

The Use of Sample Surveys to Support Monetary and Financial Stability Analysis: An Overview of the Central Bank of Nigeria

Kufre J Bassey¹

Abstract

This paper presents an overview of how the Central Bank of Nigeria uses statistics from enterprise surveys to shape economic decisions as changes in the overall economic situation led to the emergence of systemic risks in the financial sector. It underscores the role of survey in generating quantitative measures of projected business conditions, consumer tendencies as well as external sector data for compilation of balance of payment and other relevant statistics by the Bank. While monetary policy is forward looking to emerging developments in the economy, the paper suggests that sample surveys should be used to obtain reliable, accurate and timely statistics for the assessment of its effectiveness on both market expectations and public confidence.

Keywords: Business expectation survey; consumer expectation survey; financial stability; survey of foreign assets and liabilities

JEL classification: C8, D1, E2, E6

¹ Deputy Manager / Senior Statistician, Statistics Department, Central Bank of Nigeria, P.M.B.0187, Abuja; kjbassey@cbn.gov.ng.

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1.0 Introduction:

“Of late, central bankers can’t seem to get enough talk about financial stability and its connections to monetary policy. At the Federal Reserve, policymakers often point to financial stability concerns as relevant to their monetary policy decisions, especially in the context of the current extraordinarily accommodative stance of policy. At the Bank of England, the Monetary Policy Committee’s statement included an explicit financial stability escape clause for their bank rate forward guidance. The Norges Bank explicitly incorporates financial stability in its monetary policy discussions and decisions. And the Riksbank’s very public policy deliberations have centered on the tradeoffs between, and the appropriate balancing of, macroeconomic and financial stability goals (Williams, 2014)”.

“The elevation of financial stability concerns at central banks and other regulatory agencies is a natural reaction to the events of the global financial crisis, when the near-meltdown of the financial systems in many countries almost toppled the global economy (Williams, 2014)”.

Monetary policy can generally be seen as the institutional arrangements and the use of the monetary authority instruments in order to maximise social welfare (Gameiro *et al.*, 2011). Financial stability on the other hand seems difficult to define. In this overview, it is seen as the resiliency of a financial system to unexpected adverse shocks while enabling the continuing smooth functioning of a financial system intermediation process. According to Viñals (2012), the financial and economic meltdown that hit the world economy in 2007/2008 showed that monetary policy needs to take fuller account of financial developments. Borio (2011) also opined that central banks have been rightly hailed as saviours of global financial system following their swift and internationally coordinated action through liquidity support and interest rate cuts in preventing financial system’s crumbling. In Nigeria, the Central Bank monetary programme, like every other central bank, uses survey data to set benchmarks for various monetary and credit aggregates consistent with the desired overall economic activity for a given period and on a forward-looking time-frame. These benchmarks are set in consonance with the expectations of the performance of all sectors of the economy to ensure the achievement of low and stable inflation, sustainable output growth, positive balance of payments position and stable exchange rate.

In order to gain insight on how to blend monetary policy with financial stability, the Statistics Department of the Central Bank of Nigeria (CBN) introduced different enterprise and household surveys to generate timely information on market expectations and public confidence as elements of financial stability. Although the responsibility of generating such statistics is primarily domicile with the national statistical agency, the forward-looking surveillance and monitoring of some key macroeconomic indicators justified its contingencies. The objective of this paper is to present an overview of how statistics from three prominent enterprise surveys are used at different pace to support monetary and financial stability analysis in Nigeria after the global financial crisis of 2007/2008. The surveys include business expectations survey (BES) and consumer expectations survey (CES) that started in the second quarter of 2008 and 2009, respectively, as well as survey of foreign assets and liabilities (SOFAL) initiated in 2011 by IMF.

The remaining parts of the paper are structured in four sections. Section 2 presents monetary policy and financial stability overview in Nigeria, and the purpose of the enterprise surveys. The methodological framework is presented in section 3, while section 4 discusses the results. The fifth section presents the concluding remarks of the paper.

