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Analyzing the effect of credit crunch (2007-2013) on income poverty in Nigeria.

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I. Introduction

The credit crisis which started in 2007 in United States of America has represented the gravest threat to the global financial system since the 1930s. From the Wall Street financial headquarters in the United States, across to Europe, Japan, China, the global financial system around which modern free market economy and capitalism is built was crashing. Rarely does an economic event have such a profound ripple effect on institutions and individuals throughout the world. The term credit crunch is used to baptize this global financial crisis.

There are fears that the credit crunch may have worsened the living conditions of the poor across developing or emerging economies.

The International Monetary Fund (2008), noted that;"Empirical studies on Africa confirmed that previous global credit crunch failed to significantly have an impact on Africa due to the limited exposure and openness of the African Financial sector to the global economy". But this credit crunch had from its early stage already undermining an already weak savings culture in Africa.

According to World Bank (2009), "after strong economic growth in many African countries through 2007-2008, the global economic slowdown and credit crunch has affected the region in 2009. Economic prospects in Sub-Saharan Africa are slowing with regional growth expected to just be over 3% for 2009, down from earlier projections of 6%".

The impact of credit crunch on the poor is a subject of interest, especially in developing and emerging economies. A standard textbook characterization suggests that credit crunch or credit squeeze have adverse effects on human development and income poverty. The basic idea of this traditional view is that credit crunch results to the shrinking of loans to entrepreneurs which will in turn make the poor workers not needed. Thereby, leading to a fall in their income and wider spread of poverty. Evans and Jones (2009) maintained that; the fallout of credit crunch is likely to be considerable and long lasting on the falling household income especially in developing countries. These fallouts are simplified as; increase in unemployment, closure of firms due to working capital inadequacy and liquidity crisis, decline in remittances.

The institute of Development Studies in their seminal paper on – The Credit Crunch and Global Poverty (2006), explained that the credit crunch works through four key factors which increase poverty in developing countries: trade, as demand for exports is reduced; a reduction in private capital flow, fall in remittances as foreign workers have lost their jobs or returned home; and finally aid.

Hakim (2010) argued that ; the integration of financial markets will increase the effect of credit crunch on the most vulnerable in developing countries. In their final analysis of credit crunch hypothesis, Briggs and Meyers (2009) noted that; No economy can develop without credit. Without credit, investments must be self-financed out of saved earnings. Indeed, economy in which self financing predominates, traps itself in a dynamics that widens stagnation and poverty. This is the fact especially for developing countries with low saving capacity. The poor in poor countries have been more vulnerable to the wider effects of the credit crunch, with the World Bank (2009) ,warning that many governments will be forced to cut public spending just at the time when it is most needed.

One prime reason for the vulnerability of large number of people to the credit crunch crisis is that in addition to poverty, a large proportion of the world population lives on poverty threshold, just above the poverty line. In other words, even small reductions in incomes or increases in the prices of basic goods and services can result in significant numbers being plunged into poverty (United Nations, 2009).

According to the World Bank Report in 2013, the credit crunch has made life difficult for millions of consumers and getting credit and holding jobs has been tough. Even before the crisis, several countries in Africa were already struggling with high rates of poverty and unable to meet the Millennium Development Goals (MDGs). And it was feared that credit crunch will worsen the situation.

In Nigeria, despite the widespread belief that the Nigerian economy would not be affected by the crisis initially, it only took a matter of time for the impact to be localized. According to Vinod (2010), during past financial crisis, poverty issues did not receive sufficient attention from countries in Sub-Saharan Africa mainly based on the premise that they would not be affected. Today, only few developing and emerging countries worldwide have put in place structured mechanisms for analyzing, tracking and evaluating the entry points of

credit crunch into the economy and also the impact of credit crunch on the poor in the economy. This study seeks to underpin this neglected dimension of addressing poverty phenomenon by establishing the link and impact of global credit crunch on poverty deepening in Nigeria.

The rest of the paper is organized as follows. The next section reviews relevant literatures on credit crunch and then the theoretical framework. Section 4 reviews empirical literatures on credit crunch and poverty nexus. This is followed by a discussion of the analytical framework used in this study. Section 6 discusses the data and estimation results of the study. Conclusion and policy recommendations are presented in section7.

