Volume Title: African Successes, Volume III: Modernization and Development

Volume Author/Editor: Sebastian Edwards, Simon Johnson, and David N. Weil, editors

Volume Publisher: University of Chicago Press

Volume ISBNs: 978-0-226-31572-0 (cloth)

Volume URL: http://www.nber.org/books/afri14-3

Conference Dates: December 11–12, 2009; July 18–20, 2010; August 3–5, 2011

Publication Date: September 2016

Chapter Title: Were the Nigerian Banking Reforms of 2005 a Success … and for the Poor?

Chapter Author(s): Lisa D. Cook

Chapter URL: http://www.nber.org/chapters/c13361

Chapter pages in book: (p. 157 – 182)

4

Were the Nigerian Banking Reforms of 2005 a Success . . . and for the Poor?

Lisa D. Cook

The recent global financial crisis provides the latest evidence that resolving banking crises can be costly in any country. Losses typically represent a larger share of income in developing countries than in industrialized countries. For example, between 1987 and 1993, Norway, Sweden, and Finland had bank insolvency crises whose resolution cost 4.0, 6.4, and 8.0 percent of gross domestic product (GDP). At approximately the same time similar crises in Mauritania, Senegal, and Cote d'Ivoire cost 15.0, 17.0, and 25.0 percent of GDP.[1] Such potential losses provide a compelling reason for economists to identify, and for policymakers to consider, policies to prevent such episodes in the poorest countries. A recent literature has focused on analyzing which policies promote the development, efficiency, corporate governance, and accessibility of banks (e.g., Barth, Caprio, and Levine 2001, 2008; Abiad and Mody 2005; Beck, Demirgüç-Kunt, and Levine 2009). Another literature makes the further link between finance and growth (e.g., King and Levine 1993a, 1993b; Levine and Zervos 1998; Rajan and Zingales 1998). Given that African countries have lagged other countries in adopting bank reforms,

Lisa D. Cook is associate professor of economics and international relations at Michigan State University.

I am grateful to Magnus Adiele, Bode Agusto, Edna Ishaya, Eric Naivasha, Doyin Salami, and bankers and banking officials in Nigeria for their helpful discussions and Yaw Ansu and Benno Ndulu for their helpful comments. I also benefited from comments from seminar participants at the Central Bank of Nigeria, Michigan State University, and the National Bureau of Economic Research and able research assistance from Chaleampong Kongcharoen, Suhyeon Nam, and Íñigo Verduzco. Funding from the NBER Africa Project is gratefully acknowledged. A substantial part of the chapter was written while visiting the National Poverty Center at the University of Michigan, and its support is also acknowledged. For acknowledgments, sources of research support, and disclosure of the author's or authors' material financial relationships, if any, please see http://www.nber.org/chapters/c13361.ack.

1. Caprio and Klingebiel (1996, 13–19).

knowing whether the findings from cross-country evidence are relevant is difficult. Nigeria's banking reform of 2005 provides a natural experiment in which to test the efficacy of best practices in Africa. Did the banking regulation and supervision reforms of 2005 make the financial system more sound? Did they contribute to development, efficiency, and accessibility of the banking system? If so, which mechanisms were most important? Data from Nigeria's experiment are combined with new survey data to address these questions. I find that in the immediate aftermath of the policy changes, the financial system was more stable than it was previously. While it is found that development and efficiency have increased, the successes in introducing more small savers and borrowers to the formal-banking sector have been more limited. Seventy-four percent of Nigerian residents remain unbanked, including 70 percent or more of business owners and traders. This has large implications with respect to changing the incentives and constraints facing most economic agents in Nigeria.

4.1 The Nigerian Bank Reform of 2005

The 2005 Nigerian banking reform was a watershed event. To put its significant changes in historical perspective, I will review the principal institutional features of Nigerian banking preceding reform.

4.1.1 Recent Reform Efforts

A nationalization effort in the 1970s and 1980s left Nigeria's banks subject to extensive state intervention and control. Before Nigeria initiated its Structural Adjustment Program (SAP) in 1986, the banking sector was plagued by problems characteristic of many African and poor countries at the time. Direct intervention by the state was accomplished using a number of instruments, including credit and interest-rate controls and restrictions on entry. There were few banks—twenty-nine commercial banks and twelve merchant banks—for a population of 84 million. There was little activity outside the government sector, as it accounted for 80 percent of commercial banks' and 45 percent of merchant banks' assets. There was little competition, entry, and exit. The financial liberalization program accompanying SAP was designed to address these issues and to extend lending and other banking services. Specifically, its measures included reducing barriers to entry, liberalization of lending and savings rates, introducing an interbank foreign exchange market, deregulating interbank lending, and privatizing a number of banks and financial institutions. The success of this reform was mixed. The number of market participants increased. Eight times the number of banks entered annually from 1987 to 1990 than had in the previous decade. Figure 4.1 displays this exponential growth in each sector of the banking industry. Yet much of the resulting banking activity was not concentrated on lending to the private sector and households, but on exploiting new arbitrage

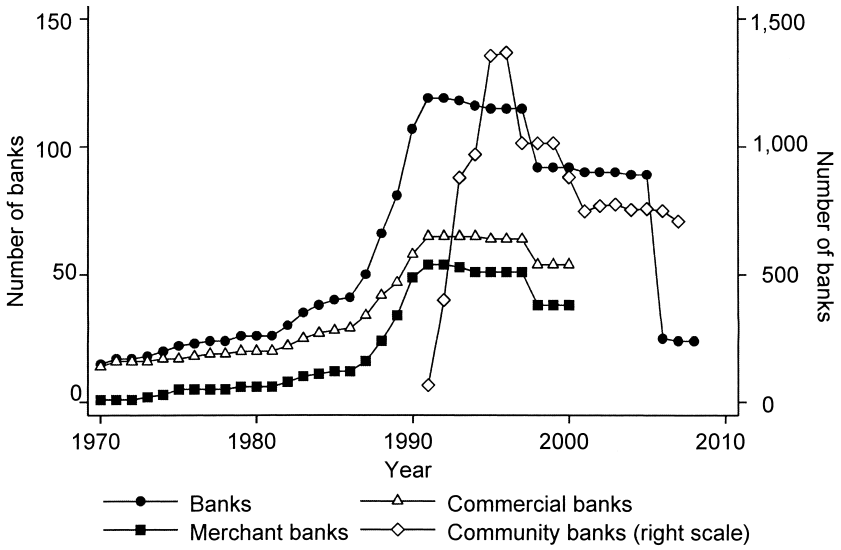

Fig. 4.1 Community/microfinance banks, commercial banks, and merchant banks, 1970–2008

Source: CBN *Statistical Bulletin 2007*.

Notes: After 2000, universal banking was introduced in Nigeria, which eliminated the classification into merchant and commercial banks.

opportunities in foreign-exchange operations and money market interest-rate spreads.[2] If consistent with cross-country evidence, this outcome of reform would limit the breadth and depth of the banking sector.[3]

The number of banks peaked at 120 in 1991. Simultaneously, banks began accumulating nonperforming loans at an increasing rate, and the share of distressed banks doubled from 26 percent in 1991 to 52 percent in 1995. There was a bank run in 1993, and the banking sector entered a period of sustained crisis.[4] To address bank insolvency, minimum capital requirements were increased in 1988 and 1989. They were increased again in 1991, and other measures were implemented to enhance the regulatory and supervisory powers of the Central Bank of Nigeria (CBN) in the Banks and Other Financial Institutions Law of 1991. The licenses of twenty-six banks were revoked in 1998, and, by 2002, only 16 percent of banks were insolvent.

2. See Lewis and Stein (1997) for a detailed account of this reform episode.

3. See, for example, Beck and Fuchs (2004).

4. While most researchers agree that expansionary fiscal and monetary policy contributed to financial collapse in the 1990s, alternative views of the principal causes of the banking crisis have emerged in the literature. Beck, Cull, and Jerome (2005) attribute the crisis to flaws in the liberalization agenda that resulted in rent-seeking behavior by banks and a concomitant shift in resources from the real economy to banks. Lewis and Stein (1997) emphasize the bad political and institutional setting in which reforms were undertaken in explaining the crisis.

Nonetheless, this was still high by international standards, as was the ratio of nonperforming loans to the total, 25 percent in 2002. New policies and institutional changes in 2001 were aimed at increasing the stability of the banking system. In addition, to increase the flow of credit to and speed up the development of the private sector, universal banking was adopted in 2001, and the distinction between commercial and merchant banking disappeared.

