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Insurance Intermediation and Capital Formation in Nigeria

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Abstract: This study investigated the relationship between insurance intermediation and capital formation in Nigeria using time series data sourced from the publications of Central Bank of Nigeria Statistical bulletin, annual reports of quoted insurance firms and Nigeria Bureau of Statistics. The ordinary least square method of co-integration, unit root test; Granger causality test and vector error correction model was used as data analysis methods. Capital formation was used as dependent variables while insurance claims on fire accidents, insurance claims on motor vehicle accidents, insurance employee claims, insurance expenditure on fire accidents, insurance expenditure on motor vehicle accidents and insurance employee expenditure. The study found that 81.7% and 78.8% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. The β coefficient shows that intermediation proxy by employee claims and fire accident has negative effect on capital formation while motor vehicle accidents accident have positive effect on capital formation and that 98.4% and 98.3% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. The study recommends that insurance intermediation relate to capital formation in Nigeria. The authority should create a complain annex where products can reach large population in Nigeria, Proper awareness and sensitization exercise should be embarked upon to enlighten the entire public on the significance of insurance policies on capital formation to encourage insurance product innovation and penetration.

***Keywords**:* Insurance Intermediation, Capital Formation, insurance claims on fire accidents, insurance employee claims, insurance expenditure on fire accidents, insurance expenditure on motor vehicle accidents and insurance employee expenditure

INTRODUCTION

The conventional wisdom of the classical economists about these links is that monetary financial intermediation is a major determinant of long-term economic growth, which in turn is related to the conjecture that in the long run there must exist an expected positive return on the capital formation Ahmed & Miller, 2000). Financial intermediation refers to mechanism by which financial institutions like insurance companies provide a medium of exchange necessary for mobilization and transfer of savings from those who generate the fund (policy holders) to investments in the economic system where the funds will yield the highest return. This arrangement is expected to enhance productive activities and positively influence aggregate capital formation in the economy (Torbira, 2014). Insurance intermediation can be categorized based on the income and expenditure.

Insurance creates a pool of investable funds through mobilization and investment of such funds in the money and capital markets or through direct investments to achieve allocation efficiency in the economy (Sambo, 2016; and Igbodika, Ibenta and Isaac, 2016). According to Surminski (2014) this mechanism have been in existence for many years, and have to a large extent helped in reducing the uncertainty of financial losses by spreading risks across a large number of insured. Consequently, insurance companies have emerged the hub not only of economic activities, but also of social policy. Gabriel (2015) opined that without due consideration of insurance, many business activities and processes would be deemed too risky, and those affected by a loss might struggle to recover. Fortunately, in today's world, insurance activities have been made available to cover virtually all forms of risk inherent in daily activities-as long as the demand and supply for risk transfer is available through the insurance companies.

Economists have long recognized the importance of financial markets in the development process. For instance, Schumpeter (1934) contends that the services provided by financial intermediaries are important for stimulating technological innovation and economic development. Hence, well-developed financial systems can channel financial resources to their most productive use, leading to the expansion of the economy. The link between financial development and capital formation has been tested using different procedures, data sets and time periods and there is overwhelming support for the critical role of financial development for economic growth.

Financial markets are found to have a strong positive impact on output and productivity growth, as well as capital accumulation (Ang, 2008;Akani, Okonkwo & Ibenta, 2016, Kenn-Ndubisi & Akani, 2015 and Levine, 2005, and references therein). Financial innovations help to reduce transaction and information costs while larger and more efficient financial markets help economic agents to hedge, trade and pool risk, thus raising investment and economic growth. While there is a plethora of research on the influence of banks and stock markets on economic growth, the role of other intermediaries such as insurance institutions has been largely ignored (Akani & Momodu, 2016 and Ang, 2008).

However, ignoring the role insurance market plays in the development processes lead to a significant underestimation of the overall impact of financial development on economic growth. The importance of insurance sector for capital formation was first recognized by UNCTAD (1964), who acknowledged that "a sound national insurance and reinsurance market is an essential characteristic of economic growth. Ward and Zurburegg (2000) persuasively argue that insurance markets can have a positive impact on the economy by facilitating a myriad of economic transactions through risk transfer and indemnification. Additionally, insurance sector promotes financial intermediation similar to banking institutions. Despite a rapid development of this sector during the past few decades, it is surprising that the impact of insurance on growth has not been analysed as rigorously as the role of banks. A review of the literature suggests only a few studies have examined this issue and they rely mainly on cross-section and time series approaches (Outreville, 1990, Ward and Zurburegg, 2000, Webb at al., 2002, and Kugler and Ofoghi, 2005). They all find that insurance sector development has a significant impact on economic growth. From the above gap, this study examined the relationship between insurance intermediation and capital formation in Nigeria.

LITERATURE REVIEW

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).

Sources of Capital Formation

Formation of capital is determined by increase in the volume of real savings, mobilization of savings and investment savings. This means capital formation from Jhingan’s view is monetary phenomenon. He disaggregates the factors as domestic and external factors.

Increase in National Income: the first important step is to increase the national output or income which will tend to raise the income of the people. This can be done by utilizing the existing techniques and employing resources more efficiently, by utilizing unused resources productively and increased division of labour.

Savings Drives. Savings drives will also help solve the problem of augmenting savings. They require concerted efforts in the form of propaganda and social education. Savings is a matter of habit which can be inculcated by propaganda. People can be persuaded to save in their own interest or in the interest of the family, for imparting education to their children, for marrying them, for building a house or as a safeguard against old age, sickness or emergency. Similarly, issuing savings certificates in the form of government bonds and annuities carrying a high rate of interest may be helpful in mobilizing savings. Further incentive to savings can be in the form of business gifts, lottery prizes and tax exemption on the purchase of government bonds.