II. Literature Review

According to Kelvin (1992), the phrase credit crunch was coined in the mid-1966 in America when the Federal Reserve's monetary policy became more restrictive; the Fed wanted to slow the growth of demand for growth of money for goods and services in order to fight inflation. Since then, credit crunch has appeared to be identified differently among different researchers. This critical difference in definition depends on the cause of contraction and whether credit is rationed by means other than price. Economic theory, however, provides two major concepts to explain this sort of rationing behavior. Firstly, in the adjacent theoretical strand of monetary policy transmission, this phenomenon is known as the bank lending channel (Bernanke and Blinder 1980, Bernanke and Gertler 1995). It's most simple version is stop lending following regulatory changes.

A second approach explaining the banks' behavior is the portfolio theory, according to which a bank chooses between different asset, aiming at optimal mix of risk and return. If the risk contained in the portfolio rises un-expectantly (for instance because of weakened stock market) the whole portfolio needs to be restructured. In extreme, risky assets (including business loans) regardless of their expected return need to be reduced in favor of risk-free assets (Bordo 2008).

After the credit crunch crisis of 1966, authors like Burger (1969) and Wojnilower (1992) provided a more encompassing view of credit crunch based on the disintermediation. In its application, the source of this constraint has presumably been the response by bankers to increased regulatory oversight and their own reaction to recent detoriation of bank assets values and profitability. Increased savings and loan failures, as well as increased capital requirements, may also have played a part. Clearly the disintermediation approach captures the two core conditions that birth credit crunch. I.e. Regulatory- led credit contraction and portfolio-led credit contraction.

The Council of Economic Advisers in 1991 defined credit crunch as the situation in which the supply of credit is restricted below the range usually identified with prevailing market interest rates and profitability of investment projects. In other words, credit crunch specifically refers to widespread reduction, ceteris paribus, in supply of credit for viable and unviable firms. It was Bernanke and Lown (1991) who first provided a different perspective on this hypothesis. They defined credit crunch as a significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest rate and the quality of potential borrowers. But Friedman (1992) commented that this definition still allows for an adjustment by higher interest rates, without some clients being completely cut off from new credit. This notion does not fully coincide with the widespread idea of a recession. In their later seminar paper Bernanke and Lown (1992), further explained that a credit crunch is a decline in the supply side of credit that is abnormally large for a given stage of business cycle. Credits normally contract during a recession but an unusually large contraction could be seen as a credit crunch. From a varied perspective, Green and Oh (1991), maintained that a credit crunch is an inefficient situation in which; credit worthy borrowers cannot get credit or cannot get reasonable terms. To them, a credit crunch can be caused by several factors, such as regulatory pressures and over – reactions to degradation of bank asset values and profitability. Ben and Gertler (1995) criticized Green and Oh in their failure to clearly explain the components of "inefficient situation" as contained in their definition. They argued that Green and Oh may have succeeded in distorting valid existing arguments as they failed to distinguish credit crunch from liquidity crisis. Ben argued that credit crunch is often caused by sustained period of careless and inappropriate lending which results in losses for lending institutions and investors in debt when loans turn sour and the full extent of bad debts become known. In contrast liquidity crisis is triggered when an otherwise sound business finds itself temporarily incapable of accessing the bridge finance it needs to expand its business or smooth its cash flow payments. In this case, accessing additional credit lines and "trading through" the crisis can allow the business to navigate its way through the problem and ensure its continued solvency. While in the case of credit crunch, it may be preferable to "mark to market" and if necessary, sell or go into liquidation if the capital of the business affected is sufficient to survive the post-boom phase of the credit cycle.

Despite their differences, all our reviewed literatures agree that a sustained general massive decline in credit supply which is non price - pushed and non discriminatory as signs of existence of credit crunch in a nation.

III. Theoretical Framework

The history of credit crunch has never been traced to originate from Africa. According to the International Monetary Fund (2008), empirical studies in Africa confirmed that previous global credit crunches failed to significantly have an impact on Africa due to limited exposure and openness of the African financial sector to the global economy. But there are clear indications that a developing country like Nigeria no longer enjoys such immunity to global financial crisis due to her increased openness to the global finance and trade liberalization.

The vulnerability of the Nigerian poor to the global credit crunch therefore depends on the extent of the financial contagion and possible local financial crisis depends on how far the economy has gone along the road of financial liberalization.