4.1.2 The Need for Reform

While relatively more credit flowed to the private sector, the fundamental issue of insolvency had not been addressed by the 2001 law nor by incremental increases in capital requirements and still threatened the system. By 2004, many banks were undercapitalized, despite having met minimum capital requirements of roughly $7.5 million for existing banks and $15 million for new banks. Shareholders' funds had been reduced by operating losses, further contributing to insolvency. More than one-third of all banks were "marginal" or "unsound" according to CBN criteria.[5] Twenty-eight percent of bank loans were nonperforming.[6] While bank concentration was falling, it was still high, with ten banks accounting for half the deposits and assets of the banking system (see figure 4.2). Other conditions prevailing in 2004 that threatened bank development, bank efficiency, corporate governance, and accessibility were overreliance on public-sector deposits, weak corporate governance, and substantial insider lending that resulted in large portfolios of nonperforming loans, and neglect of small and medium-sized savers.[7] Many of the problems in the larger banking sector were reflected in the microfinance sector among community banks, the latest institution designed to address the lack of access to finance among firms, households, and the rural poor.[8] An additional threat to the market for microfinance was regulatory arbitrage, because operators could select to which body they would report and, by extension, by whom they would be regulated—the central bank or the National Board of Community Banks, which was appointed by the Ministry of Finance.[9]

In July of 2004, the governor of CBN, Charles Soludo, announced an ambitious thirteen-point reform agenda to comprehensively reform the

5. CBN (2006).

6. Ibid. These data for the year ending on September 30, 2005.

7. See Soludo (2004) for a complete description of prevailing conditions.

8. A number of experiments had been implemented in the past three decades to address rural and poor savers and borrowers, including the People's Bank of Nigeria, which offered soft loans, and mandated rural bank branching for commercial banks. Cook (2004) reviews a number of these schemes. See FAO (2004) and Isern et al. (2009) for additional assessments of the performance of community banks and other microfinance institutions.

9. Cook (2004) cites regulatory arbitrage as a major threat to the community-banking sector. The problem of uneven reporting, late reporting, nonreporting, and the resulting lack of transparency were common to the entire financial system.

banking system. The centerpiece of the proposed changes was a more than tenfold increase in the minimum capital requirement for banks from NGN 2 billion to NGN 25 billion (roughly $190 million). Meeting the new capital standard could only be accomplished by mergers, acquisitions, or injections of new capital. This type of bank consolidation was a novel feature of reform, because there were no such restrictions in earlier rounds of raising capital requirements and because there was little history of mergers and acquisitions in the Nigerian banking sector.[10] Other major elements of the reform program were a phased withdrawal of public-sector funds from Nigerian banks, adoption of a rule-based regulatory framework that was more risk focused, and restructuring of the information-gathering and reporting mechanism to ensure greater compliance and transparency. Importantly, while insider lending had been identified as a major problem, corporate governance was on the list of reforms, and a Code of Corporate Governance was enacted by the CBN for banks in March 2006, corporate governance was given less attention relative to bank consolidation and higher capital requirements.[11] The central bank also anticipated higher capital requirements (NGN 20 million) and greater supervision and separation of the microfinance sector, since community banks were found to have inadequate capital relative to lending risk and weak institutional capacity. In the remainder of the chapter, I will assess the effects of these regulatory changes in the banking sector.

4.1.3 Outcomes

The bank-consolidation process was largely complete as mandated by the end of 2005. All but four banks participated in mergers and acquisitions. Fourteen banks that failed to sufficiently increase their capital base lost their licenses, and twenty-five banks remained, as is reported in figure 4.1. Community banks were also asked to increase their capital base and convert to microfinance banks (MFBs) starting in 2006. By the end of 2008, 603 of the 757 community banks had converted, applications for new banks were received, and the number of MFBs totaled 840.[12] Some larger banks also acquired community banks. A number of auxiliary institutions were created or invited to participate in the microfinance support network, including the MFB Development Fund, the National Microfinance Consultative Committee, the Association for Microfinance Institutions, a credit reference bureau, credit-rating agencies, and programs for deposit insurance. Before

10. Failed banks during the 1998 reform were liquidated by the Nigerian Deposit Insurance Corporation, much in the way the S&L crisis was resolved in the United States in the late 1980s and 1990s. See Ezeoha (2007) for an historical account.

11. See Ogunleye (2003) for an analysis of the relation between bank failures and corporate governance in the 1990s.

12. CBN (2008). Not all community banks converted to MFBs due to insolvency and subsequent license revocation.

embarking on graphical and empirical analysis, I describe the data collected and their sources.

4.2 Data

Bank- and system-level data sets are constructed for analysis. Bank-level data are collected from the financial statements of individual banks and from *Statistical Bulletins*, *Banking Supervision Annual Reports*, and *Annual Reports* of CBN for various years. Banks are required to report balance sheet and profit data to CBN, and a subset of these data are reported in these publications. Given the small number of banks, each can be tracked over time, and a panel data set is constructed for the years 2001 to 2008. System-wide data are gleaned from several sources for the years 1990 to 2008. In addition to the aforementioned CBN sources, aggregate data have been collected from Beck, Demirgüç-Kunt, and Levine (2009), Beck et al. (2009), *International Financial Statistics 2010* (IMF 2010), and the Economic Intelligence Unit (EIU). Data on consumer finance are taken from the 2008 national survey of 25,000 households conducted by Enhancing Financial Innovation & Access (EFinA). Data on the Nigerian banking system are also extracted from three rounds of surveys of bank regulatory and supervisory authorities to identify features of bank regulation, supervision, and structure found in Beck, Demirgüç-Kunt, and Levine (2000).

4.3 Graphical Evidence

Before moving on to the formal empirical tests, in some cases mere inspection of the data will be sufficient to convey general patterns in the data. Graphical evidence is presented below and is followed by regression analysis.

4.3.1 Major Stated Objectives

Figure 4.2 shows that the ratio of distressed banks to total dropped from 14 percent in 2005 to 4 percent in 2006 to 0 percent in 2007, and that the share of nonperforming loans relative to total loans and advances fell from 28 percent in 2004 to 8 percent in 2008. As anticipated, there is less government intervention in the banking sector, whether measured by deposits or ownership of government securities (figure 4.3), and the level of bank concentration, typically a measure of competitiveness in a banking system, had fallen by the end of 2008 (figure 4.4). Credit to the public sector fell as credit to the private sector rose (figure 4.5). However, figure 4.6 shows that the ratio of bank credit to deposits has increased markedly since 2004, which means that banks must rely on other sources of funding, for example, capital markets, to support significantly higher lending activity. I return to this point below.

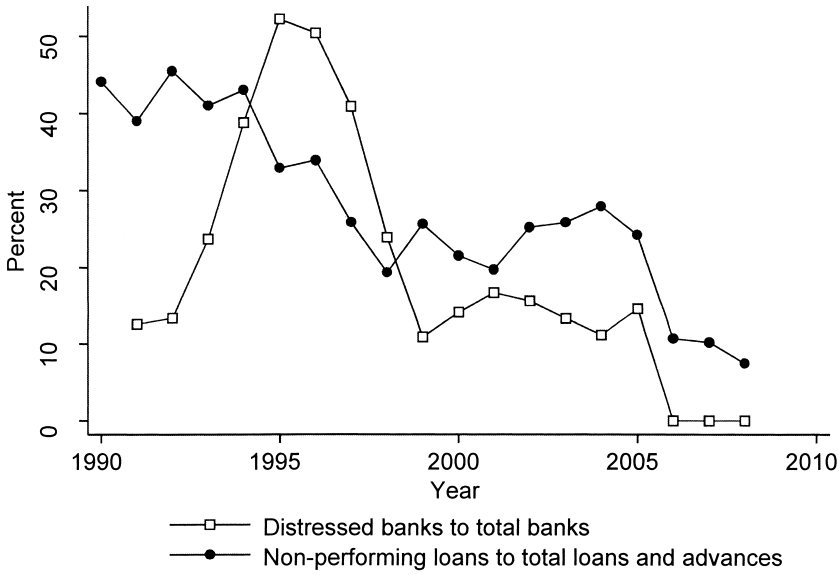

Fig. 4.2 Distressed banks and nonperforming loans, 1990–2008 (percent)

Source: For distressed banks: Author's calculation, CBN Statistical Bulletin 2007, and Onaolapo (2008); nonperforming loans, 2001–2008: Author's calculation, and CBN Banking Supervision Annual Reports 2007, 2005, 2008; nonperforming loans, 1990–2000: Alashi S. O. (2002) cited in Adegbite E O (2005).