Establishment of Financial Institutions: It is common knowledge that much of the unspent current income is hoarded in cash; jewels, gold, etc., by the people in underdeveloped countries. Therefore, the need is to establish financial institutions where small savers can safely deposit their money with confidence. The setting up of a well-developed capital and money market by the central bank can give further impetus in this direction. In order to stimulate small savings among the masses, attention should be paid to the starting of like insurance, compulsory provident fund, provident fund-cum-pension-cum, life insurance schemes, opening up of savings banks and mobile banks in rural areas, and promoting savings through cooperative societies, including the establishment of service cooperatives and strong apex institutions like the central and state cooperative banks. Such agencies will not only permit small amounts of saving to be handled and invested conveniently but will allow the owners of savings to retain liquidity individually and finance long-term investment collectively.

Rural Savings: Another important measure is to encourage rural savings for local needs which are understood and approved of by the savers. Government securities might be attached to particular development projects in rural areas. These rural debentures should as far as possible be for specific projects of development in which the villager is interested in different degrees, according as they are of direct benefit to him, or to those with whom he shares fellowship of interest because' of their belonging to his district or region or state. The guiding policy should therefore, be to link rural savings with local development projects. It this way, mobilization of rural savings might lead to more rapid development. Such voluntary savings can even lead to that critical minimum which is so essential for a take-off.

Gold Hoards: Another method is the mobilization of gold hoards. This is a useful, though a neglected method of capital formation. The government should issue gold certificates carrying a high rate of interest in lieu of the gold surrendered by the public.

Perpetuation of Income Inequalities: This is also regarded as one of the measures to achieve high rates of saving and investment. Since the mass of the people have a low marginal propensity to save in underdeveloped countries, it is the higher income groups with a high marginal propensity to save that can do saving and investment for capital formation. This had been one of the major sources of capital formation in 18th century England and early 20th century Japan. But widening of income inequalities is not feasible under the prevailing political climate in underdeveloped countries. Moreover, it is not definite that the wealthy classes may utilize their savings for productive investments, as was done by the British entrepreneurs of the 18th century. Rather the tendency is to spend on conspicuous consumption re-inforced by the international demonstration effect. In some of the African and Latin American countries where the governments are not watchful, the declining influence of the wealthy classes has led to the flight of domestic capital into the safe vaults of banks in developed countries.

Increasing Profits: Professor Lewis is of the view that the ratio of savings to national income is a function not just of inequality, but precisely, of the ratio of profits to national income. He maintains that voluntary savings form a significantly large share of national income only where inequality of income distribution is such that profits are a relatively large share of national income. If there is unequal distribution of income and the society's upper level incomes accrue to the landlords or traders, there is little chance of providing voluntary savings to finance investments.

Fiscal Measures: since sufficient voluntary savings are not forthcoming for capital formation in an underdeveloped economy, the government is in a better position to mobilize them through various fiscal and monetary measures. These measures may be in the form of a budget surplus through increase in taxation, reduction in government expenditure expansion of the export sector, raising money by public loans and even by deficit financing. Besides the government can increase savings by running public undertaking more efficiently so that they show larger profits. Above all, the government should evolve a growth oriented long-term savings policy so that savings should increase automatically as development gains momentum.

Public borrowing is also a useful tool for diverting resources from unproductive to productive channels. But its scope is limited in underdeveloped countries because of the low levels of income and savings, and high propensity to consume. Besides, there is the lack of organized money and capital markets. To make public borrowing a success, concerted campaign by propaganda and social education is essential. Further, a network of intermediate agencies should be set up in the form of savings banks, commercial banks, insurance companies, unit trusts, social security institutions and a well-organized bill market. Nurkse also suggests forced loans if voluntary public borrowing does not succeed.

Inflation: If sufficient funds are not forthcoming for capital formation, inflation is the most potent measure. It is regarded as a hidden or invisible tax. When prices rise, they reduce consumption and thus divert resources from current consumption to investment. The government creates inflation by issuing more currency into circulation to meet its requirements. But inflation raises savings at the cost of the standard of living of the masses. The fixed income groups are the hardest hit. Discontentment increases among the masses, unions fight for higher wages and productivity is adversely affected. Rising prices and costs also reduce exports to world markets. Thus inflation, as a method for capital formation, brings more harm than benefit unless counter inflationary measures are adopted by the government.

Profits of Public Corporations: The government can also mobilize domestic savings for productive investment by establishing public corporations. Public corporations receive funds in the form of equity capital and bonded debt from the open market, and in developing countries public corporation directly from the government. They also obtain foreign loans or collaborate with foreign enterprises. Public corporations are a substitute for private enterprise in underdeveloped countries. They generally utilize their resources as a revolving fund. But in certain underdeveloped countries where public corporations are established as state enterprises, their profits are utilized for capital formation. This is being done in the case of public enterprises set up by the federal government or state government. In many underdeveloped countries, public corporations have been set up for financing the establishment and running of private enterprises. Similarly they have been formed as investment trusts. The establishment of such varied public corporations helps organize capital and money markets for the mobilization of domestic savings for capital formation.

Utilization of the Disguised Unemployment: According to Nurkse, one of the important sources of capital formation is the concealed saving potential contained in rural underemployment in overpopulated underdeveloped countries. The disguised unemployed workers contribute practically little or nothing to output, their marginal productivity is zero or negligible. Such unproductive workers can be removed from the land without a fall in agricultural output and employed on various capital projects such as irrigation, roads, house building, etc., and they can be a fruitful source of capital formation. This increased income can be taxed to finance the investment projects. When the investment projects are completed, they will tend to raise output and income which can also be taxed and utilized for further investment.

