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Commercial Banks' Response to Government's Financial Stimulus for Improved Agricultural Financing in Nigeria

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ABBREVIATIONS AND ACRONYMS

ATA	Agricultural Transformation Agenda
CACS	Commercial Agriculture Credit Scheme
CBN	Central Bank of Nigeria
CRG	Credit risk guarantee
FMARD	Federal Ministry of Agriculture and Rural Development
GES	Growth Enhancement Support scheme
IDP	Interest Drawback Programme
NIRSAL	Nigeria Incentive-based Risk Sharing for Agricultural Lending

ABSTRACT

Nigeria is vigorously pursuing an agricultural transformation agenda (ATA) which requires significant financial support from the banking sector. The success of the ATA depends on the flow of funds from banks to finance the various ATA pillars, especially value chain development and the flagship component, the Growth Enhancement Support (GES) scheme. This study (i) examines the implementation of recent agricultural finance policies and incentives associated with the Nigerian Incentive-based Risk Sharing System for Agricultural Lending (NIRSAL) and the stimulus funds for boosting agricultural lending, the Commercial Agricultural Credit Scheme (CACS), (ii) determines the impact of these financial capital interventions (stimulus to the banking sector) through the instrumentality of CACS on the flow of credit to the agricultural sector, (iii) examines the factors militating against increased funding of agriculture by the banking sector, and (iv) articulates policies and strategies for improved participation of the banking sector in agricultural financing in Nigeria. The study was executed using data obtained from all the commercial banks in the country in a survey conducted between March and September 2013 plus secondary data covering the period from 2006 to 2012. The study focuses on two hypotheses, namely; (i) the stimulus provided by the government to the banking sector to boost agricultural financing has led to significant agricultural credit expansion; and (ii) commercial banks have been less risk-adverse to agricultural lending due to the capital infusion to the banking sector by the government to stimulate agricultural lending. These hypotheses were tested using random-effects Tobit econometric analysis.

There are positive trends in loan requests and in understanding of CACS implementation procedures, leading to a rising trend in funds release by the CBN and in loan disbursements by commercial banks. The results show that loan supply is higher for banks that are younger and bigger in size, and that it is significantly higher under CACS than before. These results imply that the financial stimulus under CACS has elicited significantly positive response from commercial banks. The study shows that prior to CACS rising borrower risk was associated with a higher probability of loan supply, whereas, under CACS, risk-taking by commercial banks has been moderated due to regulatory interventions by the CBN, including intensive monitoring and enforcement of operational guidelines and the imposition of sanctions against infractions. Commercial banks do not increase their agricultural lending due to higher leverage, greater liquidity, and wider networks of branches. They do so because of access to off-balance sheet resources which brightens their prospects for increased profitability and risk reduction. The introduction of NIRSAL in 2011 has bridged some of the policy gaps inherent in CACS.

For improved performance from agricultural lending, there is need to re-orient the lending focus from discrete financing of separate stages of value chains to an integrated system of value chain financing. Moreover, there is need for increased public spending on the development of infrastructural facilities, including agricultural storage, transportation, marketing, and processing facilities, so as to reduce post-harvest losses and enhance productivity. This, in turn, should lead to an improvement in competitiveness and repayment capacity of agricultural enterprises. Alternative sources of funds, such as the pension fund, accumulated funds in the CACS repayment account, and the sugar levy account, should be tapped to sustain CACS over the next decade.

Keywords: commercial banks, financial stimulus, agricultural financing, lending risk

I. INTRODUCTION

This study seeks to understand the response of the banking sector to recent agricultural finance policy initiatives in Nigeria with a view to articulating ways of strengthening the impact of these policies and boosting agricultural lending in the country. The focus is on the Commercial Agriculture Credit Scheme (CACS) and the Nigerian Incentive-based Risk Sharing for Agricultural Lending (NIRSAL). The CACS was created by government to contribute to the development of the agricultural sector through the expansion of lending to the sector by commercial banks. The Federal government decided to inject funds into the banking sector to induce the commercial banks to increase their lending for the development of commercial agriculture. To do so, the Debt Management Office raised a seven-year bond of ₦200 billion, with the proceeds earmarked for lending through the scheme by approved commercial banks. This government intervention in commercial agriculture lending took place in 2009 when governments in the developed world were providing fiscal stimulus to their economies in response to the global financial crisis and economic melt-down of 2008. These largely consisted of capital infusions into the banking sector to revive distressed banks of various sizes. The Federal Government of Nigeria decided to make the intervention fund available to approved banks to provide credit facilities to commercial agricultural enterprises at single-digit interest rates.

The CACS has been in operation effectively since 2010. The intervention initially was welcomed by the farming community, but was later to be confronted with controversies on account of the various restrictions associated with its utilization. There were restrictions in terms of the categories of beneficiaries, participating banks, and types of agribusiness enterprises. Representatives of small-scale farmers who approached the banks for loans were initially asked to wait until guidelines would be received from the CBN, but were later not provided with loans on the explanation that small-scale borrowers could not be accommodated under the scheme. Some state governors complained that the banks holding the CACS funds made it impossible for farmers to get loans, despite the efforts made by the states to access the agricultural credit facilities for on-lending to farmers in their states. A committee had to be set up to look at what the problems were and work out modalities for easy disbursement of the credit to beneficiaries. The committee, chaired by the Governor of the Central Bank of Nigeria (CBN), comprised six state governors and the ministers of finance and agriculture.

In the same vein, the government initiated an agricultural finance framework known as the Nigerian Incentive-based Risk Sharing for Agricultural Lending (NIRSAL) system to address the problem of low level of agricultural financing in the country. It is focused at the pilot stage on the development of value chains in respect of six commodities – tomato, cotton, maize, soybean, rice and cassava. NIRSAL emphasizes lending to value chain actors and to all sizes of producers. This is in contrast to previous schemes which encouraged banks to lend without a clear strategy to the entire spectrum of agricultural value chains. Success of NIRSAL will depend on the effectiveness of its governance structure, commitment of stakeholders to discharge their financial responsibilities under the initiative, and political will to undertake the required sector-specific and fiscal policy reforms for the effective performance of the agricultural sector in general.

Despite an enormous agricultural resource endowment, the performance of Nigerian agriculture is still below expectation. Nigerian farmers are among the poorest in the society, and the agricultural sector remains highly undercapitalized. With meager incomes and low savings, the majority of farmers lack the equity capital for expansion of their operations and modernization of their enterprises. Access to debt capital is even more constrained, as many smallholders are discriminated against by formal financial institutions. The phobia among banks of lending to the agricultural sector remains incurable, despite numerous policy initiatives to remedy the situation. Commercial banks do not include agriculture in their lending portfolios, while existing policies and programs aimed at encouraging banks to participate in agricultural lending are not fully effective. How can the existing rigidity of financial institutional against agricultural lending be tackled? Why do commercial banks prefer to be brokers – relying on off-balance-sheet operations – in the agricultural financial system, rather than financial intermediators – transforming customers' deposits into loans – for varying categories of borrowers?

The fact that the agriculture sector, which contributes over 20 percent to the GDP of Nigeria, is not attractive to the banking sector should be a source of worry to policy makers and investors. This raises the question as to how the banking sector can improve its understanding of the performance of the agricultural sector. According to CBN data, agricultural lending accounted for only 1.4 percent of total bank lending as of December 2010. More often than not, the demand side of the problem is the focus of attention. The major arguments are that the sector is risky, loan transaction costs are high, and the small-scale farmers have no collateral to secure a loan. The supply side of the problem has received far less attention. What exactly are the limitations of the commercial banks? How can the constraints on lending to agriculture be relaxed? What policies and incentives will be required to encourage banks to participate in agricultural value chain financing? Specifically, what are the challenges and opportunities associated with CACS and NIRSAL in creating a win-win situation for both

lenders and borrowers? What type of financial arrangements and instruments will be suitable to ensure that small-scale farmers have direct access to credit under these schemes?

The policy initiatives ─government infusion of capital for agricultural lending through the instrumentality of CACS and NIRSAL – are indeed justified in view of the fact that the agricultural sector has always been discriminated against by commercial banks over the years on account of being too risky. The resultant intervention funds are expected to increase bank lending and, so, may result in banks increasing the riskiness of their lending. Unless there is proper risk management, approval of loans for agricultural activities by the banks may not increase in accordance with the intention of the interventions. Given the conflicting nature of these objectives, the question remains as to how CACS and NIRSAL might affect risk-taking incentives relative to changes in bank lending.

1.1 Rationale for the study

The issue of mobilizing financial resources for the development of agriculture which is the focus of attention in this study is very relevant to the overall issue of financial access in the rural sector and beyond and domestic resource mobilization in developing countries including Nigeria which has received much attention in the literature (Claessens, 2005; Conning and Udry, 2005; Guha-Khasnobis and Mavrotas, 2008). Agriculture is the dominant business in Nigeria's rural sector and its modernization requires substantial infusion of financial capital. Nigeria is vigorously pursuing an Agricultural Transformation Agenda (ATA), which assigns a leading role to the private sector, while government provides necessary support. In 2011, the country witnessed a major break from the past in terms of procurement and distribution of key inputs, such as fertilizer, seeds, and agro-chemicals. These activities are now being carried out by the private sector, thus escalating demand for credit in the agricultural sector. Accordingly, a new agricultural finance policy framework, NIRSAL, was put in place to ensure that the sector is not starved of necessary finance as the wind of transformation blows. In many ways, the success of NIRSAL will define the extent to which the ATA itself will succeed. An understanding of the journey so far is warranted in order to better understand the pathway to success and engender meaningful transformation of the agricultural sector.

Moreover, the banking sector is part of the private sector that is supposed to lead the business processes that will translate the goals of ATA into reality. The banking sector must be aligned with policy makers in terms of the motivation, understanding, and implementation of ATA policies and projects that require financial services for achieving the desired results. All consumers of such services, as well as the service providers and policy makers, must play active roles in the implementation of the policies that guide the delivery of financial services to the agricultural sector. This is important in order to ensure uninterrupted flow of funds to smoothen the operations of agricultural commodity value chains. The broad goal of this study is to examine the response of the banking sector to the value chain financing needs of farmers within the framework of the ATA in Nigeria. The study seeks to achieve four objectives

1. Examine the implementation of recent agricultural finance policies and incentives associated with NIRSAL and the stimulus funds for boosting agricultural lending through CACS,
2. Determine the impact of the financial capital intervention (stimulus to the banking sector) through the instrumentality of CACS on the flow of credit to the agricultural sector,
3. Examine the factors militating against increased funding of agriculture by the banking sector, and
4. Articulate policies and strategies for improved participation of the banking sector in agricultural financing in Nigeria.

1.2 Methodology

The focus of the study is to determine whether and how the financial stimulus affected risk taking in credit and investment activities of commercial banks in Nigeria. With regard to CACS, the analysis will involve two sub-periods – pre-stimulus (2006-2008) and post-stimulus (2009-2012). Both commercial banks participating in CACS and non-participating banks are included in the study. As regards NIRSAL, all the commercial banks will be covered for the purpose of understanding their concerns, perspectives, involvement, and lending procedures under the scheme.