2.0 Monetary Policy and Financial Stability in Nigeria

The unprecedented global economic and financial meltdown of the world economy in 2007/2008 revealed that macroeconomic stability is vulnerable in the face of financial instability. The adverse impact of the crisis led to the collapse of many world financial institutions including Nigeria. According to Soludo (2009), the crises impacted on the Nigerian economy through commodity prices collapse (especially oil price), revenue contraction, declining capital inflows, de-accumulation of foreign reserves and pressure on exchange rate, limited foreign trade finances for banks, capital market downturn, divestment by foreign investors, among others. Thus, monetary policy was largely influenced by tight liquidity in the domestic economy, and liquidity management was therefore anchored on the need to ensure a well-functioning financial market that would foster growth without compromising the objective of monetary and price stability. The CBN made extensive use of open market operations (OMOs), being its primary tool of liquidity management. This was complemented by variation of prudential reserve ratios, the sale of treasury instruments at the primary segment of the market, and the use of CBN's standing facility window among others.

However, in the first half of 2010, the Nigerian economy was relatively stable though with a mixed outcomes in terms of developments. The CBN financial stability report of 2010 showed that the major challenge to economic and monetary policies in 2009 was the management of tight liquidity in the banking system. In particular, the growth in credit to the private sector slowed down significantly, while inflation rate (year-on-year) moderated substantially though at double digit all through 2009 to the first half of 2010. Exchange rate also depreciated during the third and fourth quarters of 2009 but later appreciated in the first quarter of 2010, while interest rates rose in the first half of 2009 as a result of the crisis which precipitated tight liquidity conditions in the banking system. It later reversed in the fourth quarter of 2009 following some improvements in liquidity conditions in the money market and the CBN guarantee of all inter-bank transactions.

2.1 Purpose of the Surveys

"In the narrower field of cyclical indicators, there are qualitative indices that have increasingly filled up the gap that could not be explained adequately by the more rigorous and conventional quantitative indicators, though in a less conventional way. Most of these qualitative indices are sourced from short term business tendency surveys (BTS) or business expectations surveys (BES), since they focus on the expectations and future plans of the business sector" (Cintura and Gador, 2003).

According to Forsells and Kenny (2002), central banks have long had an interest in monitoring the behaviour of inflation expectations in the economy and in

understanding the nature of the process by which expectations are formed. Kulshreshtha (2001) also reported that important short-term indicators required by the planners relate to overall economic conditions, environment for investment expenditure, capacity utilization of the existing industries and firm's financial position, among others. He also expressed that BES that are direct and up-to-date can provide necessary information for building up short-term indicators and short-term forecasting which is crucial to the planners for gauging the performance of the economy and for evaluating policy implementation. Bhattacharyay (2001) posited that results of business expectation and consumer confidence surveys are important part of the statistical information used at national and international level for monitoring economic development.

These surveys are carried out at regular intervals in several countries but they started in Europe, particularly Belgium, France and Germany, more than 30 years ago while Bank Indonesia started conducting its own business survey in 1993 (Sood, 2001; Utomo, 2001). In Nigeria, the global financial crisis added impulse to monetary policies to strengthen financial stability as changes in the overall economic situation led to the emergence of systemic risks, triggering changes in the market expectations. Thus, the introduction of the enterprise surveys was one of the critical measures to collect reliable quantitative information that cover economic phenomena and consumer tendency in order to shape economic policies and restore public confidence in the financial sector. The purpose of the BES and the CES for CBN is specifically to generate information explicitly on market expectations and consumer tendencies from households, small, medium and large enterprises, while SOFAL was initiated by IMF technical assistance missions to capture direct and portfolio investments, as well as other foreign capital flows in terms of debt securities, loans, trade and suppliers' credit, and advances.

3.0 Methodological Framework

Each of the enterprise surveys uses a well-defined structured questionnaire designed to allow for statistically valid inferences to be made over the targeted population. The questionnaire for each survey was normally drafted with the aim of stimulating useful information without imposing undue burden on the respondents. The information being sought from the surveys are as authorized by the CBN Act, 2007 which guarantees that data relating to individual entities be treated as confidential. The BES and CES are quarterly surveys that utilize opinion-testing techniques in collecting information. The methodological procedures for all the surveys are in tandem with international standard of industrial and household surveys.

