

# **The Financial Condition of Nigerian Banking Firm and the Global Financial Crisis**

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## **ABSTRACT**

*This study builds on the anatomy of banking firm financial condition developed from the Nigerian experience during 1990–2004 (Njoku and Inanga, 2008a) to explain the underlying nature of the 2008 global banking crises. The anatomy of banking firm financial condition cast the 2008 global financial meltdown as the failure of market power and market presence to transform deposit mobilization into quality earnings as imprudence stretched the sub-prime mortgage and Credit Default Swap (CDS) risks worsened by insufficient capital cushion. As global governments continue to search for solutions, ideas have floated ranging from buying up toxic assets to government outright ownership and control of banks in need of bail-out. In the light of the anatomy of banking firm financial condition, the study sees CDS detoxification, from bet to hedge, as a feasible solution to the problem.*

**Keywords:** Nigerian Banking, Fragility, Run, Contagion, Bankruptcy, Global banking crisis, Credit Default Swap, Bank Distress, Sub Prime Mortgage, Burden

## **INTRODUCTION**

On November 9, 2008, the Governor of the Central Bank of Nigeria (CBN) described the financial condition of Nigerian banks under the global financial crises as sound. Answering reporters' questions, the governor reiterated that Nigerian banking seems ahead of the world in terms of remedying bank financial condition. Banks in Nigeria lived through problems during the years 1990–2004. They overcame the problem in 2005 when 25 mega banks emerged through consolidation, mergers and acquisitions, from 120 banks in existence in 1993.

As history of banking development indicates, banking problems in the world's big economies like the USA easily assume global dimension due to inter-linkages

of the global economy. The sub-prime lending binge that sparked the 2008 banking crises was believed to have been hatched in Wall Street, yet the entire world banking system suffered massively through corporate collapse. The consequent challenge has attracted substantial attention from such world institutions as the International Monetary Fund and the World Bank, to forge global response.

The problem has forced financial bailouts by governments across the globe. The governments of USA, Britain, Germany and Russia, among others, have taken steps to inject multi-billion dollars of liquidity into their respective financial systems in the hope of restoring financial sanity. Though some weak banks have been allowed to fail in the process of implementing this policy, the governments have taken extra measures to prevent the failure of some others that are adjudged potentially strong. Understanding the anatomy of banking firm financial condition can therefore give insight into the underlying forces at work. Governments the world over have had to co-operate in order to avert possible contagion. Critically, appropriate solutions to the raging financial crisis have so far proved elusive. As the search for solution continues, this study suggests that there are lessons which the world can learn from Nigeria's experience. . Before going into detail, the paper first critically reviews the anatomy of bank financial condition using factor analysis.

## THE ANATOMY OF BANKING FIRM FINANCIAL CONDITION IN NIGERIA

The anatomy of banking firm financial condition was developed out of the financial and non-financial variables in Nigerian banking from 1990-2004, using factor analysis (Njoku & Inanga, 2008a). Substantive interpretation of the factor analysis indicated seven structural dimensions of Nigerian bank financial condition. They are market experience, macro-economic condition, deposit fragility, prudence, earnings quality, market power and capital confidence (Figure - 1).



Figure - 1: Conceptual Framework of Bank Financial Condition

Source: Njoku and Inanga, 2008a

The model offered insight into the primacy of market experience in shaping bank financial condition. In the dynamics, the macro-economic condition sets the playing field. Then, prudential application of market presence and market power transforms deposit mobilization into earnings. Since confidence is crucial, capital finds a unique role in offering defensive cushion against risks that banks normally face. The sections that follow briefly review the relevance of this model to Nigerian banking. The study applies the lessons from the Nigerian experience to explain the 2008 global banking crises.

## RELEVANCE OF MARKET PRESENCE IN NIGERIAN BANKING

As shown in Figure - 1, market presence played a crucial role in characterizing the condition of Nigerian banks. Market presence is demonstrated by the extent to which the bank exerts influence on the market place. For example, the 'big-three', namely First Bank, Union Bank and the United Bank of Africa, (the biggest and oldest three Nigerian commercial banks) were the pre-cursors of modern banking in Nigeria since the 1930s (Brownbridge, 1996). At the inception of formal banking, these three banks were monopolies (Okigbo, 1981). They dominated the market in the 1990s and are still among the strongest banks in Nigeria today. They survived the fierce early competition of the expatriate banks as well as the first banking crises of the 1950s. They were not shaken by the reforms of the Structural Adjustment Programme (SAP) of the 1980s. They remained unaffected by the distress of the banking system in the 1990s and survived the banking reforms of 2004. It is interesting that they were not necessarily ranked among the most efficient banks in Nigeria over the years. In spite of this, they effectively commanded significant influence that comes with the market presence that they gained over the years. They had wide knowledge of the market, and understood how to survive in spite of attendant constraints. Consequently, they could still attract liquidity in challenging times where other banks failed.

In contrast, other banks that had limited market presence failed during the banking crises of the 1950s. Many new banks that emerged in the 1990s, but had limited market presence, also similarly failed subsequently in spite of initial reported huge profits. On the other hand, some of them gained market presence and were able to gradually build market share and attract and retain depositors. Furthermore, the confidence that comes with market presence attracted the liquidity support needed to meet the minimum capital requirement set at the equivalent of US\$.25 billion to be attained by 2005. Several new banks with widespread market presence, such as Zenith Bank, Guaranty Trust Bank, Oceanic Bank and Diamond Bank are among the most successful banks in Nigeria today.

