CBN'S FOREIGN EXCHANGE POLICY AND REINSURANCE BUSINESS IN NIGERIA; A CHOW BREAKPOINT TEST APPROACH

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Abstract

This research work focuses on the New Central Bank of Nigeria (CBN's) Foreign Exchange Rate policy and its impact on Reinsurance Business in Nigeria using the Chow test for Structural Break point approach. The period of study covers January 2010 to December 2017 (96 months). Using monthly data on Reinsurance Business Profit Portfolio (converted to monthly series using Linear conversion method) as the dependent variable and Foreign Exchange Disbursement to Reinsurance Companies and Foreign Exchange Rate as the independent variables, the analysis finds no long run relationship amongst the variables. The breakpoint period is identified in January 2017 owing to the New CBN FX policy issue guide line which took effect in the first quarter of 2017. The Chow test reveals that the CBN's FX policy caused a significant structural break in Reinsurance business Profits decreasing it by 643units as against the prior increase in Reinsurance Profits by 22.67 units before the new policy. Also, the analysis finds a positive effect of FX disbursement and Exchange rate on Reinsurance Profits but with less than 1unit coefficient which is deemed insufficient. Based on the findings, this research recommends among other things, that CBN should ensure increased Foreign Exchange disbursement to Reinsurance Companies in Nigeria so as to increase their risk carrying capacity as well as Reinsurers developing a defensive strategy against the effects of the New FX policy by strengthening their market risk solvency capital requirements.

Keywords: Chow test, Structural Break, Reinsurance, Foreign Exchange (FX), FX Disbursements.

Background of the Study

The term "foreign exchange" has become a house hold expression in Nigeria today due to its effect on virtually every commodity in the country, both locally produced and imported. In the past, foreign exchange policies were used to stimulate the local currency depending on the condition of the economy and sometimes in response to the changing rate policies of the rest of the world. The changes in CBN's exchange rate policies dates back to the post-independence era to the present day. Before the establishment of the Central Bank of

Nigeria (CBN) in 1958 and the enactment of the Exchange Control Act of 1962, foreign exchange was earned by the private sector and held in balances abroad by commercial banks which acted as agents for local exporters in Nigeria (CBN, 2017). It was not until 1958 that the first indigenous insurance company, the African Insurance Company Limited, was established, but even with the establishment, most of its operations were foreign controlled. By 1976 the number of indigenous insurance companies had far surpassed that of the foreign companies. For instance, of the 70 insurance companies then in existence, only 14 were foreign owned. Forty-six were indigenously owned while ten were wholly owned either by the various state governments or the federal government (Soye and Adeyemo, 2017). In real terms however, the impact of these indigenous firms remained minimal. For instance, while the foreign-owned firms accounted for 53 per cent of the gross premium income of all insurance companies, the indigenous companies accounted for only 17 per cent (NAICOM, 2017).

The fact that the Nigerian pound was tied to the British pound sterling at par, with easy convertibility, delayed the development of an active foreign exchange market. Most of the earnings of the Insurance companies then were remitted in foreign currencies back to the parent companies abroad (Chibuike and Chilekeze, 2001). However, with the establishment of the CBN and the subsequent centralization of foreign exchange authority in the Bank, the need to develop a local foreign exchange market became paramount. It has thus been argued that in spite of the considerable presence of these indigenous insurance companies, the bulk of the business went to the foreign owned companies. This imbalance was

further reinforced by the specific instruction which foreign companies that were operating in Nigeria normally received from their home offices that they should insure only with companies that originate from their home countries. Even where there were no such insurance companies from the foreign companies' home countries, the practice was such that the companies as a matter of policy restrictively insured with any other foreign owned insurance company in preference to the indigenous Nigerian insurance companies (NICON, 1994).