3.1 The Business Expectations Survey (BES)

Specifically, the BES uses structured questionnaire designed to capture 21 responses from the respondents stratified into the six geo-political zones of the country (Table 1). The disaggregation considered includes geographical location, type of business, employment size and sector of the firm.

ZONE	SAMPLE STATE	Q1 2014 SAMPLE SIZE	Q1 2014 RESPONSES	Q1 2014 RESPONSE RATE (%)
North Central	Niger, Kwara, Kogi, Abuja, Nassarawa, Benue and Plateau	350	347	99.1
North East	Bauchi, Adamawa, Gombe, and Taraba	200	199	99.5
North West	Kaduna, Katsina, Kano, Jigawa, Zamfara, Sokoto and Kebbi	350	347	99.1
South East	Anambra, Enugu, Ebonyi, Imo and Abia	250	241	96.4
South South	Edo, Delta, Rivers, Cross River, Bayelsa and Akwa-Ibom	300	300	100.0
South West	Lagos, Oyo, Ekiti, Osun, Ogun and Ondo	400	398	99.5
TOTAL		1850	1832	99.0

Source: CBN Statistics Department Report- 1st Quarter 2014.

The analysis technique includes the use of a Net Balance Method where three global percentages for each question gross percentage changes are obtained. This is also called the proportion (in per cent) of respondents that answered in a specified manner. The balance (also known as Diffusion Index (DI)) is used to monitor the expected direction in the movement of a variable and anticipate possible turning points thereafter. The process involves adding up the number of firms with the same response in each sector; computing for the percentage distribution based on the total number of firms in the sector; and subtracting the percentage shares of the negative answers from the percentage shares of the positive answers, and disregarding the percentage shares of the "no change" or "normal" responses, to generate the diffusion index for each sector for each variable. Here, a positive index indicates a favourable view, except for the average expected inflation and borrowing rates where a positive index indicates the opposite. The overall business outlook diffusion index (DI) is computed as the percentage share of firms that have an "improving outlook" less percentage share of firms that have a "deteriorating outlook", and is also computed for the other business variables. Some of the prominent outcomes from the survey results have been business expectations index on selected economic indicators, business confidence index on own operations by sector and overall business constraints over the review period.

The mathematical summary for a survey with three reply options is given as follows:

$$\text{balance} = P - N \quad (1)$$

where,

P = the percentage of positive replies ("up" or "above normal")

N = the percentage of negative replies ("down" or "below normal")

3.2 The Consumer Expectations Survey (CES)

Drawing also from Table 1, this survey also use structured questionnaire on targeted respondents who are either regular employees, casual employees, employers of labour or self-employed from age 15 years and above over the selected households. The overall consumer confidence index is thereafter computed as the average of three indices (Economic Condition Index (ECI), Family Financial Condition Index (FFCI) and Family Income Index (FII)). These indexes are all diffusion indexes computed as the percentage of respondents that answered in the affirmative less the percentage share of the respondents that answered negative in a given indicator. Thus, a negative DI indicates that the respondents with unfavourable view outstrip those with favourable view, except for unemployment, change in prices and interest rate for borrowing money where a negative index indicates the opposite. In analyzing the data, the percentage of positive replies (viz: much more better, a little bit better, increase sharply, increase slightly, very likely, fairly likely, it is right time now); Unchanged replies (viz: remain the same, neither the right time nor the wrong time); and negative replies (viz: much more worse, a little worse, a little bit worse, fall sharply, fall slightly, not likely, not at all likely, it is not the right time now) indicate the direction of change of each variable (question). The difference between the percentage of consumer responses indicating an increase and the percentage indicating a decrease constitutes the "balance" as in Equation (1). Albeit, where there are, say, five possible answers, the balance can be modified as follows:

$$\text{Balance} = (\alpha + 1/2\beta) - (1/2\gamma + \rho) \quad (2)$$

where α denote the percentage answering "much better" or total certainty, β for "better", γ for "much worse" and ρ for "worse".