Bank supervisors and banks were charged with taking greater account of risk. Data on capital adequacy, liquidity, and asset quality in table 4.1 demonstrate the extent to which this happened. Although the minimum capital adequacy ratio is 10 percent, most banks have significantly exceeded the prescribed ratio since 2005. The liquidity ratio increased by more than 50 percent before settling slightly above the 2005 ratio. In tandem with the decline in the share of nonperforming loans was a reduction in bad-debt provisioning from 27 percent of total loans and advances to 6 percent, which freed up resources for other uses. From the EIU index of banking risk, which reflects an evaluation of risk management and potential for crisis, risk has fallen sharply since the 2005 reforms, as can be seen in figure 4.4. Banks' reporting has increased, and relatively more data are available. Among MFBs, the share of nonreporting banks has declined from 82 percent in 2001 to 0 percent in 2008.[13] Using data from the Beck et al. survey, capital regulatory and official supervisory power indices were constructed as in Barth, Caprio, and Levine (2001). Higher levels of the index imply better positioning of the financial system with respect to initial and overall

13. CBN Statistical Bulletin (2009).

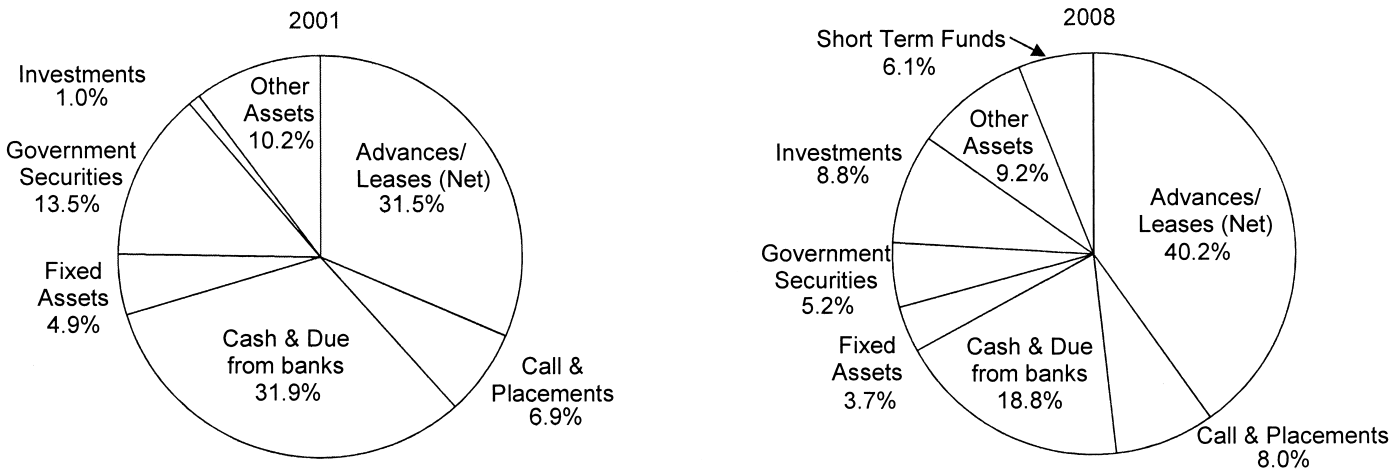

Fig. 4.3 Composition of banking system assets, 2001 and 2008
Source: CBN Annual Reports.

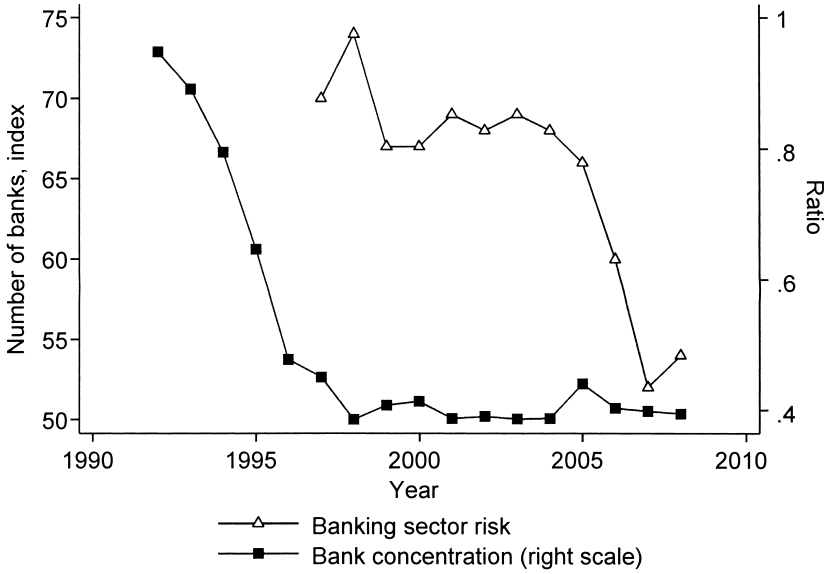

Fig. 4.4 Bank concentration and banking-sector risk, 1992–2008

Source: For bank concentration, Beck, Demirgüç-Kunt, and Levine (2009); banking-sector risk, EIU.

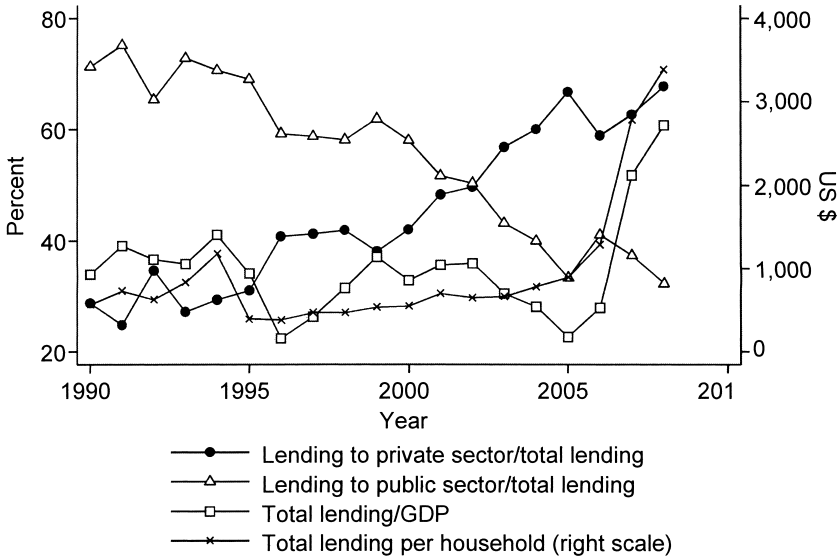

Fig. 4.5 Lending to public sector/total, lending to private sector/total, lending per income earner, lending per household, total lending/GDP, 1990–2008

Source: EIU.

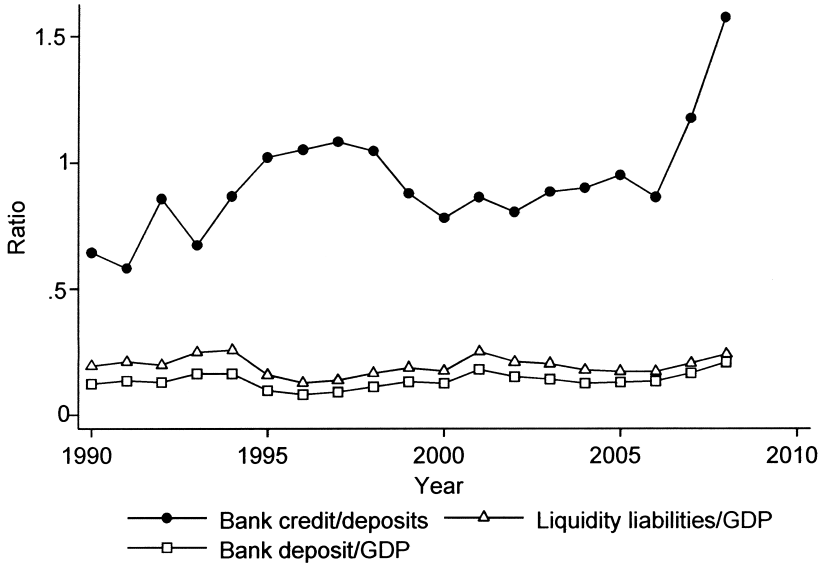

Fig. 4.6 Bank Credit/deposits, liquid liabilities/GDP, bank deposits/GDP, 1990–2008

Source: CBN Annual Reports.

