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Banking consolidation, credit crisis and asset quality in a fragile banking system

Some evidence from Nigerian data

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Abstract

Purpose – The aim of this paper is to identify the major determinants of bank asset quality in an era of regulation-induced industry consolidation, using the Nigerian case to demonstrate how consolidation can heighten incidences of non-performing credits in a fragile banking environment.

Design/methodology/approach – The paper makes use of panel data from 19 out of a total of 25 banks operating in Nigeria. A multivariate constant coefficient regression model is adopted as the estimation technique. The dependent variable in the model is quality of bank assets, proxied as the proportion of non-performing loans (NPL) to total loans; while operating efficiency, profitability, asset liquidity, loans to deposits ratio, predictability of depositors' behaviour, size of bank capital, and board skill constitute the exogenous variables.

Findings – The study reveals that deterioration in asset quality and increased credit crisis in the Nigerian banking industry between the periods 2004 and 2008 were exacerbated by the inability of banks to optimally use their huge asset capacity to enhance their earnings profiles. It shows that excess liquidity syndrome and relatively huge capital bases fueled reckless lending by banks; and that increase in the level of unsecured credits in banks' portfolios ironically helped to mitigate the level of NPL within the studied period.

Research limitations/implications – The findings here should be interpreted with caution. The reason is because of the relatively fewer number of observations and the likely biases associated with the use of pooled regression approach.

Originality/value – This paper is one of the first to investigate the specific impact of banking consolidation on the quality of bank assets in an underdeveloped financial system. Among such countries facing such challenge, the Nigerian case is unique considering that the 2004/2005 banking consolidation in the country was recorded as the largest in the history of banking in Africa. The findings here make clearer the policy/practical implications of using regulation-induced consolidation to pursue the goal of increased credit flows in a less developed financial system.

Keywords Consolidation, Assets management, Loans, Developing countries, Banks, Nigeria

Paper type Research paper

1. Introduction

In most developing economies, the theoretical premises for banking consolidation include the expansionist argument – to give banks enough financial muscles that

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enable them expand the geographical scope of their operations; the economies of scale argument – which postulates that consolidation would cut down cost of running banks and possibly reduce cost of funds; and the corporate governance argument – which holds that the size of a bank has direct bearing on its capacity to engage better management (Ezeoha, 2007, p. 166). These arguments are either motivated by market considerations or regulatory considerations. However, regulation-induced banking reforms keep most deterministic economic factors almost constant, with sole focus on distress resolution and achievement of industry stability. This approach contradicts the principle that financial and governance considerations are part of the major determinants of most business consolidations. This is so in the case of developing/emerging economies, where regulation-induced industry consolidation is common. According to Gelos and Roldós (2002) and Somoye (2008), the regulatory authorities play more role than market forces in the financial sector consolidation process of emerging markets. In effect, factors that influence both the decisions to merge and the performance of the merged firms ought to vary according to whether the merger is being pushed by market considerations or by regulation. Whereas studies on the outcomes of market-induced consolidation are very common for both developed and developing economies, such studies in the case of regulation-induced reforms are still very scanty. A special case against regulation-induced consolidation is that, given its nature, it may not be capable of ensuring automatic realization of benefits of business combination (such as better performance, improve operational efficiency, enhanced asset quality, and system stability). The reason is that a high degree of process interference normally results from the fusion of very dichotomous entities. It is therefore possible that reform-induced consolidation might be incapable of resolving the prevalence of bank distress and failure in developing economies.

Evidence from available literature confirms that very few studies have been done to examine how the internal characteristics of banks that are emerging from regulated industry consolidation impact on their performance. This paper makes an important case as to how regulation-induced consolidation impacts on banks' asset quality. It makes valuable contributions in banking consolidation literature by systematically demonstrating how regulation-induced banking consolidation leads to deterioration in asset quality of banks. The Nigerian study is unique considering that the 2004/2005 reform-induced banking consolidation in the country was considered the largest industry convergence in the history of banking in Africa (Ezeoha, 2007, p. 172).

