capital formation is not savings though savings may be a process of capital accumulation because accumulation deals with the increase in stock of real investments and not all savings are necessarily invested. The increase in investment through non-financial assets has been held to increase value to the economy and the increase in the gross domestic product through further increase in employment (Adekunle & Aderemi 2012).

The Central Bank of Nigeria (2007), defines "capital formation as the total change in the value of fixed assets in the economy in addition to fixed assets either for replacing or adding to the stocks, it refers to the increase in the fixed capital stocks of the capital formed".

In Nigeria there have been tremendous growths in the rate of gross fixed capital formation in Nigeria. At current price, the GFCF was N18.2 billion in 1981. From 1982 to 1987 it declined until 1988 when it assumed an increasing trend. The GCFC was N40.1bn in 1990, N141.9bn in 1995, N331.1bn in 2000, N804. 4billion in 2005 and N1546.5 billion in 2006. It came up to N2053 billion in 2008, and N4207.4 billion in 2011, (Kanu, Ozurumba and Anyanwu, 2014)

2.2 Theoretical Review
The relationship between capital formation and insurance within the bounds of this study is underpinned by three key theories namely the Neo-classical Theory of Growth, Financial Liberalization Theory and the Finance-Growth Nexus Theory.

The growth theory pioneered by Solow (1957) and Swan (1956) identifies contributors to growth as labour, capital, technical progress and any other variable included in the growth accounting exercise. According to this theory the thrust for economic growth had to come outside the system, mainly from technological progress which is obviously treated as exogenous. But the fundamental question of why labour supply (both quantity and quality) capital accumulation and technical progress grow at different rates in different countries still stays with us. Further, the neo-classical growth theory led by Solow (1957) predicted convergence of per capital income across countries.

Secondly, there is the theory of Financial Liberalizatio which has its origins in the work of McKinnon (1973) and Shaw (1973). It was Patrick (1966), however, who published the seminal work on the relationship between financial development and economic growth. He hypothesized two possible relationships, a "demand-following" approach, in which financial development arises as the economy develops, and a "supply leading" phenomenon, in which the widespread expansion of financial institutions leads to economic growth (Arestis, Nissanke and Stein, 2005).

Thirdly, there is the finance-growth nexus theory by (Schumpeter, 1911). Borrowing from Schumpeter, financial services are important for economic growth as long as they improve productivity by promoting technological innovation, investment and helping entrepreneurs with the best chances of success in the innovation process.

Bringing all the above together, this study is theoretically anchored on the fact that capital which is formed by insurance activities is used for production which engenders growth. Meaning that all the above theories rightly underpins a study such as this.

2.3 Empirical Review
There are countless studies across the globe on insurance and its role on economic growth as well as other areas. Reed, Cotter, Gill and Smith (1980) [33] advanced two approaches aimed at explaining the behaviour of financial institutions in respect of fund mobilization. They started with the Pool of Funds approach and the second theory called the Asset Allocation. Kugler and Ofoghi (2005) [23] used the components of insurance premiums (disaggregated analysis) and real GDP to investigate the long run

relationship between development in insurance market size and economic growth in the United Kingdom. By disaggregating total insurance premium, they attempt to solve the aggregation problem with a view to examining whether the results of Ward's and Zurbruegg's (2000) study that reported no long run relationship will be sustained.

Using Johansen cointegration test with causality test that posted a result showing a possible pattern or direction of the relationship by revealing that causality runs in both directions.

Park, Borde and Choi (2002) [32] studied the linkage between insurance penetration and Gross National Product (GNP) employing socio-economic factors adopted from Hofstede found tht deregulation facilitate growth in the insurance industry just as socio-political instability was found to be more of a proxy for poverty than an indicator for the need to insure. This assertion supports the expectations of Kong and Singh (2005) [22] and Webb, Grace and Skipper (2002) [36].

Conversely, Haiss and Sumegi (2008) [20] studied the relationship between insurance and economic growth adopting an endogenous growth model with a modified Cobb-Douglas production function and reported positive and significant relationship between real GDP and physical capital. Human capital seems to be negatively related to GDP growth while Interest rate and inflation rate do not significantly correlate with real GDP. Total insurance premium income and non-life insurance premium income negatively and insignificantly affects the growth of the economy, while life insurance premium income has a positive but insignificant impact on the output level of goods and services in the economies. This is opposed by Majekwu, Agwuegbo and Olowokudejo (2011) [27] who studied the impact of insurance contributions on economic growth in Nigeria over a twenty-seven-year period, between 1981 and 2008. The study employed the dynamic factor model on a multivariate time series which analyze a functional relationship between the volume of insurance contribution and economic growth in terms of underlying but unobserved random factors. The results of the study summarily reveal that real gross domestic product is positively correlated to insurance contributions. This implies that if insurance contributions increase, economic growth will also increase. The finding supports that of Boon (2005) [6] who also found in his study that total insurance funds affect both capital formation and GDP growth in the short and long run.

Overwhelmingly, the reviewed works dwelt on insurance and economic growth. This is the motivation for this work. The design is not only to study insurance with Nigerian economic variables but also to show how insurance contribute to capital formation which is a vehicle for engineering economic growth.