The increased export of crude oil in the early 1970s enhanced official foreign exchange receipts, hence the exchange control system at the period was unable to evolve an appropriate mechanism for foreign exchange allocation (CBN, 2017). This led to the introduction of the Second tier Foreign Exchange Market (SFEM) in September 1986. Under the SFEM, the determination of the Naira exchange rate and allocation of foreign exchange were based on market forces. Also, the indigenization policy made the foreign exchange, which was hitherto lost to foreign insurance companies, to be fully absorbed by the indigenous companies, hence improving profitability.

However, the Foreign Exchange Market was liberalized in 1995 with the introduction of an Autonomous Foreign Exchange Market (AFEM) for the sale of foreign exchange to end-users by the CBN through selected authorized dealers at market determined exchange rate. The Foreign Exchange Market was further liberalized in October 1999 with the introduction of an Inter-bank Foreign Exchange Market (IFEM).

Perhaps the most contentious issue in the business of reinsurance in Nigeria is the government's domination of the industry.

This is done through the wholly government-owned Nigeria Reinsurance Corporation (Nigeria Re) established in 1977. This government-owned corporation currently dominates the Nigerian reinsurance industry. Its total assets, which are in excess of =N= 3.7 billion, represents over 80 per cent of the assets of all the companies in the industry (Obonyo, 2016). Its gross premium, which is in excess of =N=3 billion, also represents over 80 per cent of the total gross premium earned by the industry. Furthermore, the corporation's total insurance fund, which is in excess of =N=1.2 billion, also represents over 80 per cent of the total insurance fund for the entire industry (NAICOM, 2015). The domination of the reinsurance business by Nigeria Re has been facilitated by the Nigeria Reinsurance Decree of 1977 (as amended) which requires all insurance companies in the country to compulsorily cede 20 per cent of their insurance businesses to Nigeria Re. Furthermore, Nigeria Re also has a right of first refusal on the remaining 80 per cent before such business can be placed abroad with foreign reinsurance companies (Nigeria Re Act, of 1990).

In 2017, the Central Bank of Nigeria (CBN) came up with new foreign exchange policy which saw it maintaining a heavy steady supply of dollars at both the interbank and parallel FX markets. The CBN provided about 83 million USD to the insurance industry for reinsurance business as against 3.7milliion USD and 4.1 million USD it provided in 2010 and 2005 respectively (CBN, 2017). Notwithstanding, insurance companies still find it hard to reinsure their excess risks owing to the high exchange rate occasioned by the artificial scarcity caused by the BDCs and parallel markets.

Among the problems that necessitated this research is the huge cost of reinsurance in the sense that reinsurance and insurance companies pay more in claims on business underwritten in foreign currencies, for example, Oil and Gas insurance transactions. Also, increase in reinsurance premiums and premiums on foreign currency dominated insurance policies have been identified as a problem to the companies involved. It is unclear whether this has resulted to low profitability or low patronage of these insurance companies. There is also the problem of sufficiency of CBN's foreign exchange disbursements to various sectors of the economy, whether it correlates with the quantum of businesses transacted in foreign currency by the insurance companies.

In the light of the problems identified above, this research work, therefore, has the main objective of ascertaining the extent to which the CBN's foreign exchange policy has impacted on the business of (re)insurance in Nigeria with a view to forecasting future trends in (re)insurance business using the current Foreign Exchange indices in Nigeria.

Literature Review

Munich Reinsurance America (2010) sees Reinsurance as transaction whereby one insurance company (the "reinsurer") agrees to indemnify another insurance company (the "reinsured, "cedant" or "primary" company) against all or part of the loss that the latter sustains under a policy or policies that it has issued. For this service, the ceding company pays the reinsurer a premium.