Alternatively, the DI could also be computed as $(100 + \text{balance})$, thereby transforming the negative values to all positive values. This implies that the net balance is calculated as the difference between the percentages of positive and negative responses and 100 is added to this difference, thus forming a separate diffusion index for each question. Thereafter, the general index is calculated by taking the arithmetic means of the DIs of the questions included in the consumer confidence index frame. The index is evaluated between 0 and 200 with index above 100 indicating that the consumer confidence is optimistic, below 100 indicates pessimistic, while at 100 implies neutral opinion in the consumer confidence.

Both BES and CES are quite related in that selected survey variables are combined into a single an overall cyclical indicator in order to have composite indicator. These indicators summarize economic agents' assessments of the current economic situation and their expectations for the immediate future, and are called confidence indicators.

3.3 The Survey of Foreign Assets and Liabilities (SOFAL)

SOFAL uses a sample frame that includes all enterprises with 100% foreign investment in the country. Thus, the probability of being selected is always greater than or equal to zero following a purposeful sampling method (criterion sampling). The process involves a technical working group (TWG) with members drawn from all the collaborating agencies that provide an operational framework that measures the magnitude of foreign capital inflows and out-flows; as well as identifying the country's capital flow destination and inflow recipient sectors. As part of the

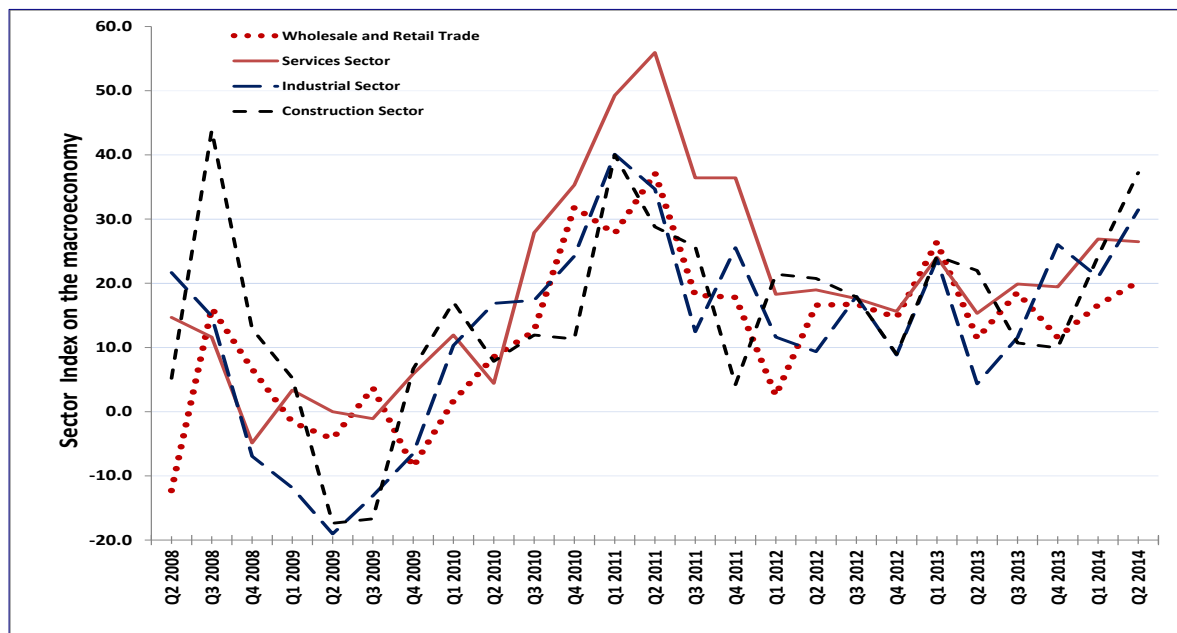
recommendations of the TWG, the collaborating agencies are basically responsible for the conduct of the SOFAL in their respective areas of authority while CBN serves as the secretariat for the coordination of all activities. In the structured questionnaire, the survey questions are generally qualitative, and mainly take the form of asking respondents to answer precise questions on foreign investments, in and by their enterprises (equity and non-equity). The analysis of survey data are generally through consolidation.

