nbs

NATIONAL BUREAU OF STATISTICS

THE NIGERIAN ECONOMY: PAST, PRESENT AND FUTURE

This report is an analysis of the Nigerian economy over the 2010 through 2015 periods with particular focus on the nation's Gross Domestic Product, Inflation, and Merchandise Trade Statistics. The report also includes forecasts for the aforementioned variables over the 2016- 2019 period.

TABLE OF CONTENTS

FOREWORD

The demand for statistics at all levels of government; federal, state and local continues to grow exponentially, and with it, the analysis of the aforementioned data into concrete trends on various socioeconomic issues. In line with our mandate of the 2007 Statistical Act as the national statistical office, and the custodian of official statistics in Nigeria, National Bureau of Statistics (NBS) continues to strive for improvements in the delivery of its mandate which includes data production, coordinating the National Statistical System (NSS), advising the Federal, States and Local Governments on matters relating to statistical developments, as well as developing and promoting the use of statistical standards and appropriate methodologies.

The Nigerian Economy; Past, Present and Future is the fourth edition of Macroeconomic forecasts being published at the NBS and aims to provide policy-makers, researchers, investors and the general public of its assessment of the Nigerian economy in the past years, the likely trends of key macroeconomic indicators in the current year and future years. Similar to previous editions published by the NBS, the focus of this report continues to be macroeconomic statistics including GDP, Inflation, and Merchandise Trade; key macroeconomic indices followed by policy makers and analysts. This edition differs from previous editions, however, as we have decided to provide more historical analysis over the previous five year period (since 2010) before analysis on recent economic developments and projecting. Again, the report combines an analysis of economic developments in 2015 with quantitative inputs into a Bayesian Vector Autoregressive Model (BVAR) modelled with parameters to represent a small open economy in order to arrive at reasonable forecasts of the levels and growth of the aforementioned macroeconomic variables.

It is my sincere hope that this report will facilitate evidence-based policy at all levels and enhance decision-making by various users. While hoping that this report will engender a positive discourse on the direction of the economy and macroeconomic policy in 2016, I would like to convey my sincere gratitude to all producers and providers of data all around the country, whose valuable inputs made the publication of this report possible. Finally, *The Nigerian Economy; Past, Present and Future* is a product of the hard work and commitment of the management and staff at NBS, all of whom are gratefully appreciated.

Yemi Kale, PhD
Statistician General of the Federation/ CEO
National Bureau of Statistics
February 3, 2016.

EXECUTIVE SUMMARY

The turmoil in global commodity markets, witnessed in the second half of 2014 brought their full weight to bear on the Nigerian economy in 2015. Oil prices fell 66.8% from $114/barrel recorded in June 2014, to $38.0 by December 2015. Prices fell even further in 2016, to $32.6 as at 3rd February, 2016. Beyond commodity markets, recent developments in the global economy created a trifecta of headwinds that the nation has to contend with.

The return of Iran to the global economy implies substantially larger crude oil supplies are to hit the global market in the near term, and thus the current consensus that oil prices are likely to remain "lower of longer". The issue of lower commodity prices has been further compounded by the United States Federal Reserve (FED) raising key interest rates, after several years of a very accommodative monetary policy as a result of the global recession which began circa 2008. In December 2015, the FED raised the Federal Funds Rate by a quarter-point. Furthermore, the economy of the Euro Area, a key importer of Nigerian exports is still on the mend. According to recent statistics from the European Commission [1] the Euro Area is expected to grow by 2.0% in 2016, up from 1.9% in 2015.

Interestingly, economists love these times, and thus the phrase; "never let a crisis go to waste". Few instances give governments the opportunity to take hard decisions. Accordingly, the government is using the 2016 budget as an opportunity to reset and redirect the macroeconomic dynamics of the country. The attempt to consolidate expenditure using the Treasury Single Account to plug leakages (even if this is only at the federal level) is a welcome first step. The proposed 1.6 trillion to be invested in capital projects, and other initiatives in particular in Power, Works and Housing are likely to bode well for the economy. In addition, the establishment of the Efficiency Unit to identify and surgically eliminate inefficiencies without hampering productivity is also another development.

In the near term, the reset may not yield fruits as quickly as Nigerians expect. Economic growth in 2016 is expected to increase to 3.78% from 2.97% in 2015, an increase of less than 100 basis points.

---

[1]

http://ec.europa.eu/economy_finance/explained/economies_of_europe/european_economic_outlook/index_en.htm

EXECUTIVE SUMMARY

Table 1: Historical and Projected growth rates for GDP, Inflation and trade, annual (%)									
Year	**2011**	**2012**	**2013**	**2014**	**2015e**	**2016f**	**2017f**	**2018f**	**2019f**
Real GDP growth	5.31	4.21	5.49	6.22	2.97	3.78	5.03	5.61	5.61
Inflation	10.83	12.22	8.5	7.98	9.55	10.16	9.49	8.67	8.54
Total Trade	48.75	-4.30	-24.26	10.34	-24.30	2.41	31.11	17.31	11.64

Beyond 2016 however, growth is expected to jumpstart averaging 5.41% yearly between 2017 and 2019 as infrastructure developments take shape and provide support for both the oil and non-oil sectors. While upward pressure on inflation is expected, meaning that the Headline index may rise from 9.55% to 10.16% in 2016, rates are expected to moderate beyond this period and average 9.01% between 2017 and 2019. The value of total trade is expected to slow in 2016, increasing by 2.41% as a result of moderations in imports and exports. Beyond 2016, both import and exports are expected to increase and Total Merchandise trade is expected to Average 15.61% growth during the period.

1.1 NATIONAL ACCOUNTS

1.1.1 Recent Growth Performance of the Nigerian economy

Growth in the economy in recent quarters has been significantly less than in previous years. Growth in the third quarter of 2015 was 2.84 percent, slightly higher than in the second quarter but still well below the average growth rate of 5.32 achieved between 2011 and 2014. This decrease can be attributed to the decline in the oil price as well as non-oil sectors that suffered setbacks during the year as political uncertainty coupled with supply shocks weighed on economic activity. In particular however, Nigeria depends heavily on oil for both exports and government revenues, and therefore movements in the oil price have a large effect on the economy.

However, the sectors most exposed to oil price movements (crude oil production and oil refinery) are not the only sectors to have recorded a decrease in their growth rates in recent quarters. To examine this in more detail, figure 1.1 divides the economy according to how strong each sector is expanding. The red bars indicate the percentage of the economy which is contracting (growth of less than -2%), the grey bars indicate the percentage which is has experienced relatively little change (growth of between -2 and 2 percent) and the blue bars represent the percentage which is growing, with darker blue indicating a faster growth rate. This analysis shows that much of the decrease in growth rate has been a result of fewer sectors experiencing rapid growth, as well as some sectors (such as crude oil production) seeing a decline. In the first quarter of 2014, the percentage of the economy that grew by more than 5% was 70.40, but this figure has declined consistently, and in the third quarter of 2015, only 16.69 percent of the economy grew by more than 5% on the year.