Synthesizing market presence plays two critical roles in the financial system. First, when there is liquidity, crunch banks with substantial market presence tend to attract liquidity support as investors are more willing to invest in them. Secondly, government appears more sympathetic to banks with wide market presence when faced with failure threats. Such banks would be considered too big to be allowed to fail.

### **RELEVANCE OF PREVAILING MACROECONOMIC CONDITION IN NIGERIAN BANKING**

Bank financial condition is also characterized by the prevailing macro-economic condition as it prescribes the playing field within which the banks operate. The Nigerian bank distress in the 1990s was attributable to inhospitable macroeconomic and regulatory environment (Beck, Cull, & Afeikhena, 2005), harsh enough to worsen banking panic in a self-fulfilling manner (Lai, 2002). The initial pioneering indigenous banks failed almost as soon as they were established due, in part, to 'bad weather' (Uzoaga, 1981). Adverse macroeconomic condition also prevailed during the reversal of the post World War II banking boom (Brownbridge, 1996) in widespread bank failure known as the first episode (Okigbo, 1981).

A major element of harsh macro economy in the Nigerian case is the associated regulatory measures. Only few indigenous banks survived the effects of the Banking Ordinance of 1952 (CBN/Nigeria Deposit Insurance Corporation, 1995). The Ordinance failed in its bid to stem the tide of bank distress, leading to clamour for Central Banking (Uzoaga, 1981). Nevertheless, the establishment of the CBN in 1958 did not assuage the adverse effects of macro economy as it masqueraded in poor productivity in the 1970s and 1980s (Brownbridge, 1996). In particular, as adverse macroeconomy combined with government domination, the banking industry became politicized, including government appointment to Board positions on political grounds, fiscal indiscipline, misusing bank resources to finance budget deficit (CBN, 2004).

The effect of adverse macro economy became more pronounced with massive liberalization (CBN, 2004) as the economy moved from boom in the 1970s to burst by sharp drop in oil revenue in the early part of the 1980s. The accompanying economic woes forced the adoption of the Structural Adjustment Programme (SAP) in 1986 and other reforms from 1987 to stimulate competitive banking. The reforms involved liberalization and prudential regulation (Brownbridge, 1996), licensing of new private banks up to 1993 (the third generation banks) and dramatic increase in the number and variety of non-bank financial institutions (NBFIs) (Soyibo, 1996). In particular, there was rapid growth



of local private banks, mainly merchant banks, after 1986. By 1992, the number of banks operating in Nigeria had risen to 66 commercial banks and 54 merchant banks, totalling 120 banks in all.

Critically, liberalizing a financial system in an unwholesome macro economy destabilized competition (Noy, 2004) by shrinking profit as deposit rates increased and foreign banks entered the system (Freixas et al., 2000). As competition intensified, inefficient banks became bankrupt, bowing desperately to lowered risk standards (Boyd et al., 2000). As a banking in Nigeria began as monopolies and oligopolies, the culture of competition was unfamiliar. As liberalization policy fostered competition (Uche, 2007), banks that were unaccustomed to it suffered (CBN, 2004). Moreover, inappropriate sequencing and inconsistencies in policy implementation truncated the efficacy of the reforms (Brownbridge, 1996). The stage was therefore set for the second episode in the 1990s through double digits inflation, high cost of funds and difficulty in attracting deposits (Ogowewo & Uche, 2006).

## **RELEVANCE OF DEPOSIT MOBILIZATION IN NIGERIAN BANKING**

Apart from the difficulty that banks faced in attracting deposits following adverse macro economy, the structure of bank deposits itself had negative impacted on liquidity. The term 'structure of deposits' covered both demand and time deposits. Critically, it stretched liquidity through loan-deposit maturity mismatch (Diamond & Rajan, 2001; Bektas, 2006; Diamond & Dybvig, 1983). The long term liquidity crunch severely curtailed the ability of banks to perform financial intermediation. Intrinsic fragility, involving loan-deposit maturity mismatch, was a major cause of illiquidity for the Nigerian banks (Olorunshola, 2004). In particular, the inter-bank market stopped lending to problem banks and the healthy banks became cautious in lending to one another.

Furthermore, in the 1990s, illiquidity of fragility was magnified by bank gambling with fluctuating government deposits (Siddiqi, 2005). The risk here is that government deposit is not stable and fluctuates with oil prices, the major source of revenue. Therefore, for a bank locked in with loan assets, sudden reduction in government deposit moved its liquidity dangerously. This imprudent practice exposed the fragility of most banks to the point of failure (Euro money, 2006).

## **RELEVANCE OF PRUDENCE IN NIGERIAN BANKING**

Prudence as a factor in the structure of the Nigerian banking financial condition is crucial and suggests need for care and caution in carrying out banking

business, especially in a climate of moral hazard (CBN, 2004). Imprudent lending was at the root of weak operational performance of most banks (Uzoaga, 1981). The high degree of imprudence displayed in the era of free banking engineered the Banking Ordinance of 1952 as the first policy effort at regulating entry conditions (CBN, 2004). With the Ordinance, banking was no longer free for all (Okigbo, 1981).