External Sources: Domestic sources for capital formation are required to be supplemented by the following external sources:

Foreign Aid: In the absence of adequate domestic resources for capital formation, it is necessary to import foreign capital in the form of loans and grants from advanced countries without any 'strings.' But the best course is to start joint ventures whereby foreign investors bring technical know-how along with capital, and they train local labour and enterprise. Capital can also be imported indirectly by paying for through export. This is the best policy because exports pay for imports. But it is for a backward economy to increase its exports to the level of imports in the initial stage of development.

Restriction of Imports: Another important external source of capital formation is the restriction of consumption imports. All luxury import should be restricted and the foreign exchange so saved should be utilized in importing capital goods. This measure can be successful only if the domestic income saved on imported consumer goods is not utilized in luxury and semi-luxury goods manufactured at home. If consumers start spending more on domestic consumer goods, the increase in the import of capital goods will be offset by reduction in domestic investment because resources will be diverted from domestic production to increased spending of consumer goods. An increase in domestic saving is, therefore, essential if the restriction of luxury imports is to lead to an increase in net capital formation.

Favourable Terms of Trade: Similarly, if the terms of trade move in favour of an underdeveloped country, it is in a position to import large quantities of capital goods. To take advantage of the favourable terms of trade, it is essential that the increase in domestic income due to larger export earnings should be saved and invested productively. If the extra income thus earned is spent on consumer goods, new saving will not take place for capital formation. Since improvement in the terms of trade is not an automatic source of capital formation, Nurkse suggests that this saving should be extracted through taxation to give the country a command over additional imports of investment goods.

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)

The Perfect Theory of Financial Intermediary

Three pillars are at the basis of the modern theory of finance: optimality, arbitrage, and equilibrium. Optimality refers to the notion that rational investors aim at optimal returns. Arbitrage implies that the same asset has the same price in each single period in the absence of restrictions. Equilibrium means that markets are cleared by price adjustment through arbitrage at each moment in time. Levine et al (2000). In the neoclassical model of a perfect market, e.g. the perfect market for capital, or the Arrow-Debreu world, the following criteria usually must be met:

i. No individual party on the market can influence prices
ii. Conditions for borrowing/lending are equal for all parties under equal circumstances
iii. There are no discriminatory taxes
iv. Absence of scale and scope economies
v. All financial titles are homogeneous, divisible and tradable
vi. There are no information costs, no transaction costs and no insolvency costs
vii. All market parties have ex ante and ex post immediate and full information on all factors and events relevant for the (future) value of the traded financial instruments.

The Arrow-Debreu world is based on the paradigm of complete markets. In the case of complete markets, present value prices of investment projects are well defined. Savers and investors find each other because they have perfect information on each other's preferences at no cost in order to exchange savings against readily available financial instruments. These instruments are constructed and traded Costless and they fully and simultaneously meet the needs of both savers and investors. Thus, each possible future state of the world is fully covered by a so-called Arrow-Debreu security (state contingent claim). Also important is that the supply of capital instruments is sufficiently diversified as to provide the possibility of full risk diversification and, thanks to complete information, market parties have homogenous expectations and act rationally. In so far as this does not occur naturally, intermediaries are useful to bring savers and investors together and to create instruments that meet their needs. They do so with reimbursement of costs, but costs are by definition an element or rather, characteristic of market imperfection.

Modern Theories of Financial Intermediation

In order to give firm ground to our argument and to illustrate the paradox, we will first review the doctrines of the theory of financial intermediation. These are specifications, relevant to the financial services industry, of the agency theory, and the theory of imperfect or asymmetric information. Basically, we may distinguish between three lines of reasoning that aim at explaining the raison d'être of financial intermediaries: information problems, transaction costs and regulatory factors.

First, and that used in most studies on financial intermediation, is the informational asymmetries argument. These asymmetries can be of an ex ante nature, generating adverse selection, they can be interim, generating moral hazard, and they can be of an ex post nature, resulting in auditing or costly state verification and enforcement. The informational asymmetries generate market imperfections, i.e. deviations from the neoclassical framework. Many of these imperfections lead to specific forms of transaction costs. Financial intermediaries appear to overcome these costs, at least partially. For example, Diamond and Dybvig (1983) consider banks as coalitions of depositors that provide households with insurance against idiosyncratic shocks that adversely affect their liquidity position. Another approach is based on Toby& Akani (2014); Akani & Akani (2019);Akani & Lucky (2014, 2015, 2020); Leland and Pyle (1977). They interpret financial intermediaries as information sharing coalitions. Diamond (1984) shows that these intermediary coalitions can achieve economies of scale.

Empirical Review

Avran, Nguyen, and Skully (2010) provided a behavioral explanation for the impact of insurance density and insurance penetration on GDP per capital in ninety three (93) countries from 1980 to 2006. The study adopts the ordinary least square (OLS) and generalized method of moments (GMM) estimation approach in analyzing the global insurance sector. Consequently, cross country panel data for the various countries was used for the analysis. The results from the study confirm that insurance density positively and significantly causes growth in the economy while insurance penetration does not have significant effect on economic growth. The relationship was demand-leading for insurance density but not for insurance penetration. This study concludes that insurance density in an economy helps boost risk management, intermediation and investment and implicitly enhance growth. Although the results from this study are insightful, the study was based on the assumption that variations which affect insurance density will affect growth.

Majekwu, Agwuegbo, and Olowokudejo (2011) examined 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 models on 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's model analysis summarily reveal that real gross domestic product is positively correlated to insurance contributions. This implied that if insurance contribution increase, economic growth will also increase. The finding supported that of Boon (2005) who also found in his study that total insurance funds affect both capital formation and GDP growth in the short and long run. The plausibility of the aforementioned findings may be ascribed to the fact that insurance activities rely a lot on investment. They recommended that government policy should be directed at growing the insurance industry in the country, and through such means enhance investment as well as production in order to boost the country's economic growth.