The Nigerian Reinsurance Corporation Act (1990) defines Reinsurance as the business of reinsuring any class of insurance business, including life business to another company wholly or partially, of which the reinsured company pays premium to the reinsurer on

agreed terms. Furthermore, the Croatian Insurance Act (2013) defined reinsurance as a major financial activity as it allows direct insurance companies, by facilitating a wider distribution of risks at worldwide level, to have a higher underwriting capacity to engage in insurance business and provide insurance cover and also to reduce their capital costs; furthermore, reinsurance plays a fundamental role in financial stability, since it is an essential element in ensuring the financial soundness and the stability of direct insurance markets as well as the financial system as a whole, because it involves major financial intermediaries and institutional investors.

Woldegebriel (2010) opined that a professional reinsurance company can be a multi-national organization operating through a subsidiary or branch offices in different countries, or licensing reinsurance brokers or on a direct basis with its ceding companies. The author also established that reinsurance in turn reduces its underwriting risk by purchasing reinsurance coverage from other reinsurers, both domestic and international, referred as a retrocession and the assuming reinsurer called retrocessionnaire. Reinsurance is one of a number of options or tools to reduce the financial cost to insurance companies arising from the potential occurrence of specified insurance claims, thus, further enhancing innovation, competition, and efficiency in the marketplace (Patrik, 2001).

FOREX and Reinsurance Business in Nigeria

The National Insurance Commission (NAICOM), being the regulatory body for all insurance business in Nigeria as at October, 2017, has only two registered Re-insurance companies in Nigeria. This was as against the previous four reinsurance companies registered prior to 2005 reforms. These two reinsurance companies are

1. Continental Reinsurance PLC and
2. Nigeria Reinsurance Corporation

Nigeria is still losing scarce foreign exchange through foreign reinsurance transactions. Apart from foreign reinsurance, insurance companies also require foreign exchange to transact business on foreign currency dominated insurance policies. A foreign currency denominated insurance policies are special risks underwritten with the premium, sum insured or reinsurance recoveries and claims settlements payable in US dollar, e.g. Energy risk insurance (Oil & Gas), Aviation risk insurance, Construction power project etc (Apere, 2016). The above special risks are underwritten under a non-domesticated reinsurance treaty arrangement which requires extra capacity from abroad whereby the terms and conditions, as well as rating of the policies, are determined by the foreign reinsurers in the international Market.

The CBN new Foreign Exchange policy would have a direct impact on the (re)insurers in the sense that (re)insurance companies may likely pay more in claims on business underwritten in foreign currency, for example, Oil & Gas insurance transactions. Apere (2016) further argued that this is because if the claim is to be paid in dollar, the underwriters will source for the dollar from interbank market using the current exchange rate which may be higher than when the business was undertaken.

The above will also increase the reinsurance premium payable by the insurance companies to their foreign reinsurers because the premium is paid in foreign currency (dollar) and will be sourced for using the interbank exchange rate. However, where the whole insurance portfolio

transactions are maintained in a foreign-currency account, the (re)insurance companies would need to increase their technical reserves provisions in order to accommodate future volatility in foreign currencies in the FX market (Apere, 2016).

The lack of local insurance firms to underwrite large risks had paved the way for foreign insurers and brokers to undertake such activities, leading to loss of foreign earnings through capital flight (Soye and Adeyemo, 2017). Thus, the currency fluctuations arising from the new floating FX policy would increase the capital flight if an insurer is underwriting more of these special risks.

Obonyo (2016) asserted that the technical devaluation of Naira through the CBN new FX policy would in the immediate shorter–term have a direct negative impact on the global rating of Nigeria insurance operators' capital base. This is mainly due to the attendant increase in inflation rate and depreciation of domestic currency in the FX market, which results in the diminution of insurers' total balance sheet values, particularly for the special risks portfolio, leading to a credit rating risk. Consequently, the local (re)insurers' portfolios would become cheaper to acquire by investors. The (re)insurers would need to develop a defensive strategy against easy acquisition by strengthening their market risk solvency capital requirement which is part of the risk-based capital methodology being planned to be fully implemented by NAICOM in the near future (Apere, 2016).