Widespread reform from 1987 followed the adoption of the Structural Adjustment (SAP) in 1986, including a new prudential measure in 1990, requiring banks to make provisions for delinquent loans (Brownbridge, 1996). Prior to this, banks were under-provisioning for loan losses in order to declare paper profits and had depended on fluctuating government deposits (CBN, 2004). Consequently, loans assets were classified into good, substandard, doubtful and bad debts to prompt provisioning of probable losses (O'Keefe et al., 2003). The prudential policy, in addition to a new policy of Government to suddenly withdraw its deposits from banks, revealed the weak balance sheets of many of the banks. There was flight to safety leading to the failure of some banks (NDIC, 1995; Soyibo et al., 2004).

It implies that without prudence, fundamentals fail through the channel of adverse selection and moral hazards. In particular, the prevalent practice of insufficient provisioning prior to the prudential measures suggests management ineptitude in anticipating loan losses. Impaired loans, mainly resulting from imprudent lending, were a principal cause of problem banking in Nigeria (Brownbridge, 1996), affecting both liquidity and earnings (Fofack, 2005) and risking both interest and principal (Olorunshola, 2004). Non-performing loans in Nigerian banking accounted for an estimated 19.5% of the country's banking sector assets (Siddiqi, 2005).

Nevertheless, prudence in the Nigerian banking past (Uche, 2007) suffered setback when there was a shift from foreign to federal government domination (Brownbridge, 1996). Such a shift occurred in the 1980s when governments began to buy up ownership stakes in banks. Government intervention had some adverse effects. These included political interference and government appointments into bank Boards based on political considerations, fiscal indiscipline and the use of bank resources to finance budget deficit. These led to the outright failure of most government-owned banks (CBN, 2004). Arguably, such State intervention may be justified by persistent imprudence that was common among the indigenous banks. However, it should not be applied to interrupt prudential banking such as was practised by expatriate banks and reflected in their earning ability (Okigbo, 1981).

## **RELEVANCE OF EARNINGS IN NIGERIAN BANKING**

The history of the Nigerian banking past would appear to indicate weak operational performance structure as a major reason for indigenous bank failure (Uzoaga, 1981), often missed by regulatory measures (Okigbo, 1981). As a result,

periods of indigenous banking boom were short-lived (Brownbridge, 1996). Typically, earnings reported were no more than paper profits since, prior to the prudential policy of 1990, banks were under-provisioning for loan losses. The prudential policy of 1990 revealed the weak nature of balance sheets of many banks, which were consequently forced to report huge losses (NDIC, 1995; Soyibo et al., 2004).

Unfortunately, successive regulatory measures in Nigeria appeared to miss the lessons of poor operating performance of Nigerian banking past (Ogowewo & Uche, 2006). The Banking Ordinance of 1952, the CBN Act of 1958 and successive amendments, and the 2004 capital reform emphasized regulatory capital, rather than bank operating problems. As operating problems are measurable in terms of earnings, the tendency for policy to ignore earnings warning might have missed opportunity to predict and prevent problem banking in Nigeria (Njoku & Inanga, 2008b).

The anatomy of bank financial condition indicates that bank earnings are not as insignificant in Nigerian banking as policy emphases appear to suggest. Operating problems of Nigerian banks in the 1990s, measured in terms of earnings, affected bank health sufficiently to constitute part of its structure. Characterized in terms of the earnings warnings model (Njoku & Inanga, 2008b), profitability has proved a useful discriminant factor with market power unlocking bank earnings potentials.

## **RELEVANCE OF MARKET POWER IN NIGERIAN BANKING**

Market power mirrors bank strength in dictating market presence and earnings. Such influence is typically generated in bank ability to source deposits cheaply. In this case, the bank is in a position to influence financial intermediation in the market place. A bank with deposit cost advantage can dictate credit selection and pricing (Agusto, 2003). Without market power, the bank sources deposits expensively and is more prone to adverse selection, pricing credit costlier than the market. Such risky bank outlook has implications for capital cushion.

## **RELEVANCE OF CAPITAL IN NIGERIAN BANKING**

Capital adequacy has received immense regulatory emphasis around the world and most studies have found it significant in influencing bank financial condition (Arena, 2005; Gunter & Moore, 2003; Estrella, Park, & Peristiani, 2000; Cole & Gunther, 1995). Apart from its role in creating capacity, capital adequacy critically characterizes bank financial conditions in a unique way, namely, the structural dimensions of defence that banks employ in order to cushion operating risks. It, therefore, plays a key role in boosting bank confidence.



It seems reasonable to expect that the defence structure rooted in capital may not always share the same linear structure as the attacks that they seek to cushion. Nonetheless, capital plays an important role in creating capacity and cushion for the bank to operate successfully. In fact, capital adequacy was the subject of the Basel framework emphasizing the role of capital in cushioning losses. There is, therefore, the need for bank capital in consistency with the risk inherent in assets to imply that the riskier banks require higher degree of capital adequacy. Accordingly, the effect of capital adequacy on bank financial condition will be less sensitive for the stronger banks. This is because stronger banks do not need to rely on higher levels of capital to shore up confidence. On the other hand, a weak bank generally maintains low level of capital from profit erosion. Hence, the role of capital becomes more acute in problem banking (Wimboh, 2004). It follows that capital adequacy is essential in attracting liquidity support, meaning that market may fail to provide liquidity for an under-capitalized bank.