A comprehensive vulnerability framework theory is the theory of financial liberalization. The channels or transmissions of credit crunch to the income of the poor in Nigeria relies heavily on the financial liberalization theory as developed originally by McKinnon (1973) and Shaw (1973), whereby financial liberalization was argued to enhance savings , which supports a higher volume of investment and thus, growth. Financial liberalization promotes economic growth through this; then increases incomes and therefore reduces poverty. There are though costs as well (see Honanan, 2004; Honanan and Beck, 2007). The poor benefit from the banking system's ability to provide more savings opportunity opportunities but do not manage to benefit from greater availability of credit. However, financial liberalization promotes financial instability, which hurts the poor who are vulnerable to unstable and malfunctioning institutions. Arestis and Caner (2004) observed that economic and institutional changes brought about by a financial liberalization package have a more intricate consequence on the living conditions of the poor than merely through the presumed growth channels. This is because financial liberalization in some countries were premature due to the failure to recognize their imperfect characteristics; indeed, in many cases all those attempts led to financial crisis.

One aspect of the theory that has not been emphasized is that of the transmission of global financial externalities like credit crunch to liberal developing economies and the strength of these economies to recover from negative effect. The intimate link between the credit crunch crisis and economic degradation stems from transmission channels (Bordo 2008). In the words of Busari and Babatunde (2009), there are several potential direct and indirect channels through which the identified dimensions of the crisis can affect any economy. The severity of the direct and indirect channels through which the identified dimensions of the crisis can affect any given economy will depend on several factors such as the level of financial integration with the rest of the world, extent of export diversification, primary commodity dependence, major trading partners, extent of aid dependence, nature and mode of domestic production and exchange, some initial conditions during the crisis.

IV. Empirical Literature

There are literatures that have associated the core effect of the credit crunch phenomenon on the poor. Basing on the experience of the 1997-98 Asian crisis, Domac and Ferri (2002) points out that one or more out of the following seven conditions were observed during credit crunch: (i) a disproportionate drop in loans to Small and Meduim Enterprises; (ii) an increase in rejection rate of loan application; (iii) a sharp slowing down of loans growth rate; (iv) increased retrenchment in the labor market; (v) an increase in real interest rate ;(vi) fall in trade export earnings ;(vii)shortening of maturity of loans. Domac and Ferri had argued that these phenomenons collectively had a size effect on welfare, through income and consumption fall for households. There are a large body of evidence that corroborates this view.

Table 1. Summary of selected previous studies on credit crunch

Period of crisis	Country	Transmission link	Effect(s)	Source
1997-1998	Korea	Credit constraints and massive retrenchments	Decline in households incomes	Kang and Sawada(2008)
2000-2001	Argentina	Nationwide retrenchment and decline in remittances	Falling incomes	The Economic Commission for Latin America and the Caribbean(2002)
2007-2009	Pakistan	Fall in remittances, falling export earnings, increased retrenchment and deficit in balance of payment	Drop in household income and welfare loss.	Ashraf,Hayat and Zamir (2009)
2007-2009	Philippians	Job losses, fall in remittances	Falling incomes and prices increase	International Labor Organization (2010)

Source: Compiled by Author

A number of publications exist on the impact of the crisis on Africa. These include but not limited to Biekpe (2009) on the impact of credit crunch on foreign aid in Africa; Kiptoo (2009) on the potential impacts of the global financial crisis on Africa. But these studies though significant, do not provide the needed or complete answer to the poverty question and are not country specific. As noted by World Bank(2009), “the economic shock that hit low income countries during credit crunch crisis was not uniform, differing substantially across countries, reflecting economic structures, initial conditions and varying channels of impact”.

By extension, the results of credit crunch impact on the poor in Asian and Latin America economies as submitted in our reviewed literatures cannot be convincingly extended to reflect or explain the real impacts of credit crunch on the poor in a developing country like Nigeria due to variance in global integration, trade expansions, labor migration and extent of aid dependence amongst others.

V. Analytical Framework and Estimation Methodology

The empirical model used in this study is formulated along the lines of Domac and Ferri (2002), Bordo (2008), Kang and Sawada (2008) amongst others based on the theory of comprehensive vulnerability framework. In particular, AGE modeling is useful in analyzing the welfare effect of poverty where there are significant interactions between policy measures for one sector and distortions elsewhere in the economy.