Ibiwoye et al. (2010) that real gross domestic product and SAP positively and significantly influenced Life Insurance consumption (LIC) in Nigeria while indigenization policy and domestic interest rate are statistically significant but inversely related to life insurance consumption. Oloke et al. (2015) found that capital security and portfolio stability (diversification) were the principal driving motive for investing in real estate while liquidity concern, high transaction costs, inadequate infrastructure development in the country and unreliable valuation data among others constitute major factors militating against investment in real estate. Sambo (2016) concluded that insurance portfolio investment is a significant factor that contributes to economic growth in Nigeria. In another study, Sambo (2016) concluded that a joint relationship exist between insurance investments and GDP in Nigeria.

Ojo (2012) revealed that insurance sector growth and development positively and significantly affects economic growth. According to him, the extent of influence the insurance sector growth had on economic growth was limited and not direct because of some cultural, attitudinal traits and values in the country. Also, Igbodika et al. (2016) revealed that; insurance sector investment had a positive and significant effect on gross domestic product in Nigeria. Nesterova (2008) found that countries with higher life expectancy at birth, income level, old dependency ratio and countries-members of the European Union have higher levels of life insurance consumption, while financial development indicator, inflation and real interest rate reduce the demand for life insurance across countries.

Ubom (2014) discovered that insurance companies in Nigeria got over 95% of income on yearly basis from premium and accumulated large sum of funds after expenditures on claims but invested less than 1% of such funds. He also found that stock and bonds, government securities as well as real estate properties and mortgages dominated the investment portfolio of these financial institutions with heavy concentration in the assets of quoted companies. Boon (2005) found in his study that total insurance funds affect both capital formation and GDP growth in the short run and long run.

Webb et al. (2005) indicated positive effect of banking development on economic growth, while insurance variables do not contribute significantly to economic growth. The result of simultaneous equations, assuming endogenous relationship between financial activity and growth, showed that higher levels of banking and life insurance penetration predicted higher rate of economic growth. Concerning the other direction of the relationship, economic growth affects life insurance penetration, but did not predict banking development

Reed, Cotter, Gill and Smith (1980) 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) 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) studied the linkage between insurance penetration and Gross National Product (GNP) employing socio-economic factors adopted from Hofstede found that 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) and Webb, Grace and Skipper (2002). Haiss and Sumegi (2008) 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. The finding supports that of Boon (2005) who also found in his study that total insurance funds affect both capital formation and GDP growth in the short and long run.

Lucky and Uzah (2016) examined factors that determine Nigerian capital formation. The objective was to test Jhingan's propositions for sources of capital formation in Nigeria. Time series data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin. Nigerian Gross Fixed Capital Formation (GFCG/GDP) was modeled as the function of Broad Supply (M2/GDP), Credit to Private Sector (CPS/GDP), Gross National Savings (GNS/GDP), Commercial Banks Lending Rate, Exchange Rate (EXR), Inflation Rate (INFR), External Debt (EXTD/GDP), Public Expenditure (PEX/GDP), Government Revenue (GR/GDP), Terms of trade (TT/GDP) and Operating Surplus (OPS/GDP). Cointegration Test, Augmented Dickey Fuller Unit Root Test, Granger Causality Test and Vector Error Correction Model were used to test the dynamic relationship between the variables. Findings proved that M2/GDP, GNS/GDP, EXR, EXTD/GDP, TT/GDP have negative and insignificant effect on capital formation while CPS/GDP, LR, INFR, PEX/GDP, GR/GDP and OPS/GDP have positive and insignificant effect. The model summary revealed 86.0% explained variation and f-statistics 12.38458 probability of 0.000004. The study concludes that the variables have significant impact on Nigerian Gross Fixed Capital Formation and confirm the Jhingan's proposition.

Torbira and Ogbulu (2014) empirical investigation into the relationship between fund mobilization by insurance companies and gross fixed capital formation (GFCF) in Nigeria and specifically how the latter responds to stimuli emanating from the insurance companies. A five variable-predictor multivariate regression model was estimated and analyzed. The short run results reveal those four explanatory variables namely: premium from fire, accidents, motor vehicles and employee liabilities insurance policies positively and insignificantly correlate with Gross Fixed Capital Formation while the relationship between premium from marine insurance policies and GFCF is both negative and insignificant. In the long run, the fund mobilization variables by insurance companies positively and significantly impact on the growth of gross fixed capital formation. In addition, the Granger causality test provides no evidence of causality among the variable.

Pathania (2013) examined linkages between export, import and capital formation investigated by time series econometric techniques like Unit root test, Co-integration and ranger causality during the period of 1991 to 2010 for India. This study checked that whether there is uni-directional or bidirectional causality between export, import and capital formation in India. In this paper, the results reveal that there is bidirectional causality between gross domestic capital formation and export growth. The traditional Granger causality test also suggests that there is uni-directional causality between capital formation and import and export.

Ugwuegbe and Uruakpa, (2013) investigated the impact of capital formation on economic growth in Nigeria. To analyze the impact of capital formation, stock market capitalization, inflation rate and interest rate on economic growth, the study employed Ordinary least square (OLS) technique. To test for the properties of time series, phillip-perron test was used to determine the stationarity of the variables and it was discovered that gross fixed capital formation and economic growth are integrated of order zero I (0), Johansen co integration test was employed to determine the order of integration while error correction model was employed to determine the speed of adjustment to equilibrium. The empirical findings suggested that capital formation has positive and significant impact on economic growth in Nigeria for the period under review.

Kanu & Ozurumba, (2014) examined the impact of capital formation on the economic growth of Nigeria using multiple regressions technique. It was ascertained that in the short run, gross fixed capital formation had no significant impact on economic growth; while in the long run; the VAR model estimate indicates that gross fixed capital formation, total exports and the lagged values of GDP had positive long run relationships with economic growth in Nigeria. It was equally ascertained that there exists an inverse relationship between imports (IMP), Total National Savings (TNSV) and economic growth; while GDP was seen to have a unidirectional causal relationship with export (EXP), Gross fixed capital formation (GFCF), Import (IMP) and Total national saving (TNSV).