Capital adequacy has had high predictive power in bank distress studies (Estrella, Park, & Peristiani, 2000; Demirguc-Kunt et al., 2003). Demirgüç-Kunt & Huizinga, (1999) find a positive relationship between capitalization, profitability, and borrowing capacity of banking firms, especially in developing financial markets. Capital is crucial to banking so much that the degree of supervisory diligence depends on it in prompting corrective action (Peek & Rosengren, 1996). It means that inadequate capital accelerates failure of weak banks. Under certainty, the bank may rely on demand deposits to maximize credit since market risks discipline run risks (Lai, 2002). However, under uncertainty depositors panic when they observe low project cash flows, finding it rational to run (Diamond & Rajan, 2001). They fear fallback position in the event of loss, unless capital provides cushion, being run-free and renegotiable (Lai, 2002).

Bank capital has link to size, denoting funding ability (Siddiqi, 2005). Through this channel, the bank gains opportunity for risk reduction through diversification (Gilbert et al., 2002; Wimboh, 2004), volume and break-even (Tefula, 2002). Bigger banks, in terms of large capital size, are associated with smaller operating costs (Demirgüç-Kunt & Huizinga, 1999), reflecting scale and technical efficiencies (Yildirim, 2002). The small size of banks in Nigeria during the era leading up to 2006 hindered bank ability to fund infrastructural projects vital to the Nigerian economy (Siddiqi, 2005). The typical shareholder funds of the equivalent of US\$.01 billion that Nigerian banks maintained pre-merger, could support legal lending limit of just US\$.35billion, grossly inadequate in financing vital infrastructure (Euromoney, 2006). If banks generate insufficient volume of business due to small size of capital, then bank burden may be difficult to bear the smaller the bank.



Banks in Nigeria unable to meet the prescribed minimum of capital become distressed by regulatory standard (Ogowewo & Uche, 2006). Thus in the Nigerian case, the minimum capital regulatory thrust of the 1958 Banking Ordinance weeded the banking industry of fringe players in an attempt to resolve the first episode of problem banking in Nigeria. Again, the second episode hinged solution on the same issues of minimum capital as the Central Bank of Nigeria insists on capital adequacy cover for loan loss (CBN, 2004). To force closure of the episode, the Central Bank of Nigeria prescribed N25 billion Naira (\$195 million) minimum shareholder fund by the close of 2005 (Jato, 2001). This measure has again had the effect of weeding the weak players by compelling bank consolidations in mergers and acquisitions (Ogowewo & Uche, 2006).

### **SYNTHESIS OF THE NIGERIAN EXPERIENCE**

The review of the Nigerian case clearly demonstrates that the anatomy as modelled effectively reflects the nature of banking firm financial condition. The conceptual framework plausibly paints the anatomy of bank financial condition as the prudential application of market power and market presence to transform deposit mobilization, under a given macro-economic condition, into earnings quality as capital boosts confidence. The next sections apply the insight in explaining the 2008 global banking crises.

### **APPLYING THE LESSONS FROM NIGERIA TO THE GLOBAL BANKING CRISES**

Because banking around the world is interconnected, the lesson from Nigeria may be applicable in explaining the 2008 global banking crises. Accordingly, the anatomy casts the crises in the light of the failure of market power and market presence to transform deposit mobilization into earnings quality as imprudence stretched the sub-prime mortgage and Credit Default Swap risks. Since capital could not offer cushion, confidence fell and bank financial condition grew worse.

The above proposition foots the crises on bank appetite for Credit Default Swap (CDS) bet. By accelerating the failure of firms like Lehman Brothers, the CDS bets worsened the 2008 global financial crisis (Van Duyn & Bullock, 2008). As the sub-prime mortgage binge began to renege, the CDS spread of the banks widened to erode confidence. Hence, bank liquidity problems turned insolvent (Diamond & Dybvig, 1983). Although the widening spread may be argued to reflect the trouble with the banks to alert counterparty risk, the erosion of bank

confidence itself came with the risk of run. The next sections give a brief review of Credit Default Swap and interpret the global banking crises in terms of the anatomy of bank financial condition.

### *Credit Default Swap (CDS)*

According to Wikipedia (2008), credit default swap (CDS) is a credit derivative contract between two counterparties. A JP Morgan team created the instrument in 1997 (David, 2008), to primarily hedge against credit risk (Engdahl, 2008; Eisinger, 2008). It involves the making of periodic payments from the buyer of protection to the seller in return for pay-off if an underlying financial instrument is in default. It, therefore, looks like an insurance contract in that the buyer appears to pay premium to insure against a risk and receives settlement should the risk crystallize. However, it is not insurance because the buyer of CDS is not required to have proprietary interest in the underlying security. In addition, the buyer does not have to suffer a loss from the default event. To receive compensation, it is enough to prove that the default happened (Wikipedia, 2008).