Table 4.1 Financial soundness indicators, Nigerian banking system (2004–2008)

						2004–2008	
Indicator	2004	2005	2006	2007	2008	Average	S. D.
Capital adequacy							
Capital adequacy ratio	14.2	17.8	22.6	20.9	21.9	19.5	3.5
Liquidity							
Liquidity ratio	52.0	41.3	65.1	60.9	46.5	53.1	9.9
Aggregate credit to deposit ratio	74.0	66.6	65.1	70.9	70.9	69.5	3.6
Asset quality							
Nonperforming credits to total loans and advances	27.9	24.2	10.7	10.2	7.5	16.1	9.2
Bad-debt provision total loans and advances	22.6	19.1	6.3	8.1	6.1	12.5	7.8

Source: CBN Annual Reports 2004–2008.

Note: Capital adequacy ratio = (qualifying capital/risk-weighted assets) × 100. At least 50 percent of qualifying capital shall comprise paid-up capital and reserves. From January 2004, minimum capital adequacy ratio is statutorily set at 10 percent. Liquidity ratio = (total specified liquid assets/total current liabilities) × 100. Statutory minimum liquidity ratio was changed from 40 percent to 30 percent in 2008. Maximum recommended aggregate credit to deposit ratio is 80 percent.

capital stringency and official supervisory power. While the capital regulatory index was unchanged between 2000 and 2007, the index of supervisory power improved more than 10 percent between 2000 and 2007. This would be consistent with increases in the scope and depth of CBN's supervisory role stemming from the 2005 reforms.

4.3.2 Other Financial Indicators

With respect to bank development, financial deepening increased between 2004 and 2008, using a variety of measures. As in King and Levine (1993b), a broad measure of financial depth is the ratio of liquid liabilities (currency plus demand and interest-bearing liabilities of banks and other financial intermediaries) to GDP. This ratio fell initially and then rose from 2006. The M2/GDP nearly doubled from 19.8 percent to 38 percent, and credit to the private sector more than doubled from 13.2 percent to 33.5 percent.[14] Financial development may also be measured by the relative importance of deposit money banks assets to central bank assets. The ratio of deposit money bank assets to deposit money bank assets and central bank assets has increased from 0.83 in 2004 to 1.15 in 2008.[15]

How much better were Nigerian banks at intermediating society's savings into private-sector credits than before? Cross-country evidence (e.g., Beck and Fuchs 2004) shows that higher interest spreads are inversely related to credit to the private sector as a fraction of GDP. Figure 4.6 demonstrates that Nigerian banks are more efficient at intermediation than prior to 2005, as measured by bank credit to bank deposits. Figure 4.7 shows that they are more efficient by other measures, that is, by declining overhead costs as a fraction of total assets. There is mixed evidence on efficiency using data on net interest margin from the Beck and Demirgüç-Kunt (2004) series, which suggests that it has fallen, and the EIU series, which suggests that it is unchanged in figure 4.8.[16]

Are banks more profitable in the postreform years? Figure 4.7 indicates they were slightly more profitable in terms of return on assets and return on equity. More generally, these findings conform to cross-country evidence as well (e.g., Beck and Demirgüç-Kunt 2009). Returns on assets have decreased and then increased across countries. While returns on equity have converged to 15 percent in high- and middle-income countries, as in Nigeria, their variance is significantly higher in lower income countries, also as in Nigeria.

14. CBN Annual Reports 2000–2008.

15. While the explicit relation between financial development and growth is beyond the scope of this chapter, King and Levine (1993a, 1993b) and Levine, Loayza, and Beck (2000) show that financial development and growth are positively related.

16. Although not pictured here, data were collected on the bank cost-income ratio, overhead costs relative to gross revenues, between 1992 and 2008. These data also indicate that banks are more efficient, as the lowest levels in this range are 0.547 and 0.510 in 2007 and 2008, which reflected a downward trend starting most recently in 2003.

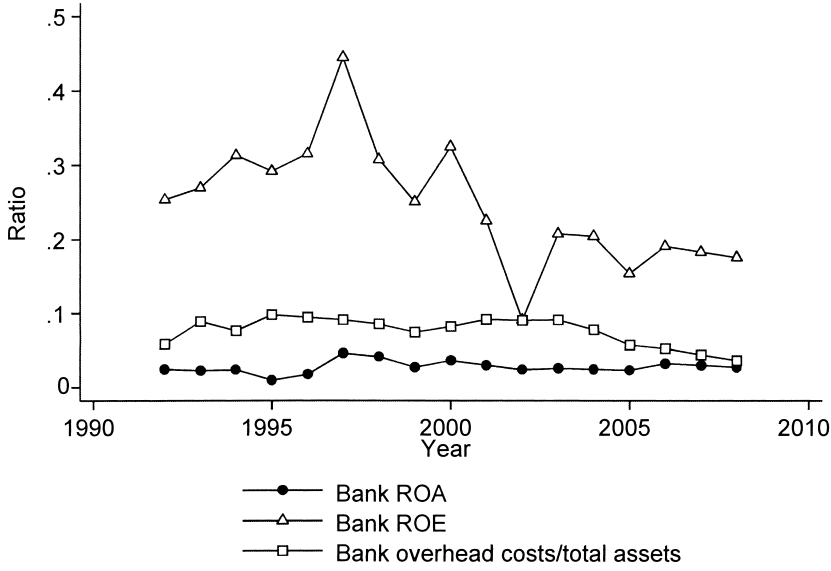

Fig. 4.7 Bank ROA, ROE, bank overhead costs/total assets, 1990–2008
Source: CBN Annual Reports.

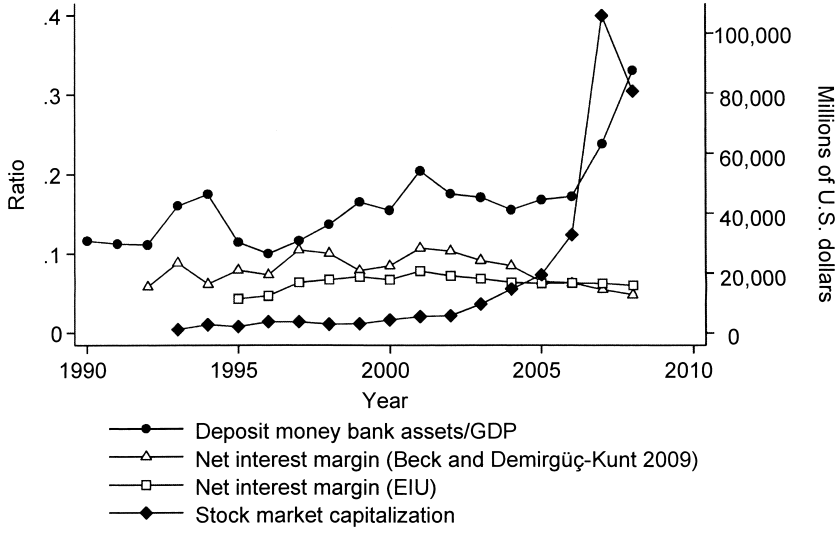

Fig. 4.8 Deposit money bank assets/GDP, net interest margin, 1990–2008
Source: **Beck (2004), CBN, and EIU.**

Table 4.2 **Characteristics of the banked and unbanked in Nigeria, 2008**

	Never banked	Previously banked	Currently banked
Gender			
Male	67	7	27
Female	82	3	15
Area			
Urban	54	7	39
Rural	82	4	14
Socioeconomic status			
AB	23	0	77
C1	7	3	91
C2	25	4	70
DE	81	5	13
Regular sources of income			
Salaries	23	5	71
Subsistence farming	88	4	8
Commercial farming	85	6	9
Trading of goods and services (nonfarming)	69	5	25
Money from family/friends	74	3	23
Own business (nonfarming)	71	6	23
Do not receive income	91	4	5

Source: FinScope/EFInA (2008).

Note: Calculation of socioeconomic status includes education, type of house, occupation, and ownership of household durables. Categories are roughly equivalent as follows: AB ≈ high income (0.4 percent of adult population); C1 ≈ upper-middle income (1.2 percent of adult population); C2 ≈ lower-middle income (11.2 percent of adult population); and DE ≈ low income (87.3 percent of adult population).