1.1 NATIONAL ACCOUNTS
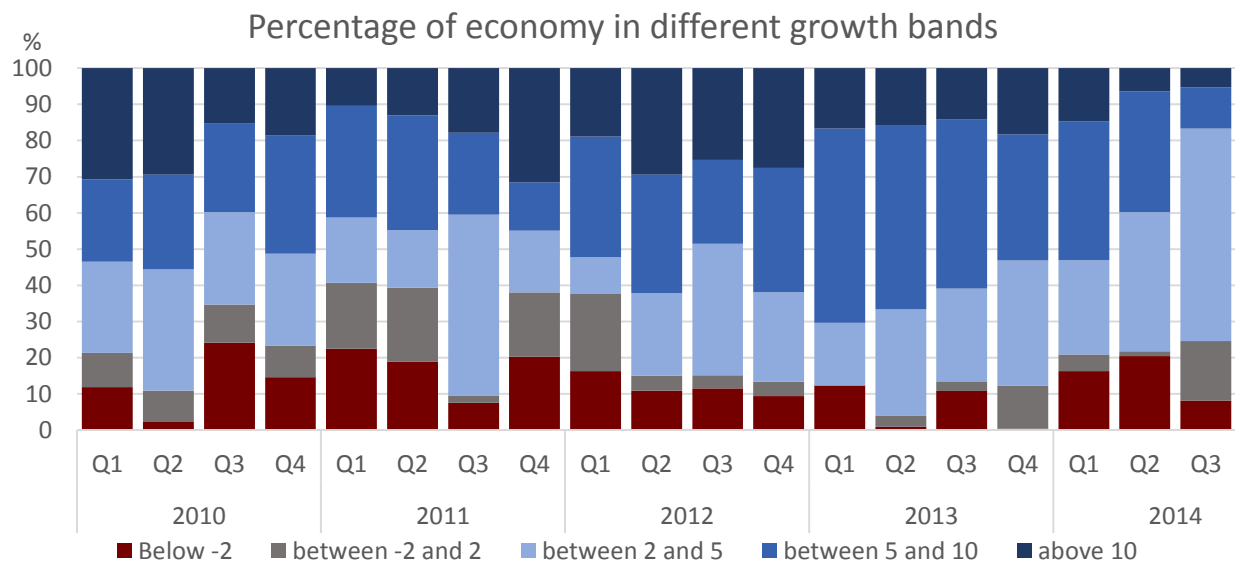
Percentage of economy in different growth bands

FIGURE 1.1: Percentage of the economy in different growth bands, red indicating negative, darker blues indicating more rapid growth

To further explore the effect that fast growing sectors slowing have had on the economy, figure 1.2 compares the growth rate of the economy, with what the growth rate would be *only including sectors experiencing positive growth.* This artificial series will always be higher than or equal to the actual growth rate, and the nearer it is to the true rate, the less impact declining sectors are having on the economy. This comparison reveals that even stripping out the negative contribution of declining sectors, overall growth has still been falling for a number of quarters. When only considering growing sectors, growth in the third quarter of 2015, was 3.72%, lower than the average growth rate between 2011 and 2014 despite not taking into account declining sectors.

It should be noted that this analysis is not equivalent to stripping out the effect of the decline in the oil price. This decline adversely affected government and revenues, as well as foreign exchange, both of which could impact on growth across many more the sectors in the economy.

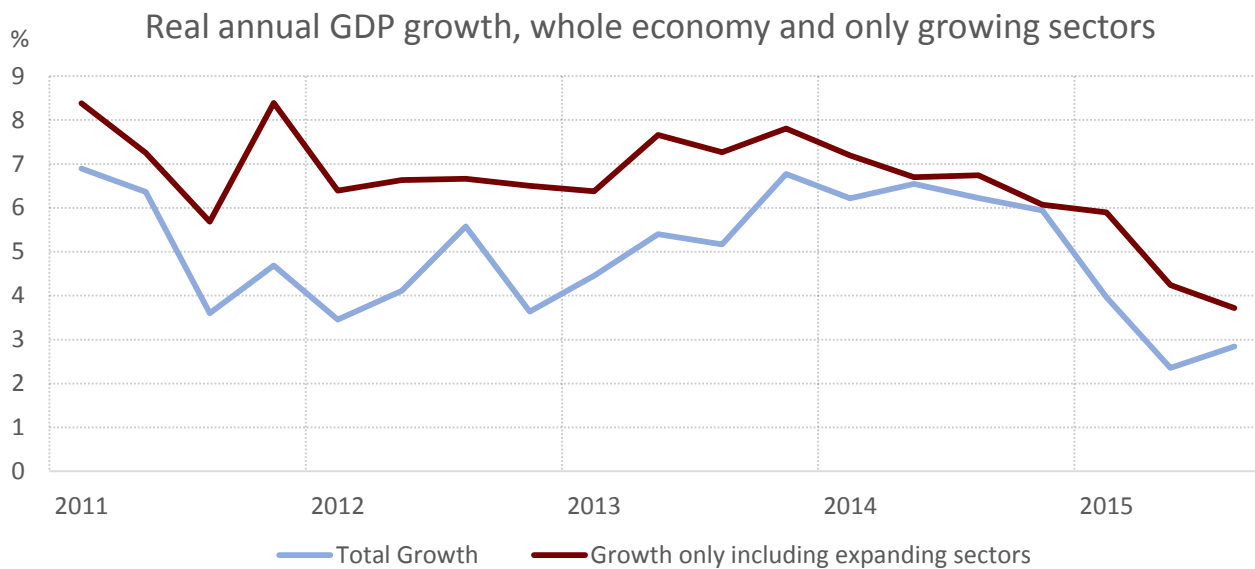Real annual GDP growth, whole economy and only growing sectors

FIGURE 1.2: Growth in the economy, compared with hypothetical growth when only considering expanding sectors

This analysis suggests that although the oil price decline has certainly had an adverse effect on the Nigerian economy, there are other factors that have contributed to the reduction in the growth rate. It is likely that a reduction in demand from Nigeria's main export partners has also been an important factor.

Another way to examine this trend is to look at the distribution of growth rates. Figure 1.3 compares different parts of the distribution in growth rates in 2011, with the same parts in 2014. In 2011, the sector at the 90th percentile grew at 66.3%; this figure fell to 29.7% by 2014. In addition, the median growth rate also fell slightly. However, comparing the distributions also reveals that beneath the 45 percentile, the distribution is higher in 2014, indicating fewer sectors that are growing comparatively slowly.
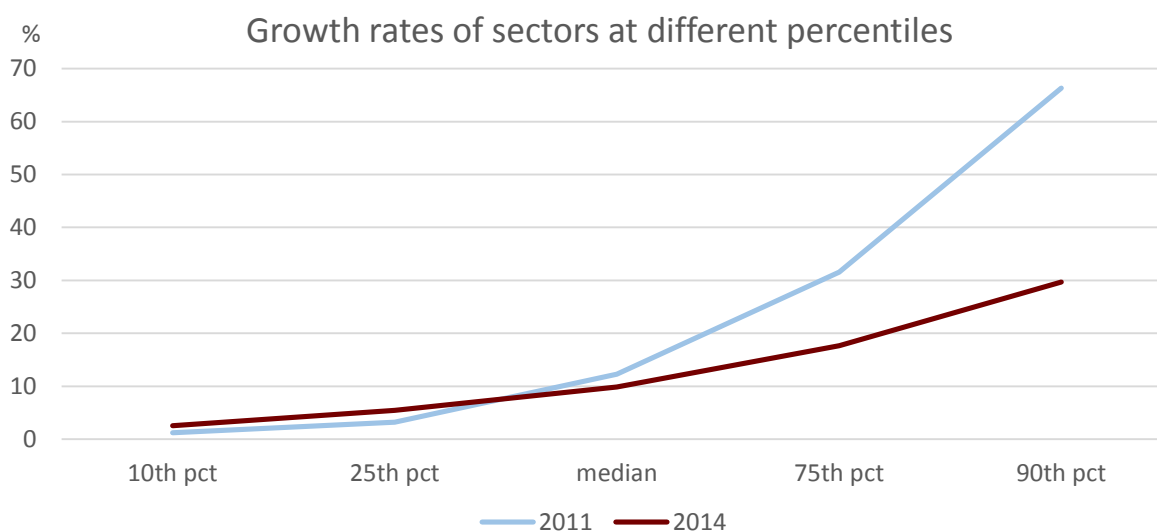
FIGURE 1.3: Percentiles of distribution in growth rates among sectors, 2011 and 2014

1.1.2 Review of 2015

As stated earlier, the Gross Domestic product of the country in 2015 has displayed a drop in the rate of growth than in previous years. A year on year comparison shows that the growth rates in each quarter of 2015 were consistently lower than the corresponding quarters of 2014. In the third quarter of 2015, the GDP growth rate was 2.84% and forecasted as 2.78% in the fourth quarter[2] which was 3.38% points and 3.16% points lower than its corresponding quarters of 2014 which stood at 6.23% and 5.94% respectively. Further analysis show that the growth rate in Q4 of 2015 is 0.07% points lower than Q3 of the same year implying a drop both in the year on year and quarter on quarter performance of the economy.