Data were collected from all commercial banks. Policy-related data were obtained from CBN, the Federal Ministry of Finance, and the Federal Ministry of Agriculture and Rural Development. The two types of data collected from the commercial banks covered the period from 2006 to 2012. Data collected with respect to CACS and NIRSAL included the amount of CACS capital received, when it was received, when credit disbursement began, CACS credit disbursed by type of business, the number of CACS agricultural credit applications received and approved, interest rates, capital adequacy, asset quality,

age of bank, earnings, liquid assets, liquid liabilities, total loans, non-performing loans, total deposits, bank size (total assets), bank total equity capital, number of bank branches, presence of an agricultural desk in the bank, and the number of staff in agricultural finance department. Qualitative data were obtained from all commercial banks using open-ended research instruments. This aspect of the data collection exercise involved visits to the headquarters of the banks and discussions with key officials. The key questions posed to officials of each bank were:

1. Is the bank is increasing credit supply to agriculture due to government incentives since 2009? Why or why not?
2. What do they like and dislike about CACS and NIRSAL?
3. What are the specific constraints facing the bank in responding to the agricultural finance policy incentives under CACS and NIRSAL?
4. What has the bank done specifically in response to the various incentives provided under NIRSAL?
5. What efforts has the bank made to align with the concept of value chain financing in agriculture?
6. What policies and incentives are necessary to encourage banks to participate in agricultural value chain financing?
7. What steps can the banking sector take to improve lending to agriculture and, by so doing, contribute to the success of the Agricultural Transformation Agenda in the country?
8. What innovations in the area of agricultural value chain financing can the bank can introduce to the financial system?

The study focuses on two hypotheses, namely; (i) the stimulus provided by the government to the banking sector to boost agricultural financing has led to significant agricultural credit expansion; and (ii) commercial banks have been less risk-adverse to agricultural lending due to the capital infusion to the banking sector by the government to stimulate agricultural lending.

However, to the extent that banks were subject to government regulations, these regulations might reduce rather than increase risk taking. Besides, the efficiency of the banking system can have a profound impact on real resource and investment allocation, not only directly, by reducing the amount of resources channeled into the credit market, but also indirectly, by affecting entrepreneurs' investment decisions. In a credit market distorted by information asymmetries, financial intermediaries often react by credit rationing firms; such that loan requests are frequently rejected or only partially satisfied. On this basis, one can reasonably argue that if the probability of credit rationing is very high, and applying for a loan is costly, entrepreneurs might ex ante find it optimal not to seek external financial resources and to stay out of the financial market. This occurs when other investment opportunities, which do not require access to credit, are also available (Capasso and Mavrotas, 2010). Earlier studies underscore the importance of bank capital for credit origination (Thakor, 1996). While previous research shows that a negative shock to bank capital forces a cut in lending (Berger and Bouwman, 2013), others suggest an asymmetric response of financial institutions to capital shocks. In particular, Duchin and Sosyura (2012) find that a positive shock to capital need not result in credit expansion, but instead may lead to a shift in credit rationing and an increase in risky investments. It is instructive to ascertain in the case of Nigeria the direction of the impact of injection of capital funds by the government.

DETERMINING THE EFFECTS OF STIMULUS ON AGRICULTURAL LENDING

The effect of government intervention on commercial agriculture lending is examined by focusing on the response of the commercial banks to financial infusions into the banking sector under CACS. The estimated model of this response is specified implicitly as follows:

$$y_{i,t} = \alpha + x_{i,t}\beta + \varepsilon_{i,t} \quad (1)$$

In this time-series-cross-section formulation, y is the value of loans supplied by commercial banks which are the cross-sectional units; i refers to a bank, while t refers to time expressed in years from 2006 to 2012. β is the parameter to be estimated, and $\varepsilon_{i,t}$ is the error term. For the purpose of the analysis, the period from 2006 to 2008 is regarded as pre-stimulus, while the period from 2009 to 2012 is regarded as the post-stimulus period. The essence is to determine whether there is a significant change in the supply of credit to the agricultural sector by commercial banks across the two periods due to the injection of funds by the governmental to boost agricultural financing. To take advantage of the stimulus, the banks themselves have to be in good standing to engage in financial intermediation. This underscores the need to consider key

performance variables of the bank to lend to agribusiness firms across the country. Thus, to capture the effect of the stimulus, some bank characteristics that may influence the bank's lending are considered, such as size (total assets) and proxies for key measures of banks' financial condition and performance used by banking regulators, such as capital ratio and liquidity ratio. The estimated equation is specified as follows.

$$y_{it} = \alpha_i + \beta_{1ir_{it}} + \beta_2 CACS_{it} + \beta_3 loanrisk_{it} + \beta_4 CACS * loanrisk_{it} + \beta_5 capratio_{it} + \beta_6 liqratio_{it} + \beta_7 tassets_{it} + \beta_8 branch_{it} + \beta_9 bankage_{it} + \varepsilon_{i,t} \quad (2)$$

Where, y_{it} is the total value of loans granted to agricultural enterprises by a commercial bank in a particular year, *ir* is the (lending) interest rate, *CACS* refers to the stimulus to the banking sector through government's capital injection under CACS with a value of unity from 2009 to 2012 and zero from 2006 to 2008, *capratio* is the capital ratio of the bank (ratio of equity capital to total assets) *liqratio* is the liquidity ratio (ratio of liquid assets to total assets), branch refers to the number of branches of a commercial bank, *bankage* is the age of the commercial bank, *tassets* refers to a bank's total assets, and *loanrisk* refers to the loan-to-income ratio (for a borrower), which is used as a proxy for borrowers' risk, while $\varepsilon_{i,t}$ is the stochastic disturbance term of the regression.

In testing the specified hypotheses, the significance of the coefficients β_2, β_3, *and* β_4 are particularly crucial. Commercial banks' disposition to the stimulus policy is analyzed by including an interaction term *CACS*loanrisk* in the model. The significance of the coefficients will enable us capture the effect of the stimulus policy on agricultural lending by commercial banks. The direction of the effect depends on whether the banks tend to be more risk-taking in view of the fact that they have access to off-balance sheet resources to support their lending to agriculture. If this is the case, the sign of the estimated coefficient will be positive. Alternatively, they may refrain from making risky investments in accordance with the operational guidelines of the regulatory authority. In this case, a negative sign is expected. It is expected that lending will decline as borrowers become more risky, thus the sign of the estimated coefficient of *loanrisk* is expected to be negative. The signs of the coefficients of *capratio, liqratio, tassets, branch,* and *bankage* are expected to be positive since bigger, older and more liquid banks with wider network of branches should have greater capacity to lend to agriculture than otherwise would be the case. Bigger banks (banks with larger total assets) tend to have greater capacity to generate loanable funds, meet larger loan requests, have more personnel with specialization in agricultural lending, and are better able to carry out extensive agricultural credit transactions compared with those with low level of total assets.

Although bank capital has a role to play in reducing risk, the direction of the effect of capital ratio is ambiguous. According to Koch (1988) it provides a cushion for firms to absorb losses and remain solvent. It also provides ready access to financial markets and guards against liquidity problems caused by deposit outflows. With high capital ratios, banks are better placed to take on risky investments by, for example, investing more in loans than in safe assets. The large equity base of such banks will serve as a cushion against large loan losses. However, on the other hand, a highly capitalized bank may decide to invest in safer assets such as government securities, thus crowding loan requests by the private sector. Besides, a less capitalized bank may decide to follow a similar investment pattern of investing more in loans than safe assets in order to increase expected profits even though at a greater risk (Betubiza and Leatham, 1995).

In view of the nature of the data (limited observations and limited time covered) and the peculiar characteristics of the banks, the model cannot be estimated by pooled ordinary least squares technique (POLS). Some of the seventeen commercial banks included in the analysis did not grant any loans in some of the years covered in the study (2006 to 2012); thus the dependent variable takes on the value of zero during those years. With the small size of the sample, eliminating those banks to circumvent the problem of limited dependent variable is inadvisable as it will undermine the degrees of freedom and, more importantly, create sample selection bias. Rather than excluding those banks with zero response for the amount of originated credit, a random-effects Tobit analysis is employed to account for the censored nature of the data and to adequately characterize the full range of commercial banks' behavior during the period covered in the study.

2. LENDING TO THE AGRICULTURAL SECTOR BY COMMERCIAL BANKS IN NIGERIA: CHALLENGES AND OPPORTUNITIES

This section examines the various constraints on bank lending to agriculture in Nigeria and the emerging opportunities to reverse the trend. The analysis is based on the commercial banks' perspectives and proposals. The generally discriminatory attitude of the banks to agriculture is considered as are the challenges they face with regard to CACS and NIRSAL.

2.1 Factors discouraging agricultural lending

The agricultural sector has not been accorded priority by commercial banks in their lending activities over the years. Thus, financial constraints are more pervasive in agriculture than in many other sectors. According to Olomola and Gyimah-Brempong (2014), these constraints derive from policy failures and institutional weaknesses, supply and demand-side bottlenecks, stringent terms and conditions of financial products, and market failures.

The agricultural sector has been poorly served by the financial system partly on account of the unfavorable policy environment. Over the years, the enabling environment for efficient operation of the financial system has been lacking. Until recently, the economy has been characterized by weak regulatory regimes, poor physical and financial infrastructure, and policies that repress financial market development. To date, it is expensive to provide financial services in rural areas which is the domain for agricultural activities. Rural areas in Nigeria are typically less dense in economic activity, have poorer infrastructure, and are more subject to risks from weather and agricultural price volatility than urban areas. Financial institutions generally have weak institutional capacity for providing financial services in rural areas. Moreover, operators within the financial sector often display limited understanding of the agriculture sector. This taints their perceptions of the level of risks involved in financing the sector.

Moreover, debt capital is not flowing into the agricultural sector as expected due to obstacles faced by lenders and borrowers. Borrowers in the agriculture sector lack personal capital with very limited cash flow, and their credit histories are poor or are insufficient to secure loans. They lack business plans and the ability to project realistic cash flow. Access to market for many agricultural producers in Nigeria is poor and their linkages to other value chain actors is weak. Financial management experience within the sector is limited. Inadequate and poor record keeping is also a challenge. As regards the lenders, the main problem is their unwillingness to venture outside of their specialty areas of lending. Other constraints include lower staffing levels with fewer staff having expertise in agriculture; especially in rural areas. The credit market serving agriculture is also encumbered by stringent loan terms and conditions set by financial institutions, including high interest rates and transaction costs. Other constraints include inappropriate financial products and services and inadequate capacity to deliver requisite services.

An evidence of market failure in the financial sector has been that private banks have failed to provide appropriate credit and financial services to small, family farms and to rural areas in general. The agricultural credit market is beset by several imperfections including market segmentation, covariate risk, scarcity of collateral, information asymmetry, and mass illiteracy of clients. The widespread information asymmetry often leads to problems of adverse selection and moral hazard. These problems underpin the reluctance of commercial banks to lend to small-scale farmers (Olomola, 1996, 1999). Adverse selection arises when the lenders do not have sufficient information on particular characteristics of borrowers, especially in terms of a borrower's preferences for undertaking risky projects. In the case of moral hazard, the main problem is that borrowers' actions are not discernible by lenders. This heightens the risk of default, in that individual borrowers may be lax in making efforts to make the project successful or they may change the type of project that they undertake.