4.3.3 Microfinance Institutions

In tandem with activity in the larger banking sector, the MFBs' capital-to-asset ratio increased from 24 percent in 2003 to 30 percent in 2008 (see table 4.8). With respect to accessibility, MFBs have increased their lending relative to deposits from 59 percent in 1998 to 69 percent in 2008. However, according to a large national household survey conducted in 2008, large swathes of the population, including farmers, traders, owners of firms, and the poorest, remain without access to banking services. Results from analysis of these data appear in tables 4.2, 4.3, 4.4, 4.5, 4.6, and 4.7. More than three-quarters of respondents have had neither a savings nor a checking account. Two percent of respondents have ever had a loan from a community bank. In terms of loans to the rural population, 1.1 percent of the adult population has or once had a loan from MFBs compared to 0.7 percent from commercial banks.[17] Ninety-three percent of those in the sample prefer to receive cash as payment, and the share is 0.99 for business owners. Since these are

17. Author's calculation from EFInA (2008).

Table 4.3 Means of receiving income

	All	DE status	DE + C2 status	Own business	Own business and DE status	Own business and DE + C2 status
Cash	92.7	96.1	93.3	98.6	99.2	98.6
Cheque	1.0	0.7	0.9	0.7	0.5	0.7
Into bank account	6.3	3.2	5.7	0.6	0.3	0.6
Other	0.1	0.1	0.1	0.1	0.0	0.1

Source: Author's calculation from FinScope/EFInA (2008).

Note: Calculation of socioeconomic status includes education, type of house, occupation, and ownership of household durables. Categories are roughly equivalent as follows: C2 ≈ lower-middle income (11.2 percent of adult population) and DE ≈ low income (87.3 percent of adult population). Columns (2) to (4) are calculated from all sources of income. Columns (5) to (7) are calculated for people whose regular source of income is own business.

Table 4.4 Bank accounts and loan activity

	All	DE status	DE + C2 status	Own business	Own business and DE status	Own business and DE + C2 status
Never had savings account	76.1	83.3	77.1	73.5	80.5	74.3
Never had current account	89.3	93.6	90.2	89.4	93.6	90.3
Never had credit card	96.6	98.0	96.9	96.1	97.4	96.4
Never had loan from microfinance/ community bank	98.1	98.4	98.1	97.8	98.1	97.9
Currently have loan	6.8	6.5	6.6	9.3	9.2	9.2
Loan to start business (of those with loans currently)	22.7	23.6	23.2	29.4	30.7	29.7
Source of loan from commercial bank	10.0	5.8	9.9	3.9	0.6	3.5
Source of loan from microfinance/ community bank	4.3	3.9	4.4	1.4	0.5	1.4
Loan to expand business (of those with loans currently)	30.2	31.2	30.5	49.2	50.6	48.76
Source of loan from commercial bank	7.7	3.6	6.0	7.5	3.7	5.5
Source of loan from microfinance/ community bank	6.0	4.2	5.48	2.3	1.9	1.8

Source: Author's calculation from FinScope/EFInA (2008).

Note: Calculation of socioeconomic status includes education, type of house, occupation, and ownership of household durables. Categories are roughly equivalent as follows: C2 ≈ lower-middle income (11.2 percent of adult population) and DE ≈ low income (87.3 percent of adult population).

Table 4.5 Summary statistics

Variables	*N*	Mean	Std. dev.	Min.	Max.
Time series (1992–2008)					
Private credit/GDP	17	0.13	0.04	0.08	0.25
Output gap	17	–0.90	5.13	–11.13	4.81
Real GDP per capita (N, 2000 prices)	17	47,306	9,747	38,691	64,773
Nonperforming loans/total assets	17	0.13	0.05	0.03	0.19
Real interest rate (%)	17	–2.76	19.53	–52.60	14.34
Overhead cost/total assets	17	0.08	0.02	0.04	0.10
ROE	17	0.25	0.08	0.09	0.44
ROA	17	0.03	0.01	0.01	0.05
Interest spread (%)	17	12.21	4.39	1.66	20.70
Bank assets/GDP	17	0.17	0.05	0.10	0.33
Bank concentration	17	0.51	0.19	0.39	0.95
Liquidity assets/deposit	17	0.25	0.07	0.11	0.36
Equity (N million)	17	434,396	752,941	5,450	2,788,537
Loans/liabilities	17	0.37	0.08	0.19	0.49
Real treasury bill rate (%)	17	–9.46	20.18	–60.34	11.20
Inflation (%)	17	23.34	21.16	5.38	72.84
Change in industrial production index	16	0.01	0.04	–0.06	0.07
Net interest margin	17	0.08	0.02	0.05	0.11
Panel data (1992–2008)					
Provision of bad debt/loans and advances	174	0.11	0.09	0.01	0.47
Dummy for new or merged bank	176	0.74	0.44	0.00	1.00
Dummy for foreign-owned bank	176	0.20	0.40	0.00	1.00
(1993–2008)					
Provision of bad debt/loans and advances	150	0.11	0.10	0.01	0.47
Dummy for new or merged bank	150	0.75	0.44	0.00	1.00
Equity/lag of total assets	150	0.28	0.23	0.06	2.09
Dummy for foreign-owned bank	150	0.19	0.40	0.00	1.00

Source: For output gap: Author's calculation by HP-filter real GDP, IMF (2009) World Economic Outlook; real interest rate: Author's calculation from lending rate and CPI inflation, IMF (2010) IFS; inflation: Author's calculation, IMF (2010) IFS; private credit/GDP, overhead cost/total asset, ROE, ROA, interest spread, bank assets/GDP, bank concentration, net interest margin: Beck, Demirgüç-Kunt, and Levine (2009); nonperforming loan/total asset, provision of bad debt/loans and advances, new or merged bank, foreign-owned bank: CBN; liquidity assets/deposit, equity, loans/liability: Author's calculation, CBN, Statistical Bulletin. vol. 18 (Dec 2007) and Golden Jubilee Edition (Dec 2008); real GDP per capita: IMF (2009) World Economic Outlook; real Treasury bill rate, industrial production index: IMF (2010) IFS.

Table 4.6 Types of banks and bank account activity

Status	Banked	Own business + banked
Ever used large bank	94.2	93.1
Currently use large bank	96.3	95.7
Use large bank as main bank	96.9	96.2

Source: Author's calculation from EFInA (2008).

Note: "Banked" means that one has had any type of account at a bank.

Table 4.7 **Sources of loans**

Source	Borrower	Own business + borrower
Loan from large bank	8.4	6.0
Loan from small bank	4.9	3.7
Loan from other	86.8	90.3

Source: Author's calculation from EFInA (2008).
Note: Loans from "other" include pool/savings, employer, family, and friends.

Table 4.8 **Financial indicators, community and microfinance banks**

Indicators	2003	2004	2005	2006	2007	2008
Loans/assets	34.8	33.4	31.7	29.9	30.3	34.8
Capital/assets	24.4	24.0	22.3	23.0	28.9	30.2
Loans/deposits	55.1	53.3	50.9	48.5	55.6	69.9

Source: CBN Annual Report, 2003; CBN BSD, 2004, 2006, 2007, 2008.
Note: Data between 2003 and 2005 are for community banks. Data between 2006 and 2008 are for microfinance banks.

cross-section data, it is unclear whether over time small savers and earners have benefited from the recent reforms, but it is clear that most in Nigeria remain unconnected to formal means of saving and borrowing.

Some time-series data exist from other sources. The CBN reports that lending by MFBs to manufacturing, transportation, and communications has fallen dramatically as a share of the total, while the share of lending for trading activities has increased from 36 percent to 44 percent between 2001 and 2008. There are no data on lending to households, and it is unclear among sectors of economic activity which may be better for microenterprises and, by extension, poverty alleviation.[18] Nonetheless, given innovation and excess demand in transportation (e.g., "okada" motorbikes as a form of transportation) and communications (e.g., rapid increases in penetration of mobile phones), there may exist some missed opportunities among micro-enterprises.

Another indicator of access is the number of banks reporting significant investment in microfinance activities. In 2008, six large banks report having MFBs as subsidiaries or microfinance units in their banks, and four report investing in two MFBs, including Accion MFB Ltd.[19] In this instance, too, it is difficult to evaluate changes that may benefit the poor.

18. While manufacturing may be an obvious mechanism for raising employment, it is not obvious that microenterprises are the best candidates among other potential borrowers for credit extension, since many manufacturing activities depend on exploiting economies of scale.