4.0 Discussion of Results

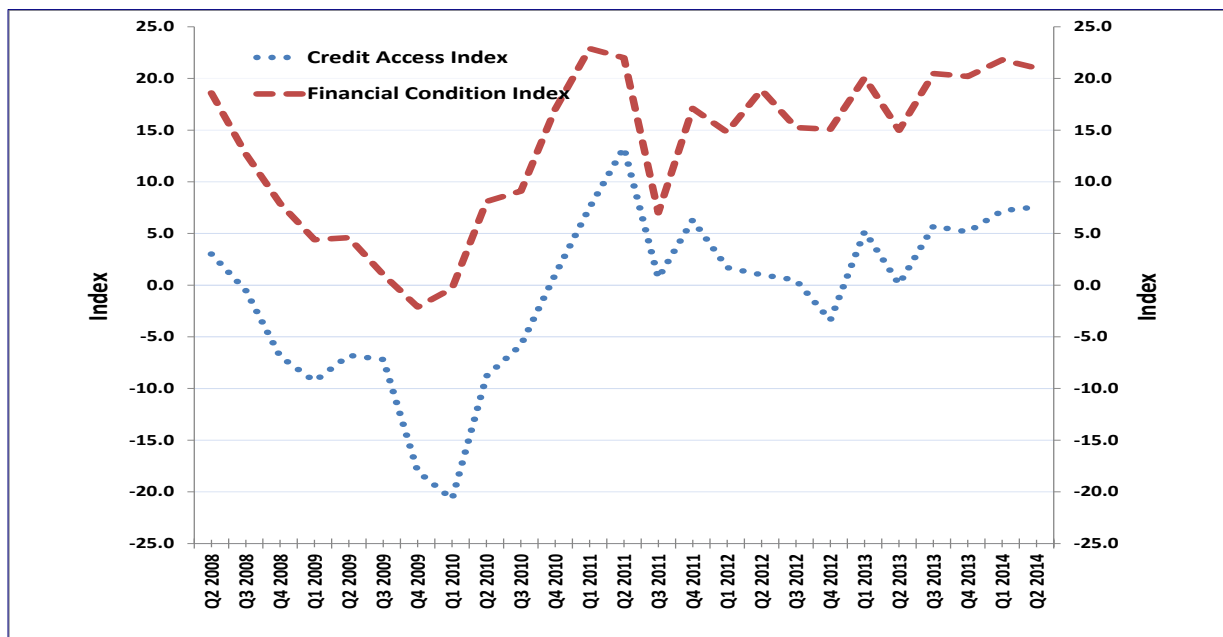
The business expectations survey generates quantitative measures of projected general business conditions and tendencies to provide policy makers with indicators on the current and prospective outlooks of the business sector (Figures 1 – 2)