Despite the recent policy incentives enshrined in NIRSAL, the attitude of commercial banks to agricultural lending has not changed remarkably. They still complain that credit requests received from clients are not properly packaged into bankable proposals. According to officials of a bank, "a large number of smallholder farmers are unbankable. Yet this group makes up the highest number of players in the industry. This is a key problem because the bank recognizes the importance of primary producers in the sector as key to driving the sector". The commercial banks express other discouraging aspects of the borrowers' characteristics as follows.

> *Most facility requests emanate from individual borrowers who have no means of securing their loans. Another problem is the inability of borrowers to provide the required documentation as stipulated by CBN. The default risk is still borne 100 percent by the bank; and there is the lack of requisite skill sets and adequate staff to drive agricultural business.*
>
> *Farmers are presently not using best global practices, and there is limited commercial farming taking place. There is also limited historical information available on past performance. Most clients do not maintain proper records.*
>
> *There is lack of acceptable warehouses. Most borrowers do not maintain records. A number of clients do not have bank accounts. Borrowers are unable to raise the required equity contribution.*

Despite these constraints, banks are participating in the recent agricultural finance initiatives. They also are making efforts to build necessary skills within their staff to serve the agricultural sector. According to one of the banks, "we are rolling out an aggressive training program to increase agricultural finance skills, not only for the agricultural finance officers, but also for other marketing staff in the bank".

2.2 Challenges of the recent agricultural finance incentives

COMMERCIAL AGRICULTURE CREDIT SCHEME (CACS) IMPLEMENTATION CHALLENGES

Despite its attraction to medium and large-scale enterprises, CACS has encountered administrative and operational challenges from lenders, borrowers, and regulatory authorities. The required skills for administering agricultural loans are missing in many of the banks. Some of them have had to tread carefully to minimize losses that may arise due to poor loan repayment. According to officials of one of the banks:

> *"Under CACS, we were careful due to poor loans we had previously with agriculture-related borrowers. We had challenges understanding how properly to deal with agricultural lending and to mitigate repayment risks. When we were better placed to deal with these challenges, however, the funds were exhausted, and we did not receive disbursements for all requests made.*

Disagreements between the banks and CBN over some operational details discouraged some banks from intensively implementing the CACS scheme. Delays in reviewing transactions submitted to CBN have exacerbated the situation. According to some bank officials, "Staff of the development finance department were rigid in the interpretation of the guidelines; often insisting that certain standard credit clauses (especially default clauses) be removed from offer letters". The fact that CBN has to repeat the due diligence activities that already had been done by the banks in some instances was also a major cause of delay in releasing funds. While some banks were not satisfied with the style of rule enforcement of CBN, others seemed not to be on a familiar ground as far as agricultural lending is concerned. In such cases, the onus is on the regulator to ensure that the guidelines are followed to the letter to minimize borrowers' risk and maximize loan repayment.

Many of the commercial banks sidetracked the guidelines and faced CBN sanctions from time to time. CBN had to strive to change a perception of many borrowers and the public in general that CACS is a form of government largess to be accessed under the guise of agriculture but then could be diverted to other uses with a slim chance of being repaid. The central bank, therefore, has designed elaborate procedures for due diligence in lending transactions and for monitoring loan utilization. Some of the banks expressed concern about urban bias and a tilt of CACS towards large-scale agribusiness firms. By the way CACS was designed; it was difficult for many Nigerian firms to meet the requirements for accessing the loans; with the result that most of the beneficiaries have been foreign companies. Moreover, the credit limits discriminated against the small-scale farmers and favored large-scale farmers, who ordinarily are less constrained than smaller farmers in accessing financing.

NIGERIA INCENTIVE-BASED RISK SHARING FOR AGRICULTURAL LENDING (NIRSAL) IMPLEMENTATION CHALLENGES

The response of the commercial banks to NIRSAL incentives was sluggish. A general feeling that the government was unlikely to implement the policies in a consistent and stable manner underpinned the initial hesitation of the banks to participate in agricultural lending under NIRSAL. There had been concerns about the equity contribution of the borrower. This was initially put at a maximum of 20 percent. In addition, the NIRSAL scheme required that clients fulfill all of the basic loan conditions. Also the borrowers were required to pay a credit risk guarantee (CRG) of 3.0 percent, which was an unwelcome cost. Bank officials stated that:

> *Our biggest constraint under NIRSAL is its bureaucratic nature resulting in very slow turn-around time for processing credit requests. In addition, NIRSAL's CRG pricing formula for credits differs from the understanding provided by the NIRSAL guidelines. The guidelines state that the CRG premium is chargeable on the outstanding portion of the guaranteed facility. However, NIRSAL claims that the initial CRG premium is payable on the full facility amount. …By NIRSAL's agreement, CRGs, if approved, will be issued within 10 working days. But, we have instances where a CRG is delayed for over one month. The reason given is that a particular officer is not available to sign.*

According to the banks, most borrowers find the 3.0 percent guarantee fee to be on the high side. The fee constitutes an additional cost to the customers, hence some of them decline loan offers. Another factor influencing the participation of banks is the unavailability of bankable project proposals. Many of the proposals submitted for financing under the NIRSAL scheme hardly meet the lending criteria stipulated by some banks. In addition, there are challenges on the part of NIRSAL. The main challenges include the difficulty in validating the information provided by counter-parties for the purpose of credit risk guarantee; a general lack of information technology infrastructure in respect of movement of information to the NIRSAL head office, and manpower shortage.

These challenges are not insurmountable. As lending opportunities emerge, it is in the interest of all stakeholders to ensure that the lending conditions are fine-tuned to improve the situation. There is a need for timeliness in loan transactions, due diligence procedures, and in acceding to CRG requests by banks. There should be clarity in the terms and conditions guiding the classification of the value chains for the purpose of credit risk coverage and IDB payments. The commercial banks and the regulators also need to strike an appropriate deal regarding critical issues. These include retaining losses on non-performing accounts until the end of the financial year before redemption of credit risk guarantees, and limiting the guarantee cover to the amount in default after all other securities have been realized so as not to leave the banks with a net loss in terminal default situations.

2.3 Emerging opportunities for lending to agriculture

The policy initiatives to boost agricultural lending in Nigeria received regulatory impetus in 2010 when CBN issued a circular making it mandatory for commercial banks to establish agricultural desks to handle transactions relating to agricultural financing. Prior to this, very few banks had special units for agricultural finance purposes, so that internal capacity for developing innovative products in support of agriculture had been underdeveloped. Compliance with this regulation is spreading gradually within the banking sector, but deployment of competent personnel to cope with agricultural loan demand and regulatory requirements by CBN is not still being accorded priority attention. There is need for the banks to ensure that personnel on the newly established agricultural desks are adequately trained to bridge existing knowledge gaps. Commercial banks should be more proactive in designing measures to reach prospective agricultural customers. The banks can contribute to the success of the ATA by creating incentives for agricultural customers. At the grassroots level, the banks could take it upon themselves to educate farmers and popularize agricultural financing in rural areas.

RECOGNITION OF BANKS' TRAINING NEEDS

With the expansion of investment under the ATA, there is increasing recognition of agriculture as a viable sector of the Nigerian economy. Banks are beginning to recognize their need to develop skills in agricultural (value chain) financing – financial analysis, risk analysis, and risk management of agricultural enterprises – in order to engage the sector effectively. A number of banks are also making efforts to train relevant front office staff to understand all aspects of agriculture, lending risks, financing needs and financing cycles, and farm budgets. Some banks already are training credit analysts in agricultural value chain financing in order to improve their ability to properly asses and review agricultural credit proposals quite apart from other regular credit transactions. One bank reported that "we are organizing capacity building for farmers and other players in agriculture value chains. We provided capacity building to farmers in the areas of farm records keeping and bookkeeping. We are also creating new agricultural finance products. We are working to amend our existing products to suit agricultural enterprises such as our stock financing, assets acquisition for mechanization, and so forth.**"**

VALUE CHAIN FINANCE

Value chain finance has been defined as financial products flowing to value chain actors to address and alleviate driving constraints to growth in the value chain (Fries, 2007). According to Miller and da Silva (2007), a value chain consists of the set of actors (private and public, and including service providers) and the sequence of value-adding activities involved in bringing a product from production to the final consumer. In agriculture they can be thought of as a "farm to fork" set of inputs, processes, and flows. Miller (2011) makes a distinction between conventional agricultural financing and agricultural value chain finance. The latter refers to any or all of the financial services, products, and support services flowing to or through a value chain to address the needs and constraints of those involved in that chain, be it a need for finance, a need to secure sales, procure products, reduce risk, or improve efficiency within the chain. Agricultural value chain finance can be internal – such as when an input supplier provides credit to a farmer or when a lead firm advances funds to a market intermediary – or external when it involves value chain relationships and mechanisms – for example, when a bank issues a loan to farmers based on a contract with a trusted buyer or a warehouse receipt from a recognized storage facility. This

definition stresses that value chain finance does not include conventional agricultural financing from financial institutions, such as banks and credit unions, to actors in a chain unless value chain relationships are expressly integrated.

Value chain finance, especially the financing of contract farming and out grower schemes, is attractive to banks. According to AFD (2012), there are four ways in which value chain financing can stimulate banks' interest in lending to agriculture.

1. Ready market and distribution channel for farmers' products. The close relationship between farmers and buyers is an important element of loan security. The mere fact of being in the value chain tends to boost farmers' creditworthiness.
2. The technical advice provided to farmers under contract farming arrangements mitigates harvest failure and improves the quality of outputs. This reduces risks to both borrowers and lenders.
3. Reduction in loan transaction costs. There are several dimensions to this. Lower appraisal and monitoring costs are based on the participation of value chain partners in the loan administration. Much lower loan disbursement and recovery costs result from lenders dealing with only a few value chain partners. The partners facilitate or directly distribute loans to farmers. Finally, loan recovery costs are reduced since value chain partners can provide part of the credit in kind to avoid loan diversion to other purposes.
4. Banks can rely on value chain partners' creditworthiness and credibility as collateral options. These partners can serve as guarantors for farmers to enable them to have access to loan.

Despite the advantages however, there are downsides. These include side-selling by partners outside the contractual obligations and willful loan default. There remains a need for intensive monitoring of activities and regulatory interventions to ensure that all parties in value chain financing arrangements play by the rules. The effectiveness of financing mechanisms will also depend on an enabling legal environment to prevent unfair price determination, unfair treatment of farmers, and flexible property rights to provide for the use of fixed and non-fixed assets as collateral.