Therefore the study adopts the AGE model based on these variables in functional form as follows:

PBPL= f (BOT, UR) (1)

From Equation. (1) functional model; PBPL is a measure of population below poverty line of $1.25, this is the variable to be explained in the model. Balance of Trade non-oil (BOT) is expected to demonstrate a negative effect on the poverty variable. See Domac and Ferri (2002), Bordo (2008), Kang and Sawada(2008).

While an increase Unemployment rate (UR) will have a positive coefficient. See International Labor Organization (2010); Ratha et al.,(2010).

Therefore the fully extended model is specified in linear form as:

$PBPL_t = \alpha_0 + \beta_1 BOT_t - \beta_2 UR_t + \mu_t$ (2)

Where t = 2007 -2013 (this captures the crisis period).

A single equation estimation regression is performed on our model using the Eview 3.1 computer software.

VI. Data and Estimation of Results

The data for the statistical analysis are annual data for the period 2007 to 2013 and are obtained from Central Bank of Nigeria annual report, Federal Bureau of Statistics and World Bank Statistics website.

Table 2. Model Summary

R^2	Adjusted R^2	Std. Error of Estimate	F-statistics
0.5531	0.3296	2.3004	2.4749

Predictors: (constant), balance of trade (non-oil), unemployment rate

Source: Authors computation

In the above model summary table, the value of R^2 is found 0.55, which means 55% of population below the poverty line in Nigeria is explained by the model’s independent variables. The R^2 is at this level mostly because several other factors determine the rate of poverty in a developing economy like Nigeria. This study’s focus was primarily on the variables via which credit crunch was transmitted into Nigeria.

To find out the overall significance of the model, the F-statistics was undertaken. The F- statistics shows the value 2.4749 is found significant at 5%. The overall results of the F-statistics describes the model is best fitted which strongly leads to define a strong relation between selected credit crunch transmission variables (BOT non-oil, Unemployment rate) with income poverty.

Table3. Results of Regression Analysis

Variables	Coefficients	Standard Error	T- statistics	Probability
(Constant)	53.5838	4.4045	12.1655	0.0003
Balance of trade	-0.0006	0.0016	-0.3778	0.7248
Unemployment rate	0.2914	.4956	0.5879	0.5882

Dependent Variable: Population Below poverty line

Source: Author’s computation

The value of the constant is found 53.58, which describes that if all independent variables remain zero the poverty rate will remain affected by other variables that were not taken into account in the model. The t-value of Balance of trade (non-oil) is found significant at -0.3778. Which describes that Balance of trade (non-oil) has significant impact on poverty rate. The negative relation is in line with the theoretical expectation. The

t-value of unemployment rate is found at 0.5879, which states the significant impact of unemployment rate on poverty in Nigeria. As expected, the coefficient on unemployment rate is positively associated with poverty rate. This result describes the importance of unemployment rate in the Nigerian Economy. Such that only 1% increase brings about 2.91% increase on poverty rate in Nigeria.

VII. Conclusion and Policy Implication

The study focused on the impact of credit crunch of 2007-2013 on poverty in Nigeria. The impact has been assessed using selected transmission variables; Balance of trade (non-oil) and unemployment rate. Beyond the scope of this study are several other prime macroeconomic variables that influence poverty rate in a developing economy like Nigeria suffering from various issues such as; energy and water shortages, political instability, lack of policy implementation, continuous increase in inflation, widening gap of inequality , deepening security concern, burden of foreign debt etc.

Although the global credit crunch ended officially in 2013, there is no proof to state that the condition of Nigeria's BOT (non-oil) and unemployment rate has improved. What this study has achieved is to verify whether credit crunch impacted on the poor, by identifying significant transmission mechanisms. As a follow up, policy makers should take tight policies towards improving the dropping BOT (non-oil) and reducing unemployment rate.

We suggest that; the current devaluation of the Nigerian currency be effectively channeled towards improving the BOT (non - oil) of the country. As this policy discourages imports, efforts must be made to enable domestic production by providing the enabling environment. We must also explore our competitive advantage across the West African markets. To curb the worsening unemployment rate, the Small and Medium Scale Enterprises (SMEs) must be strengthened. Prime focus in this area should be on the Agricultural and other agro-allied sectors as the sector contributes about 40% to Nigeria's GDP and employs 70% of the labor force.