19. Another MFB, AB MFB (Nig.) Ltd., is wholly owned by foreign interests, including two German non-governmental organizations (NGOs), the African Development Bank, and the International Finance Corporation (IFC).

More formal assessments of the reforms have been mixed. Ezeoha (2007) finds evidence of a fundamental change in the financial structure, but suggests that the sustainability of reforms will depend on continuously improving macroeconomic conditions and on public confidence in the government's commitment to reform. Hesse (2007) analyzes prereform interest-rate spreads and finds that they warranted intervention. However, there is no test of the effect of intervention on postreform spreads. World Bank (2006) uses bank-level data from 2000 to 2005 to test the effect of overhead costs and other covariates on two different measures of interest spreads and finds support for increased efficiency of intermediation among Nigerian banks. Somoye (2008) examines key financial variables and simultaneously rejects the null of no change (e.g., in total assets and bank capitalization) and fails to reject the null of no change (e.g., in efficiency and bank lending) to the private and nonbanking sectors. Onaolapo (2008) evaluates the relation between bank capitalization and financial soundness using data on the Nigerian banking sector from 1990 to 2006. He finds evidence of a positive relation between bank capitalization, distress management, and asset quality.

These analyses were able to exploit, at most, one year of postreform data. The passage of time allows a more comprehensive analysis to be undertaken, which is the contribution of this chapter.

4.4 Reform and Changes in Financial Indicators

The empirical strategy in the chapter rests on using different measures of bank efficiency and risk management to test the null hypothesis of no effect on banks and the banking system. It is anticipated that the set of reforms will allow banks to become more efficient at intermediation.

4.4.1 Efficiency

A time-series data set is constructed from all banks and financial intermediaries operating in the period 1992 to 2008. Two measures of bank efficiency are used in the empirical analysis. Following Stulz (1999), Demirgüç-Kunt and Levine (1999), and Demirgüç-Kunt and Huizinga (2010), I conjecture that financial development and structure affect firm performance and, more particularly, bank performance. Bank efficiency also depends on overhead cost. One model uses bank efficiency measured by the ex ante interest margin, that is, interest-rate spreads, or the difference in saving and lending rates. Another model uses bank efficiency measured by the ex post interest margin, that is, net interest margins, or the ratio of net interest income to total assets, which accounts for the possibility that banks that charge high interest rates may experience high default rates. To distinguish the effect of cost, development, structure, and bank reform from general economic conditions, macroeconomic variables are included in estimation. Specifically, I estimate the basic regression

$$(1)\quad EF_t = \alpha + \beta OV/ta_t + \gamma BDS_t + \delta X_t + \zeta 2005_t + \eta 2005 * OV/ta_t + \varepsilon_t,$$

where EF_t is the interest spread or net interest margin at time t; OV/ta_t is overhead cost scaled by total assets at t; BDS_t are financial-development and -structure variables—bank assets/GDP, bank concentration as measured by the ratio of the three largest banks' assets to total assets, and loans/liabilities (measures extent of intermediation by the banking system); X_t contains measures of opportunity costs and macroeconomic variables—liquid assets/deposits, equity, the real treasury bill rate, inflation rate, and log of industrial production at t; and ε_t is a random error term.[20] It would be important to control for opportunities and opportunity costs associated with liquidity and capital, as Nigerian banks had high levels of both following bank consolidation. There is reason to believe that a mechanism most affected by reforms was cost, since the cost of allocating resources should fall with falling costs associated with economies of scales achieved following mergers and higher levels of capitalization, hence the interaction term.[21] The ordinary least squares (OLS) models are executed in the aggregate sample. Due to persistence in the series, models are estimated in first differences with trend. Tests for structural breaks identify 2005 as the break year in the series, and this dummy is included. Standard errors robust to autocorrelation are calculated and reported. Table 4.5 contains mean values of industry- and bank-level variables used in estimation.

Table 4.9 reports the results of regressing interest-rate spreads on bank costs, development, and structure. The estimated coefficient on the 2005 year dummy is negative and significant, as anticipated. However, it is also negative and significant for overhead cost/total assets. This result likely reflects temporarily elevated costs associated with restructuring, for example, adoption of the e-FASS system, that nonetheless increased efficiency. This finding is consistent with systematic evidence from an industry study by PwC (2009), which shows that the cost-income ratio fell from 0.65 on average to 0.56 among the largest banks. There is also evidence that banks invested in R&D to make them international with respect to customer access (e.g., ATMs and Internet banking).[22] While the sign on the interaction term is negative, it is not significant.

20. The inclusion of a measure of liquidity and of equity follow Martinez Peria and Mody (2004) in their analysis of Latin America. They reflect the fact that high levels of liquidity will increase costs that are passed on to borrowers and increase spreads, while high levels of capital will impose opportunity costs with respect to equity.

21. Among the reforms implemented was the introduction of an electronic financial analysis and surveillance system (e-FASS), which permitted automated submission of returns by financial institutions. Adoption of such technology and related technological innovations should aid in mitigating operating costs in information-poor environments.

22. See Kasekende et al. (2009) for a review of banking competitiveness in Africa's four largest economies.

Table 4.9 Bank efficiency estimation. Dependent variable: Interest spread (percentage points)

Explanatory variables	(1)	(2)	(3)	(4)	(5)
Year ≥ 2004	–6.100*	–5.729*	–6.980**	–5.159	–6.523*
	(3.342)	(3.225)	(3.177)	(3.909)	(3.914)
Overhead cost/total assets	–273.235***	–268.070***	–284.957***	–270.452***	–285.726***
	(88.680)	(76.574)	(69.467)	(78.566)	(71.941)
Bank assets/GDP		–22.968	–15.324	–28.406	–19.462
		(23.232)	(19.820)	(23.867)	(21.532)
Bank concentration			–26.619		–25.246
			(18.843)		(20.804)
Overhead cost/total assets × Year ≥ 2004				–28.558	–19.662
				(29.596)	(21.551)
Time trend	Yes	Yes	Yes	Yes	Yes
F	5.828	3.999	4.903	3.979	3.987
N	16	16	16	16	16

Source: CBN; Beck, Demirgüç-Kunt, and Levine (2009).

Note: Results are reported for OLS models. Data are for 1992 to 2008. Newey-West robust standard errors for autocorrelation are in parentheses. Interest spread, overhead cost/total assets, bank assets/GDP, and bank concentration are first-differenced.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 4.10 reports the results of regressing interest-rate spreads on an alternative measure of bank development, controls for opportunity costs related to excess liquidity and capital, and macroeconomic variables. The estimated coefficients from this specification are similar to those reported in table 4.9. The macroeconomic variables have the anticipated effect on interest spreads, although the estimated coefficient on the inflation rate is significant.

Table 4.11 reports the results of regressing net interest margin on bank costs, development, and structure. Again, the estimated coefficient on overhead cost/total assets is positive and significant. However, from Beck, Demirgüç-Kunt, and Levine (2009) this finding is consistent with those from low-income countries where bank overhead costs/total assets and net interest margin are correlated and both high relative to middle- and high-income countries. The results on overhead cost are also very close in size, direction, and significance to those of World Bank (2006), which uses Nigerian bank data for 2001 to 2005 and includes additional controls for excess liquidity and capital (see above) and macroeconomic indicators. Demirgüç-Kunt and Huizinga (1999), find a positive relation between cost and net interest margin using data from eighty countries. From the positive and significant coefficient on the interaction term, this relation was stronger after 2004.

Table 4.10 **Bank efficiency estimation. Dependent variable: Interest spread (percentage points)**

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year ≥ 2004	–8.086**	–8.594**	–8.770**	–7.879**	–7.819**	–8.290**	–8.385**	–7.498*
	(3.406)	(3.662)	(3.604)	(3.745)	(3.778)	(4.119)	(4.096)	(4.218)
Overhead cost/total assets	–283.811***	–302.773***	–320.082***	–268.028**	–282.775***	–301.656***	–320.213***	–265.844**
	(87.277)	(86.989)	(85.901)	(110.350)	(92.193)	(93.412)	(92.335)	(118.484)
Overhead cost/total assets × Year ≥ 2004					–10.124	–11.699	–15.875	–14.066
					(11.568)	(14.775)	(14.921)	(12.502)
Liquid assets/deposits	–25.166*	–29.035	–31.574*	–26.194*	–26.305	–30.438	–33.718*	–27.841
	(14.972)	(18.275)	(17.560)	(15.445)	(16.948)	(21.000)	(20.348)	(17.434)
Equity	0.000003	0.000003	0.000003	0.000001	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loans/liabilities		–1.575	–0.498	5.589		–1.448	–0.416	5.919
		(20.268)	(20.030)	(23.057)		(21.755)	(21.439)	(24.695)
Real Treasury bill rate		–0.042				–0.042		
		(0.033)				(0.035)		
Inflation			0.058**				0.061**	
			(0.025)				(0.027)	
Log of industrial production index				–18.344				–19.030
				(22.527)				(24.233)
Time trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F	4.928	6.130	6.467	22.033	8.129	9.938	9.694	36.281
N	16	16	16	16	16	16	16	16

Source: For overhead cost/total assets, spread: Beck, Demirgüç-Kunt, and Levine (2009); liquidity assets/deposit, equity, loans/liabilities: Author's calculation, CBN, Statistical Bulletin (2007, 2008); real Treasury bill rate, inflation, industrial production index: IMF (2010) IFS.