Efforts made by banks to align with the concept of value chain financing

Banks are imbibing the value chain finance approach to agricultural lending. Some have engaged various clients that operate in agricultural value chain informing them of the government agricultural financing initiatives and how they might benefit. According to some bank officials:

> *"We have focused on value chains and targets and are making efforts to have specific value chain financing products unique to each one. We have a clear understanding of the value chain concept and are developing training content for our credit analysis team, as well as legal and other partners, on same".*

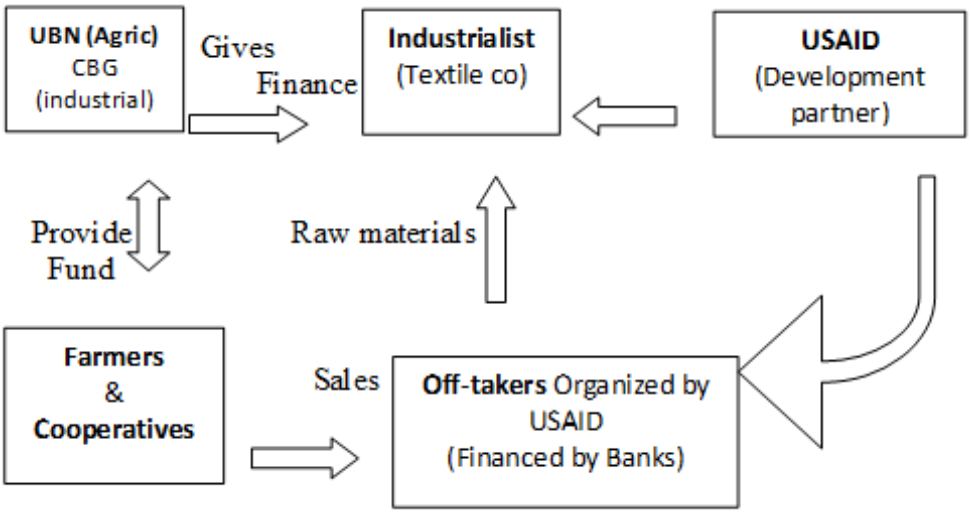
The banks that are already adopting a value chain approach in other business sectors appear to be familiar with the concept such that adopting the value chain approach to agriculture is a normal course of business for them. Some have evolved credit policies which stipulate that they can only finance production activities if there are clear buyers of the products. This is being followed as a guiding principle for agricultural lending. A number of specialized products have already been developed and are being targeted at various operators in agricultural value chains. These include financing of industrial end-users and of out growers schemes in which the banks are supporting the financing of input procurement, primary production, marketing, and processing.

Financial innovations for agricultural value chain financing

The emerging initiatives in agricultural value chain financing are exemplified by the experiences of some of the banks. For instance, Access Bank is developing a value-chain management system that is inclusive of all players in the value chain. The bank is working with microfinance organizations for on-lending to small-scale farmers. These microfinance partners ensure proper disbursement, monitor the use of the funds by farmers, and assist in recovery, where necessary. This innovation is also contributing to capacity building for extension officers to ensure proper monitoring and evaluation. These activities are achieved through the provision of grants from Citi Foundation to ensure financial inclusion of the famers. These efforts are being piloted with farmers in Kano, with plans to replicate the program elsewhere in the country.

Another area where the banks are developing interest and expertise is in the use of warehouse receipt financing for lending in the agricultural sector – in particular, Stanbic IBTC Bank.

Figure 2.1—A multi-departmental approach to financing projects in the textile industry following the value chain finance approach



Union Bank is adopting a multi-departmental approach in financing projects in the textile industry following the value chain finance approach. The innovation involves a partnership arrangement with a development bank as illustrated in Figure 2.1. The collaborative effort is between the Agricultural department of Union Bank (UBN) and the Credit and Business Group (CBG) which is responsible for large scale commercial farming and processing. The bank provides finance on two platforms – primary production (farmers) and industrial production (the processors). Other actors along the value chain, such as off-takers (buyers), packaging service providers, manufacturers, and marketers, can also be financed.

THE GROWTH ENHANCEMENT SUPPORT (GES) SCHEME FINANCING OPPORTUNITIES

Since the inception of the ATA in 2011, markets for the supply of agricultural inputs (seeds, fertilizers, crop protection products, farm implements and machines, etc.) have been completely liberalized. Thus, the production, procurement, and distribution of inputs has been left in the hands of the private sector operators. At the same time, the subsidy on fertilizers has been increased from 25 percent to 50 percent. In order to ensure that farmers directly benefit from the subsidy and have unrestricted access to the private-sector supplied inputs, the federal government initiated the Growth Enhancement Support (GES) scheme, through which input subsidies are channeled to small-scale farmers across the country through an electronic wallet system. With unique voucher numbers that are delivered to their phones, farmers redeem their input subsidy allocation from accredited agrodealers. It is expected that this scheme will improve agricultural input distribution and marketing. In addition, it should provide incentives to encourage actors along the fertilizer value chain to work together towards the common purpose of improving agricultural productivity, household food security, and incomes. The specific policy objectives of the GES are to:

1. Target 5 million farmers annually for 4 years for the delivery of agricultural inputs on their mobile phones;
2. Provide direct support to farmers to enable them to procure agricultural inputs at affordable prices, at the right time, and at the right place;
3. Increase productivity of farmers across country through increased use of fertilizer—increasing application rates from 13kg/ha to 50kg/ha; and
4. Transform the role of government from direct procurement and distribution of fertilizer to a facilitator of procurement, a regulator of fertilizer quality, and a catalyst of active private sector participation in the fertilizer value chain.

At the inception of the GES in 2012, the input subsidy rates were 100 percent for seeds (rice and maize) and 50 percent for other inputs such as fertilizer, veterinary inputs (vaccines, medicines), breeding stock (chicken, pigs, cattle), and fishery inputs (outboard engines, nets, water testing kits, fingerlings, and feed).

Agrodealers and input suppliers have a role to play in the procurement and distribution of these inputs to the farmers, while commercial banks are expected to provide the required financing. Many of the commercial banks did not respond favorably to this GSS-related financing opportunity in 2012, demonstrating, rather, their usual pessimism about agricultural

lending and distrust of government in ensuring effective implementation of policy incentives. The situation however, improved subsequently as government expedited actions on the implementation of NIRSAL. In 2013, NIRSAL acted as the transaction adviser to FMARD on the ₦60 billion GES financing, for which global borrowing terms were negotiated with banks on behalf of agrodealers across the country. The key terms of the transactions included: borrower equity contribution of 10 percent, NIRSAL credit guarantee of 75 percent (inclusive of principal and interest accrued therein), maximum interest rate of 18 percent (including NIRSAL fees of 1.00 percent). Part of the negotiated lending incentives were that collateral should be limited to warehouse inventory or warehouse receipts, which should be monitored by supply chain managers under the GES. The loan period was scheduled to coincide with the duration of the planting season. For instance, for the wet season input supply, the loan issued in March should be fully repaid by September. Another incentive is the provision of a 50 percent interest rate subsidy to be applied on the actual interest paid by agrodealers participating in the GES scheme.

3. ANALYSIS OF COMMERCIAL BANKS' RESPONSE TO GOVERNMENT'S FINANCIAL STIMULUS FOR AGRICULTURAL LENDING

The injection by government of capital into the banking sector through CACS in 2009 and the introduction of NIRSAL in 2011 represent the most fundamental policy initiatives by the Nigerian government to encourage commercial banks to expand inflows of credit to the agricultural sector. This section examines the design and implementation of CACS, through which the financial stimulus was provided to the banking sector, and that of NIRSAL, through which incentives were provide to address agricultural lending risks. The performance of these initiatives and the response of commercial banks are also analyzed.

3.1 Design and Implementation of the Commercial Agriculture Credit Scheme

As part of its developmental role, CBN, in collaboration with FMARD, established CACS in 2009 to provide finance for the country's agricultural value chains (production, processing, storage, and marketing of agricultural commodities). Increased production arising from the intervention were expected to moderate inflationary pressures and assist the Central Bank to achieve its goal of price stability in the country. The primary objectives of CACS are to

1. Fast-track the development of the agricultural sector of the Nigerian economy by providing credit facilities to large-scale commercial farmers at single digit interest rates,
2. Enhance national food security by increasing food supply and effecting lower agricultural produce prices, thereby promoting low food inflation,
3. Reduce the cost of credit in agricultural production to enable farmers exploit the untapped potentials of the sector, and
4. Increase output, generate employment, diversify Nigeria's revenue base, raise the level of foreign exchange earnings, and provide inputs for manufacturing and processing on a sustainable basis.

The scheme, which is a sub-component of the federal government's Commercial Agriculture Development Program, is financed through a ₦200 billion bond raised by the Debt Management Office. Loans to eligible entities under CACS are disbursed at a maximum interest of 9 percent. The costs of the subsidy arising on all loans granted at this stipulated rate relative to prevailing interest rates on commercial credit and the administrative expenses of the scheme are borne by CBN. The Central Bank and FMARD jointly ensure that the scheme is implemented successfully through a Project Steering Committee, chaired by the Minister of Agriculture, whose members include the Governor of CBN, a representative of the Federal Ministry of Finance, a representative of commercial farmers, and the Programme Coordinator of the Commercial Agriculture Development Programme. The day-to-day implementation of CACS is undertaken by a Technical Implementation Committee, that is chaired by the Director of the Development Finance Department at CBN.

CACS operated through the allocation of two tranches of ₦100 billion each. The first ran from May to December 2009, while the second tranche commenced in February 2010. By 2012, 19 commercial banks were participating in CACS. Nonetheless, the disbursement of the funds has lagged; implying that repayment may even drag beyond the expected time frame for the scheme.

Lending under CACS covers key stages of the agricultural value chain beginning from the supply of farm inputs to the production of tree and arable crops, livestock, and aquaculture. It also covers processing such as feed mills development, threshing, and other forms of transmutation for value addition, as well as the storage of commodities and inputs, and

the marketing of agricultural commodities. The guidelines issued for the operation of the scheme define two types of commercial agricultural enterprises. First, any farm or agro-based enterprise with agricultural assets (excluding land) of not less than ₦100 million are considered large-scale commercial enterprises. To qualify for financing under CACS, such enterprises should demonstrate prospects of growing their assets to ₦250 million within the next three years. Secondly, medium-scale commercial enterprises have at least ₦50 million in assets and, in order to qualify for support under the scheme, should show prospect to grow to ₦150 million in the next three years. Against loans provided with a maximum interest rate of 9 percent, participating banks are to request from borrowers acceptable collaterals in line with their banking operations. The loans have a maximum duration of seven years with a moratorium period on repayment based on the gestation period of the enterprise. There is also provision for working capital facility of one year which can be rolled over as the need arises. According to its original design, CACS was to last for a period of seven years; but the terminal date was extended in 2014 from 2016 to 2025 by the committee of governors of the CBN.

RESPONSE OF BANKS TO CACS INITIATIVE

Commercial banks are positively disposed to the incentives provided under CACS and are willing to explore the opportunities it opens up to them. CACS is a source of additional income for the banks and affords them the opportunity to actively participate in the ATA in promoting commercial agriculture enterprises in the country. CACS is an initiative that affords the banks an opportunity to offer customers in the agricultural low interest loans, while not putting pressure on the bank's balance sheet. This helps improve their liquidity. The scheme provides long-term funding to enable banks to offer loans on seven-year terms to support agricultural infrastructural development and the acquisition of agricultural capital items. The focus of the scheme is on medium and large-scale agricultural enterprises which have the capacity to borrow from banks and where are organized to employ good management practices to efficiently utilize the funds. The agricultural enterprises are in a position to comply with collateral and other requirements of the banks. Furthermore, the low interest rates makes it attractive to the agricultural enterprises. Borrowing under the scheme is a cheaper option for the targeted enterprises than seeking financing through other channels. This is also of interest to the banks since, due to CACS, their clients operate with lower costs and higher returns and, in consequence, are empowered to meet their repayment obligations.

The banks have shown favorable responses to CACS by increasing their lending to agriculture since CBN launched the scheme. In general, the banks stated five reasons for why the scheme has proved successful.