It means that the structuring of CDS around sub-prime mortgage exposed the writer of the instrument to liability if a sub-prime borrower reneged. Therefore, banks that sold CDS suffered exposure by the simple event of sub-prime mortgage default. Sadly, an instrument originally designed to enable banks to hedge against risk now became a weapon of mass speculative bet effectively transforming banks from risk managers to risk takers. Through the lens of CDS spread basis points that vary inversely with credit-worthiness (Wikipedia, 2008), an investor is able to buy CDS protection, speculating the likelihood of default of a reference entity. On the other hand, an investor sells protection, speculating the unlikelihood of default of a reference entity. This gamble transforms participating banks into risk takers that they are not designed to be, thereby further stretching the fragility that is implicit in the nature of banking.

In the episode of the global financial meltdown, some banks sold CDS, effectively betting that sub-prime mortgages were not going to be in default. It turned out that the mortgages went into default on a massive scale, thereby exposing the selling banks to huge losses. This may be contrasted with hedging in which sub-prime mortgage lenders used CDS to manage credit risks. The holder hedged exposure by buying protection against debt default. If banks had restricted the use of CDS to only hedging, financial storm would not have triggered. It turned out that bank counterparties that sold the CDS bet had not created back-up capital reserves, having been too optimistic. As such, they were unprepared for the flood of risks that rushed.

Being the most widely traded credit derivative product (Barrett, 2006), CDS market is reported to have matured to an estimated size of around \$60 trillion by the end of 2007, achieving a ten-fold growth since 2003 (Lewis, 2007). As at June 2007 the notional outstanding credit default swaps, was reported at about \$43 trillion (Upper, Gallardo, & Mallo, 2007). Since 2000, the outstanding CDS was reported to jump from \$900 billion to more than \$45.5 trillion at the end of 2007 (Morgenson, 2008). IDSA (2008) estimates \$62.2 trillion to be outstanding worldwide. Subject to discrepancies, the estimates show that the size of the CDS market is massive, well beyond the balance sheets of the banks at the short end of the market. Hence, the risks crystallized in waves of financial storms.

Banks became gullible for several reasons. First, the default rate of CDS had been historically low. Investment grade CDS reportedly had default rate as rare as 0.2 percent (Carey, 2008). The rarity of default shored up bank appetite for the instrument, since it appeared to be a low risk means of making huge money. Nevertheless, the low default rate was only because the American economy was strong at the time and mortgage borrowers were not reneging. The scale fell off the eyes when the US economy took a hit and sub-prime borrowers began to renege. The low default deception had reinforcement in infrequent cash flows between buyers and sellers inherent in cancellation arrangements. This second factor implied cash flow free opportunity to make huge money. The two factors effectively hid the enormity of the risk, as the actual size of the exposure did not reflect in bank balance sheet, being a contingency. What is more, CDS is an over the counter transaction devoid of centralized clearing house. It means that, apart from restriction of risk transfer, the transactions are not transparent and are therefore prone to unscrupulous manipulations. Naturally, market of this size calls for transparency (Cox, 2008). The next section gauges the implication of CDS bet for the global banking crises in the light of the anatomy of banking firm financial condition.

### *Impacts of Market Presence*

As the 2008 financial meltdown centred on Credit Default Swap (Devine, 2008), market presence was a handy medium for the spreading of the toxic assets. The exotic investment security had a touch of class and naturally appealed to the rich and affluent. The big banks with strong muscle were the ones peddling it. Through the vehicle of market presence maintained across the globe, the influential banks in America were able to sell CDS around the world. Freddie Mac, Fannie Mae, Lehmann Brothers, Wells Fargo, AIG, Citi Bank, Wachovia and Bear Sterns were names of influential banks whose involvement were often cited.

The general lack of understanding of the instrument meant that market presence was wrongly used in spreading the toxic assets around the world. Information asymmetry had driven the toxicity of the exotic investment security to high heights. It was the case that the influential banks were ignorant. The security instrument was too complex to understand. Documentation was too detailed, boringly voluminous and full of complicated formulas. The complexities were from complicated mathematical modelling. A bank should have grip of its markets of which its products is a part. Unfortunately, in the case of CDS bet, the influential banks lost control. The lack of understanding inhibited appreciation of inherent product risk as the financial instrument was an experimental project, not yet tested. Therefore, the market did not know what to expect.

As crisis suggests, inherent exposure of market presence manifests easily in challenging times. On the other hand, market presence exposure is easily deluded in good times. This is because in good times banking obligations hardly renege. Hence, confidence of players was high during prosperous times as counterparties met commitments. Therefore, bank presence that could not observe directly, felt confident to rely on third party certifications, especially of rating agencies and insurance agencies. Nevertheless, when reality set in market players became more cautious. At that point the risk had become acute for those banks that were already exposed. The market as whole was ignorant. Even the expert Wall Street bankers were caught napping. As a director of a swaps and derivative agency put it (Devine, 2008), nobody really saw it coming.

The privacy and lack of disclosure surrounding the CDS securities helped promote the information asymmetry that hid the risk. This may explain why players relied on rating agencies. It may also explain the gully in believing that CDS offered insurance protection. Moreover, the secrecy surrounding the instrument did not accord with basic principle of insurance. Utmost good faith is a cardinal basis of Insurance, demonstrated in effective disclosure. Rather than insurance, CDS turned out to be gamble. Structuring the instrument as an insurance contract would have required reserves creation and adequate reporting. But by choosing to label it swap rather than insurance, creators of the instrument effectively hid the true nature of the derivative. The information asymmetry, thus allowed market presence to spread the problem far and wide.