Business Outlook Index on the Macroeconomy

Figure 1

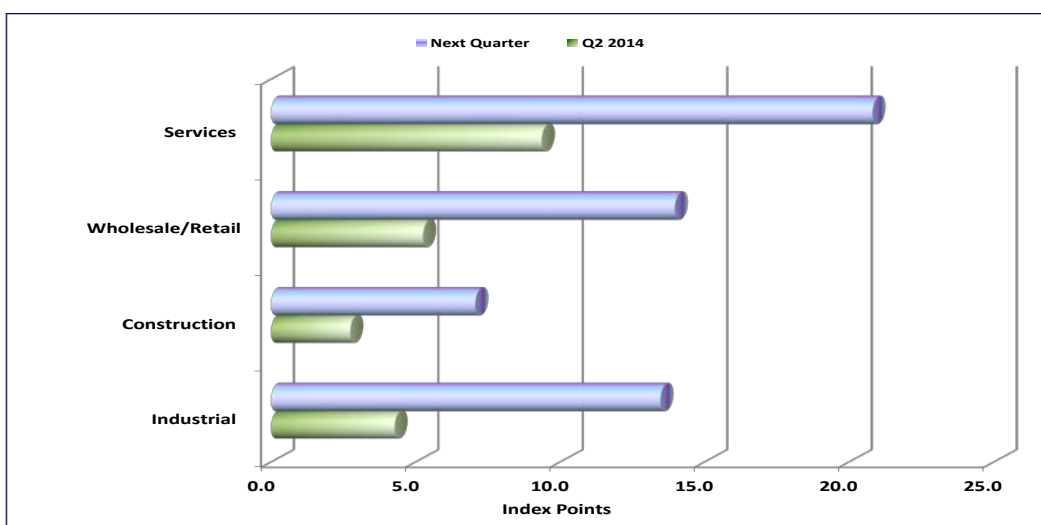


Business Outlook Index on own operations – Access to Credit and Financial Condition Figure 2



A cursory observation of Figures 1 and 2 shows how respondent firms were on average less optimistic in the overall business activities during the crisis period. For 2014q2, respondents were optimistic on the average that there would be improvement in business activities in the country.

Contribution to the Overall Business Outlook Index on the Macroeconomy by Sectors Figure 3



The optimism was driven mostly by the opinions from the services sector (9.4 points), while others include wholesale/retail trade recorded 5.3 points in the

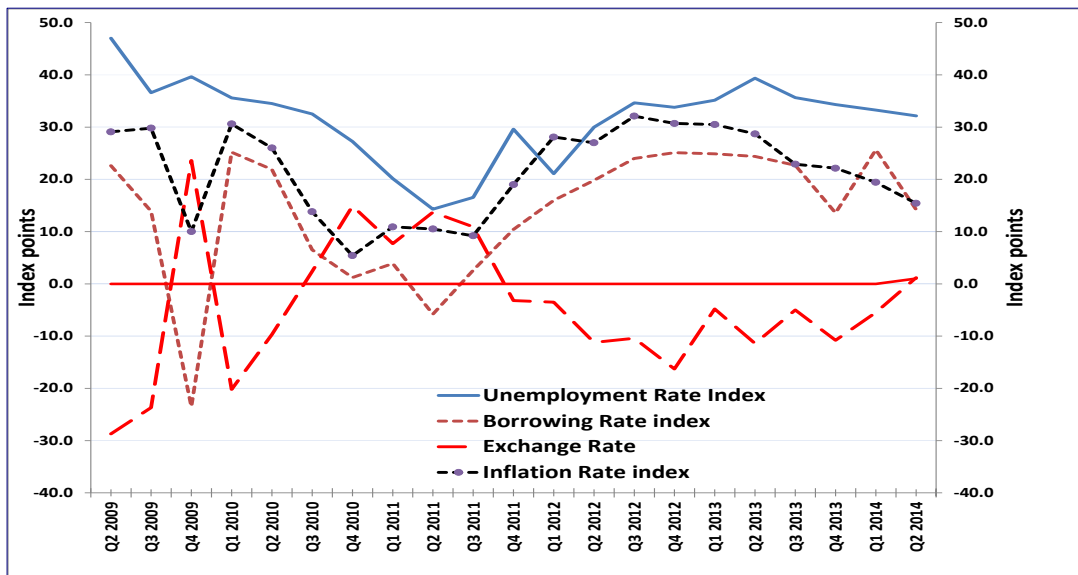
confidence index measure, industrial (4.3 points), and construction (2.7 points). The respondents were also optimistic on positive outlook in the volume of business activities over the next quarter (Figure 3).

Respondents also emphasized constraints in terms of insufficient power supply as a major factor that will impede business activities, together with high interest rate tendencies, financial problems, unfavourable economic climate, and competition.