3. Methodology and Data
The relationship under study is presented thus

$$LNCAPFORM = F(LNGPI, LNTIB$$

Where
LNCAFN = Natural log of Capital Formation
LNGPI = Natural log of General Insurance Premium
LNTIB = Natural log of Total Insurance Business
In rewriting this relationship in structural form, it appears thus:

$$LNCAPFORM_t = \delta_0 + \delta_1 LNGPI_t + \delta_2 LNTIB_t + \varepsilon_t$$

In terms of apriori expectation; $\delta_1, \delta_2 > 0$

Natural log form of the annualized series used as proxies for the dependent and independent variables from 1996—2010 are employed to introduce linearity. The choice of the base year and upper limit is informed by the availability of data as published by both the Central Bank of Nigeria and the National Insurance Commission (NAICOM). The ordinary least squares form of regression complemented by an array of preliminary and diagnostic tests are employed in the model estimation in this series.

4. Data analyses and presentation
To show the analytical relationship amongst the series, specifically, Insurance and capital formation, a bar plot of the series is presented below in Fig. 1
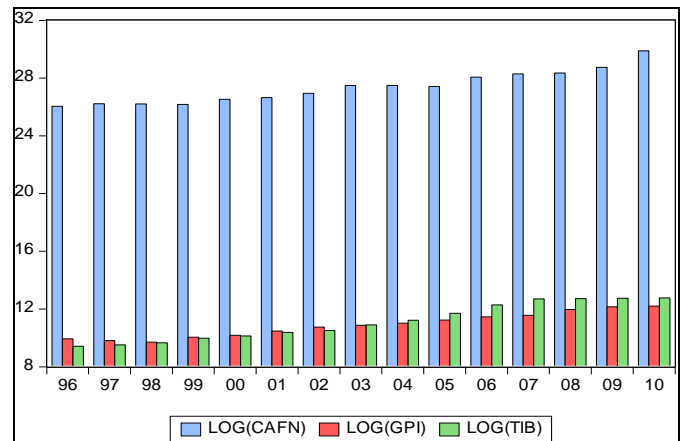

Fig 1: A Bar Graph of the Dependent and the Independent Variables

The chart clearly indicates that Capital formation is bigger than insurance premium and business respectively. This shows that insurance premium is only a subset of capital formation and not the only channel through which capital can be formed.

The stationarity properties of the series are tested following the framework set by Dickey (1979) and the results are presented in table 1 below:

Table 1: Summary of the ADF Unit Root Test

Variables	ADF Test Statistic	Critical Values at 5%	P Value	Order of Integration
LNCAFN	-4.12	-3.86	0.0349	I(1)
LNGPI	-4.45	-3.86	0.0218	I(1)
LOGTIB	-2.01	-1.97	0.0006	I(1)

Source: Author's Computation

Table 1 shows the test for unit which reports the stationarity properties of the series following the Augmented Dickey Fuller statistics. All the variables were found to be without unit root first difference hence stationary at order 1. At the first difference as reported, the ADF statistics for the all the variables were more negative than the critical values at 5% level of significance. The null hypothesis of the presence of unit root in all the variables is summarily and convincingly rejected. On the basis of the above results, the OLS is estimated at first difference to avoid having spurious regression estimates.

5. Regression Result

Table 2: Ordinary Least Squares Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.62374	2.023690	6.732127	0.0000
D (LOG(GPI))	1.801570	0.513497	3.508433	0.0000
D (LOG(TIB))	2.019713	0.343410	5.881345	0.0000

Durbin-Watson stat	1.6approx 2
R-squared	92%
Adjusted R-squared	91%
F-statistic	70002E8
Prob (F-statistic)	0.000000

From the estimated results above (Table 2) capital formation is found to be a positive and significant of general insurance premium and total insurance business. This is consistent with apriori expectation. The R^2 which is 92% explains that 92% of variation in capital formation within the estimated framewor. This shows that the model has goodness of fit with an unexplained variation is about 8%. The F-test of 70.8 (0.00000) shows that the overall regression is statistically significant at 5% levels of significance. This shows that the overall regression can be used for meaningful analyses. The D-W statistics which is 1.6 approximately 2, by rule of thumb, rules out the suspicion of autocorrelation. In more specific terms, it was found that 1% change in general insurance premium and total insurance business produces 1.8% and 2.01% respectively in capital formation within the period and scope studied.

6. Summary and Conclusions

This paper studied the impact of insurance on capital formation with particular emphasis on the Nigerian economy covering a 14year period 1996 to 2010. The ordinary Least Square Regression method was used to measure the impact of the in dependent variable on the dependent. The R^2 explains that 92% of variation in CAFN in the model is explained by the principal explanatory variable GPI and TIB. GPI was found to be a positive and significant function of Capital Formation. TIB was positive and significant. The result shows insurance as a significant contributor to capital formation. This indicates that the premium collected by insurance companies helps in accumulating investible funds.

By way of research implication, it is expected that this study will ignite interest in investigating the functioning of the insurance sector not just in Nigeria but in several developing economies where the insurance sector has been having an abysmal performance. This has become quite imperative as these economies are driving for funds to catalyze development; a knowledge of the role of insurance will make them look inwards for fund mobilization and ultimately fund development.

As it is evident that the development of the insurance sector would contribute largely to the process of financial intermediation which in itself is a vehicle for economic growth; this becomes a wakeup call for policy making to advance policies that are healthy and helpful for the development of the insurance sector. This is with the ultimate aim of improving its contributory role in the growth of not just the financial system but also the economy at large. It is also our hope that this result can be useful for the sake of generalization for economies within the size and scope of Nigeria.

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