1. Transparent process. The implementation of the scheme has been directed at the real players in the agricultural sector in line with the guidelines of the scheme. Open release of the CACS implementation guidelines to commercial banks by the CBN has been helpful in bridging communication gaps and generating better understanding of the scheme among stakeholders.
2. Timeliness of operations. Although some banks complain about delays in processing loan applications, others feel that the operation and turn-around-time for credit processing and disbursement by CBN officials have been encouraging and contributed to the scheme's success.
3. Rule enforcement. The guidelines of the scheme provide clear instructions on the loan application, disbursement, monitoring, and collection processes. CBN enforces strict compliance with the implementation guidelines. Many of the commercial banks judged the strict adherence by CBN to auditing, monitoring, and evaluating the enterprises of the borrowers as highly commendable.
4. Effective monitoring. The emphasis on verification and monitoring of the projects benefiting under CACS is particularly considered to be a very good initiative.
5. Adequate funding. The provision of liquidity to fund lending at interest rates of 9 percent is attractive to both the banks and the scheme's beneficiaries. Overall, the ability of CBN to absorb the subsidy on the interest rate under CACS is an overarching source of attraction to the scheme by participating banks.

PERFORMANCE OF CACS

Data from CBN show that by the end of 2012 a sum of ₦199 billion has been disbursed for 269 projects. These consisted of 239 private and 30 state government projects. Under CACS, each state government can borrow up to ₦1.0 billion for on-lending to small-scale farmers. To date, however, not all the states have considered it necessary to take advantage of this provision of the scheme. Nonetheless, the overall impact of the scheme on the flow of credit from commercial banks to agriculture is likely to be positive, especially judging by the rising trend in the share of agriculture in commercial banks' overall credit portfolios by key sectors of the economy (Fig. 3.1). The share of agriculture rose from 1.4 percent in 2009 to

3.9 percent in 2012. This positive trend is not due to CACS alone, but, according to Olomola and Gyimah-Brempong (2014), is a reflection of all agricultural credit intervention schemes and government incentives to lenders. These schemes include the Agricultural Credit Guarantee Scheme, the Self-Help Group Linkage Banking, the Trust Fund Model to Enhance Agricultural Credit Supply, the Interest-rate Drawback Programme (IDP), and the Agricultural Credit Support Scheme (ACSS), all introduced at different periods by CBN.

Figure 3.1—Share of key sectors in credit provided by Nigerian commercial banks, 2006-2012

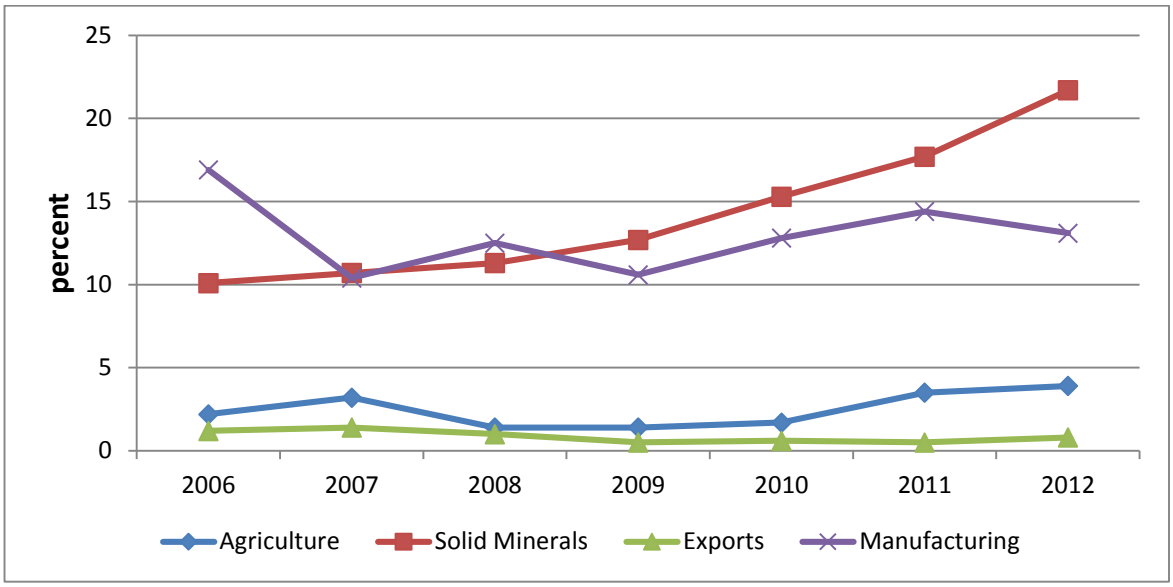


Table 3.1—Loan application rejection rates under the Commercial Agriculture Credit Scheme, 2010

Banks	Private			State		
	Number submitted	Number approved	Rejection rate (%)	Number submitted	Number approved	Rejection rate (%)
Access Bank Nigeria Plc	5	4	20	0	1	-100
Diamond Bank Nigeria Plc	0	0	0	0	0	0
Ecobank Nigeria Plc	0	0	0	0	0	0
Equatorial Trust Bank Plc	0	0	0	0	0	0
Fidelity Bank Plc	1	1	0	4	3	25
First Bank of Nigeria Plc	207	25	88	4	0	100
First City Monument Bank Plc	0	0	0	0	0	0
First Inland Bank Plc	0	0	0	0	0	0
Guaranty Trust Bank Plc	7	6	14	0	0	0
Intercontinental Bank Plc	0	0	0	0	0	0
Nigeria International Bank Plc	0	0	0	0	0	0
Oceanic Bank International Plc	1	1	0	0	0	0
Platinum Habib Bank Plc	0	0	0	0	0	0
Skye Bank Plc	6	3	50	0	0	0
Spring Bank Plc	0	0	0	0	0	0
Stanbic – IBTC Bank Plc	3	3	0	0	0	0
Standard Chartered Bank Nigeria Plc	0	0	0	0	0	0
Sterling Bank Plc	0	0	0	0	0	0
Union Bank Plc	8	8	0	3	4	-33
United Bank for Africa Plc	97	25	74	18	7	61
Unity Bank Plc	4	3	25	0	0	0
Wema Bank Plc	0	0	0	0	0	0
Zenith Bank Plc	8	6	25	3	4	-33
Total	**347**	**85**	**76**	**32**	**19**	**41**

Source: CBN Department of Development Finance monthly report of activities, various issues

There are positive trends in terms of demand and supply of credit and in understanding of implementation procedures of CACS. These all have led to a rising trend in funds release by CBN and loan disbursement by commercial banks. This understanding is evidenced by the reduction in the rejection of loan applications by the commercial banks. By the end of 2010, 76 percent of loan applications from the private sector were rejected. By the end of 2012, however, the number of loan applications had increased and the rejection rate had declined to 52 percent (Tables 3.1 and 3.2).

Table 3.2—Loan application rejection rates under the Commercial Agriculture Credit Scheme, 2012

	Private			State		
Bank	Number submitted	Number approved	Rejection rate (%)	Number submitted	Number approved	Rejection rate (%)
Access Bank of Nigeria Plc	10	10	0	1	1	0
Citibank (NIB) Plc	2	2	0	0	0	0
Diamond Bank Nigeria Plc	12	12	0	0	0	0
Ecobank Nigeria Plc	7	6	14	0	0	0
Enterprise Bank	3	3	0	0	0	0
Equatorial Trust Bank Plc	0	0	0	0	0	0
Fidelity Bank Plc	3	3	0	5	5	0
Fin Bank Plc	0	0	0	0	0	0
First Bank of Nigeria Plc	223	56	75	4	4	0
First City Monument Bank Plc	7	7	0	0	0	0
Guaranty Trust Bank Plc	8	8	0	1	1	0
Mainstreet Bank (AfriBank)	1	1	0	0	0	0
Keystone Bank	1	1	0	0	0	0
Skye Bank Plc	10	7	30	0	0	0
Stanbic – IBTC Bank Plc	23	23	0	0	0	0
Standard Chartered Bank Nigeria Plc	0	0	0	0	0	0
Sterling Bank Plc	10	10	0	2	0	100
Union Bank Plc`	15	15	0	6	5	17
United Bank for Africa Plc	99	26	74	18	9	50
Unity Bank Plc	21	21	0	0	0	0
Wema Bank Plc	4	4	0	0	0	0
Zenith Bank Plc	13	13	0	5	5	0
Total	**472**	**228**	**52**	**42**	**30**	**29**

Source: CBN Department of Development Finance monthly report of activities, various issues

The drop in loan application rejection rates is associated with the rising number of participating banks and a substantial increase in the volume of loans. The number of participating banks rose from only 2 in 2009, to 11 in 2010, to 19 in 2012, and to 20 in 2014. Three banks, United Bank for Africa, Zenith Bank and First Bank of Nigeria, in that order, have dominated the loan market under CACS, based on the share of cumulative loans disbursed in 2010, 2012, and 2014. Cumulative loans disbursed stood at ₦96.8 billion in 2010. This increased to ₦198.2 billion in 2012, and to ₦237.0 billion in 2014 (Table 3.3). Of these loans, the percentage share of the three leading banks stood at 60, 46 and 46 percent in 2010, 2012, and 2014, respectively, with the United Bank for Africa being the leader during the period (Table 3.4). In their response to the stimulus provided by government, the banks have demonstrated a clear preference for lending to the private sector, particularly to large-scale producers. Their hesitation to lend to the state governments for on-lending to small-scale farmers is evident in the fact that only five banks lent to them in 2010 and eight banks in 2012, whereas the number of commercial banks which lent to the large-scale private borrowers increased from 11 to 19 during the same period. Small-scale farmers faced discrimination from both the banks and the states who are supposed to serve as the on-lenders. As at 2014, not all 36 states in the country have availed themselves of the opportunity to borrow under CACS for on-lending to farmers' cooperatives. The limited coverage of smallholders under CACS is not an operational aberration; indeed it is in compliance with the design of the scheme.