In the event that buyers of the mortgage-backed securities became suspicious that they were entering risky investment deals for which they had limited understanding to naturally feel a sense of loss of control, the sellers sold swaps to cover up and confer confidence (Devine, 2008). The false promise of insurance could not sustain when reality set in. Bear Stearns was the first to fail. JP Morgan took it over. Then, Lehman Brothers became bankrupt. AIG was about to fail when



the government intervened with an \$85 billion rescue package. Citi Bank was also about to fail but for the bailout by government. The interesting part is that though market presence fuelled the spread of the exposure, yet when the bubble burst, market presence still entered the decision of which bank to bail out. Banks like Lehman Brothers low on market presence were allowed to fail. On the contrary, banks like Citi Bank and AIG high on market presence forced government bailout.

Estimated at about 60 trillion, the size of the market was alarming, with global reach. Some major financial firms considered too big to fail across the globe were in the mess, prompting governments to chew their words not to intervene. The US government voted \$700 billion bail out package. Germany, Britain, France, Russia, Switzerland and many other countries around the world announced heavy bailout budgets for the banks. In spite of perceived competence as among the smartest bankers in the world, the Wall Street financial gurus did not have experience in this experimental project. That explains failure to create back up capital reserves. Surely, market presence was handy to spread the mess and to instigate bail-out as the economy sank into recession.

#### *Impacts of Macro-economic condition*

Adverse macro-economy was a catalyst for the crisis. In the US, adverse macro-economic condition was evident in high fuel prices, persistent unemployment, budget deficit and negative reserve. The adverse economy resulted in recession. As unemployment rates were high in lay-offs and businesses began to fail in their credit commitments, the bad weather forced the sub-prime borrowers to renege, leading to foreclosures on a massive scale. Property prices fell, thereby exposing the mortgage-based securities that underlay the Credit Default Swap. As the sub-prime lending binge and mortgage-backed securities failure began to take toll on the banks, inter-bank confidence eroded, leading to credit crunch and economic contraction (Dell'Ariccia et al., 2008). The resultant liquidity squeeze compelled government intervention.

#### *Impacts of Deposit Mobilization*

Theory blames crisis initiation on market failure in providing liquidity, especially the inter-bank market and the deposit market on which banks relied, thereby turning a liquidity problem into solvency problem (Lai, 2002). It brewed into a financial storm of global proportion as liquidity shortfall in one institution began to have repercussions on others (Vij, 2005). Banks became more fragile by

outright risk crystallization and would have to depend on the liquidity market to meet current maturing CDS obligations. Then, the market began to fail due to erosion of confidence.

Market would advance liquidity if bank fundamentals suggest safety and if the terms are favourable, or decline liquidity otherwise (Allen & Gale, 2000). In this case, market was not forthcoming with liquidity for the banks that had high exposure to CDS bets. As not much asset on the left remained for the right side of the balance sheets of such affected banks as Lehman Brothers, the liquidity surplus banks shunned the deficient banks even to the point of pulling out of take-over negotiations, except with government guarantees. Then, free-rider problems in the inter-bank market forced systemic liquidity dryness (Bhattacharya & Gale, 1987) to compel government bailout. Before the government bail-out could be arranged, desperate banks bowed out. For example, Lehman Brothers became desperate, filed for bankruptcy protection and later sold itself to J.P. Morgan at below fair value. Apart from sending jitters, that action of realising assets in a forced sale situation would create further gap between assets and liabilities in the liquidity market (Bektas, 2006) to force tighter liquidity crunch.

Critically, as the sub-prime mortgage loans began to under-perform, bank liquidity became stretched for the affected banks, including Bear Stearns, Lehman Brothers, Freddie Mac, Fannie Mae and City Bank. Bear Stern and Lehman Brothers filed for Bankruptcy to avoid run. Freddie Mac and Fannie Mae got to the brink of run before the government intervention. In Britain, Northern Rock was already undergoing run before government intervention. In particular, huge contingent liabilities crystallizing from CDS without assets backing created permanent gap between bank assets and bank liabilities. In essence, the liquidity market could no longer command confidence, except by government intervention. The gap on the assets side was toxic because the delinquent assets did not command much value. The crises occurred because the toxic assets, no longer covered the liability. So depositors and bank counterparties would have to withdraw quickly to cut losses as late exit would spell more losses (Lai, 2002).

The initial \$700 billion American bailout was to arrest this situation by the government buying the toxic assets off bank balance sheets as a means of bridging the gap between bank assets and liability. Furthermore, the liquidity market fragility manifested some sense of self-fulfilling bank run attributable to sun spot (Diamond & Dybvig, 1983). In this story, the risk of run crystallized with investors placing less confidence on the mortgage-backed securities. The runs triggered contagious worldwide problems that did not spare even the so-called healthy banks that failed to exercise prudence.