A (re)insurer's portfolio, consisting mainly of the special risks, operating under the CBN new floating FX regime is likely to be exposed to an economic risk which may arise where the long term currency movements can lead to fluctuations of (re)insurer's

future profits. In the same vein, the (re)insurer will also be exposed to a foreign exchange translation risk which will impact on the Statement of Financial Position after conversion of foreign currency asset/liability values into local currency values (Apere, 2016).

Theoretical Review

Reinsurance has a global feature as manifested by economic interdependency, mobility of capital and transactions across borders, sharing regulations, international competition and management; and like any product, it is subject to cycles and fluctuations driven by internal and external factors (Plantin, 2006). Therefore, purchase of reinsurance cover by insurance companies will help minimize drastically, the fluctuations in the income of insurance companies, which may automatically lead to reduction in their expected loss and increase their risk appetite. Doherty and Tinic, (1981) quoted in Soye and Adeyemo (2017) scholarly affirmed that the theory of reinsurance is such that an insurer reinsures its business for several motives, such as to diversify the risk of its portfolios so that the probability of ruin can be decreased, to take advantage of expertise and skills of reinsurers and to stabilize the returns of its shareholders. This means that, Insurers can manage their capital position and improve their balance sheet strength (thus minimizing insolvency risks, and the potential costs of regulatory intervention) not only by increasing equity, but also by transferring part of their liabilities for assumed risks to third party reinsurance companies (Adiel, 1996; in Soye and Adeyemo, 2017).

The traditional exchange rate theory seeks the identification of equilibrium between two economies in order to calculate the fair

value of the exchange rate (Reuben and Hilliard, 2017). They further assert that the equilibrium is based on the relative valuation of an identical commodity, on relative inflation, on the relative level of real interest rates. The Monetary Approach to Foreign Exchange Rate theory or model assumes a freely floating exchange rate regime (not a fixed exchange rate regime) and minimal interventions by the Central Banks (CurrenciesFX.com). In the transaction of reinsurance business, given a freely floating exchange rate, the rate of reinsurance and/or insurance of special risks will be determined by the market forces, hence, there is tendency that they will pay higher for reinsured risks. The effect of this theory on the local reinsurers, therefore, is cushioned by the fact that the CBN partially intervenes in the market by providing FX to various needed sectors of the economy, inclusive of the (re)insurance sub-sector at normal rate.

Empirical Review

Chibuike and Chilekeze (2001) in their research on Reinsurance in Nigeria; a review of compulsory legal cession, traced the origins and development of reinsurance in Nigeria and argues that the compulsory legal cession, which Nigeria Re enjoys, has today outlived its usefulness. They further argued that the granting of special foreign exchange to Nigerian Re, which is the sole Reinsurance company owned by the government, has a long term negative implication on the industry. They concluded that Legal cession and royalty treatment will result to complacency and won't augur well for reinsurance in Nigeria. They recommended the need for the government to create a conducive, macro-economic environment for the practice of insurance (and reinsurance) in Nigeria, stressing that it is the lack of this

that has led to the reduced international interest in the Nigerian reinsurance arena.

In another related study, Soye and Adeyemo (2017) investigated the impact of reinsurance mechanism on insurance companies' sustainability in Nigeria using expost-facto research design and inferential statistical analysis; their study tested the sign of the significant relationship between dependent variable (profitability (ROA)) and set of independent variable (Net Retention ratio, Net Claim ratio, Net Commission ratio, and Ratio of Ceded Reinsurance). Their analysis revealed that Net Retention ratio, Net Claim ratio, Net Commission ratio, and Ratio of Ceded Reinsurance are correlated with insurance profitability (ROA) and administrative expenses. They recommended that insurance companies in Nigeria should put proper reinsurance programs into priority, taking into consideration characteristics of their underwriting documents and consideration factors such as past loss experiences, size of risks and frequency of losses. They asserted that it is important for insurance companies to have optimal retention levels in their risk diversification management basically to ensure favorable financial performance.