Table 3.3—Cumulative funds released by commercial banks to clients, 2010, 2012, and 2014, ₦ billions

Bank	2010			2012			2014	
	Private	States	Total	Private	States	Total	Overall	Loans, (number)
Access Bank of Nigeria Plc	4.2	1.0	5.2	9.3	1.0	10.3	12.6	15
Citibank (NIB) Plc	-	-	-	3.0	-	3.0	3.0	2
Diamond Bank Nigeria Plc	-	-	-	2.7	-	2.7	3.0	13
Ecobank Nigeria Plc	-	-	-	3.7	-	3.7	4.5	8
Enterprise Bank Plc	-	-	-	0.4	-	0.4	0.5	6
Fidelity Bank Plc	0.5	3.0	3.5	2.6	6.0	8.6	10.8	8
First Bank of Nigeria Plc	9.1	-	9.1	18.2	4.0	22.2	27.1	70
First City Monument Bank Plc	-	-	-	4.7	-	4.7	5.4	11
Guaranty Trust Bank Plc	4.2	-	4.2	4.8	1.0	5.8	5.8	9
Heritage Bank Plc	-	-	-	-	-	-	1.2	2
Keystone Bank	-	-	-	0.2	-	0.2	2.1	3
Mainstreet Bank (AfriBank)	-	-	-	2.0	-	2.0	2.0	1
Oceanic Bank International Plc	2.0	-	2.0	-	-	-	-	-
Skye Bank Plc	6.0	-	6.0	9.2	-	9.2	9.6	7
Stanbic – IBTC Bank Plc	1.3	-	1.3	11.7	-	11.7	14.3	29
Sterling Bank Plc	-	-	-	4.8	2.0	6.8	12.3	18
Union Bank Plc	7.4	3.5	10.9	12.4	5.5	17.9	18.2	21
United Bank for Africa Plc	28.7	6.5	35.2	32.3	9.5	41.8	41.8	35
Unity Bank Plc	5.5	-	5.5	19.5	-	19.5	22.3	24
Wema Bank Plc	-	-	-	0.7	-	0.7	1.1	6
Zenith Bank Plc	9.8	4.0	13.8	18.0	9.0	27.0	39.1	25
Total	**78.8**	**18.0**	**96.8**	**160.2**	**38.0**	**198.2**	**237.0**	**313**

Source: CBN monthly economic reports, various issues

Table 3.4—Proportion of all loans disbursed by leading commercial banks under CACS

Bank	2010	2012	2014
United Bank for Africa Plc	36.3	21.1	17.6
Zenith Bank Plc	14.3	13.6	16.5
First Bank of Nigeria Plc	9.4	11.2	11.4
Sub-total	60.0	45.9	45.6
Others	39.9	54.1	54.4
Total	100.0	100.0	100.0

Source: Author's computation using data from CBN economic reports, various issues

The emphasis on large-scale enterprises right from the design stage is an agreement between government and the banking sector to favor less risky borrowers. There are three issues arising from this bias to the design of CACS:

1. This inherent approach of carrying coal to Newcastle is inadvisable. The large enterprises targeted under CACS have the wherewithal to borrow from the banking sector on a commercial, unsubsidized basis and are in a position to take advantage of a variety of financing options. In contrast, smallholder farmers with limited options for acquiring credit and little savings, are neglected by the scheme and left alone to fend for themselves. Without adequate financing, such farmers can neither expand their scale of production nor attain a higher level of commercialization.
2. Growth in Nigeria's agricultural sector at the time CACS was introduced derived principally from the contribution of smallholders. To the extent that their contribution is not considered in determining the targeting of the lending stimulus, it will be difficult to achieve significant transformation of the agricultural sector through which the less resource endowed participants in the value chain will be empowered to play active roles.
3. Ignoring small-scale farmers in the order of lending priority under CACS undermines their participation in value chain development. It is not surprising that only discrete financing of value chains has been going on under CACS. Inadequate attention has been given to the development of critical links and governance of the agricultural value chains,

including the empowerment of the primary producers to be active players in them. Table 3.5 presents the structure of loans financed by the banks with regard to specific stages of the value chain. The cumulative total number of loans rose from 228 in 2012 to 274 in 2014 (August), while the loans disbursed increased from N160.2 billion to N190.3 billion accordingly. Although production loans represents about 50 percent in each of the sub-periods, there is no financing link apparent between the production stage and any of the other stages of the value chain. Moreover, production by small-scale farmers is left out of this financing structure.

Table 3.5—Structure of cumulative projects financed by value chain

Project category	2012	2014
Input supply		
-number	1	1
-value (₦ billion)	0.6	0.6
-number share (%)	0.4	0.4
-value share (%)	0.3	0.3
Production		
-number	112	139
-value (₦ billion)	55.5	66.2
-number share (%)	49.1	50.7
-value share (%)	34.6	34.8
Processing		
-number	87	105
-value (₦ billion)	82.4	95.4
-number share (%)	39.2	38.6
-value share (%)	51.5	50.2
Marketing		
-number	16	15
-value (₦ billion)	15.3	20.1
-number share (%)	7.0	5.5
-value share (%)	9.6	10.6
Storage		
-number	12	13
-value (₦ billion)	6.4	8.0
-number share (%)	5.6	4.7
-value share (%)	4.0	4.2
Total number	**228**	**274**
Total value	**160.2**	**190.3**

Source: CBN monthly economic reports, various issues

RESULTS OF THE ECONOMETRIC ANALYSIS OF THE IMPACT OF CACS

The interest of the commercial banks in agricultural lending has been stimulated under CACS in terms of increased participation and rising loan disbursement levels. The commercial banks have taken advantage of the opportunity given to them to rely on off-balance sheet resources through CACS to engage in agricultural credit transactions in view of expected financial benefits. It is, therefore, expected that agricultural lending should expand due to the financial stimulus provided by the government. This section presents the results of an econometric analysis which seeks to determine the impact of the CACS on credit supply to the agricultural sector. The study hypothesized that agricultural lending is significantly affected by interest rate, size of banks (proxied by total assets), capital ratio, liquidity ratio, number of bank branches, age of bank, and level of borrowers' risk. It was further hypothesized that lending would be higher as a result of the financial stimulus provided by the government with the instrumentality of CACS and that the stimulus would have significant impact on the risk-taking behavior of commercial banks as regards lending to agriculture. A random-effects Tobit regression was estimated to test these hypotheses. The results of the agricultural loan supply equation are presented in Table 3.6, while the elasticity coefficients for the regressors in the equation are presented in Table 3.7.

The results show that agricultural loan supply depends significantly on bank's size, age, borrowers' risk, and government's financial stimulus under CACS. The interest rate (lending rate), commercial banks' capital ratio, liquidity ratio, and number of branches are not statistically significant predictors of agricultural loan supply. The estimated coefficient for interest rate has the expected negative sign, but is not statistically significant. As expected, the coefficients for capital ratio, liquidity ratio, and bank branches have positive signs indicating that higher levels of these variables are associated with higher

probabilities of loan supply. However, as the coefficients are not statistically different from zero, they mean little if anything as far as agricultural lending in Nigeria during the period was concerned.

Table 3.6—Results of estimated random-effects Tobit model for agricultural lending

Variable	Coefficients	Standard Error	P[|Z|>z]
Interest rate	-3.816	3.478	0.273
CACS dummy	2.2921***	0.754	0.000
Total assets	0.145*	0.086	0.093
Capital ratio	0.380	0.294	0.196
Liquidity ratio	0.414	0.448	0.356
Bank branch	0.146	0.226	0.517
Age of bank	-0.633**	0.286	0.027
Loan risk	0.489***	0.147	0.001
CACS*Loan risk	-0.004***	0.002	0.093
Constant	14.011**	7.240	0.053
Log likelihood = -69.941; Wald chi^2 (9) = 35.36; Prob > chi^2 = 0.000			
/sigma_u	7.44e-18	0.334	1.000
/sigma_e	1.454	0.165	0.000
Rho	2.62e-35	2.35e-18	
Likelihood-ratio test of sigma_u=0: Chi^2 (01) = 0.00 Prob > Chi^2 = 1.000			

Source: Authors' computation
Note: ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level

Table 3.7—Estimated elasticity coefficients of the variables in the random-effects Tobit model

Variable	Coefficients	Standard Error	P[|Z|>z]
Interest rate	-1.077	0.982	0.273
CACS dummy	0.320***	0.083	0.000
Total assets	0.219*	0.131	0.093
Capital ratio	-1.116	0.089	0.196
Liquidity ratio	-0.064	0.069	0.356
Bank branch	0.099	0.152	0.517
Age of bank	-0.244**	0.110	0.027
Loan risk	0.021***	0.006	0.001
CACS*Loan risk	-0.030***	0.017	0.094

Source: Authors' computation
Note: ***significant at the 1% level, **significant at the 5% level, *significant at the 10% level

The signs of the coefficients for the size of the bank in total assets and the CACS dummy variable are positive and significant. These results show that loan supply is higher for banks that are bigger in size and that it is significantly higher under CACS than before; thus underpinning the positive supply effect of government's financial stimulus. However, older banks show a decrease in loan supply – an increase of one percent in the age of a bank is associated with a reduction of 0.24 percent in loan supply. In contrast, a similar increase in the total assets of a bank is associated with an increase of 0.22 percent in loan supply (Table 3.7).

An interaction term was included in the model to determine whether banks' disposition to risk taking in agricultural lending has been affected by the government's financial stimulus. The coefficient of loan risk is positive and highly significant. The coefficient of the interaction term is also significant, but the sign is negative. This shows that CACS has significantly affected the risk-taking behavior of commercial banks. The results shows that prior to CACS rising borrowers' risk was associated with higher probability of loan supply, whereas under CACS risk-taking by commercial banks is dampened —as borrowers' risk increases, the probability of loan supply decreases. As shown in Table 3.7, an increase of one percent in borrowers' risk level is associated with an increase of 2.0 percent in loan supply, whereas under CACS it is associated with a decline of 3.0 percent in loan supply. Under CACS, the amount of loan supplied to agricultural enterprises tends to be higher for borrowers with lower risk levels than for borrowers with higher risk levels. This finding does not support the theoretical

predictions of the risk behavior of lenders in developed countries. In a recent study, Duchin and Sosyura (2012) found that capital support by government led to higher risk taking by banks. They found that increases in risk taking were more pronounced at larger banks which were more likely to receive continued government protection.

Our findings are broadly consistent with theories that predict an increase in risk taking incentives in response to government protection (Berger et al. 2011; Black and Hazelwood, 2013; Bhattacharyya and Purnanandam, 2011). This is due mainly to lax monitoring and weak regulatory regime. This is understandable because the 2008-2009 financial crises in many developed countries was actually due to very weak bank regulation in the face of generous policy incentives to encourage lending to various groups of consumers. The fact that the findings of this study are at variance with what obtains in developed economies is not surprising because the lower risk-taking attitude of commercial banks in the case of Nigeria is a reflection of the enforcement of the CACS implementation guidelines and extant regulatory policies by CBN. Although commercial banks find it difficult to adhere strictly to CACS operational guidelines, recalcitrant banks have not been spared from sanctions by CBN. CBN applies sanctions against any infringement from time to time to serve as a deterrent to recalcitrant banks. For instance, in May 2014, one of the banks was fined a sum of ₦353 million for infraction of the CACS guidelines in one month. In point of fact, the cumulative penalty charged the banks that have violated CACS guidelines from inception of the scheme in 2009 to May 2014 stood at ₦1.2 billion (CBN, 2014). The effects of these punitive actions are capable of attenuating the inclination of banks towards risk taking. This explanation is consistent with recent studies which suggest that disciplinary actions and penalties imposed by regulators tend to reduce banks' risk-taking (Duchin and Sosyura, 2012; Berger, et al., 2011).

3.2 Design and Implementation of NIRSAL

The federal government initiated NIRSAL, the Nigeria Incentive-based Risk Sharing for Agricultural Lending scheme, in July 2011. It is an agricultural finance framework to address the problem of low levels of agricultural financing in the country. NIRSAL, unlike previous schemes which encouraged banks to lend without a clear strategy to the entire spectrum of agricultural value chains, emphasizes a value chain approach to agricultural lending and insists on covering all categories of producers– small, medium, and large-scale. The implementation process of NIRSAL generally has been on track. The organization has now developed into a new non-bank financial institution. It was established with active support and partnership of the Bankers Committee and FMARD. It is fully financed by CBN and charged with enabling banks to lend with confidence to cohesive and complete agricultural value chains and to offer technical assistance and reasonable incentives to banks reduce risk in their lending.