This sluggish growth was partially due to the decline price of crude oil which constitutes the major source of income for the government. Other factors responsible for this decline include the dominance of political activities in 2015 due to the general elections, shocks in the domestic supply of refined petroleum products, insurgency in the Northeast and the pressure/restrictions

---

[2] Fourth quarter is forecasted

on foreign exchange transactions in the later part of 2015 bearing in mind that Nigeria imports a considerable amount of goods both through formal and informal channels.
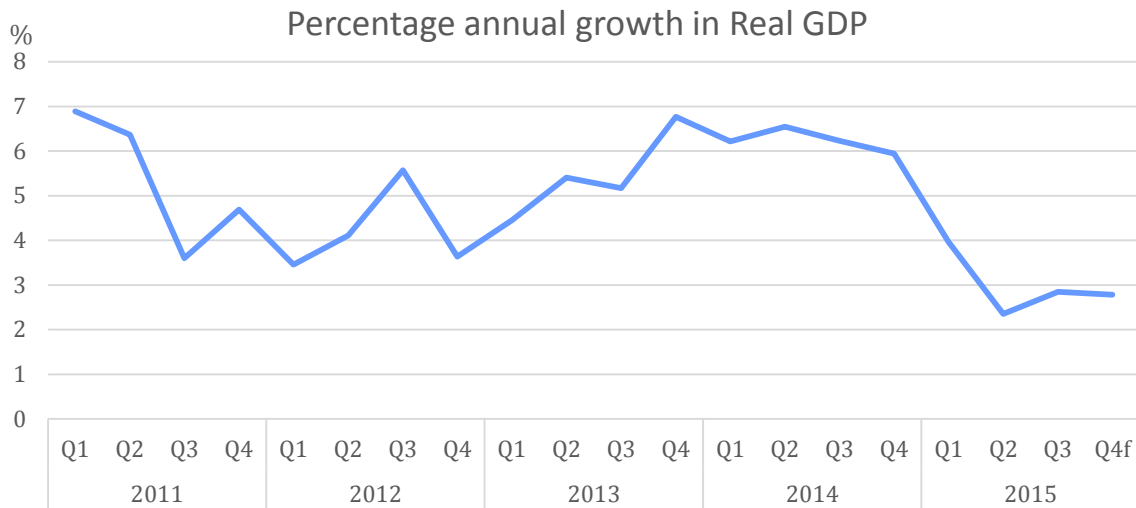
Percentage annual growth in Real GDP

FIGURE 1.4: Constant basic price GDP annual growth rate, 2011-2015

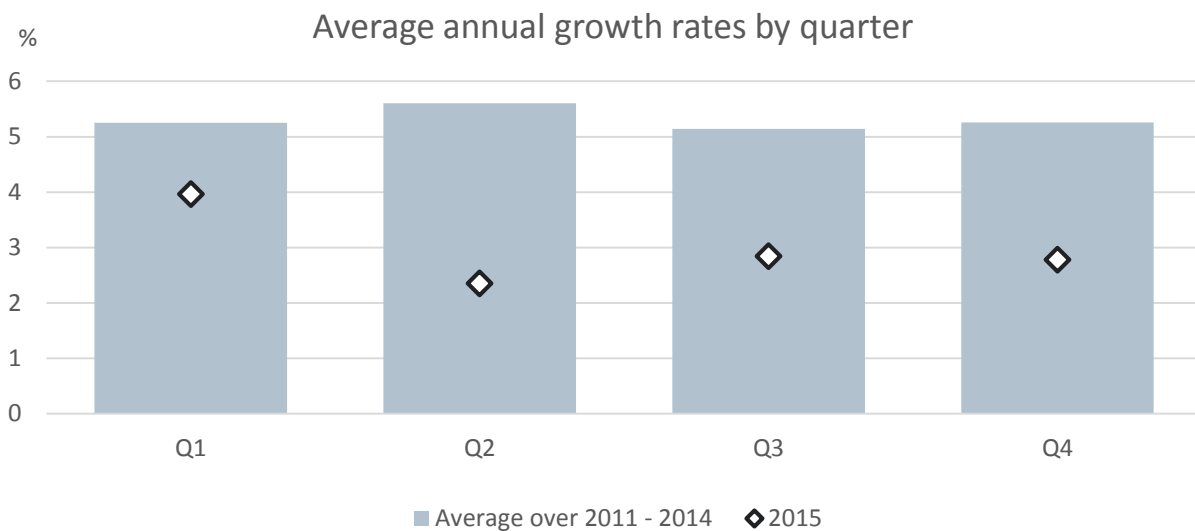### Average annual growth rates by quarter

■ Average over 2011 - 2014   ◇ 2015

FIGURE 1.5: Year on Year Constant Basic price GDP growth in 2015, against 2011- 2014 average growth rates by quarter

As the previous graph indicates, growth has been on the decline since 2011. A year on year analysis shows for the most part, the quarterly year-on-year growth rates recorded in 2015 have been lower than growth recorded in previous years, with a few exceptions. In Q1, Q2, Q3 and Q4 of 2015 growth rates were recorded of 3.96%, 2.35%, 2.84% and 2.78%, respectively lower by 1.29% points, 3.25% points, 2.30% points and 2.48% points when compared to the 2011 – 2014 averages of each corresponding quarter, which stood at 5.25%, 5.60%, 5.14% and 5.26% respectively.

Agriculture

The agricultural sector is made up of four sub activities, namely: Crop production, Livestock, Forestry and Fishing and has remained a major driver of the Nigerian economy.
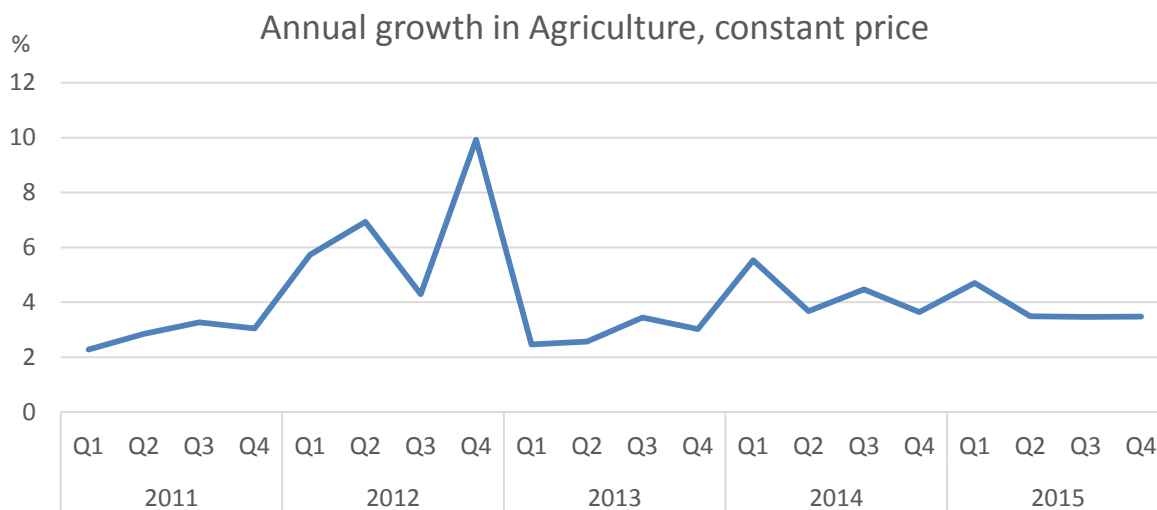

FIGURE 1.6: Real Annual Growth rate of Agriculture (%)

Growth has however slowed since the previous highs recorded in 2012, partially as a result of security challenges in the North East. In 2015 in particular, growth slowed, declining by 1.21% in Q2 from 4.70% recorded in the Q1 of 2015. Growth remained relatively stable in Q2, Q3 and Q4 at 3.49%, 3.46% and 3.48% respectively. This was however lower when compared with quarterly growth recorded in 2014 at 5.53%, 3.68%, 4.47% and 3.64% respectively. Further

compounding on slow growth in the sector is the lack of efficient transportation and storage of materials leading do substantive losses in output