Shuaib, Igbinosun and Ahmed, (2015) examined the impact of government agricultural expenditure on the growth of the Nigerian economy. The study employed secondary data sourced from National Bureau of Statistics, and Financial Review of Central Bank of Nigeria. The study employed E-view 7.2 statistical output as a window in exploring the possible links between government agricultural expenditure and economic growth. The results revealed that government agricultural expenditure has a direct relationship with economic growth which statistically significant at 5% level.

Aiyedogbon (2011) explored the relationship between military expenditure and capital formation in Nigeria. The study spanned a period of 1980–2010. It employed the econometric methodology of vector error correction model and testing the results using stationarity test, co-integration and variance decomposition. Findings reveal that military expenditure (milex) and lending rate have negative impact on gross capital formation (GCF) in Nigeria in both the short- and long-run. The GDP is positively significant in the long run while it is positive and insignificant in the short run.

Umerede (2006) investigated possible determinants of capital formation using Nigerian data covering 1980-2004 studied. Time-series estimates are obtained using an OLS methodology which included tests for stationarity and cointegration. Empirical results showed a positive influence of cumulative foreign private investment (CFPI), index of energy consumption (INDEXEC) and total banking system credit to the domestic economy (BSTCr), and a negative influence of gross national savings (GNS), domestic inflation rate (INFR), maximum lending rate (MLR), foreign exchange rate EXCHR) and debt service ratio (DSR) on capital formation. We discovered that foreign exchange

rate leads capital formation in Nigeria, followed by index of energy consumption and then, debt service ratio.
Ajao (2011) in his study concludes that long-term capital formation in Nigeria were not majorly sourced from the capital market as the above result shows the marginal contribution of Market Capitalization and New Issues to Gross Fixed Capital Formation. Though, it is unarguable that when investors take position for profit, it can affect the level of wealth which can then be used to build private capital. This result is in line with the findings of Sarkar (2006) where he concludes that there exist no meaningful relationship between stock market capitalization and gross fixed capital formation.
Orji and Mba (2011) in their study looked at relationship between FPI, capital formation and Growth, in Nigeria using the two-stage least squares (2SLS) method of estimation. The study finds that the long run impact of capital formation and foreign private investment on economic growth is larger than their short-run impact. There is thus, a long-run equilibrium relationship among the variables as the error correction term is significant, but the speed of adjustment is small in both models. In their result, the two stage least squares estimates are very close to the OLS estimates suggesting that OLS estimates are consistent and unbiased. Hence, endogeneity was not a problem in the estimated models. There is therefore no simultaneity between GDP growth and capital formation model. These findings therefore have some policy implications as discussed in the work.
Adekunle and Aderemi (2012) examined the relationship between Domestic Investment, Capital Formation and Population Growth in Nigeria he used Secondary data from the Central Bank of Nigerian, for capacity utilization, capital expenditure bank credit and capital formation while growth and investment rates from World Economic Information database were used. Their result shows that the rate of investment does not assist the rate of growth of per capital GDP in Nigeria. The paper tests on the curve estimation regression models confirm that growth is in existence but is found to be insignificant. The linear result indicates the importance of government expenditure, capacity utilization and bank credit in increasing the income of Nigerians. The results also show that there is negative relationship between growth rates of the population and capital formation. With the curve estimation method results, investment rate can engender growth in the economy though slowly, on a linear path.
Orji and Mba (2012) studied the relationship between foreign private investment, capital formation and economic growth in Nigeria using a two-stage least squares (2SLS) method of estimation. The study finds that the long run impact of capital formation and foreign private investment on economic growth is larger than their short-run impact. There is thus, a long-run equilibrium relationship among the variables as the error correction term was significant, but the speed of adjustment was found to be small in both models. The two stage least squares estimates were very close to the OLS estimates suggesting that OLS estimates are consistent and unbiased. Hence, endogeneity was not a problem in the estimated models. There was therefore no simultaneity between GDP growth and capital formation model. Policy implications of study were highlighted and remedies proffered. Kanu, Ozurumba and Anyanwu (2014), writing on “Capital expenditures and capital formation in Nigeria posits that Capital Expenditures (CAPEX) had a negative significant relationship with Gross Fixed Capital Formation (GFCF) in Nigeria at both 1% and 5% Alpha levels, while other macro-economic variables such as Imports, National Savings and Gross Domestic Product formation of human capital. By investing this capital in workers, their efficiency is increased.
Ali and Mustafa (2011) examined the relationship between developments stocks floated in the capital market of Pakistan. The study analyze the long run and short run of development stock using annual data collected from different sources. The study used the extended production function that measures Gross National Product (GNP) as the function of annual education expenditure proxy of Human Capital Development (HDI). Long run estimation employed co integration analysis while short run rely on Error Correction Method. The estimation result indicates that domestic debt proxy by development stock in Pakistan exert negative influence on Human Capital Development (HDI) and recommended improved fiscal measures to achieve the required human development index.
Marco *et al*, (2012) determined to study the relationship between various components of domestic debt such as treasury bills, commercial paper and development stock in India. The study employed annual time series data

Banking and Insurance Academic Journal
Vol.2, No.12; December-2022;
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sourced from the states bank of India with the objective determining its effect on Human Development Index. The analysis employed was the Ordinary Least Square method of Co-integration, Unit Root, Granger Causality Test and Vector Error Correction. Findings revealed that there is positive and significant relationship between Domestic Debt and Human Development Index in India. Andre (2005) examined the impact of short term government borrowings on economic development of Kenya. The short term borrowings were proxy by development stock, treasury bills, treasury certificate floated in the stock exchange. It employed and made used of Ordinary Least Square Method and time series data from 1980 – 2002. The findings of the study have bi-variant relationship running through the dependent and the independent variables with the use of granger causality while the static regression result prove no significant relationship between the Domestic Debt and Human Development Index in Kenya.