To achieve these objectives, CBN provided an initial start-up investment of ₦75 billion to facilitate the implementation of the five pillars that seek to "de-risk" agricultural lending and lower the associated transaction costs. The allocation of this investment is as follows:

1. Risk-sharing facility (₦45 billion): To break down banks' perception that agriculture is a high-risk sector, NIRSAL is designed to share their losses on agricultural loans by issuing them a credit risk guarantee cover.
2. Insurance facility (₦4.5 billion): The scheme expands the insurance products available for agricultural lending from the current coverage to help reduce credit risks and increase lending across the entire value chain.
3. Technical assistance facility (₦9 billion). NIRSAL is building the capacity of banks to lend sustainably to agriculture, equipping agricultural producers with knowledge and skill to borrow, to use their loans judiciously, to regard agriculture as a business, and to produce high quality goods for the market.
4. Holistic bank rating mechanism (₦1.5 billion): This mechanism rates banks based on the effectiveness of their agricultural lending and on their social impact in doing so.
5. Bank incentives mechanism (N15 billion): This offers banks additional incentives to build their long-term capabilities to lend to agriculture. NIRSAL is both a financier and an adviser to agribusiness firms.

Whereas agribusiness firms follow standard financial procedures to access loans, including compliance with collateral requirements, the lending conditions for farmers have specialized requirements. These focus on cooperative societies and on cooperation with NIRSAL with a view to coordinating commercial activities along agricultural value chains. For instance, a production cooperative organizes its members into clusters of farmers. Each cooperative is required to appoint a business manager to oversee its affairs. The cooperative also signs agreement with a consortium of input suppliers for bulk purchase of modern inputs for its members. It organizes transportation to deliver inputs to members and to collect produce

from farms to a designated warehouse and temporarily hold the produce after harvest until prices improve. At the same time, the cooperative signs an agreement with a network of processors. The exact processing capacity required can be estimated based on average processing speed per day. The agreement will include financial terms – for example, price per ton or bag processed – with the processor acting as a service provider. Depending on the type of crop, state inspectors will be present at the site of each processing plant to supervise grading and packaging. The cooperative also signs sales agreements with end-users of the processed crops, both domestic and foreign buyers. Based on price and volume agreed, under these arrangements the business manager can offer members a price for their produce that reflects the value of the processed commodity rather than the primary commodity in its raw form.

The various agreements are part of the documentation required by commercial banks to enable them provide necessary financial support. Other documents required are a registration certificate for the cooperative from a state or federal agency; a letter of application from the cooperative's senior management stating the purpose of borrowing; an itemized list of cooperative members who are borrowing; and the exact amount each wants to borrow, including contact addresses and signatures. The cooperative also must submit a copy of its bank account statements for the past six months. It is not necessary that the cooperative operate an account at the bank from which it intends to borrow. Also, the cooperative should provide a copy of a sales agreement indicating a pre-planned schedule of sales to a buyer or buyers, with volumes tallying with planned production for the particular production season. Also required is a joint and several guarantee from cooperatives' executives which may be signed nationally or at state level. This potentially will reduce collateral requirements. There is provision for a 10 percent equity contribution or negotiated collateral if the guarantee is considered inadequate. In addition, state monitoring and recovery teams are to be formed to oversee village level registration and monitor activities while crops are still being tendered on the field. As harvest approaches, the team is to liaise with farmers and designated processor to avoid side-selling to middle men.

NIRSAL provides cash as an interest drawback to farmers who pay back their loans on schedule. The level of subsidy can be negotiated, but it ranges from 30 to 50 percent. The lending guidelines also provide for a trust fund to act as collateral for borrowing by cooperative members in a state. The fund will remain in a CBN account for NIRSAL and an accounting entry taken against it to secure the borrowing of funds by farmers. Cash will only be spent or called in event of a loss, just as NIRSAL's guarantee then will be called.

PERFORMANCE OF NIRSAL

NIRSAL covers all crop and livestock activities with an emphasis on three key functions: (1) credit guarantees on loans made to agribusiness investors, farmers, companies and other related participants; (2) investment advice to farmer groups and value chains actors; and (3) strategic advice to state governments, cities, and local governments on how to create an enabling business environment for agriculture. The scheme has made considerable achievements in all three areas. Notable achievements include providing multiple "financing guidelines" to support bank capacity building and lending in areas such as cassava production, cassava grits equipment, cassava chip exporting, and procuring and using small-scale rice paddy cultivation and mechanization equipment. NIRSAL also launched multiple "value chain fixing" initiatives based on client requests. Examples of these efforts include the Lagos ₦30 billion aquaculture project that aims to capture 25 percent of Nigerian fresh fish consumption and the ₦48 billion tomato paste production and processing domestication project. Value chain advisory services are also being provided for various states under NIRSAL in respect of rice, cassava, tomato, beef, leather, maize, soybeans, cotton, jatropha, pineapples, oil palm, and wheat value chains. NIRSAL is also engaging with key companies in value chains to build closer linkages between such companies and suppliers, including smallholder farmers. A number of companies with existing relationships to previous CBN financing schemes like CACS are potential clients.

As regards credit guarantees, NIRSAL has issued a total of fifty three CRG covers valued at ₦19.3 billion from 2012 to 2014 (August). In addition eighteen GES CRGs valued at ₦3.9 billion were approved through five banks under the 2014 NIRSAL-GES framework; thus bringing the cumulative disbursement under NIRSAL GES Scheme to ₦32.9 billion for 158 projects. Progress is also being made in respect to the interest draw back (IDB) which is another key component of NIRSAL's design. IDB claims are being paid quarterly in respect of each of the projects. Cumulatively, 25 projects have benefited under IDB (as of August, 2014) and the total IDB claims paid stood at ₦206 million. With regard to the GES, the total IDB paid by 2014 stood at ₦199 million for 73 projects.

BANKS' RESPONSE TO NIRSAL

Even though NIRSAL provides incentives to attract the banking sector to lend to agriculture, it took considerable time and effort on the part of the scheme organizers and FMARD to persuade commercial banks to take advantage of NIRSAL

lending opportunities and incentives. In 2012, when the banks were expected to finance agrodealers and input suppliers, many of the banks remained unconvinced about the prospects of NIRSAL, and so the level of financing was quite low. By 2013, there was a change of attitude as it became evident that government was determined to implement its ATA and that the banking sector has a lot to gain from financing the supply of inputs ─ a critical component which would require investments running into billions of naira. Only a few of the banks took tangible steps in 2012 and early in 2013 to articulate procedures and actualize lending based on the value chain approach enshrined in NIRSAL operations. During the first and second quarters of 2013, the views of the banks were sought for this study regarding the steps they have taken so far. The responses of a few of them are shown in Table 3.8.

Table 3.8—Commercial banks' initial responses to NIRSAL, 2012-2013

Bank	Initial responses to NIRSAL's operations
Access Bank of Nigeria Plc	Since the inception of NIRSAL, Access Bank has processed and obtained a CRG in favor of its customers worth N1.44 Billion. Internally, the bank is looking at boosting the number of customers covered under the NIRSAL scheme. Has popularized the scheme with staff and customers to boost NIRSAL related credits.
Citibank (NIB) Plc	Created awareness with clients that participate in agricultural value chains. In discussions with different clients on the added value of accessing agricultural funding via NIRSAL.
Diamond Bank Plc	Participated in a broad range of value chains and at different stages in those value chains – cotton, palm oil, rice, cassava, input supply, and mechanization. Has not funded any of the transactions yet due to initial challenges experienced, but are designing value chain financing products that are based on NIRSAL guarantee.
Eco Bank Plc	Eco Bank's loan portfolio has grown as a result of the various incentives provided under NIRSAL, particularly the CRG and IDP. The CRG has enabled the bank to finance some customers that would not have financed otherwise because they did not have collateral. The IDP is strictly for the customer's benefit, as it reduces their cost of borrowing and enhances their profitability.
First Bank Plc	Aligns product scheme with the credit risk guarantee benefit of NIRSAL, adopting the interest rebate in the scheme to offer loans to agricultural enterprises at lower interest rate and leverage on the scheme to provide funding for input procurement and distribution and tractor acquisition for Tractor Hiring Service Providers.
Guaranty Trust Bank Plc	Has embarked on creating awareness about NIRSAL to all account and credit officers and agriculture value chains practitioners.

Source: Authors' compilation based on 2013 survey of commercial banks.

Due to the sluggish response to the NIRSAL scheme by the commercial banks, the arrangement that they would finance the agrodealers in 2012 to enable them to purchase fertilizer from the suppliers failed. This led to the disruption of fertilizer distribution in many states. With a lack of finance from the bank, agrodealers could not purchase fertilizer from suppliers and many registered farmers could not be supplied (Olomola, 2014). The situation changed in 2013 as many input supply companies embraced the GES scheme. This is because companies had confirmed the government's commitment to pay according to the schedule, and in part due to the clearly laid-down lending framework and incentives agreed upon by the participating banks and NIRSAL Thus, for the 2013 GES, 13 commercial banks granted loans to the agrodealers to finance their input distribution across the country. Nonetheless, a substantial part of the ₦19.6 billion loan came from only six banks namely (Table 3.9). This is an indication that, despite the availability of financing incentives, only a few banks have the capacity to cope with the requirements of agricultural lending in accordance with NIRSAL guidelines.

The fact that the response in 2013 was much better than in 2012 also shows that some of the banks are becoming more interested in agricultural lending and are making efforts to develop the necessary capacity to do so. The rising interest of commercial banks in NIRSAL is due to better understanding of its operations by the banking sector, plus the incentives offered, such as improved guarantee cover and provision for interest rate rebates. The credit guarantee varies according to specific stages of the value chain. The stages covered are (1) primary production of agricultural products with 75 percent of 12.5 percent of first loss or 10 percent face value, (2) agroprocessing which has a guarantee cover of 50 percent of 12.5 percent of first loss or 7.5 percent of face value and (3) other stages, including logistics, which attract a guarantee cover of 30 percent of 12.5 percent of first loss or 5 percent of face value. The categories of borrowers that can benefit from this incentive are companies, large individual entrepreneurs, and cooperatives. NIRSAL commits to providing interest rate rebate of 40 percent to those who repay loans on time for primary production, 25 percent for processors, and 20 percent for others. For borrowers (farmers) who are not connected to specific market outlets, NIRSAL works out modalities to train them to become suppliers to processors. NIRSAL also commits to working with value chains to provide improved technical assistance to farmers directly or via industry associations.

Table 3.9—Commercial banks' loans to agrodealers during the 2013 Growth Enhancement Support scheme

Bank	Amount loaned (₦ millions)	Percent of total
Mainstreet Bank Ltd	6,568	33.5
Zenith Bank	4,000	20.4
United Bank for Africa Plc	3,851	19.6
Sterling Bank Plc	1,623	8.3
First Bank of Nigeria Plc	1,104	5.6
Enterprise Bank Ltd	934	4.8
Unity Bank Plc	500	2.3
Access Bank Plc	326	1.7
Union Bank Plc	270	1.3
Jaiz Bank Plc	157	0.8
Diamond Bank Plc	155	0.8
Wema Bank Plc	109	0.5
First City Monument Bank Plc	15	0.1
Total	19,612	100.0

Source: NIRSAL, Abuja

4. SUMMARY, POLICY IMPLICATIONS, AND CONCLUSIONS

The past five years have witnessed renewed efforts by the federal government of Nigeria to boost agricultural financing through injection of capital into the banking sector and policy reforms to reduce agricultural lending risks and thereby expand credit supply to the sector. This study examines the financial innovations taken and commercial banks' response to the policy incentives. This section presents highlights of the main findings, policy recommendations, and conclusions.