Biener, Martin and Ruo (2015) investigated the structure of the Global Reinsurance Market and Global Foreign Exchange Dilemma using a Multidimensional Analysis of Efficiency, Scale and Scope. They found that Reinsurers with total assets less than USD 2.9 billion and a stronger foreign currency exhibit scale economies, while those with assets greater than USD 15.5 billion and weaker foreign exchange do not. They also found that large reinsurers are characterized by high cost efficiency while small reinsurers exhibit superior efficiency when they are specialized. They concluded

that further consolidation is expected in the global reinsurance market, not only because it potentially improves cost efficiency, but also because it has the potential to lower reinsurance prices for consumers. Also, they opined that policymakers should be cautious about adopting anti-concentration measures in the global reinsurance market, as doing so may have the unintended consequence of raising the price of reinsurance for developing economies due to high foreign exchange thereby reducing industry cost efficiency.

Methodology

This research work adopts the Chow forecast test approach in trying to establish the future trends in Reinsurance business and Foreign exchange movements in the Nigerian economy. The study makes use of monthly data from January 2010 to December 2017. The data were sourced from the CBN Quarterly Statistical Bulletin (2017 edition) and Annual Reports of Nigeria Reinsurance Corporation and Continental Reinsurance Company PLC. The Reinsurance Companies' Reinsurance Portfolio/Profit was converted to monthly figures using the Linear Conversion method which was done with the aid of Eviews10 Statistical Software.

Model Specification

This study aims at forecasting an expected growth in Reinsurance business in Nigeria given the existing foreign exchange policy. In the first quarter of 2017, the CBN issued a New Policy Actions in the Foreign Exchange Market in order to ease the difficulties encountered in obtaining funds for foreign exchange transactions. Though Reinsurance companies in Nigeria enjoy CBN's sectoral

disbursement of FX for transactions, we assume a study of special risk underwriting which involves foreign currency denominated risks. Our model follows the linear model of Soye and Adeyemo (2017) by modifying the variables to suit our study thus:

Reinsurance Profit/Portfolio = F(CBN FX disbursement for Reinsurance + Foreign Exchange Rate)

The above model can be stated in econometric form as:

$$REP_t = \beta_0 + \beta_1 {}^*FX_t + \beta_2 {}^*FEXR_t + \mu_{it}$$

Where:

REP = Reinsurance Business Profit/Portfolio (including Special Risks)

FX = CBN's Foreign Exchange disbursement for Reinsurance business

FEXR = Foreign Exchange Rate (₦ – USD)

$\beta_0 - \beta_2$ = Parameters of the model to be estimated

μ_{it} = Stochastic Error term and 't' is the time period

The apriori expectation is that the Foreign Exchange disbursements and Foreign exchange Rate have positive relationship with Reinsurance Profits in Nigeria i.e. β_1 and $\beta_2 > 0$.

Data Analysis, Results and Findings

Unit Root Test: Given the time series property of the data, we first test for the stationarity of the series using the Augmented Dickey Fuller (ADF) Unit Test. This test assumes that the series have unit root or are not integrated subject to the validation of the null hypothesis. The ADF test is summarized below:

Variables	ADF at Level	ADF at 1st Difference	Order of Integration	
REP	3.878741	-1.164544	I(0)	Stationary at Level

| FX | -3.746207 | -10.18636 | I(0) | Stationary at Level |
| FEXR | 0.238535 | -6.678431 | I(1) | Stationary at 1st difference |

Source: Extracted from Eviews10 Output (See Appendix)

The test for unit root above shows that Reinsurance Profit (REP) and Foreign Exchange Rate disbursement for Reinsurance Business (FX) are both stationary at level meaning that they are integrated of order I(0); again, Foreign Exchange Rate is stationary at first difference i.e. I(1) integrated. This shows that the variables have mixed order of integration; hence we test for the existence of long run relationship using the Bounds test as specified in Pesaran et al (2001:12)