Industry

Industry slowed significantly in reference to growth recorded in the four quarters of 2015 which stood at -2.53%,-3.31%, -0.13% and -1.14% showing a year on year decline relative to growth recorded in 2014 which stood at 4.84%, 8.97%, 5.43% and 7.96% respectively.
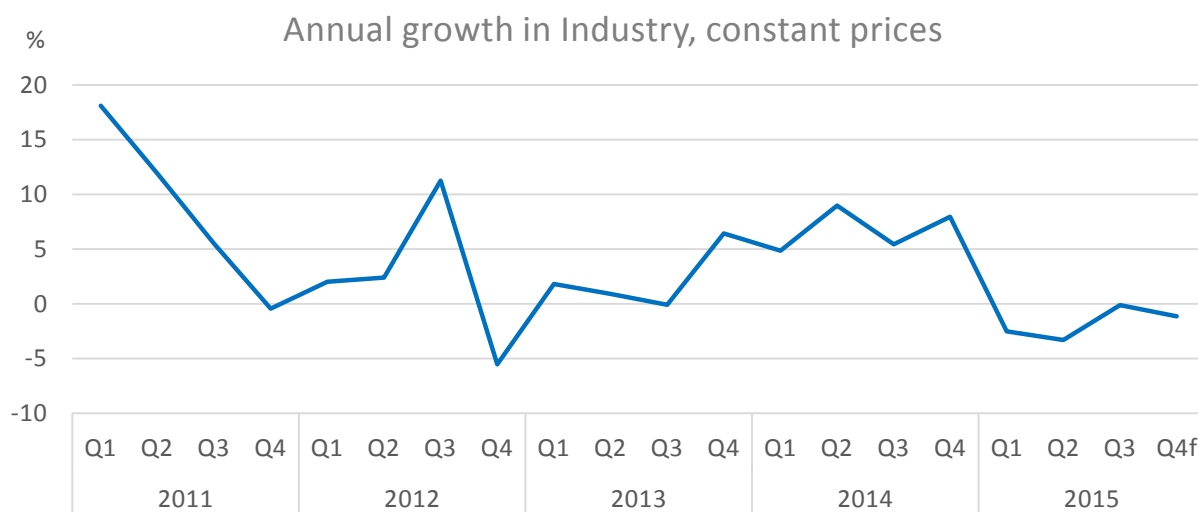

FIGURE 1.7: Real growth rate in Industry

The sharp drop in the price of oil from an average price of $110 per barrel from 2010 till 2014 to below $40 per barrel in the last quarter of 2015 has grossly affected this sector's yield. The drop in price is mainly due to the increasing production of the United States and the firm stand of Organization of Petroleum Exporting Countries not to cut production. The manufacturing sector had a challenging 2015 with the problems of insecurity, poor conditions of infrastructure, the uncertainty of the elections which slowed investment and in the last quarter; challenges in accessing foreign exchange.

Services

The Services Sector also recorded slower growth in 2015 relative to 2014. Through the first three quarters of 2015, growth was recorded at 7.04%, 4.67%, and 3.97% respectively. Compared to the growth rates recorded in 2014, growth was slower by 0.15% points, 1.87points and 3.64% points. As electricity output slowed for the most part during the year, companies had to rely on alternate sources of energy. This implied higher costs and thus lower values added. Also, slower consumption from households as a result of tight household budgets weighed on growth.
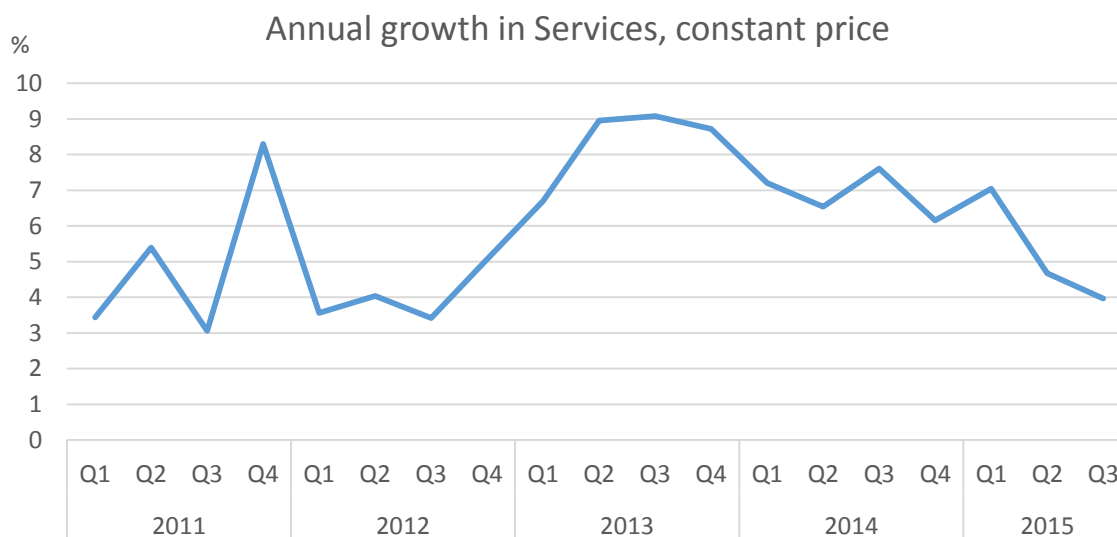

FIGURE 1.8: Real growth rate in Services

This was reflected in slower Trade, Telecommunications, Financial Services, and Real Estate output. Finally, intermittent supplies of Premium Motor Spirit as a result of lack of clarity about subsidy policies hampered transportation of people and goods across the country.

1.2.1 Inflation and the headline index

The Consumer Price Index recorded significant increases in the price level of goods and services nationwide in 2015. During the first half of the year, the headline index opened at 8.2% in January, and edged higher over the period to end at 9.2%, implying a range of 100 bps over the period. By March 2015, the index had increased from 8.2% to 8.5%. During that period, all major CIOCOP divisions that contribute to the index increased, reflecting an increase in the overall price level of goods and services. In addition, towards the end of the first half of the year, Irregularity of the supply of Premium Motor Spirit (PMS) impacted food prices as well as the movement of goods and services throughout the entire country
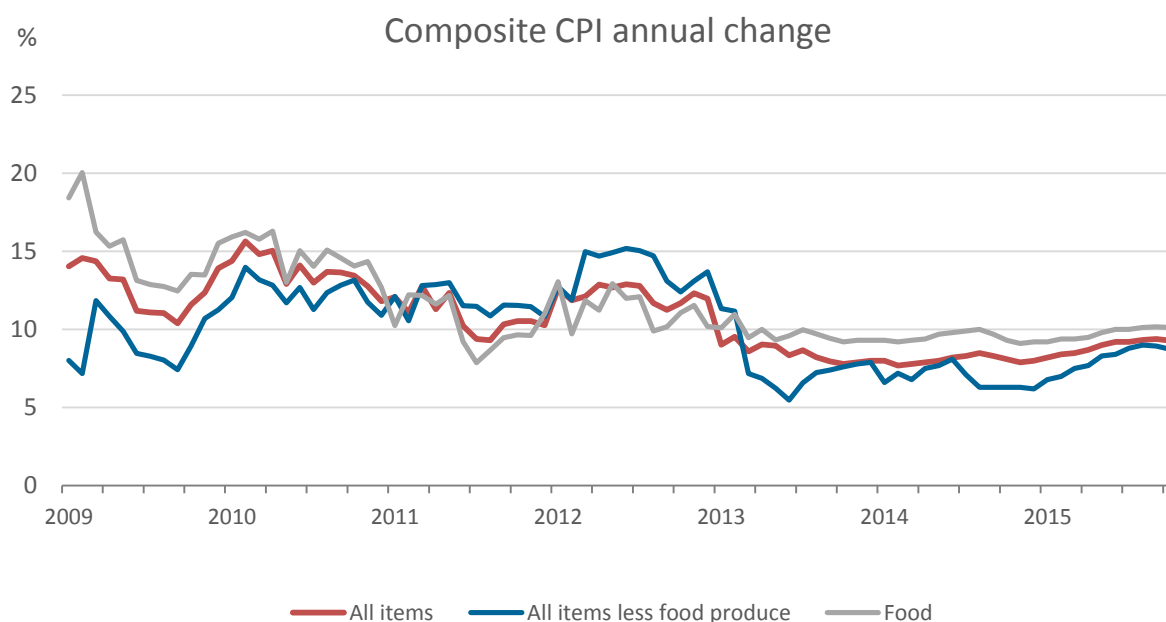