### *Impacts of Prudence*

With Freddie Mac and Fannie Mae and some other big players stretching fragility (Diamond & Rajan, 2001) through sub-prime mortgage lending binge, the CDS crisis evolved into credit crunch (Bektas, 2006). As the mortgages began to fail, the securities they backed became worthless with counterparty risk remaining unrealized. It smacks of imprudence to sell unregulated credit default swaps, having not created back-up reserves (Devine, 2008).

A major difference between insurance and credit default swap bet is the absence of this back-up capital reserve. Therefore, for the participating banks, the gamble was a bubble waiting to burst. Imprudence compromised banking with betting on sub-prime lending. The banks were exposed because they sold insurance without creating capital reserve backing, after gambling that sub-prime mortgage would not renege. It turned out that sub-prime borrowers reneged in the wake of adverse macro-economic conditions and the CDS contingency crystallized, catching counterparties unprepared.

Strangely, rating agencies such as Standard and Poor's certified the instruments investment grade, in spite of the false promise of insurance. It means that third party certifications do not excuse the need to exercise prudence. Management must develop ability to discern. Prudence is especially essential in translating market presence into productive outcome. It is one thing to have market presence; it is yet another thing to apply the prospect with such wisdom that keeps the bank safe. Without prudence, market presence may drive futility to damaging heights. The absence of prudence in CDS meant that market presence spread toxic assets across the globe.

### *Impacts of Earnings*

Banking business is risky by nature. It, therefore, calls for productive transformation of risks into return. The CAMELS theory reflects these perceptions in gauging returns consistent with risk (Peek & Rosengren, 1996). Successful transformation of risks leads to profit. Otherwise, risks crystallize into losses. In the current crises, the major banks burned their fingers in the CDS saga reporting huge losses as their bet failed. The risky gamble did not transform into expected returns. It shows that banking is not betting. The risk of loan-deposit mobilization inherent in the nature of banking is challenging enough, requiring no further magnification. Bankers are risk managers, not risk takers (Evans, 1991). Therefore, bank management as a key resource in profitability (Olson, 1975), should practise risk avoidance and risk transfer instead of risk taking (Santomero, 1997).



### *Impacts of Market Power*

The affected major Wall Street banks had market power. However, when it comes to Credit Default Swap, they misapplied the power. The same fire power that can cook food, can burn the finger. If effectiveness is to do the right things, then the Wall Street banks did the wrong thing with the Credit Default Swap gamble. Therefore, their efficiency drove futility to great heights, having not mixed with effectiveness. They were very good at the wrong thing; driving volumes of toxic assets, rather than quality assets. It is quality assets that generate revenues to cover operating costs and achieve a safety margin. As bank burden not covered continued to weigh by bank booking of bad credits, fragility was not freed to let intermediation contribute direct to profit.

### *The Role of Capital*

In the global financial melt down, capital proved inadequate in providing cushion. As the sub-prime borrowers reneged in the wake of the economic downturn, the need for equity cushion became acute. Loan write-offs, loan provisions and potential crystallization of contingent liabilities from the Credit Default Swap took toll on bank earnings, stretching capital. Such banks as Citi Bank had to invoke their global reach to source additional capital after taking huge losses. In addition, the banking landscape experienced bank reconstructions as banks sold off significant units of their investments or became targets of takeover bids. As the crisis hit, banks considered too big to fail, including Freddie Mac and Fannie Mae, AIG and Citi Group, resorted to government bailout.

A critical element of government intervention has been to shore up bank capital. The financial storm generated sufficient panic that governments around the world saw the need to coordinate intervention. Accordingly, the British response was to inject capital as a confidence booster to arrest the haemorrhage. This was unlike the initial American response that was assets based. Nevertheless, the American approach and indeed the rest of the world embraced the British initiative. However, government intervention should be with caution. Government assumption of ownership stakes in banks as appearing to be the current global thinking should be stopgap measure directed at restoring confidence in the liquidity market place. Thereafter, government should divest to avoid injecting politics into banking.

### *Neutralizing the Toxic Asset*

Global response to the impasse is in government bailout of banks. The US government initially proposed to buy the toxic assets off bank balance sheets but later chose to adopt the British approach of injecting capital by taking ownership stake.



The global response seems to settle around government assuming ownership in troubled banks considered too big to fail. Otherwise, such banks fail. Critically, both measures do not appear to address the core problem.

The banking crisis is rooted in Credit Default Swap. The affected banks made imprudent use of the derivative instrument for betting rather than hedging. The core condition of the sub-prime mortgage does not appear to be as severe as the problem seems. About 95 percent of sub-prime borrowers are reportedly not reneging. It, therefore, implies that the 5 percent failure-rate, up from about 0.2 percent, is what is fanning the flame of the crisis. The problem is rooted in the bets attaching the increasing failures themselves and not necessarily the mortgage instruments. The mortgage instrument worst loose value at the level that may be cushioned by capital.

Given the above scenario, then the current global strategy would appear faulty. The solution is not as much capital injection into banking as it is in reconstructing the CDS bet commitments in a fair workout. Currently, the real effect of government action is not bailing out the banks, but bailing out the buyers of the CDS bet. This is because the bank counterparty, by becoming bankrupt, exposes the buyer of the "insurance" to total loss as unsecured creditor. This situation is a loss-loss scenario for the bank and the buyer of the protection alike.