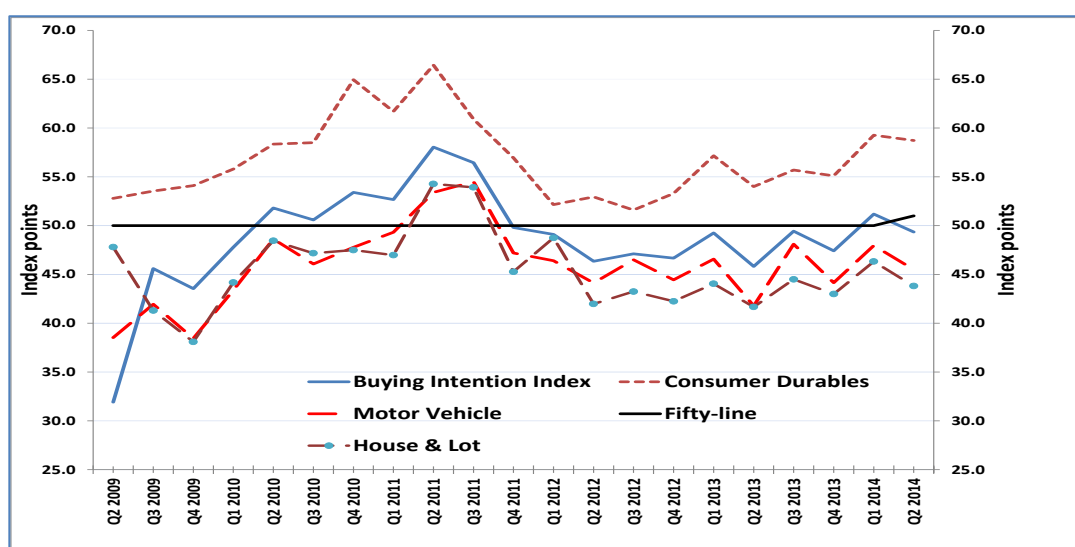
On the other hand, the consumer expectations survey generates information about consumer sentiments over the overall economic condition (measured by selected economic indicators) (Figure 4), as well as family financial situation and family income (measured by the household buying intention of consumer goods and services) (Figure 5).

Indices of selected economic indicators: next 12 months

Figure 4



The improved confidence in the buying intention up to 2011q2 (Figure 5) was attributed basically to the expectation of increased rate of employment. As the expected rate of unemployment and inflation increased the confidence index declined from 2012q1. It could also be seen that in 2014q2, the overall outlook of confidence index on family financial situation and family income remained bleak. However, inflation rate was expected to decline while consumers were optimistic about naira appreciation in the exchange rate market.



Stein (2014) showed that monetary policy, when governed by the usual dual mandate, penalizes variance in inflation and employment.

The maiden edition of SOFAL in 2011 contributed majorly to the external sector data for the compilation of balance of payment, external debt, and international investment position statistics. The survey data of respondents drawn from the Industrial, Construction, Wholesale/Retail Trade and Services sectors showed that the total inward capital to Nigeria from other countries (foreign liabilities) amounted to N12,729.69 billion as at end 2011, representing an increase of 8.97 per cent above the level of N11,681.32 billion in 2010 (Table 2).

Nigeria's Foreign Liabilities by Category (N 'Billion)

Table 2

	FDI	FPI	OCF	Total
2011	9,515.34	1,318.48	1,895.87	12,729.69
% Share	74.75	10.36	14.89	
2010	8,108.99	1,907.69	1,664.64	11,681.32
% Share	69.42	16.33	14.25	
Annual Change (%)	17.34	-30.89	13.89	8.97

Sources: CBN 2011 SOFAL Report.

This involves N9, 515.34 billion or 74.75 per cent FDI, N1, 318.48 billion or 10.36 per cent FPI and N1, 895.87 billion or 14.89 per cent OCF, respectively. The increase in 2011 was largely attributable to the 198.7 per cent growth in investments from Africa, while investments to Nigeria from Asia and North America grew by 10.3 and 6.4 per cent, respectively (Table 3).