2. Review of theoretical and empirical literature

2.1 A transcript of the Nigerian case

The regulation-induced banking industry consolidation, which took place between July 2004 and December 2005, led to decrease in the number and eventual increase in the sizes of the emerging banks. It also gave rise to the transformation of banking business in the country. From a total of 89 commercial and merchant banks operating as at June 2004, the number of banks was trimmed down to 25 deposit money banks that were able to meet the Central Bank's reform requirements. As part of the consolidation requirements, banks were mandated to grow their shareholder equity/minimum capital from N2 billion to N25 billion (that is from about US $18 million to US $200 million). In terms of ownership, the exercise led to a significant shift from predominantly privately held to predominantly publicly quoted banks. Both the convergence in the

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number of banks and the increased in capital based were induced by a reform process that left banks with the option of mergers and acquisition as the only permissible legal modes of consolidation (Central Bank of Nigeria, 2004). In addition to resolving the persistent cases of bank distress and failure in the country, the consolidation exercise was equally targeted at proactively positioning banks to become sound catalyst for the country's economic development (Ezeoha, 2007, p. 160), while at the same time improving upon their corporate governance postures (Soludo, 2004). The impression given by the Central Bank of Nigeria was that the exercise would help to groomed banks to become capable of competing in the regional and global markets (Ogowewo and Uche, 2006), and expectedly become immune from potential crisis.

Four years after the consolidation, not much success has been recorded in terms of realizing the desired level of banking system stability. According to International Monetary Fund (IMF, 2008, p. 34), the 2005 consolidation instead led to rapid credit growth as banks sought to increase their returns on capital – a situation that ended up posing enormous credit risk challenges in the industry. Even the acclaimed size benefits seem to have been eroded by problems associated with poor public confidence, governance-related challenges, and of recent the global financial crisis. As at August 2009, the number of technically distressed banks in the country stood at eight out of the 24 surviving banks, whereas the proportioned of performing to non-performing credits was 60.75 percent (Central Bank of Nigeria, 2009). Ironically, also, the eight troubled banks accounted for about 35.6 percent of the banking industry assets, 36.11 percent of industry loans, and 34.52 percent of industry deposits as at June 2009 (Central Bank of Nigeria, 2009). Assessing the post-consolidation position of the Nigerian banking industry, the former Chairman of the 1996 Presidential Committee on Review of the Nigerian Capital Market, Chief Dennis Odife, argues that:

> Prowess in banking was to be measured by how much foreign exchange a bank and its customers bided for in the period, rather than by how many industries they financed and how much employment they generated (cited in *ThisDay Newspaper*, 2009).

To further confirm the high level of decadence in the banking industry, the apex bank, between August and September 2009, announced the sacking of eight bank CEOs and directors, appointed new chief executive officers (CEOs) and directors to man the banks, and injected US $4 billion into the affected banks as a bailout measure.

This latest action of the apex bank signals that, perhaps, very little achievements have been made within the four-year post-consolidation era in the Nigerian banking industry. Apart from the general problems induced by the global economic and financial crises, the current domestic problems being experienced by the banks have discountenanced the pre-consolation promises of the Central Bank of Nigeria, and raised strong issues on the existing theories of banking consolidation. While banking consolidation might have helped to achieve stability in some developing economies, the isolatory approach adopted in the case of Nigeria has proved to be ineffective.

2.2 Theoretical background

Two major theories can be used to explain the case of deterioration in credit quality in Nigerian banks. First is the theory of adverse selection, where as a result of high collateral demand and high interest rates, credit market boom in the country only favour institutional and individual borrowers who are less considerate of the harsh

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lending conditions, and who in turn are more prone to default. There is also free-cash flow behaviour, where due to sudden access to huge amount of capital, Nigerian bank managers became freelance in their attempts to commit much of the capital into loanable assets and by doing so guarantee returns on capital. Thus, in the bid to follow industry trends, individual banks, with less market power granted loans without much regard to the credit scores of the borrowers. In fact, this behaviour manifested visibly during the recent stock market boom in Nigeria, when marginal lending among banks recorded tremendous increase (Central Bank of Nigeria, 2009). The same was the case with post-consolidation consumer lending, which also recorded huge increment between 2006 and 2008. More general is the proposition of the information asymmetry theory, which emphasizes that lack of information about customers can exacerbate the problems of moral hazards and adverse selection, and as such can decrease the quality of bank loans (Aryeetey *et al.*, 1997, p. 199). Recent events that have also helped to heighten the level of bad credits, in the case of Nigeria, are the reckless use of local purchase orders for government contracts for lending and the use of customers' salaries as collateral for loans. Under this scenario, it became very difficult for banks to separate the lemons from the plums, since the failure of any of the underlying securities exposed borrowers to a high risk of default.