Nevertheless, there is a win-win opportunity for both the buyer of the protection and the seller. As the cost of a meltdown is high, there is room for government intervention (Diamond & Rajan, 2005). The opportunity to bail out the buyer is present in the government preventing the bank from failing, as the governments seem to be doing currently. But the government can exploit the opportunity to also eliminate the CDS bet. Therefore, the government saves both the bank and the buyer by simply converting the bet to a hedging transaction. In this framework, the bank does not keep the bet promise and the buyer does not suffer the counter-party risk.

The solution in the story works out as follows:

1. The government outlaws bank betting. Banks are risk managers, not risk takers.
2. The Government shores up confidence by capital injection and guarantees.
3. The government restructures the CDS from bet to hedge.
4. The counter-party refunds CDS fees to the buyer with interest.
5. If the buyer also purchased the underlying investment, the counter-party compensates the buyer for the loss in value of the underlying mortgage.
6. The Government regulates the CDS market to make it more transparent.
7. The Government establishes clearinghouse for CDS to mitigate systemic risk.

The merit of this win-win strategy is in discouraging bank appetite for risk taking, while preventing corporate collapse. Speculative use of CDS has given rise to growth in outstanding notional value debt obligations. Under a CDS speculation, the buyer of protection may not actually own the underlying debt obligation against which default the CDS is supposed to insure. Hence, a useful hedging instrument becomes toxic by betting. Clearly, speculative use of CDS should be outlawed! Derivatives bought speculatively are financial weapons of mass destruction (Warren, 2003). This is because without collateral, counterparty credit worthiness ultimately determines the worth of the CDS. Since the counter parties can go bankrupt, speculative CDS may be worth nothing in the hands of a protection buyer.

One may take the case of Lehman Brothers. At bankruptcy, the CDS debt outstanding against the bank was approximately \$155 billion (Edwards, 2008), but referenced by about \$400 billion notional value of CDS contracts (Van Duyn & Weitzman, 2008). It suggests about \$245 billion CDS speculative deals that did not settle physically. At a final settlement price of 8.625 per cent, the \$400 billion notional CDS of Lehman's bankruptcy was an estimated net speculative exposure of \$366 billion (Van Duyn & Bullock, 2008). In addition, frequent mark-to-market lead to margin calls from buyers upon the widening of CDS spread to shrink net cash flows further. However, after cancellations of counterparty offsetting positions of Lehman Brothers, the net cash flows were as low as \$7 billion (Pickel, 2008). It illustrates huge leverage of \$366 billion bubble, typical of a speculative CDS.

Possible pressures from cash settlements expectations for these toxic assets are the crux of the CDS binge. The size and incidence of the toxic assets in Lehman Brothers' balance sheet threatened its going concern status and crystallized counter-party risk for buyers of protection to the extent that Lehman Brothers did not hedge. By the bankruptcy of Lehman Brothers, the buyers would risk complete loss of about \$245 billion that did not have underlying assets cover or counterparty hedge. Such a buyer is better-off with refund of premium paid to acquire the speculative protection. The mitigating measure is even more robust if the refund came with interest. Therefore, the buyer would have enjoyed a positive pay off in this arrangement to keep Lehman Brothers from failing. If this thinking applies, then, Lehman Brothers should have been alive!

On its part, Lehman Brothers having survived by the forgiveness of \$245 billion toxic asset is happy to refund premium with interest. The counter-party bank is also happy to compensate the buyer for the loss in value of the underlying mortgage. Under this arrangement, the role of government bailout is to create the enabling environment of confidence that would allow the arrangement to succeed. Effectively, the government converts the CDS contract from bet to hedge.

As a confidence boosting measure, the government may take temporary equity stake in the banks to inject liquidity in the inter-bank market to let the banks resume lending to one another. This is crucial because banking thrives on confidence and counterparty defaults inject systemic risk to threaten the entire market confidence. As counterparties renege upon crystallized contingencies overwhelming them, confidence erodes in the market place through inter-linkages to create panic (Conrad, 2008). The confidence erosion itself dried up liquidity market during September, 2008 (Fleming, 2008). Systemic CDS risk amplifies by chains of netting transactions that mask the underlying securities (Bloomberg, 2008). The information asymmetry, therefore, compels urgent need for a clearinghouse.

## CONCLUSION AND POLICY RECOMMENDATIONS

Banking firm financial condition is shaped by seven structural dimensions. They are the extent of market presence of the bank, the state of the macro-economy, the degree of bank deposit mobilization, the effectiveness of the prudential policies pursued by the bank, bank market power, the resulting bank profitability and the extent to which capital provides confidence cushion. The anatomy of banking firm financial condition also contributes insight into the global banking crises to suggest viable strategy to de-toxify the CDS binge. The study, therefore, recommends the following:

1. Policy measures to shore up bank financial condition should target the seven structural dimensions.
2. The global banking crises shed light on the danger of risk-taking among banks. It, therefore, provides policy lesson for banks to follow the strategy of risk management rather than risk taking. In this light bank usage of derivative instruments such as Credit Default Swap should be restricted to hedging and not used for betting.
3. Following the insight into the global banking crises as gleaned from the anatomy of bank financial condition, the study recommends de-toxifying CDS bet by outlawing it for banks and working out the current exposures in a win-win framework.

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