Bounds Test: The Bounds test determines the long run relationship existing among a set of variables that have mixed integration (Pesaran, 2001). The test is summarized below:

Null Hypothesis: No long-run relationships exist				
Test Statistic	Value	k		
F-statistic	1.861223	2		
Critical Value Bounds				
Significance	I0 Bound	I1 Bound		
10%	3.17	4.14		
5%	3.79	4.85		
2.5%	4.41	5.52		
1%	5.15	6.36		

Source: Extracted from Eviews10 Output (See Appendix)

The F-statistic value is less than the I(0) and I(1) Bounds significance at 5% level, hence we accept the null hypothesis and conclude that there is no long run relationship existing among the variables.

Also, the long run test was carried out on the set of data for the period before the new CBN FX policy (January 2010 to December 2016), the result also shows no long run relationship among the variables. This conclusion means that foreign exchange rate and disbursements have no long run impact on the growth of Reinsurance in Nigeria.

Chow Breakpoint Test: The Chow test is used to test for the presence of a structural break in January of 2017 when the CBN introduced a new Foreign exchange rate policy (CBN, 2017). Reinsurance business, being a business that relies on Foreign Exchange, is expected to be either positively or negatively affected by the new FX policy. The test result is given as follows:

Chow Breakpoint Test: 2017M01
Null Hypothesis: No breaks at specified breakpoints
Equation Sample: 2010M01 2017M12

| F-statistic | 81.03765 | Prob. F(3,90) | 0.0000 |

Log likelihood ratio	125.6325	Prob. Chi-Square(3)	0.0000
Wald Statistic	243.1130	Prob. Chi-Square(3)	0.0000

Source: Extracted from Eviews10 Output (See Appendix)

The test above shows that the F-statistic value (81.037) is very significant at 5% level given a p-value of 0.000 hence we reject the null hypothesis and conclude that break point exists at specified break point 2017 M01 i.e. January 2017. This affirms that the CBN's new Foreign Exchange Policy at the time caused a significant impact on Reinsurance Business Companies' Profitability in Nigeria. Thus, we go ahead to determine the extent of this impact in the Chow estimates below:

January 2010 – December 2016
(Before CBN's New Policy Actions in the Foreign Exchange Market)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.66672	0.432774	52.37542	0.0000
FX	0.000553	0.000115	4.827540	0.0000
FEXR	0.048575	0.002181	22.27645	0.0000

*Estimated equation: REP = 22.66672 + 0.000553*FX + 0.048575*FEXR*

The equation above represents the impact of Foreign Exchange Rate on Reinsurance Business prior to the New CBN regulations in the first quarter of 2017. It can be seen that Reinsurance grew by 22.667 units for the period while Foreign Exchange rate disbursement (FX) increased Reinsurance Profits by 0.000553 units. This coefficient however falls short of expectations as it is less than 1 unit. Similarly, Foreign Exchange Rate at the time has a positive effect on Reinsurance business increasing it by 0.048575 units. This coefficient also falls short of industry expectations as it is below 1unit. Notwithstanding, both FX disbursement and Exchange Rate have significant impact on Reinsurance business prior to the new CBN policy with t-statistic values of 4.828 and 22.276 respectively.

January 2017 – December 2017
(After CBN's New Policy Actions in the Foreign Exchange Market)
Sample: 2017M01 2017M12
Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-643.4531	260.1977	-2.472939	0.0354
FX	0.006135	0.000831	7.382556	0.0000
FEXR	2.230418	0.851176	2.620396	0.0278

*Estimated equation: REP = -643.4531 + 0.006135*FX + 2.230418*FEXR*

The equation estimate above represents the relationship between Reinsurance business and Foreign Exchange for the period after the new CBN FX policy. We can see that Reinsurance Profits plummeted significantly by 643.4531 units while Foreign Exchange Disbursements (FX) and Foreign Exchange Rate (FEXR) remained positive (0.006135 and 2.230418 units) respectively. However, Foreign Exchange Rate increased significantly to 2.23 units for the period after the new CBN policy, while FX disbursement also increased significantly to 0.0061 units for the same period.