Composite CPI annual change

FIGURE 1.9: Year on Year percentage change in CPI indices: all items, all items less food produce, and food

During the Second half of the year, the headline index recorded a narrower range, opening at 9.2% in July, and ending at 9.6% in December, implying a range of roughly 40bps. Year-on-year increases slowed in July, as food, utilities and furnishing prices eased. Higher prices in Housing, Clothing and Footwear, Utilities and other divisions drove the index higher in September while

the index eased marginally in October. The end of the Year (November and December) recorded increases in major divisions that contribute to the index due to increase transportation costs as a result of shortages in Premium Motor Sprit (PMS) coupled with the knock-on effect impacting transportation of people and goods across the country.   Also contributing to the increase in the Headline index were foreign exchange pressures. By December 2015, the Imported Foods index had increased 11.1% (yoy) reaching an almost three year high. During the year, the index averaged 9.9%, up from 8.0% average recorded in 2014; an increase of roughly 120 bps.

1.2.2 Food Price Inflation

In the First half of 2015, food prices opened at 9.2% in January, and increased at a faster pace to reach 10.0% by June, 2015. Food prices opened the year by increasing at the same pace in January as recorded in December; at 9.2%. Most groups that contribute to the Food sub-index increased at a faster pace in the Months of January and February, but Food prices slowed in March increasing at relatively the same pace in March as in February; by 9.4%.The pace of increases was weighted upon by a slower increase in the Bread and Cereals, Oils and Fats, Dairy and Confectionary groups. Beyond March, Food prices edged higher as farm produce inventories were drawn down and the late onset of rains which have pushed back the harvest season. This was coupled with higher transportation costs due to limited Premium Motor Spirit (PMS) availability which impacted movement of goods.

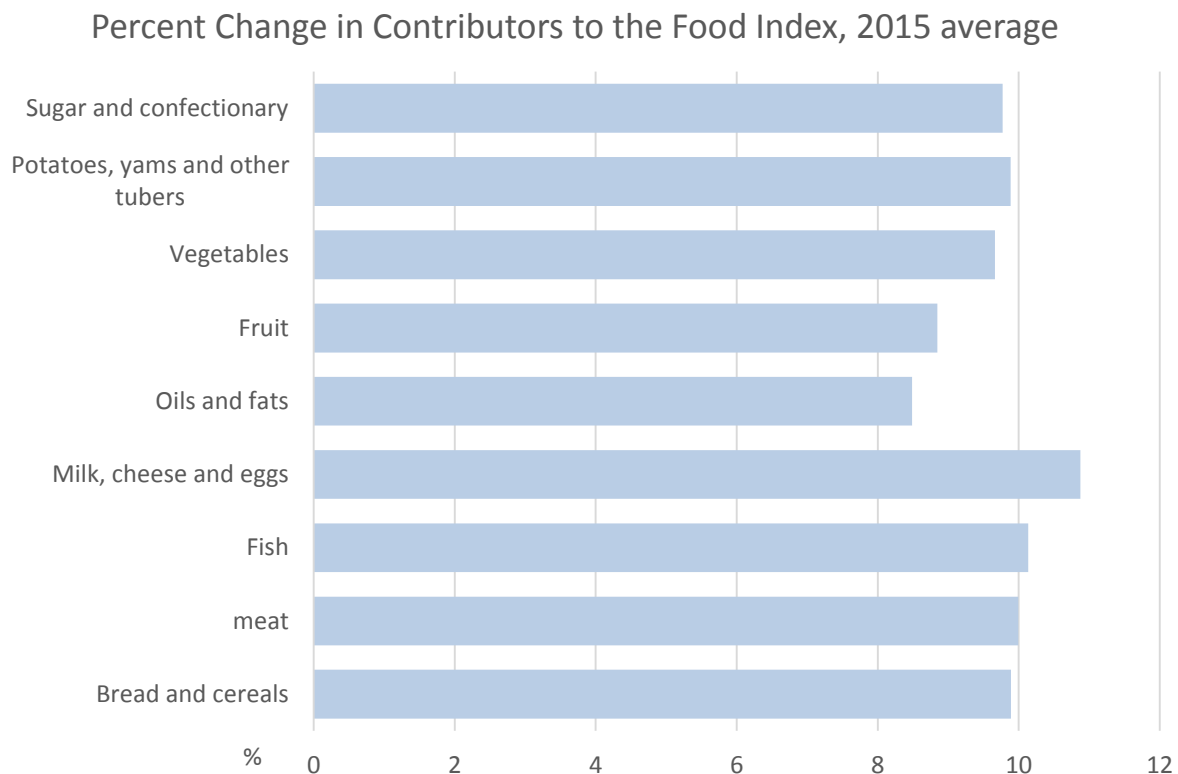## Percent Change in Contributors to the Food Index, 2015 average

FIGURE 1.10: Year on year change in food sub-indices, averaged over January – December 2015

Food prices edged higher during the second part of the year, between July and September to 10.2%, driven by higher prices in the Bread and Cereals, Meats and Oils and Fats groups. There was a brief respite in price movements in October however, when the Index increased by 10.1% compared with 10.2 % in September. Towards the end of the year, food prices continued to edge higher as supply challenges partially caused by lack of refined petroleum products hampered the transportation of goods throughout the country. During the November-December period, almost all groups which contribute to the Food sub-index increased at a faster pace.   By December, prices had climbed to 10.6%, with the year-on-year movement in a range of 50 basis points for the second half of the year.

1.2.3 Core inflation

In the first part of 2015, prices moved in a volatile manner, opening at 6.8% in January, and reaching a high of 8.4% by June, recording a range of 160 basis points. Between January and