Alfredo (2011) detailed the analysis between domestic debt and human capital development of developing countries in the Sub-Sahara African region using cross-sectional data from 5 Sub-Sahara African regions. The study employed time series data from 1980 – 2009. It was discovered from the findings that domestic debt has positive but no significant effect on Human Development Index of the selected Sub-Sahara African countries. The relationship between the different component of domestic debt and its effect on Nigerian Human Development Index as examined in the above literature is lacking. Existing literatures has focused on the relationship between domestic debt and economic growth. Therefore, this study intends to fill the knowledge gap by looking at the effect of domestic debt on Human Development Index in Nigeria

METHODS

The research design adopted quasi-experimental, according to Best and Kahn (1989) quasi-experimental research is the type of enquiring that deals with the collection and analysis of data for the purposes of describing and interpreting existing conditions and also to make discovery and explanation of past events. Quasi-experimental is utilized because it enables exploring relationships between two or more variables. The population of this study includes all the insurance companies registered with Nigeria Insurance Commission as at December 2020. Documentary data were collected via the Nigerian Stock Exchange Factshhets (NSE), Security and Exchange Commission (SEC) bulletin and Central Bank of Nigeria (CBN) Statistical bulletin.

Model Specification

The model below is specified in this study.

CF = f (INCF, INCMV, INCEL) (1)

CF = f (INEF, INEMV, INEL) (2)

It is empirically stated as

$$CF = \beta_0 + \beta 1 INCF + \beta_2 INCMV + \beta_3 INCEL + \mu$$

$$CF = \chi_0 + \chi 1 INEF + \chi_2 INEMV + \beta INCEL + \varepsilon \quad (3)$$

Where

CF = Capital formation as percentage of GDP
INCF = Insurance claims on fire accidents
INCMV = Insurance claims on Motor vehicle accidents
INCEL = Insurance employee claims
INEF = Insurance Expenditure on fire accidents
INEMV = Insurance Expenditure on Motor vehicle accidents
INCEL = Insurance employee expenditure
β_0 = Regression Intercept
β_1 - $\beta 5$ = Coefficient of the independent variables to the Dependent variable
μ = Error term

Unit Root Test

Banking and Insurance Academic Journal
Vol.2, No.12; December-2022;
ISSN (5381–5923);
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Spurious regression can be detected in regression model by low Durbin Watson and relatively moderate R^2.Therefore, to distinguish between correlation that arises from share trend and one associated with an underlying causal relationship; we use the Augmented Dickey fuller (Dickey and Fuller, 1979, 1981)

$$X_t = \mu + \Theta X_{t-1} + \varepsilon_t \quad (4)$$

approach. Thus, the study constructed a p-dimensional (4x1) vector auto regression model with Gaussian errors that can be expressed by its first differenced error correction form as

The null hypotheses for the ADFstatistic test are H_0. Non stationary (unit root) and H_a: Stationary respectively

Co-integration

To search for possible long run relationship amongst the variables, we employ the Johansen and Juselius (1990)

$$\Delta Y_t = \Gamma_1 \Delta Y_{t-1} + \Gamma_2 \Delta Y_{t-2} + \ldots + \Gamma_{k-1} \Delta Y_{t-k+1} - \Pi Y_{t-1} + \mu + \varepsilon_t \quad (5)$$

Where Y_t are the data series studied, ε_t is i. i. d, N (0, ∑) Γ_i + -1 + A_1+A_1 + A_2 + A_3 + ……. + A_i for i = 1,2,3……..,k-1, Π = I – A_1 – A_2 - ……-A_k. The Π matrix conveys information about the long term relationship among the Y_t variables studied. Hence, testing the co-integration entails testing for the rank r of matrix Π by examine whether the eigen values of Π are significantly different from zero. Johansen and Juselius (1990) proposed two tests statistics to determine the number of co-integrating vectors (or the rank of Π), namely the trace and the maximum eigen-value (λ-trace) is computed as;

$$\lambda trace = -T \sum_{j=r+1}^{n} In(1-\lambda_j) \quad (6)$$

The trace tests the null hypothesis that “at most” r co-integration vector, with “more than” r vectors being the alternative hypothesis. The maximum eigenvalue test is given as:

$$\lambda_{\max} = -TIn(1-\lambda_{r+1}) \quad (7)$$

It tests the null hypothesis of r co-integrating vectors against the alternative hypothesis of r + 1 co-integration vectors. In the equation (3) and (4), is the sample size and λ is the largest canonical correlation.

Granger Causality

In case we do not find any evidence for co-integration among the variables, the specification of the Granger causality will be a vector autoregression (VAR) in the first difference form. However, if will find evidence of co-integration, there is the need to augment the Granger-type causality test model with a one period lagged error term. This is a crucial step because as noted by Engel and Granger (1987).

$$Y_t = \alpha_o + \sum_{i=1}^{n} \alpha_1^y Y_{t-1} \sum_{i=1}^{n} X_{a1} X\mu \quad (8)$$

and

$$X_t = \beta_o + \sum_{i=1}^{n} {}_{\beta 1}^{y} Y_{t-1} \sum_{i=1}^{n} X_{\beta 1} X Y_t \quad (9)$$

Error Correction Model (ECM)

Co-integration is a prerequisite for the error correction mechanism. Since co-integration has been established, it is pertinent to proceed to the error correction model.