Overall, the CBN's Foreign Exchange policy exerts about 86% influence on Reinsurance profits and also both independent variables have joint impact on Reinsurance Profits. (F-statistic = 33.44)

Summary of Findings

The issuance of a New Policy Action in the Foreign Exchange Market led to increased supply of Dollars at both the interbank and parallel FX markets. This action has significant effect on Reinsurance business in Nigeria which is the main objective of this research work. Having critically analyzed how the FX policy affects Reinsurance business in Nigeria, our findings are summarized as follows:

1. The CBN's new FX policy which took effect in the first quarter of 2017 caused a significant structural break in Reinsurance business in Nigeria.
2. The Foreign Exchange disbursements to Reinsurance and the rate of exchange have no long run relationship with Reinsurance business profit portfolio.
3. Prior to the new policy guideline in January 2017, Reinsurance business grew by 22.67 units monthly while foreign exchange disbursement to Reinsurance services and Exchange Rate increased Reinsurance profits by a mere 0.000553 and 0.048575 units respectively which, though they are significant, still fall below expectations as they are less than 1unit.
4. The months after the new policy issue by CBN (i.e. January 2017 to December 2017), foreign exchange disbursement for Reinsurance services and Exchange Rate increased Reinsurance profits significantly to 0.006135 and 2.230418 units respectively. However, Reinsurance profits fell by 643.45 units owing to the initial shock effect of the new policy on Reinsurance business in Nigeria.
5. Foreign Exchange disbursements and Foreign Exchange Rate both have joint impact on Reinsurance Profit Portfolio, hence they exert up to 86% influence on Reinsurance business.

Conclusion and Recommendations

There is no doubt that foreign exchange is an important element of reinsurance business worldwide. A favorable foreign exchange is very advantageous to reinsurance firms while an unfavorable foreign exchange affects reinsurance businesses because they pay more for reinsurance services thereby adversely affecting their balance sheet. We see that in Nigeria, the CBNs new FX policy caused a significant change in Reinsurance business growth in Nigeria by sharply decreasing their profits due to the initial effect of the policy on the business. The CBN's FX disbursements to reinsurance business sub-sector have not had the desired high impact on Reinsurance business growth in Nigeria. In the light of these crucial findings, we recommend as follows:

1. The CBN should ensure increased Foreign Exchange disbursement to

Reinsurance Companies in Nigeria so as to increase their risk carrying capacity and also ensure a long run positive effect of FX policies on Reinsurance business in Nigeria.

2. Local reinsurers' portfolios would become cheaper to acquire by foreign investors owing to the initial shock in their Reinsurance portfolios occasioned by the New CBN FX policy which puts them at a tight corner of sourcing for Foreign Exchange on Special risk insurance at higher rates. In order to hedge against this, reinsurers would need to develop a defensive strategy against easy acquisition by strengthening their market risk solvency capital requirement which is part of the risk-based capital methodology proposed by NAICOM.

3. Reinsurance profits recorded negative growth after the CBN's new policy issue; this can be corrected by avoiding foreign exchange translation risk which impacts negatively on the Statement of Financial Position of Reinsurers after conversion of foreign currency asset/liability values into local currency values. Reinsurance Companies in Nigeria must implement additional risk management requirements especially with the high exchange rate which will be of vital importance under the CBN new floating FX policy regime.

4. Reinsurance companies must ensure that their Foreign-currency (i.e. Domiciliary) Accounts are adequately maintained and funded to accommodate future claims and premium payments in foreign denominated currencies. Reinsurance companies must significantly reduce currency convertibility into local currency. In addition, Reinsurance companies can also engage in currency options as means of risk hedging.