March, pressures on the core index was triggered by multiple groups implying that most groups which contribute to the core, and by implication the entire economy faced general price increases. In January, the strongest increases were recorded in the Housing, Water, Electricity, Gas and Other Fuels divisions. In February the largest pressures came from the Furnishings & Household Equipment Maintenance division. In March, it was the Clothing and Footwear division. Between April and June, the importation of refined petroleum products, and transportation costs began to weigh on the core. This was also followed by increases in other divisions generally consumed. Again, a factor which accounted for the increase in the core are imported products as if imported food index is taken as a proxy for imported products, imported items began to show significant increase in April of 2015.
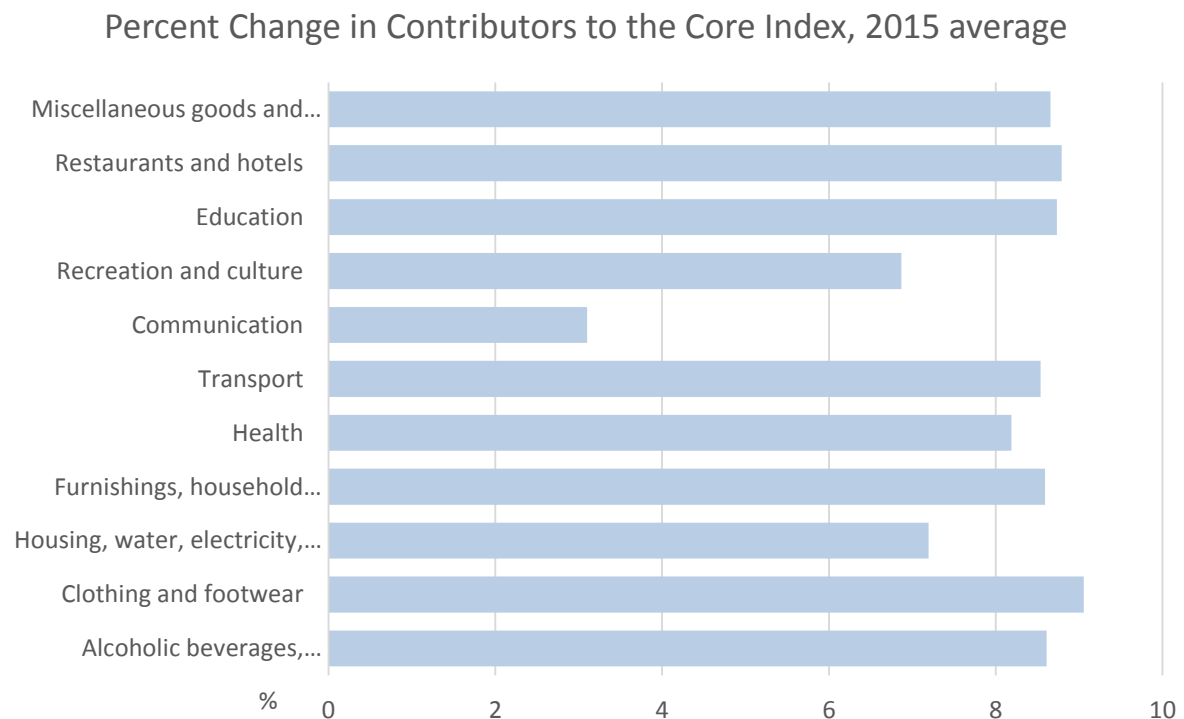
Percent Change in Contributors to the Core Index, 2015 average

FIGURE 1.11: Year on year change in core sub-indices, average over January-December 2015

In the second part of the year, prices trended higher in July to 8.8% and increased to a high of 9.0% in August, driven in part by increases in transportation costs and the Transportation group,

1.2 INFLATION

Education prices as a result of the start of the school year, and other services. Prices eased in the last quarter of the year, holding at 8.7% during the period as prices eased in the Housing, Water, Electricity, Gas and Other Fuels; and Furnishings & Household Equipment Maintenance divisions. In all, core prices were in a narrower band during the second part of the year, with a high of 9.0% recorded in August, but closed at 8.7% in December, a 30 basis points range

STATISTICS ON IMPORTS AND EXPORTS OF MERCHANDISE

1.3.1 Exports

The value of exports fell in every quarter of 2015, resulting in an overall decline over the first three quarters of 21.03%. In the first quarter, the value declined by 9.80% from the Fourth Quarter of 2015 to N 2,665.06 billion. In the second quarter the fall was more modest, the value declined by only 0.42% to N 2,653.79. The third quarter however saw the largest drop of 12.08%, meaning that the value of exports was N 2,333.21 billion in the last quarter for which data is available. In total, the value of exports for the first three quarters together was N 7,652.06 billion, which represents a decline of 42.68% relative to the same period of the previous year.

This fall in the value of exports can be viewed as part of a wider, global trend. Figure 1.12 shows the range of growth rates in the value of total imports for Nigeria's main trading partners. The numbers refer to imports from all countries, not solely those from Nigeria. It also shows the average of these growth rates, weighted by how important each country is to Nigeria as an export destination. It reveals that average growth in import demand in these countries fell between 2009 and 2012, then remained stable until 2014, but then declined suddenly in the first three quarters of 2015, by 15.19% on average. The countries included account for 77.04% of Nigeria's exports in 2014.

Growth rates of imports of main export partners

Range of growth rates in imports of main trading partners

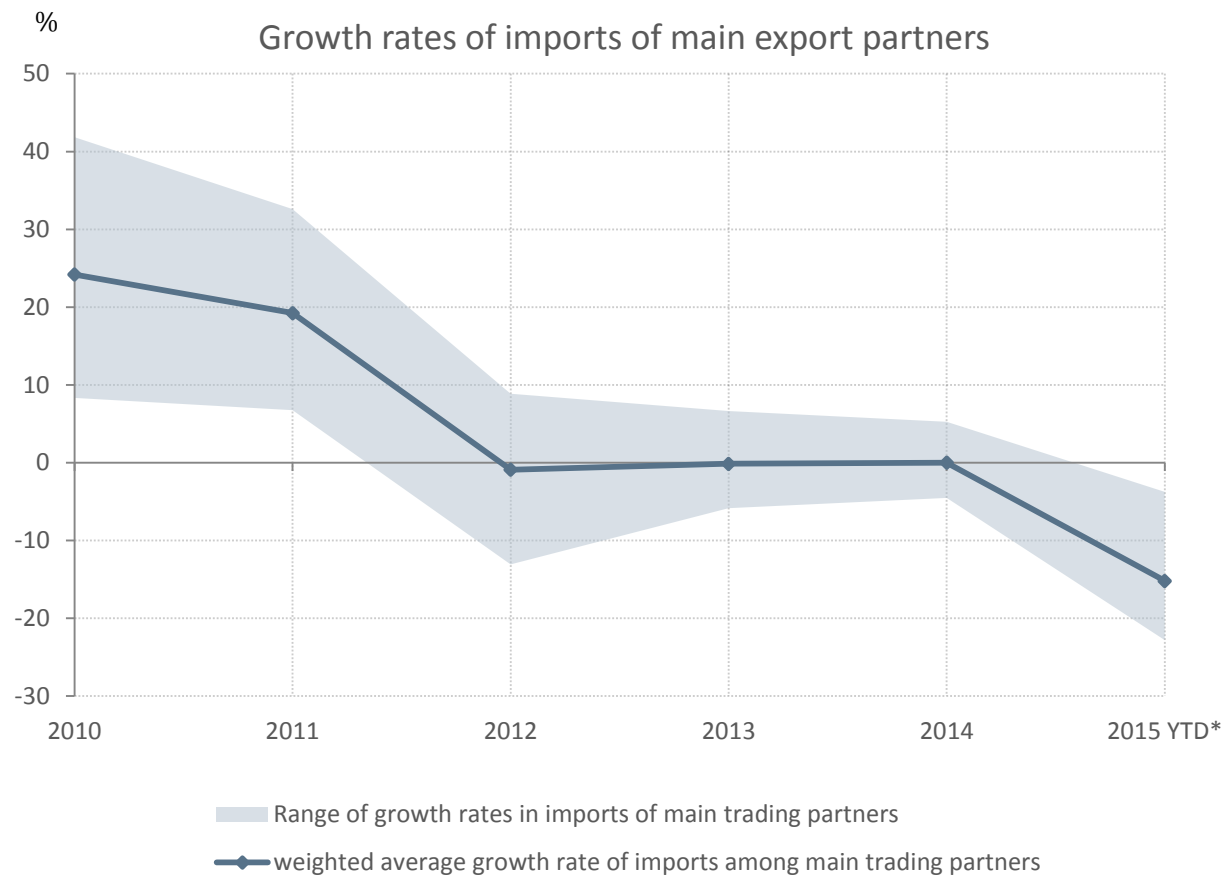weighted average growth rate of imports among main trading partners

FIGURE 1.12: Annual growth rate of the value of imports of major trading partners, range and weighted average. Notes: 1. For 2015 YTD, growth refers to Q1-Q3 2015 compared to Q1-Q3 2014 2. Countries include Brazil, France, India, Indonesia, Italy, Japan, Netherlands, Portugal, South Africa, Spain, Turkey, UK and US. Sources: OECD stats

Overall, the value of global trade fell over the first three quarters of 2015 by 30.16%[3], which was to a large extent a result of falling commodity prices, such as crude oil. Whilst these trends affected all countries, they had a particularly large impact on Nigeria's exports due to the heavy reliance on crude oil exports. Figure 1.13 plots the yearly growth in the value of exports against