2.3 Empirical review

Most literatures on banking consolidation focus on structural issues such as lending, competition, growth/value creation, operating efficiency, and corporate governance postures of banks that are affected by mergers or acquisitions. The need to boost domestic bank credit supply, for instance, is one of the contingent motivators of consolidation. At the same time, the need to control the high incidence of loan default occasioned by increased lending activities has also been another popular motive for consolidation in developing economies. According to Gorton and Winton (1998), early reforms in majority of the emerging economies were influenced by the existence of large percentage of bad loans and risky credits. Consolidation is also used as a strategy for tackling distress and governance problems associated with fragmented banking industries, especially in most developing economies. As at the late 1990s, according to Mihaljeck (2006, p. 46), the banking systems of many emerging market economies were highly fragmented in terms of the number and size of institutions, ownership patterns, profitability, and competitiveness, use of modern technology, and other structural features. In their selected case studies of Ghana, Malawi, Nigeria, and Tanzania, Aryeetey *et al.* (1997, p. 214) conclude that fragmentation in the financial markets in these countries persisted over the years after the introduction of financial system reforms of the 1980s. Based on macroeconomic considerations, cases of banking consolidation in most developing countries are found to have been motivated by the quest to grow large-scale banks that are capable of withstanding crisis and aiding economic growth (Talwar, 2001; Reyes, 2001; Mester, 1999). According to Ro (2001) and Abdullah and Santos (2001), specifically, such exercises are mostly warranted by the rampant cases of bank distresses in the affected countries.

Previous studies have also linked consolidation to the quest for corporate growth (Barley, 1997). The results of investigations on this, such as those of Hughes *et al.* (2002), and Hawkins and Mihaljak (2001), suggest that there is positive relationship between banking consolidation and the desire of banks to enjoy advantages associated with

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economies of scale. Nevertheless, this could be so in countries that provide conducive business environment necessary for growth. In the case of Ghana, for instance Buchs and Mathien (2003) find that the expected size-benefit arising from banking consolidation has less significant impact given that the fundamental issues of high infrastructure costs and large fiscal deficits of governments remained unresolved. Similarly, Hughes *et al.* (2002) examine the impact of consolidation in banks with management entrenchment, and find that it is indeed the scale and scope economies that drive consolidation in the banking industry. They also find that not all mergers and acquisitions that lead to larger banks are value-entrenching; and that this is the case in a system where there is the practice of seat-tight directorship and management.

The claim that consolidation increases lending activities has come under some critics. For instance, di Patti and Gobbi (2003), Walraven (1997), Berger and Udell (1996), Peek and Rosengren (1996), and Berger *et al.* (1995), conclude from their various studies that consolidation reduced the level of lending among banks, especially to small scale borrowers. The theorem behind the negative relationship is that consolidation might throw small banks who are specialists in small and medium scale enterprises (SME) lending out of the banking system (Strahan and Weston, 1996). Berger *et al.* (1995) go further to blame the early 1990s credit crunch in the USA to a kind of reforms that gave room for the emergence of large and geographically diversified banks. On the other hand, previous researchers have demonstrated equally that consolidation increases the capacity of banks to grant loans to various economic entities (Schmieder *et al.*, 2009; Marsch *et al.*, 2007; Mohanty *et al.*, 2006; Ely and Robinson, 2001; Strahan and Weston, 1996). Marsch *et al.* (2007) particularly use the case of Germany to disperse the fear that consolidation reduces flow of credits to SMEs. According to their findings, an increasing bank size in the context of banking consolidation does not negatively affect the proportion of SME's investments that is financed with bank loans.