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Appendices

Null Hypothesis: REP has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		3.878741	0.0049
Test critical values:	1% level	-3.501445	
	5% level	-2.892536	
	10% level	-2.583371	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(REP) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.164544	0.6870
Test critical values:	1% level	-3.501445	
	5% level	-2.892536	
	10% level	-2.583371	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: FX has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.746207	0.0048
Test critical values:	1% level	-3.500669	
	5% level	-2.892200	
	10% level	-2.583192	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(FX) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-10.18636	0.0000
Test critical values:	1% level	-3.502238	
	5% level	-2.892879	
	10% level	-2.583553	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: FEXR has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		0.238535	0.9737
Test critical values:	1% level	-3.502238	
	5% level	-2.892879	
	10% level	-2.583553	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(FEXR) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=11)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.678431	0.0000
Test critical values:	1% level	-3.502238	
	5% level	-2.892879	
	10% level	-2.583553	

*MacKinnon (1996) one-sided p-values.

ARDL Bounds Test(2010M01 to 2017M12)
Date: 04/12/18   Time: 09:14
Sample: 2010M03 2017M12
Included observations: 94
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.861223	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

ARDL Bounds Test(2010M01 to 2016M12)
Date: 04/14/18   Time: 13:41
Sample: 2010M03 2016M12
Included observations: 82
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.820998	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Chow Forecast Test
Equation: UNTITLED
Specification: REP C FX FEXR
Test predictions for observations from 2017M01 to 2017M12

	Value	df	Probability
F-statistic	21.32193	(12, 81)	0.0000
Likelihood ratio	136.8218	12	0.0000

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	158.9453	12	13.24544
Restricted SSR	209.2635	93	2.250145
Unrestricted SSR	50.31819	81	0.621212

LR test summary:

	Value	df
Restricted LogL	-173.6219	93
Unrestricted LogL	-105.2110	81

Unrestricted log likelihood adjusts test equation results to account for
    observations in forecast sample

Unrestricted Test Equation:
Dependent Variable: REP
Method: Least Squares
Date: 04/12/18   Time: 09:17
Sample: 2010M01 2016M12
Included observations: 84

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	22.66672	0.432774	52.37542	0.0000
FX	0.000553	0.000115	4.827540	0.0000
FEXR	0.048575	0.002181	22.27645	0.0000

R-squared	0.859700	Mean dependent var	31.68167
Adjusted R-squared	0.856236	S.D. dependent var	2.078712
S.E. of regression	0.788170	Akaike info criterion	2.396855
Sum squared resid	50.31819	Schwarz criterion	2.483670
Log likelihood	-97.66793	Hannan-Quinn criter.	2.431754

F-statistic	248.1669	Durbin-Watson stat	1.403479
Prob(F-statistic)	0.000000		

Chow Breakpoint Test: 2017M01
Null Hypothesis: No breaks at specified breakpoints
Varying regressors: All equation variables
Equation Sample: 2010M01 2017M12

F-statistic	81.03765	Prob. F(3,90)	0.0000
Log likelihood ratio	125.6325	Prob. Chi-Square(3)	0.0000
Wald Statistic	243.1130	Prob. Chi-Square(3)	0.0000

Unrestricted Test Equation:
Dependent Variable: REP
Method: Least Squares
Date: 04/12/18   Time: 09:25
Sample: 2017M01 2017M12
Included observations: 12

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-643.4531	260.1977	-2.472939	0.0354
FX	0.006135	0.000831	7.382556	0.0000
FEXR	2.230418	0.851176	2.620396	0.0278

R-squared	0.881392	Mean dependent var	43.00833
Adjusted R-squared	0.855035	S.D. dependent var	2.183504
S.E. of regression	0.831353	Akaike info criterion	2.680794
Sum squared resid	6.220335	Schwarz criterion	2.802021
Log likelihood	-13.08477	Hannan-Quinn criter.	2.635912
F-statistic	33.44017	Durbin-Watson stat	1.850197
Prob(F-statistic)	0.000068		