[3] Data from the CPB Netherlands Bureau for Economic Policy Analysis "World Trade Monitor"

the growth in the oil price, from 2001 to 2015 Q1-Q3. Although there have been periods of divergence, the two series have moved together closely over the period, emphasizing the extent to which Nigeria's exports are affected by changes in the oil price.
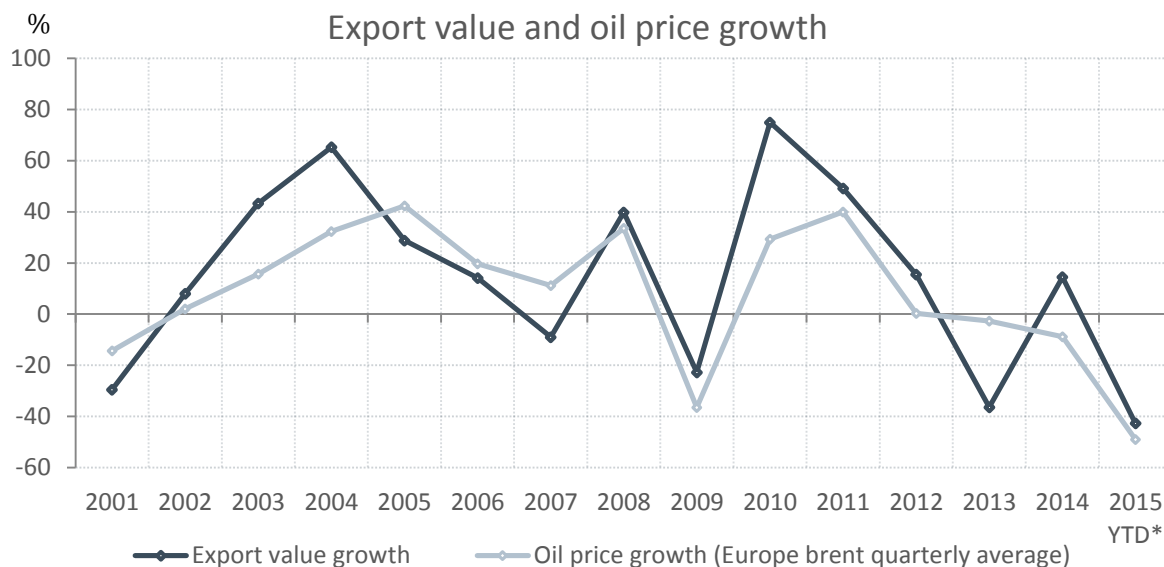

FIGURE 1.13: Annual growth in value of exports and oil price Europe Brent Spot price. Notes: 1. For 2015 YTD, growth refers to Q1-Q3 2015 compared to Q1-Q3 2014. 2. Sources: St Louis Federal Reserve Bank

This trend continued into 2015. Over the first three quarters the price of oil fell by 24.2%, and the value of exports fell by 21.03%, or N 621.35 billion. However oil exports fell by an even larger amount over the period, by N 627.99 billion, which implies that non-oil exports increased over this period. Figure 1.14 explores this further, and reveals that exports of Vehicles, aircrafts and parts thereof increased significantly, accounting for the 0.93% increase in non-oil exports. Between 2014 Q4 and 2015 Q3 the value of exports in this section increased by N 124.12 billion.

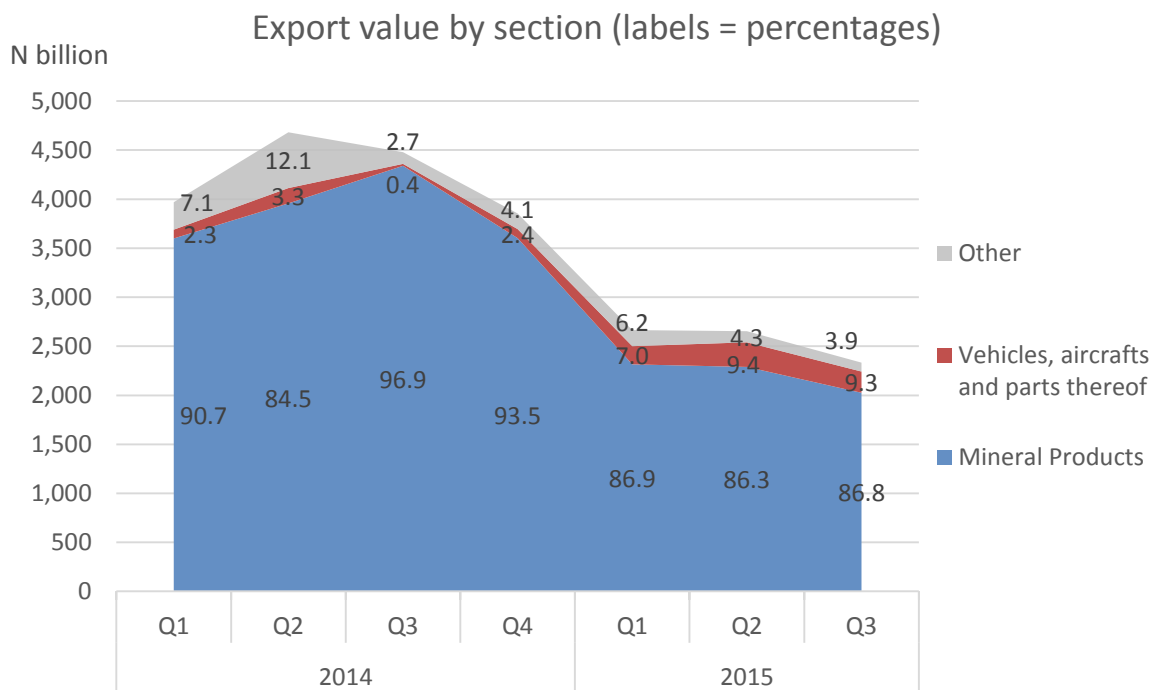**Export value by section (labels = percentages)**

N billion

FIGURE 1.14: Value of exports by main sections

Although still dependent on oil, Nigeria is beginning to diversify its exports, albeit gradually. Figure 1.15 shows the percentage of the value of total Nigerian exports that is accounted for by crude oil. In 2003, 96.40% of the value of exported goods was accounted for by oil, and this figure fell to 78.45% in 2014. This is despite the increase in the oil price over this period. Over the first three quarters of 2015 the share of oil in exports fell further, to 68.88%. However this is perhaps less surprising given the dramatic fall in the oil price.
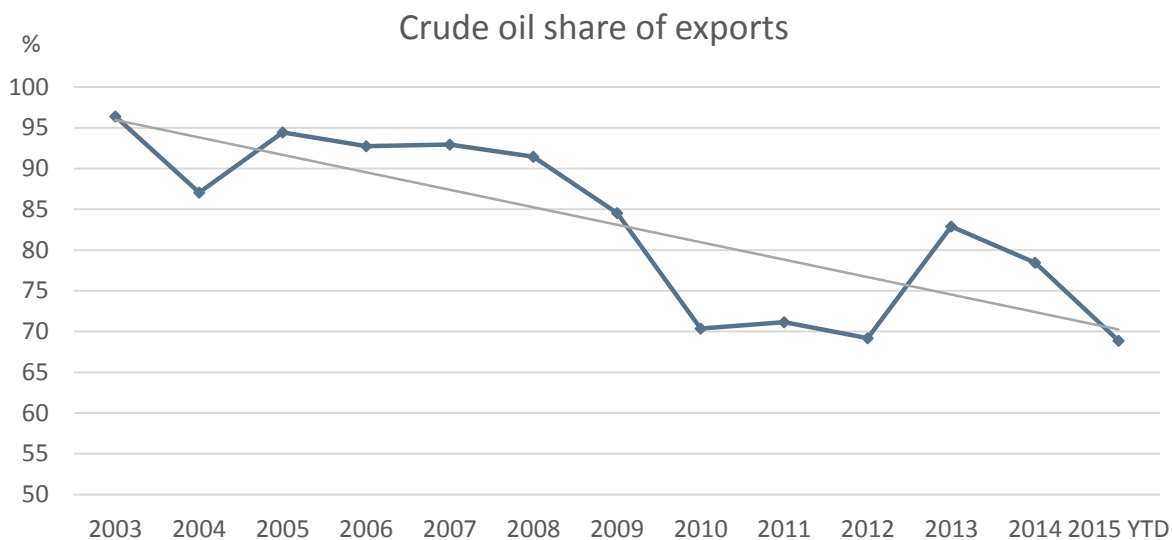
Crude oil share of exports

FIGURE 1.15: Percentage of export value accounted for by sales of crude oil.