Note: Results are reported for OLS models. Newey-West robust standard errors for autocorrelation are in parentheses. Interest spread, overhead cost/total assets, bank assets/GDP, and bank concentration are first-differenced. Data are for 1992 to 2008.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Table 4.11 Bank efficiency estimation. Dependent variable: Net interest margin

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year > = 2004	–0.004	0.004	0.004	0.005	0.003	0.002	0.003
	(0.012)	(0.009)	(0.010)	(0.010)	(0.009)	(0.010)	(0.010)
Overhead cost/total assets		1.080***	1.071***	1.091***	1.088***	1.080***	1.095***
		(0.227)	(0.250)	(0.247)	(0.237)	(0.265)	(0.262)
Bank assets/GDP			0.038	0.029		0.057	0.048
			(0.058)	(0.055)		(0.062)	(0.059)
Bank concentration				0.031			0.025
				(0.056)			(0.059)
Overhead cost/total assets × Year ≥ 2004					0.066*	0.100**	0.091**
					(0.035)	(0.045)	(0.045)
Constant	0.041	0.004	0.006	0.020	0.000	0.002	0.013
	(0.050)	(0.047)	(0.051)	(0.069)	(0.050)	(0.053)	(0.073)
Time trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F	2.602	47.363	27.427	20.585	46.045	22.118	15.438
N	16	16	16	16	16	16	16

Source: CBN; Beck, Demirgüç-Kunt, and Levine (2009).

Note: Results are reported for OLS models. Data are for 1992 to 2008. Net interest margin, overhead cost/total assets, bank assets/GDP, and bank concentration are first-differenced. Newey-West robust standard errors for autocorrelation are in parentheses. Data are for 1992 to 2008.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

4.4.2 Risk Management and Bank Performance

If there is less distress in the system, for example, a lower share of nonperforming loans to the total, it is anticipated that banks would require fewer resources for loan-loss provisioning. Alternatively, the ratio of loan-loss provisions to total loans may indicate portfolio quality. The bank-level sample is constructed from banks existing in 2006.[23] The sample period is 2001 to 2008. In these regressions the dependent variable is the provision of bad debt to total loans and advances. Specifically, the model estimated is

$$(2) \qquad PBD_{it} = \alpha + \beta \mathrm{BANK}_{it} + \gamma BDS_t + \zeta 2005_t + \eta \mathrm{MACRO}_t + \varepsilon_{it},$$

where PBD_{it} is provision for bad debt/total loans and advances, and the indicators of bank development and bank structure are bank assets to GDP and bank concentration; BANK_{it} comprises controls for bank-specific characteristics: the ratio of equity to lagged total assets, dummies for new (or merged) bank and foreign ownership, and bank and year dummies. The

23. A sample is constructed from variables available from uniform reports on individual large banks available from 2001.

macroeconomic indicators included in $MACRO_t$ are GDP growth rate and inflation rate. To account for a structural break in the dependent variable, Driscoll-Kraay standard errors are calculated and reported with estimated coefficients in table 4.12. I find that the estimated coefficient on the year 2005 is not significant when accounting for bank and macroeconomic characteristics. Consistent with the findings of Demirgüç-Kunt and Huizinga (1998) and Bikker and Hu (2002), this evidence is suggestive that asset quality will be positively affected by higher growth and lower inflation. Further, it is consistent with Beny and Cook (2009), which shows that better economic

Table 4.12 **Performance, risk management estimation. Dependent variable: Provision of bad debt/loans and advances**

Explanatory variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Year ≥ 2004	–0.185**	–0.185**	–0.019*	–0.019*	–0.001	0.006	–0.007
	(0.072)	(0.072)	(0.011)	(0.011)	(0.004)	(0.006)	(0.006)
			Bank characteristics				
New bank	0.182***	–0.014	0.184***	–0.018	–0.012	–0.010	–0.016
	(0.031)	(0.042)	(0.033)	(0.043)	(0.043)	(0.043)	(0.042)
Equity/lagged total assets	0.055*	0.055*	0.050	0.050	0.065**	0.067**	0.058**
	(0.032)	(0.032)	(0.035)	(0.035)	(0.029)	(0.029)	(0.028)
Foreign ownership		–0.257***		0.040	0.022	–0.257***	–0.258***
		(0.027)		(0.028)	(0.028)	(0.029)	(0.027)
				Financial structure			
Bank assets/GDP					–0.390***	–0.372***	–0.427***
					(0.047)	(0.046)	(0.017)
Bank concentration					–0.404***	–0.322**	–0.159
					(0.145)	(0.156)	(0.139)
				Macroeconomic indicators			
Growth rate, percent						0.001**	
						(0.001)	
Inflation rate, percent							–0.002***
							(0.000)
Constant	0.116***	0.312***	0.131***	0.034***	0.258***	0.483***	0.483***
	(0.035)	(0.047)	(0.032)	(0.007)	(0.055)	(0.067)	(0.066)
Bank dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	No	No	No	No	No
R^2	0.606	0.606	0.541	0.541	0.596	0.598	0.601
N	150	150	150	150	149	149	149

Source: For provision of bad loans, loans and advances, equity, total assets: CBN; bank assets/GDP and bank concentration: Beck, Demirgüç-Kunt, and Levine (2009); growth rate, inflation: Author's calculation, IMF (2010) IFS.

Note: Results are reported for pooled OLS models. Robust Driscoll-Kraay standard errors are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

management was correlated with Africa's growth spurt in the early twenty-first century. The evidence suggests that a larger capital base is correlated with the ability to manage expected bankruptcy costs.

The findings from this study are largely in line with previous studies. Only one major result is challenged by the analysis in this chapter—Somoye's (2008) failure to reject the null hypothesis of significant change in bank efficiency and lending to the private sector. Tests of structural breaks require testing the relative significance of several adjacent years to the candidate year, and earlier tests would not have had post-2005 data available for checking maximum significance.

One limitation of this analysis and that of others is that recorded distress may have been artificially low. Recall that CBN reported no banks in distress between 2006 and 2008, despite such signals as a decline of 46 percent in the Nigerian All-Share Index in 2008, which is shown in figure 4.8. Nigerian banks were overextended in 2008 when the loans-to-deposits ratio exceeded 1.5 (see figure 4.6), which was similar to that of Western banks prior to and during the financial crisis of 2008. This should have alarmed bank regulators earlier than it did. In late 2009, two stress tests were executed on the twenty-four banks, and significant distress and poor corporate governance were identified in the banking system. Ten banks failed the tests, and the CBN determined that the system required a capital and liquidity injection of $4.12 billion. It is estimated that rescued banks held NGN 2 trillion ($13.3 billion) in "toxic" loans. Executives at one-third of all banks were forcibly removed and arrested. As aforementioned, while corporate governance was among the reform items, it did not feature prominently in the reform program prior to 2009. These events suggest that the reforms of 2005 may have protected the banking system from a worse crisis than may have evolved, but that additional reform on the part of the banks and the central bank is required. In particular, it seems that better internal controls and bank monitoring are warranted, along with timely and relevant determination of distress.

4.5 Conclusion

This chapter examines the consequences of major reforms undertaken in the Nigerian banking sector in 2005. Firm-level and time-series data allow the extension of analysis conducted shortly after the reforms. A statistically significant break is identified in most financial series at the year 2005. There is increased banking-sector development and greater competition and less government intervention in bank activity. Further, I find that banks are more efficient than prior to the reforms and that this change is correlated with overhead costs generally and from 2005. Asset quality increased between 2005 and 2008, which is correlated with a higher capital base. Favorable macroeconomic conditions likely enhanced the impact of the reforms.