As indicated above, the emphases of past studies are more on the relationship between consolidation and the quantum of bank lending activities. Little attention has been paid on how increased lending by consolidated banks affects the quality of their assets. Some of the empirical studies on this area dive indirectly into the issue of quality of lending (see for instance, Berger and Udell, 1996). Such works deal with whether the involvement of banks enhances or reduces the level of operating efficiency among the affected banks. According to Beck *et al.* (2004) and Demirguc-Kunt and Levine (2000), consolidation gives incentives for the creation of financial conglomerates, which might impose threats to the overall efficiency of the banking institutions. The study by de Patti and Gobbi (2003) also links up to a finding that consolidation has the tendency to temporarily decrease the volume and quality of bank credits. There are existing evidence that consolidation only leads to efficiency in economies with sound banking and financial regulatory frameworks and efficient financial markets. For example, Chen (2007) studies the impact of deregulation on credit quality and risk. Using bank-level balance sheet data and macroeconomic data from the European Union, he finds that deregulation may result in improved loan quality and lower credit risk. In addition to using advanced economies' data, his study does not, however, indicate the type of deregulation in question. It can, however, be inferred from his study that mergers and acquisitions resulting from foreign entries give banks incentives to better screen borrowers. The basis of such findings is that sound regulatory structures ensure

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adherence to laid down rules, guide the corporate governance behaviours of banks, and specially moderate the conducts of bank managements.

The recent global financial crisis has created an incentive for researchers to investigate how the aftermath of the consolidation impacted on asset qualities of banks. In the case of Nigeria, the financial markets are generally inefficient. In the same vein, there have been series of criticisms arising from the inability of the regulatory bodies to institute sound supervisory and control mechanisms that are capable of checkmating the activities of banks. Hypothetically, therefore, it is expected that the aftermath of the 2004/2005 banking consolidation in the country might be responsible for the rising level of non-performing credits prevalent in Nigerian banks.

3. Data and methodology for the study

3.1 The research data

This research makes use of 19 out of the 24 consolidated deposit money banks that have been in operation in Nigerian since December 2005. The 19 banks are mostly publicly quoted, and include eight of the banks recently declared technically insolvent by the Central Bank of Nigeria between August 2009 and September 2009; as well as the six largest banks in the country. The sampled period of the study is 2004 to 2008, which is selected to capture events during and after the country's banking industry consolidation. As indicated earlier, quality of bank assets constitutes the variable under study, and is defined as the proportion of non-performing loans (NPL) to total loans (IMF, 2008). Here, NPL is defined as loans that are overdue in the account, and the due interests are not recovered regularly (Viverita, 2008; Mendoza and Terrones, 2008; Bernstein, 1996). Collaborating the positions of theoretical stances and previous empirical studies (such as those of Masood and Stewart, 2009; Mendoza and Terrones, 2008; Omri *et al.*, 2005; Hasan and Wall, 2003; Hubbard *et al.*, 2002; Berger and DeYoung, 1997; Jensen and Meckling, 1976, among others), we identify key factors that are likely to influence the level of individual bank's asset quality. Among such factors are: operating efficiency (measured as the ratio of interest expenses to interest income); profitability of bank (measured as the proportion of profit before tax to total assets); level of bank asset liquidity (measured as the ratio of liquid assets to total assets); the ratio of total loans to total deposits; predictability of depositors' behaviour (measured as the proportion of fixed deposit to total deposits); size of bank capital (measured as the ratio of share capital to total assets of a bank); as well as board skill (proxied as the proportion of board members with doctorate and relevant professional qualifications to total board membership).

3.2 The empirical model

Our model specification is based on the theoretical implications of the factors defined above (mostly from the points of view of previous studies). Considering that the sample size is made up of few observations (in terms of number of years and sampled banks), we do not expect the data to exhibit a significant random or temporal effects. It should be re-emphasized that the 2004/2005 banking consolidation in Nigeria gave rise to 25 banks with relatively similar structural features. Thus, post-consolidation data from the emerging banks are expected to exhibit very little heterogeneous/dynamic trends. As a result, the panel data generated from the 19 sampled banks over the years 2004 to 2008 are pooled, and a multivariate constant coefficient multiple regression model