A-Priori Expectation

Base on theories such as financial intermediation theory and empirical results examined in this study, the variables are expected to have a positive effect on the dependent variables. The mathematical implication is stated as follows: β_1 β_1, β_1, β_1>0 β_1

ANALYSIS AND DISCUSSION OF FINDINGS

Table 1: Presentation of Unit Root Test

Variable	ADF	MacKinnon @1%	MacKinnon @ 5%	MacKinnon @10%	Prob.	Order of int	Summary

Unit Root Test Level Series							
CF	-1.028256	-3.737853	-2.991878	-2.635542	0.2748	1(0)	Not stationary
INCEL	-2.159958	-3.737853	-2.991878	-2.635542	0.2735	1(0)	Not stationary
INCF	-2.211003	-3.737853	-2.991878	-2.635542	0.9998	1(0)	Not stationary
INCMV	-1.200770	-3.689194	-2.971853	-2.625121	0.6597	1(0)	Not stationary
Unit Root Test Difference Series							
CF	-5.473202	-3.752946	-2.998064	-2.638752	0.0002	1(1)	Stationary
INCEL	-4.751898	-3.711457	-2.981038	-2.629906	0.0008	1(1)	Stationary
INCF	-7.561443	-3.724070	-2.986225	-2.632604	0.0000	1(1)	Stationary
INCMV	-6.605833	-3.699871	-2.976263	-2.627420	0.0000	1(1)	Stationary
Unit Root Test Level Series							
CF	-1.028256	-3.737853	-2.991878	-2.635542	0.2748	1(0)	Not stationary
INEF	-2.983652	-2.983652	-2.976263	-2.627420	0.2746	1(0)	Not stationary
INEL	-1.880311	-3.752946	-2.998064	-2.638752	0.9996	1(0)	Not stationary
INEMV	-0.385333	-3.788030	-3.012363	-2.646119	0.8949	1(0)	Not stationary
Unit Root Test Difference Series							
CF	-5.473202	-3.752946	-2.998064	-2.638752	0.0002	1(1)	Stationary
INEF	-8.673842	-3.711457	-2.981038	-2.629906	0.0000	1(1)	Stationary
INEL	-5.352522	-3.752946	-2.998064	-2.638752	0.0000	1(1)	Stationary
INEMV	-10.91540	-3.737853	-2.991878	-2.635542	0.0000	1(1)	Stationary

Source: Computed by researcher from E-View Windows (9.0)

Weak stationarity requires that the mean (first moment) and variance/covariance (second moments) are independent of time. To confirm these informal checks, formal unit root tests are applied. The results in Table above imply that the variables are not stationary at level. However, the unit root results above proved that all the variables are stationary at first difference. This means the rejection of null hypotheses of non stationarity and acceptance of null hypotheses of null stationarity.

Banking and Insurance Academic Journal
Vol.2, No.12; December-2022;
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Table 2: Co-Integration Test Using Johansen

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.910271	116.9647	47.85613	0.0000
At most 1 *	0.772926	47.04691	29.79707	0.0002
At most 2	0.122641	4.055009	15.49471	0.8990
At most 3	0.008948	0.260666	3.841466	0.6097
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.910271	69.91780	27.58434	0.0000
At most 1 *	0.772926	42.99190	21.13162	0.0000
At most 2	0.122641	3.794343	14.26460	0.8804
At most 3	0.008948	0.260666	3.841466	0.6097
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.688972	55.13020	29.79707	0.0000
At most 1 *	0.511331	21.26190	15.49471	0.0060
At most 2	0.016954	0.495891	3.841466	0.4813
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.688972	33.86830	21.13162	0.0005
At most 1 *	0.511331	20.76600	14.26460	0.0041
At most 2	0.016954	0.495891	3.841466	0.4813

Source: Computed by researcher from E-View Windows (9.0)

The Johansen (1988) test is used to check for co-integration. Two important aspects of this procedure are the selection of the correct lag length and the most appropriate data trend. The results point to a linear deterministic trend for the entire sample and the sub-periods. Therefore, the study concludes that there is long run relationship that exists among the variables from the trace statistics and the maximum Eigen coefficient.

Table 3: Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
CF does not Granger Cause INCMV	29	20.8850	6.E-06
INCMV does not Granger Cause CF		17.2568	2.E-05
INCEL does not Granger Cause INCMV	29	0.15314	0.8588
INCMV does not Granger Cause INCEL		2.45295	0.1073
INCF does not Granger Cause INCMV	29	0.35840	0.7025
INCMV does not Granger Cause INCF		2.80923	0.0801
INCEL does not Granger Cause CF	29	8.00583	0.0022
CF does not Granger Cause INCEL		28.0581	5.E-07
INCF does not Granger Cause CF	29	46.8259	5.E-09

Null Hypothesis:	Obs	F-Statistic	Prob.
CF does not Granger Cause INCF		4.43456	0.0230
INEF does not Granger Cause CF	29	1.14211	0.3359
CF does not Granger Cause INEF		2.17051	0.1360
INEL does not Granger Cause CF	29	0.90490	0.4179
CF does not Granger Cause INEL		2.34644	0.1173
INEMV does not Granger Cause CF	29	1.14295	0.3356
CF does not Granger Cause INEMV		1.07981	0.3556

Source: Computed by researcher from E-View Windows (9.0)

The VECM allows one to comment on long-run and short-run causality. The table above gives a summary of the results. Over the entire period, the findings indicate a bidirectional causal relationship running through the dependent and the independent variables.