Nigeria's Foreign Liabilities by Region of Origin (N 'Billion)

Table 3

Region	2011	2010	% Change Btw (1) & (2)	% Share Column (1)	% Share Column (2)
	(1)	(2)			
Asia	1,778.64	1,612.72	10.29	13.97	13.81
European Union	6,988.08	7,469.34	-6.44	54.90	63.94
North America	507.73	477.33	6.37	3.99	4.09
North Atlantic & Caribbean	1,438.54	1,439.63	-0.08	11.30	12.32
Others	3.29	8.15	-59.59	0.02	0.07
Africa	2,013.41	674.14	198.66	15.82	5.77
<i>ECOWAS</i>	133.54	122.61	8.92	6.63	18.19
<i>East & Central Africa</i>	1,714.33	441.96	287.89	85.15	65.56
<i>South Africa</i>	157.37	107.71	46.10	7.82	15.98
<i>North Africa</i>	8.15	1.86	338.42	0.40	0.28
Total	12,729.69	11,681.32	8.97		

Sources: CBN 2011 SOFAL Report.

In terms of sectoral distribution of the inward investment, extractive industry of the Nigerian economy was the preferred sector of foreign investors as it received about 49.4 per cent share, followed by the manufacturing sector with about 29.1 per cent, and transport, storage and communication with 10 per cent share. The sector on agriculture, hunting, forestry and fishing, as well as financing, insurance, real estate and business services remained unattractive among others (Table 4).

Nigeria's Foreign Liabilities by Destination Sector (N 'Billion)

Table 4

Sector	2011	2010	% Change Btw (1) & (2)	% Share Column (1)	% Share Column (2)
	(1)	(2)			
Agriculture, Hunting, Forestry and Fishing	6.09	9.51	-35.91	0.05	0.08
Financing, Insurance, Real Estate & Business Services	726.27	328.73	120.94	5.71	2.81
Extractive	6,285.97	6,695.01	-6.11	49.38	57.31
Construction	157.57	127.55	23.53	1.24	1.09
Manufacturing	3,704.37	2,377.17	55.83	29.10	20.35
Transport, Storage and Communication	1,273.39	1,531.99	-16.88	10.00	13.11
Wholesale and Retail Trade, Catering and Accommodation	576.02	611.37	-5.78	4.52	5.23
Global Total	12,729.69	11,681.32	8.97		

Sources: CBN 2011 SOFAL Report.

5.0 Concluding Remarks

The use of sample surveys have been a major tool of generating markets information and public opinions on the overall economy by the Central Bank of

Nigeria for over a decade. The three enterprise surveys have also supported the monetary and financial stability analysis in Nigeria by

- providing the policy makers with indicators on the current and prospective outlook of the business sector;
- generating quantitative measures of projected general business conditions and tendencies;
- generating data for measuring the size of foreign direct investment (FDI); foreign portfolio investment (FPI) and other capital flows (OCF); and
- quantifying foreign investments attribute to government investment promotion policies (such as the free trade zone policy) in Nigeria, among others.

The surveys also bring to fore some of the major challenges in Nigeria's financial system to include major weaknesses in the business environment and financial inclusion where these factors combined with other factors to weaken the financial system and constrained growth in Nigeria during the global financial meltdown of 2007–2009.

Having recognized that financial stability can be fostered by public confidence, the Bank also implemented several recommendations emanating from the surveys to enhance stability in the system. These include renewed collaboration with other regulators for data generation, establishment of power development fund (PDF) in support of small and medium enterprises (SMEs), establishment of small and medium enterprises credit guarantee scheme (SMECGS), establishment of fund for the refinancing and restructuring of the manufacturing sector loan portfolio, and establishment of commercial agriculture credit scheme (CACS) in collaboration with the Federal Ministry of Agriculture and Water Resources.

In conclusion, this paper has underscored the need for policy decisions to be informed by careful analysis of sound and transparent data on the overall economic situation for any effective and pragmatic implementation. Hence, to ensure that financial sector contributes optimally to the real sector, the availability of reliable, accurate and timely statistics is a fundamental prerequisite and sample survey can be used to achieve this.

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