4.1 Main findings

This study has examined the design and implementation of financial initiatives to encourage commercial banks to expand their lending to agriculture in Nigeria with an emphasis on capital infusions by government through the instrumentality of CACS and incentives provided under NIRSAL to reduce lending risk. With regard to the CACS specifically, there are positive trends in loan requests and the degree of understanding of implementation procedures, leading to a rising trend in funds release by the CBN and loan disbursement by the commercial banks. The number of participating banks rose from only 2 in 2009 to 20 in 2014. Three banks, United Bank for Africa, Zenith Bank and First Bank of Nigeria in that order, have dominated the loan market under the CACS. The development of critical links, governance of value chains, and empowerment of primary producers to be active players have been downplayed. Although production loans represents about 50 percent of total loans disbursed annually, there is no financing link between the production stage and any of the other stages in the value chains. More troubling, offering loans to support production by small-scale farmers generally is left out of this financing structure. However, this is more of a policy design defect rather than an implementation challenge.

The econometric analysis of the effects of governments' capital infusion into the banking sector on agricultural lending reveals that lending depends significantly on bank's size, age, borrowers' risk, and government's financial stimulus under CACS. Although rising capitalization ratios, bank liquidity, and bank branching have a direct relationship to credit origination, their effects are not statistically significant. The results show that loan supply is higher for banks that are younger and bigger in size (in terms of total assets) and that loan supply is significantly higher under CACS than before. This implies that financial stimulus through CACS has elicited a significantly positive response from the commercial banks. Specifically, CACS has significantly affected the risk-taking behavior of commercial banks. The study shows that prior to CACS, higher borrowers' risk was associated with higher probability of loan supply, whereas under CACS risk-taking by commercial banks has been moderated – the probability of credit origination tends to decrease as borrowers' risk increases.

The introduction of NIRSAL in 2011 has bridged some of the policy gaps inherent in CACS. NIRSAL places greater emphasis on value chain financing and reduction in agricultural lending risks. The organization has issued a total of 53 credit risk guarantee (CRG) covers valued at ₦19.3 billion from 2012 to 2014 (August). Moreover, cumulative disbursement under

NIRSAL GES scheme stood at ₦32.9 billion for 158 projects by August 2014. Progress is also being made in respect of the interest draw back (IDB), which is another key component of NIRSAL's mandate. Cumulatively, 25 projects have benefited under the IDB till date (August 2014) and total IDB claims paid stood at ₦206 million. With regard to the GES, the total IDB paid by 2014 stood at ₦199 million for 73 projects.

4.2 Policy Recommendations

CACS has changed the configuration of agricultural financing in Nigeria; focusing on large enterprises and demonstrating how off-balance sheet resources can be mobilized and deployed by banks to provide loans to targeted enterprises. In view of its positive impact on loan origination, stakeholders have clamored for its extension from its 2016 terminal date to 2025. Granting the extension by the committee of governors is consistent with the positive response of the banking sector to the scheme as a source of cheap loanable funds. If the scheme is to be sustained until the new terminal date, CBN should relentlessly monitor the use of the funds and ensure strict compliance with the guidelines. There is also the need to re-orient the lending focus from discrete financing of separate stages of value chains to an integrated system of value chain financing. This will ensure that the agricultural lending portfolios of the commercial banks synchronize with the emerging value chain approach to agricultural development in the country and the business orientation of the ongoing ATA.

Moreover, the small-scale component of CACS which is coming through on lending by state governments should be revamped and re-directed towards a more efficient delivery system. The limit of ₦1.0 billion which can be granted to a state government should be increased to ensure meaningful coverage of small-scale farmers within a state. This is important because the needs of such farmers for credit to acquire modern inputs and sophisticated equipment is much more now than it was the case before the ATA was instituted.

It is important for CBN and the commercial banks to give due priority to the recovery of the CACS loans in order not to deplete the loanable funds and to ensure that sufficient funds will be available to sustain the scheme until 2025, as recently approved. What is more, there is need to give prominent attention to the issue of risk in agricultural lending in its totality. This should include systemic risks, borrowers' risks, and bank risks. Specific actions to address the problem are detailed below.

STRENGTHEN NIRSAL AND MAKE ITS IMPLEMENTATION MORE EFFECTIVE

NIRSAL should intensify efforts to conclude the guidelines for its operations, especially in key areas such as credit guarantee, value chain financing, and capacity building for stakeholders. Once the guidelines are finalized, communication to stakeholders should be a priority to generate awareness and motivate stakeholders for full compliance. Participating banks should be strictly monitored and appropriate sanctions designed and imposed against infractions of the guidelines. The CRG should be fine-tuned in such a way as to prevent moral hazard among beneficiaries. To this end, loan limits should be set for the purpose of application of guarantee cover. If the loan amount to which guarantee is applicable is not pegged, it will be difficult to operate the CRG program on a sustainable basis.

There is need to improve on administrative procedures for settlement of claims relating to CRG and IDB. In this regard, NIRSAL should articulate approval limits for some categories of officers. This will lead to significant improvements in the turnaround time for issuing CRG certificates and payment of the IDB in line with the NIRSAL guidelines.

Commercial banks should be involved in capacity building for improved performance under NIRSAL. There should be proper identification of skill gaps and technological innovations to be adopted in order fast track service delivery and achieve the desired results for the scheme. The credit needs of various actors along agricultural commodity value chains should be articulated and necessary training support provided at the various stages of the value chains. For instance, small-scale farmers need to work in large homogenous groups linked to recognized buyers and processors under very clear contract terms. Such farmers' groups need to be trained on basic business skills, proper farm management practices, and access to input and output markets. In addition, institutional capacity building is required – farmers' groups need to be trained on how to establish appropriate governance structures that make them dependable, suitable, and acceptable to the emerging systems of value chain financing.

NIRSAL should identify suitable firms to engage in relevant contract farming models that can be integrated into suitable value chain financing framework with commercial banks (Olomola, 2010; Olomola, 2014). One possibility is for the banks to disburse loans through the resource-providing agribusiness firms involved with farmers and expect repayment from the beneficiary farmers to be made through the same firm. Alternatively the bank can disburse loans directly to the farmers' groups while the agribusiness firm provides collateral or some form of credit risk guarantee on behalf of the farmers' groups.

WAYS OF STRENGTHENING BANKS' PARTICIPATION IN VALUE CHAIN FINANCING

The participation of commercial banks in value chain financing can be strengthened through strict enforcement of operational guidelines and sanctioning of erring participants. NIRSAL should have zero tolerance for willful loan default and, therefore, should give priority to result-based monitoring of agencies and borrowers involved in the financing of the agricultural value chains. NIRSAL should spearhead the entrenchment of appropriate legislations for effective operationalization of its guidelines and regulatory authority and for timely discharge of responsibilities and obligations of stakeholders. Enabling laws and regulatory actions are required in the following areas:

1. Law on warehousing receipt system such that receipts can be traded and applied for the purpose of value chain financing by commercial banks.
2. Enabling laws to govern contracts between out-growers and buyers to make them binding and bankable.
3. Provision of special prudential guideline incentives unique to agricultural loans.
4. Liberalization of agricultural insurance to create more products and strengthen its capacity to serve an agricultural sector that is undergoing rapid transformation.

WAREHOUSE RECEIPT FINANCE

Warehouse receipt finance (WRF) is currently gaining ground in many African countries. It is available in Tanzania, South Africa, and Zambia, for example, and covers crops such as rice, maize, coffee, cashew, sesame, and pepper. Its adoption in Nigeria is relevant in view of the wide gap between agricultural credit demand and supply and the various forms of credit rationing faced by small-scale farmers (Olomola and Gyimah-Brempong, 2014). Adopting WRF will further boost ongoing policy initiatives to encourage the banking sector to lend to agriculture and should assist in extending credit to small-scale farmers. The challenge of inadequate collateral, which is the heart of the discrimination against the small-scale farmers by commercial banks, can be adequately addressed through WRF because it is more or less a self-liquidating loan product. Warehouse receipts serve as liquid collateral assets which the banks can easily manage and monitor.

Warehouse receipts are "documents issued by warehouse operators as evidence that specified commodities, of stated quantity and quality, have been deposited at particular locations by named depositors". The form of the receipt depends on local regulations, and consists in some legal systems of two documents: a certificate of title and a certificate of pledge. For instance in Latin America where the system has been operated successfully for a long time, the documents used are, first, the warehouse receipt itself, confirming that the produce was received in storage; and, second, a warrant or chattel bond that represents ownership of the crop. Typically, a farmer delivers grains to the (certified and secured) warehouse for storage. The farmer subsequently hands the warehouse receipt to the bank as collateral for credit — often 70 to 80 percent of the value of the commodity in storage. Upon selling the commodity, the farmer notifies the bank, which obtains repayment from the buyer in return for the warehouse receipt. The buyer now presents the receipt to the warehouse to retrieve the product. After deducting the loan amount and interest, the bank transfers the balance to the farmer. For its successful operation in Nigeria, all the value chains currently being developed under ATA should be accommodated in the WRF system. To do so, the legislative, legal, and business environments must be strengthened. Specifically, there should be legislative actions to legalize warehouse receipts as documents of title, to confer ownership rights to products in storage, and to permit transferability of title documents.

WAYS OF IMPROVING LENDERS' AND BORROWERS' SKILLS

As mentioned earlier, all stakeholders in the value chain financing system require some form of capacity building. This can be achieved in various ways, including the following:

1. Training of bank staff in agricultural financing products, project assessment and monitoring.
2. Provision of support by commercial banks to clients to enable them develop bankable proposals.
3. Appointment by commercial banks of well-trained graduates of various disciplines of agriculture as agricultural credit officers in various locations in the country to provide technical inputs into agricultural finance.
4. Commercial banks should sponsor their agricultural credit officers and relevant desk officers to participate in agricultural shows, workshops, etc. to familiarize them with agricultural development issues.

5. Commercial banks should develop communication materials and undertake regular portfolio review to demonstrate the potentials of agriculture as a profitable venture.

4.3 Conclusions

The financial innovations introduced in Nigeria under CACS and NIRSAL have led to an increase in lending to agriculture. We have found that commercial banks do not increase agricultural lending due to higher leverage, greater liquidity, and wider network of branches. Rather, they do so because of access to off-balance sheet resources provided by government which brightens their prospects for increased profitability and risk reduction. Capital infusion by the government through the instrumentality of CACS has a significant effect on agricultural lending. Other determinants of loan origination are bank size, age and borrowers' risk. The CACS stimulus has a significant impact on the risk of originated loans. After CACS, commercial banks granted less risky loans than before. The amount of originated loans granted to risky borrowers tended to be lower following the CACS stimulus compared with the situation before CACS. This we attributed to regulatory interventions by CBN, including intensive monitoring and enforcement of operational guidelines as well as imposition of sanctions against infractions.

It is important to stress that the policy actions required to expand lending to agriculture should not be limited to the banking and agricultural sectors alone. Complementary fiscal and monetary policy actions are required. There is need for increased public spending on the development of infrastructural facilities, including agricultural storage, transportation, marketing, and processing facilities so as to reduce post-harvest losses and enhance productivity. This in turn should lead to an improvement in competitiveness and repayment capacity of agricultural enterprises. Alternative sources of funds, such as the pension fund, accumulated funds in CACS repayment account, sugar levy account, etc., should be tapped to sustain CACS over the extended period from 2016 to 2025.

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