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is then applied to estimate the relationship between the dependent and the exogenous variables. Consistent with the reasons suggested by Podesta (2002), the essence of the pooled approach is to test whether the ability of banks to pursue effective risk credit management practice depends on its internal structures and operational framework. The estimation equation is specified as:

$$\begin{aligned} QBA_{it} = {} & \alpha_i + \beta_1 OPE_{it} + \beta_2 ROA_{it} + \beta_3 ALIQ_{it} + \beta_4 UNSEC_{it} + \beta_5 DEPP_{it} \\ & + \beta_6 LTDEP_{it} + \beta_7 BSKILL_{it} + \beta_8 BCAP_{it} + \varepsilon_{it} \end{aligned}$$

where QBA represents the quality of bank assets; OPE the level of bank's operational efficiency; ROA the return on assets; ALIQ the level of asset liquidity; UNSEC the level of unsecured credits; LTDEP the proportion of fixed deposit to total deposits; BSKILL the board skill; and BCAP the proportion of bank equity capital to total assets; i and t represent, respectively, the individual bank entity and the annual time effects. The mathematical definitions of these variables are as stated in Section 3.1.

4. Research results

4.1 The descriptive results

The descriptive results represented in Table I show that average percentage of non-performing credits to total loans within the period from 2004 to 2008, in the Nigerian banking industry, is 18.5 percent. This falls outside the range of industry non-performing credits of 19-46 percent as reported by the Central Bank of Nigeria (2009). Operating efficiency, measured by the ratio of interest expenses to interest income, stands at an average of 38.3 percent, while average bank profit is as low as 3.8 percent. This gives an impression that the banks did not optimally utilize the huge asset capacity generated from the consolidation exercise. While banking system liquidity stands at about 45.2 percent, the ratio of unsecured loans to total loans

	Observation	Mean	SD	Beta coefficient	SE	t-value	$P > \|t\|$
Asset quality	90	0.185	0.329	–	–	–	–
Operating efficiency	80	0.383	0.155	0.023	0.207	0.110	0.911
Profitability	90	0.038	0.189	−4.277	0.524	−8.160*	0.000
Bank liquidity	90	0.452	1.961	0.204	0.098	2.080**	0.041
Unsecured loans-to-total loans ratio	90	0.134	0.289	−0.190	0.089	−2.140**	0.036
Fixed deposit-to-total deposit ratio	90	0.249	0.288	0.139	0.090	1.540	0.128
Loan-to-deposit ratio	90	0.494	0.196	−0.328	0.154	−2.130**	0.036
Board skill	95	0.068	0.076	−0.358	0.335	−1.070	0.288
Equity capital-to-total asset ratio	90	0.055	0.262	1.449	0.725	2.000**	0.049
Constant	–	–	–	0.085	0.096	0.890	0.374
F-value							17.02
$P > \|F\|$							0.000
R^2-value							65.7%
Adjusted R^2							61.8%

Note: Significance at: *1, **5 and ***10 percent confidence levels

Table I. Descriptive and regression results on the relationship between asset quality and the theorized exogenous variable

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averages 13.4 percent. Similarly, the average ratios loan-to-deposit and fixed deposit-to-total deposit are 49.4 and 13.4 percent, respectively. Overall, the descriptive results give an indication that part of the problems Nigerian banks faced during the period 2004 to 2008 might be traceable to low return on assets, poor operating efficiency, and high level of unsustainable lending activities. With the exception of the liquidity measure, the relatively low standard deviations across the other variables confirm that the above problems were industry wide.

4.2 Empirical results

The results, as given in Table I, reveal that bank profitability, asset liquidity, level of unsecured credits, loan-to-deposit ratio, and size of bank's equity capital have significant influence on banks' asset quality. The analysis shows that the relationship between the level of non-performing credits and bank profitability is negative and very significant – meaning that profitability is an important factor in controlling the quality of bank's assets. It also suggests that in an era of earnings downturn, banks generally might be finding it difficult to manage their credit portfolios. The outcome of the regression estimation also indicates that asset liquidity positively influences the level of non-performing credits – implying that rising level of liquidity drives down the quality of bank assets. It can also be interpreted to mean that excess liquidity has the possibility of causing deterioration in asset quality. Theoretically, also, excess liquidity can lead to free cash flow behavior among bank managers. This again is coupled with the fact that most of the liquid assets held by banks in less developed economies are usually non-remunerated (Khemraj, 2010). The result here is understandable, given that due to the general market instability, individual banks might find it difficult to go for the recommendation that requires banks with a large amount of very liquid assets to sell off such in order to shield loan portfolio (Ehrmann *et al.*, 2003).