Table 5: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1437.117	1369.599	1.049298	0.3041
INCEL	-0.685271	0.578254	-1.185069	0.2471
INCF	-0.591852	1.042248	-0.567861	0.5752
INCMV	2.633157	1.182940	2.225944	0.0353
ECM(-1)	-0.299079	0.200392	-1.492472	0.1481
R-squared	0.817849	Mean dependent var		7298.370
Adjusted R-squared	0.788705	S.D. dependent var		11548.21
S.E. of regression	5308.347	Akaike info criterion		20.14296
Sum squared resid	7.04E+08	Schwarz criterion		20.37649
Log likelihood	-297.1444	Hannan-Quinn criter.		20.21767
F-statistic	28.06221	Durbin-Watson stat		2.073472
Prob(F-statistic)	0.000000			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6.264274	329.1043	-0.019034	0.9850
INEL	2.348764	0.213329	11.01007	0.0000
INEMV	-0.293377	0.340648	-0.861232	0.3970
ECM(-1)	-14352.82	51380.77	-0.279342	0.7822
R-squared	0.984826	Mean dependent var		7298.370
Adjusted R-squared	0.983075	S.D. dependent var		11548.21
S.E. of regression	1502.382	Akaike info criterion		17.59106
Sum squared resid	58685905	Schwarz criterion		17.77788
Log likelihood	-259.8658	Hannan-Quinn criter.		17.65082
F-statistic	562.4772	Durbin-Watson stat		2.423132
Prob(F-statistic)	0.000000			

Source: Computed by researcher from E-View Windows (9.0)

Analyses of Regression Results

Model I results proved that 81.7% and 78.8% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. However, the F-Statistics and the F-probability justifies that the model is significant and adequate in explaining variation on the dependent variable. The β coefficient shows that intermediation proxy by employee claims and fire accident has negative effect on capital formation while motor vehicle accidents accident have positive effect on capital formation within the periods covered in the study.

Model II results proved that 98.4% and 98.3% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. However, the F-Statistics and the F-probability justifies that the model is significant and adequate in explaining variation on the dependent variable. The β coefficient shows that intermediation proxy by employee claims and fire accident has negative effect on capital formation while motor vehicle accidents accident have positive effect on capital formation within the periods covered in the study.

Discussion of Findings

This study was motivated to examine the effect of insurance intermediation and capital formation in Nigeria. Findings of the study revealed that there is negative and no significant relationship between insurance claims on fire accidents, insurance claims on Motor vehicle accidents and Insurance Expenditure on Motor vehicle accidents on capital formation but there is positive and significant relationship between insurance expenditure on Insurance employee expenditure and income on motor expenditure. The positive effect of the variables confirms our a-priori expectations and justifies the reforms in the insurance sector. The findings also confirm financial intermediation theories and the opinion that insurance industry play significant role in economic growth. According to Prebisch, (1974) government intervention aimed at controlling interest rates accelerates growth. The author contends that lower interest rates encourage savings and that the government should lower interest rates to a level where full employment is achieved.

Empirically the findings of this study confirm the findings of Catalan, Impavido, and Musalem (2000) that contractual savings seem to correlate with market capitalization (MC) and value of stocks traded in most countries and that there was relationship between life insurance assets and market capitalization for nine OECD countries but the results for the developing economics were mixed, Park, Borde, and Choi (2002), Hofstede (1983), the findings of Webb, Grace, and Skipper (2002) and Akani & Lucky (2015),that higher levels of banking and insurance penetration jointly produce a greater effect on growth than would be indicated by the sum of their individual contributions and that financial intermediation significantly correlate with GDP. This suggests that insurance intermediation is a determinant of economic growth, Boon (2005) showed short and long run causality running from bank loans to GDP, and bidirectional causality between real gross fixe capital formation and bank loans, Kugler and Ofoghi (2005); Lucky, Akani & Anyamaobi (2015), Ward's and Zurbruegg's (2000) study that reported no long run relationship will be changed.

Conclusion

The estimated model I results proved that 81.7% and 78.8% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. The β coefficient shows that intermediation proxy by employee claims and fire accident has negative effect on capital formation while motor vehicle accidents accident have positive effect on capital formation within the periods covered in the study.

From the estimated model II, results proved that 98.4% and 98.3% variation in capital formation in Nigeria could be traced variation in insurance financial intermediation as formulated in the regression model. The β coefficient shows that intermediation proxy by employee claims and fire accident has negative effect on capital formation while motor vehicle accidents accident have positive effect on capital formation within the periods covered in the study.

The probability value of 0.5752 is greater than 0.05, the study include that there is no significant relationship between insurance claims from fire accident and capital formation in Nigeria. The probability value of 0.0353 is less than 0.05; the study concludes that there is significant relationship between insurance claims from motor accident and capital formation in Nigeria. From the findings, the probability value of 0.2471 is greater than 0.05; the study inferred that there is significant relationship between insurance claims from employee liabilities and capital formation in Nigeria.

From the findings, the probability value of 0.0000 is less than 0.05; the study concludes that there is significant relationship between insurance expenditure from fire accident and capital formation in Nigeria. The probability value of 0.0000 is less than 0.05; the study concludes that there is significant relationship between insurance expenditure from employee liabilities and capital formation in Nigeria.

Recommendations

i. The result of the study reveals that insurance intermediation relate to capital formation in Nigeria. The authority should create a complain annex where products can reach large population in Nigeria.

ii. Proper awareness and sensitization exercise should be embarked upon to enlighten the entire public on the significance of insurance policies on capital formation to encourage insurance product innovation and penetration.

iii. The regulation of the Nigeria insurance sector should be enhanced to improve the sectors performance and ensure increased total insurance investment in Nigeria economy. This is beneficial as increase in total insurance investment would enhance capital formation in Nigeria.

iv. Insurance intermediation strategies should be more robust to guarantee a reasonable degree of hedge against investment risk. This should ensure higher investment returns, which can also be reinvested into the nation's economy for greater capital formation

v. The insurance sector investment guidelines should be reviewed to ensure viable insurance intermediation scope. This would enhance the insurance sector investment returns and improve the public confidence in insurance sector thereby increasing capital formation in Nigeria.

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