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## The case for stress testing in Nigerian banks

### WHAT IS STRESS TESTING?

Since the start of the global financial crisis, stress testing has received increased attention by regulators, rating agents, bank management, etc. Stress testing is not new. It has been a very important tool in the arsenal of risk management for many years. However, banks have not been very successful in implementing effective stress testing systems in the past. The reasons for this are lack of data, complexity and quantitative models capability required and inability to integrate the results of stress testing with the risk management decision process.

Stress testing is the process of:

- a. Defining potential extreme adverse future economic scenarios,
- b. Measuring the sensitivity of the bank's credit, market, investment and operational risk portfolios to changes in economic variables resulted under extreme scenarios defined under a
- c. Aggregating the results of b and quantifying the overall negative impact on planned profitability, capital levels, liquidity position, etc.
- d. Comparing the results of c to board approved risk appetite levels and implementing risk reduction business strategies, policy changes, etc. should the results of the stress test exceed risk appetite.

Step d is the most important in implementing an effective stress testing framework. During the current global financial crisis, many international banks ran into trouble because their stress testing frameworks omitted this important step. Senior management failed to adjust their risk taking strategies and risk management policies based on the stress testing results and continue to do business as usual in the hope that the stress scenario will never realize. As we now know, extreme scenarios have a habit of occurring more frequently than popular belief, causing these banks to be bailed out to survive.

*tools, etc. He was also a member of the Barclays Group Risk Technical committee, the oversight body in the Barclays group for all technical risk management frameworks implementation. During the 4 years of Basel II implementation in South Africa he served as the chairman of the credit risk task group of the accord implementation structure, lead by the SA central bank. Andre has been a regular presenter at conferences and international risk industry events. The World Bank invited him on two occasions to share his experience of Basel II implementation in South Africa with the central banks of other emerging markets at Basel II implementation planning events in Colombia and Turkey.*

## CHALLENGES IN IMPLEMENTING STRESS TESTING

The first and foremost challenge in implementing stress testing is the lack of historical data to measure the impact of extreme stress events. As Nigeria has not yet implemented global risk management standards, such as Basel II, which requires banks to maintain elaborate loss histories, data availability for deriving stress test impacts is limited. However, using appropriate statistical calibration techniques and loss data from other emerging markets, this problem can be overcome to derive plausible stress testing impacts for the Nigerian environment.

A second pre-requisite for a successful stress testing programme, is to have board level approved risk appetite limits. These limits will drive the actions required to reduce risks where the results of stress testing indicate excess risks. Without such limits, no action will be taken.

To limit the negative potential future impact of stress scenarios, tough decisions, sometimes with immediate negative revenue implications are required. Senior management needs to take a strategic view and be prepared to position the bank for long term sustainability and growth, sometimes at the expense of short term revenue targets, if stress testing is to be effective.

## TYPES OF STRESS TESTING

Nigerian banks should perform 3 types of stress testing as part of their on-going stress testing framework execution. These are:

- **Moderate PBT stress.**  
This refers to the negative impact on planned PBT levels, due to moderate stress scenarios – mild recession.
- **Liquidity stress test**  
This refers to the negative impact on liquidity levels, should extreme liquidity events occur – large deposits outflows that cannot be replaced, significant reduction in counterparty credit lines, etc.
- **Capital stress test**  
This refers to the impact on projected capital levels, should extreme scenarios realize and large losses are incurred, eating into capital.

It is important that stress testing be performed bottom up – ie taking into account the specific risk characteristics of loan portfolios, investments, collateral holdings, business processes, etc. Top down stress testing with simplifying assumptions about risks will lead to stress test results that are insufficiently

robust. Results of these stress tests should be used to adjust risk policies and business strategies.

Had Nigerian banks (and indeed many international banks) been applying stress testing as an integrated feature of their risk management frameworks in the past, value destroying practices such as excessive margin lending would have been averted and the industry would have been in a better position to fund much needed economic growth.

## **CENTRAL BANK ROLE IN STRESS TESTING**

One of the most severe early consequences of the global melt down after the collapse of Lehman Brothers in September 2008, was a freeze up of the inter bank markets worldwide, as confidence became impaired. Frozen inter-bank lending only started to thaw recently when regulators, lead by the US Federal Reserve, implemented bank recapitalization based on the published results of stress testing.

A transparent system of standardized stress testing, lead by a central bank can thus greatly restore and maintain confidence in country's banking system. One lasting consequence of the global financial crisis will be an ongoing focus on systemic stability – ie the robustness of the banking system to withstand severe shocks. Stress testing has thus come to stay and the Nigerian banking industry should start to incorporate stress testing as a crucial building block of the risk management architecture.

Sadly, the 1998 amendment to the 1988 Basel 1 accord for market risk has not been implemented yet in Nigeria. As a result, there is no explicit regulatory capital requirement for market risk taken in banks' proprietary trading activities.

## CONCLUSION

Developing the depth in Nigeria's capital markets is key to the future growth of the economy and achieving the 2020 aspirations. Existence of sound market risk management practises is crucial to promote investors confidence required for capital market development. Regulators of the Nigerian financial system should therefore take a lead role and adopt the Basel I and II market risk management requirements for implementation by banks and other financial institutions as a national priority.