Against expectation, the level of unsecured loans exhibits negative and significant relationship with the level of NPL. This implies that in the event of credit crisis, banks might have more appeal to better manage their non-collateralized loans. The result confirms the existence of moral hazards and adverse selection in the country's credit system, where collateralized loans are more difficult to manage. While secured credits may have the tendency of building negative confidence in the minds of bank managers, in the case of Nigeria, high incidence of corruption also makes foreclosure on the part of secured creditors difficult (Ezeoha and Anyigor, 2009). Again, Ezeoha and Anyigor (2009) have argued that where bankruptcy resolution is a difficult phenomenon, the reliance on collaterals as a strategy for ensuring timely loan repayment does not always prove very optimal.

Empirical results arising from this study also show that the relationship between the proportion of loans to total bank deposit and the level of NPL is significantly negative. This implies that, in an era of financial crisis, increased lending might provide some solutions to the problem of NPL. This can be achieved by ensuring that credit portfolios are effectively diversified (Central Bank of Nigeria, 2009), and that prospective borrowers are well scrutinized before requests are granted.

Finally, results with the ratio of equity capital to total assets indicate that there is a positive relationship. This can be interpreted to mean that increase in bank's capitalization has the tendency of building wrong confidence in bank management and reducing their sensitivity to portfolio risk. It is also important to note that not

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even the recapitalization of banks from 2 billion to 25 billion Nigerian naira was enough to achieve the needed stability in the industry. Contrary to the proposition of the bank-lending channel hypothesis (Gambacorta and Mistrulli, 2004), increase in the capital base of Nigerian banks rather contributes to asset quality deterioration. The study does not find issues such as operating efficiency, certainty of depositors' behaviour, and the possession of higher and professional qualifications by board members as significant determinants of the quality of bank's assets in Nigeria. The fact that operating efficiency is not found to be significant here does not, in any way, undermine the importance of such factor in improving the quality of bank assets. It only means that the persistent problems of high infrastructural cost might have overcrowded individual bank's efforts to improve efficiency.

5. Conclusion

Descriptive results from this study show that the average level of NPL to total loans and the ratio of unsecured credits to total loans in the Nigerian banking industry stood at 18.5 and 13.4 percent, respectively, for the period 2004 to 2008. In real terms, the rate of return on assets, at 3.8 percent, gives an impression of weak performance of the banks for the period under review. The empirical results reveal some interesting evidence on the determinants of bank's asset quality. The findings suggest that deterioration in asset quality and increased credit crisis in the Nigerian banking industry might have been exacerbated by the inability of banks to make optimal use of the huge asset capacity acquired from consolidation to enhance their earnings profile. Also, rather than aid improvement in asset quality, excess liquidity syndrome and relatively huge capital bases (equally arising from the consolidation exercise) fueled excessive and reckless lending by banks, with very little regard to impending risk of default. This introduced some free cash flow behaviour and moral hazards in the entire lending system. The results equally show that increase in the level of unsecured credits in banks' portfolios ironically played some mitigating role in the level of non-performing credits within the period under study. By implication, banks with higher level of unsecured credits were subjected to adopt more stringent measures in their asset management system. Also, increased lending activities relative to bank's deposit portfolio is found to have the capacity to mitigate deterioration in assets quality. By implication, reducing lending as a strategy for managing incidences of NPL in a period of financial crisis might indeed prove sub-optimal.

The above findings have some policy implications for Nigeria, and for other developing countries that are passing through similar credit crisis. First, in real terms, low earnings to asset ratios among banks might have helped to build up to the current credit crisis in the country. Second, increase in asset liquidity should prompt deep sensitivity, at both industry and individual bank levels, over the choice of risk asset management practice. Again, banks need to be more careful on the choice of collaterals. As a matter of fact, this study provides evidence that banks tend to be more proactive in managing unsecured risk assets. Notably, the study shows that policies that discourage bank lending, during financial crisis, do not necessarily guarantee reduction in the incidences of non-performing credits or improvement in the quality of bank assets. We treat the results here with caution considering the relatively small number of observations and the likely biases associated with the use of pooled regression approach.

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