Nonetheless, it is ambiguous whether changes in the microfinance sector aided the poor.

While the reforms of 2005 increased safety and soundness by several measures, the analysis suggests that bank distress was un- or underreported after 2005. Along with nonperforming loans, corporate governance, which received less attention than other reforms, may require more examination and oversight than in the recent past.

References

Abiad, Abdul, and Ashoka Mody. 2005. "Financial Reform: What Shakes It? What Shapes It?" *American Economic Review* 95:66–88.

Adegbite, E. O. 2005. "Financial Sector Reforms and Economic Development in Nigeria: The Role of Management." Paper delivered at the inaugural National Conference of the Academy of Management Nigeria.

Barth, James R., Gerard Caprio, Jr., and Ross Levine. 2001. "The Regulation and Supervision of Banks around the World, a New Database." World Bank Policy Research Working Paper no. 2588, Washington, DC, World Bank. http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2001/06/01/000094946_01052204005474/additional/112512322_20041117140525.pdf.

Beck, Thorsten. 2004. "The Determinants of Financing Obstacles." Policy Research Working Paper no. 3204, World Bank.

Beck, Thorsten, Robert Cull, and Afeikhena Jerome. 2005. "Bank Privatization and Performance: Empirical Evidence from Nigeria." *Journal of Banking and Finance* 29 (8–9): 2355–79.

_____. 2008. "Banks Regulations are Changing: For Better or Worse?" Policy Research Working Paper Series no. WP 4646, Washington, DC, World Bank.

Beck, Thorsten, Asli Demirgüç-Kunt, and Ross Levine. 2000. "A New Database on the Structure and Development of the Financial Sector. *World Bank Economic Review, World Bank Group* 14 (3): 597–605.

———. 2009. "Financial Institutions and Markets across Countries and over Time: Data and Analysis." Policy Research Working Paper no. 4943, World Bank.

Beck, Thorsten, Asli Demirgüç-Kunt, Ross Levine, Martin Cihak, and Erik H. B. Feyen. 2009. Financial Development and Structure Dataset." Finance Research Group, World Bank. http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,„contentMDK:20696167~pagePK:64214825~piPK:64214943~theSitePK:469382,00.html.

Beck, Thorsten, and Michael Fuchs. 2004. "Structural Issues in the Kenyan Financial System: Improving Competition and Access." Policy Research Working Paper Series no. WP 3363, Washington, DC, World Bank.

Beny, Laura, and Lisa D. Cook. 2009. "Metals or Management? Explaining Recent Economic Growth in Africa." *American Economic Review* 99 (2): 268–74.

Bikker, J., and H. Hu. 2002. "Cyclical Patterns in Profits, Provisioning and Lending of Banks and Procyclicality of the New Basel Capital Requirements." *BNL Quarterly Review* 221:143–75.

Caprio, Jr., Gerard, and Daniela Klingebiel. 1996. "Bank Insolvencies: Cross-Country Experience." World Bank Policy Research Working Paper no. WPS 1620, Washington, DC, World Bank.

Central Bank of Nigeria. *Annual Report and Statement of Accounts*, various years, 2000–2008.

_____. *Banking Supervision Annual Reports*, various years 2000–2008.

_____. *Statistical Bulletins,* various years, 2000–2008.

_____. 2005. *Microfinance Policy, Regulatory and Supervisory Framework for Nigeria*. http://www.cenbank.org/out/Publications/guidelines/dfd/2006/microfinance%20policy.pdf.

Cook, Lisa D. 2004. "Financial Crisis and Growth in Nigeria: Evidence from the Community Banking System." Unpublished Manuscript, Stanford University.

Demirgüç-Kunt, A., and H. Huizinga. 1999. "Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence." *World Bank Economic Review* 13:379–408.

———. 2010. "Bank Activity and Funding Strategies: The Impact on Risk and Returns." *Journal of Financial Economics* 989 (3): 626–50.

Demirgüç-Kunt, A., and R. Levine. "Bank-Based and Market-Based Financial Systems—Cross-Country Comparisons." Policy Research Working Paper no. 2143, World Bank.

Ezeoha, Abel. 2007. "Structural Effects of Banking Industry Consolidation in Nigeria: A Review." *Journal of Banking Regulation* 8 (2): 159–76.

FAO. 2004. "Federal Republic of Nigeria: Assessment of Community Banks." September 20. http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-federal-republic-of-nigeria-assessment-of-community-banks-sep-2004_0.pdf.

EFInA. 2008. *National Survey of Nigerian Households on Consumer Finance* (data set). Lagos, Nigeria: Enhancing Financial Innovation & Access.

Hesse, Heiko. 2007. "Financial Intermediation in the Pre-Consolidated Banking Sector in Nigeria." Policy Research Working Paper Series no. WP 4267, Washington, DC, World Bank.

International Monetary Fund (IMF). 2009. *World Economic Outlook*. http://www.imf.org/external/pubs/ft/weo/2009/01/index.htm.

———. 2010. *International Financial Statistics*. Accessed July 2010. Ehttp://www.imfstatistics.org

Isern, Jennifer, Amaka Agbakoba, Mark Flaming, Jose Mantilla, Giulia Pellegrini, and Michael Tarazi. 2009. "Access to Finance in Nigeria: Microfinance, Branchless Banking, and SME Finance." Consultative Group to Assist the Poor. http://www.cgap.org/publications/access-finance-nigeria-microfinance.

Kasekende, Louis, Kupukile Mlambo, Victor Murinde, and Tianshu Zhao. 2009. "Restructuring for Competitiveness: The Financial Services Sector in Africa's Four Largest Economies." In the *Africa Competitiveness Report 2009*, African Development Bank/World Economic Forum, 49–81.

King, Robert G., and Ross Levine. 1993a. "Finance, Entrepreneurship and Growth: Theory and Evidence." *Journal of Monetary Economics* 35:513–42.

_____. 1993b. "Finance and Growth, Schumpeter Might be Right." *Quarterly Journal of Economics* 108:717–38.

Levine, Ross, Norman Loayza, and Thorsten Beck. 2000. "Financial Intermediation and Growth: Causality and Causes." *Journal of Monetary Economics* 46 (1): 31–77.

Levine, Ross, and Sara Zervos. 1998. "Stock Markets, Banks, and Economic Growth." *American Economic Review* 88:537–58.

Lewis, P., and H. Stein. 1997. "Shifting Fortunes: The Political Economy of Financial Liberalization in Nigeria." *World Development* 25 (1): 5–22.

Martinez Peria, Maria Soledad, and Ashoka Mody. 2004. "How Foreign Participation and Market Concentration Impact Bank Spreads: Evidence from Latin America." *Journal of Money, Credit, and Banking* 36 (3): 511–37.

Nigerian Deposit Insurance Corporation. *Annual Reports*, various years, 2000–2006.
Ogunleye, G. A. 2003. "The Causes of Bank Failures and Persistent Distress in the Banking Industry." *NDIC Quarterly* 13 (4): 21–41.
Onaolapo, A. A. 2008. "Implications of Capital Regulation on Bank Financial Health and Nigerian Economic Growth 1996–2005." *Journal of Economic Theory* 2 (3): 112–7.
PriceWaterhouseCoopers (PwC). 2009. "Balance Sheet Management Benchmark Survey: Status of Balance Sheet Management Practices among International Banks —2009." http://www.pwc.com/gx/en/banking-capital-markets/assets/balance-sheet-management-benchmark-survey.pdf.
Rajan, Raghuram G., and Luigi Zingales. 1998. "Financial Dependence and Growth." *American Economic Review* 88:559–86.
Somoye, R. O. C. 2008. "The Performances of Commercial Banks in Post-Consolidation Period in Nigeria: An Empirical Review." *European Journal of Economics, Finance and Administrative Sciences* December (14). http://www.europeanjournalofeconomicsfinanceandadministrativesciences.com/ejefas_issues.html.
Soludo, Charles. 2004. "Consolidating the Nigerian Banking Industry to Meet the Development Challenges of the 21st Century." Address delivered to the Special Meeting of the Bankers' Committee, July 6, Abuja, Nigeria. http://www.bis.org/review/r040727g.pdf.
Stulz, René M. 1999. "Globalization, Corporate Finance, and the Cost of Capital." *Journal of Applied Corporate Finance* 12 (3): 8–25.
World Bank. 2006. *Nigeria: Competitiveness and Growth*, Appendixes. September 26. Washington, DC, World Bank.