By continent, Europe remained the largest consumer of Nigerian exports, and accounted for 39.22%, or N 3,001.14 billion of the total value of exports in the first three quarters of 2015. Asia was the second largest consumer, and accounted for N 2,269.17 billion or 29.65%, followed by Africa (N 1,166.88 billion or 15.25%) and then The Americas (N 1,028.42 billion or 13.44%). It is notable that The Americas, which used to be second only to Europe as a consumer of Nigerian products, has slipped to fourth place. This is largely a result of the large decline in the value of exports destined for the US. In 2010, 34.37%, or more than one third of the value of exports was accounted for by the US. However, this figure has fallen consistently, and in the first three quarters of 2015, only 3.21% of exports went to the US. To a large extent, this can attributed to the discovery of large deposits of shale gas in the US, which reduced their dependence on imported crude oil.

This is explored more in figure 1.16, which shows exports to the US against those to the three largest export partners in 2015. Whilst exports to the US have fallen dramatically, they have been steadily increasing in value for India, the Netherlands and Spain, countries which accounted for 16.76%, 12.14% and 8.89% of exports respectively in the first three quarters of 2015.
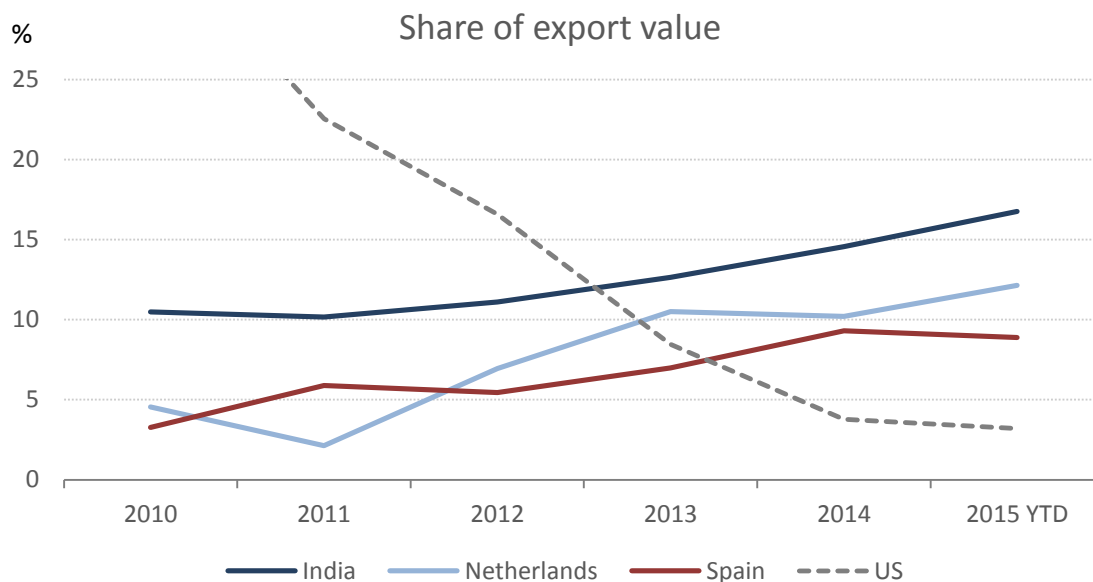
Figure 1.16: Percentage of export value accounted for by main export partners

1.3.2 Imports

The value of imports followed a clear downward trend in throughout the first three quarters of 2015. The largest fall was seen in the first quarter, when imports declined by 14.94% relative to the Fourth Quarter of 2014. However this continued into the second and third quarters, when the value of imports declined by 1.27% and 1.02% respectively. In total, the value of imports in the first three quarters of 2015 was N 5,121.58 billion, which represents a 4.15% decline relative to the same period of 2014.

A number of factors may have had a downward impact upon the value of Nigeria's imports in 2015. Since the final quarter of 2014, the Naira has depreciated sharply. The Bureau de Change rate to the dollar was 168.90 Naira in 2014 Q3, compared with 225.49 in 2015 Q3[4]. Whilst in the short term this has the effect of raising the value of imports, over time it may mean that as

---

[4] Data from CBN Statistical Database

foreign goods become more expensive for domestic consumers, there is a substitution to local goods. In addition, a number of policy measures have been introduced which been aimed at regulating imports. Notably, CBN issued a circular detailing that importers would not be granted foreign exchange for a list of 41 items, making it more difficult to import them. In addition, the National Automobile Policy, which increased tariffs on imported vehicles was implemented in 2015.

Figure 1.17 shows how each section has contributed to the fall in the value of imports. The section to have contributed most is Vehicles, aircrafts and parts thereof, which fell from N 185.95 billion to N 149.09 billion over the year to 2015 Q3, contributing 2.02 percentage points, or just over a quarter of the fall. This section was particularly affected by policy, given both the National Automobile Policy, and the inclusion of Private Jets in the list of goods not eligible for foreign exchange. The section Base Metals and articles of base metals contributed a similar amount, falling from N 178.73 billion to N 142.15 billion, contributing 2.01 percentage points.

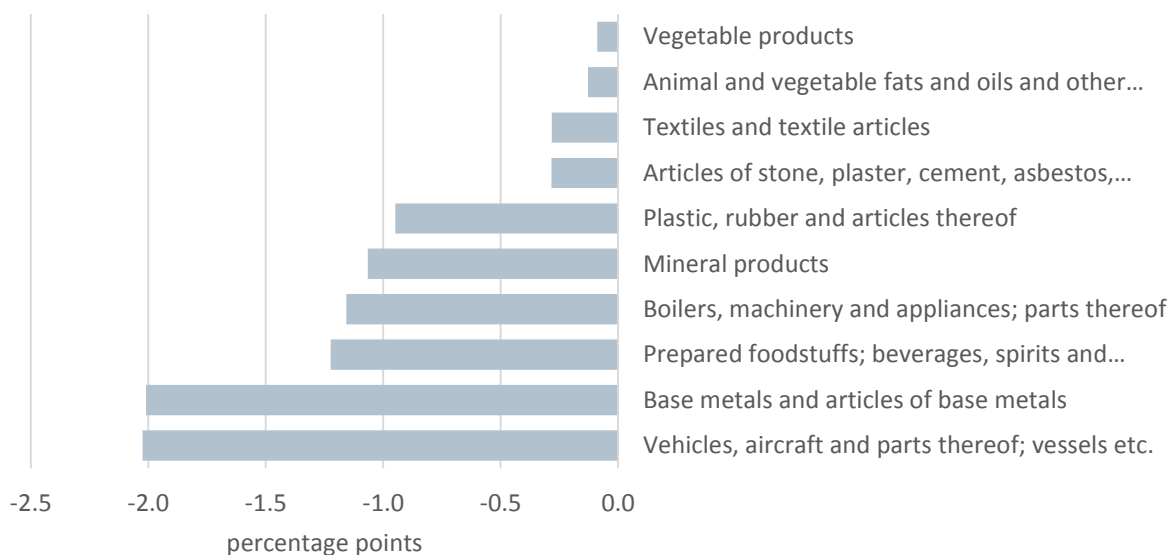## Contributions to fall in imports between 2014 Q3 and 2015 Q3

FIGURE 1.17: Contributions to fall in value of imports between 2015 Q3 and 2014 Q3, by section

The third largest contributor to the fall was "Prepared foodstuffs; beverages, spirits and vinegars etc." which contributed 1.22 percentage points.

Figure 1.18 gives a longer run perspective, and reveals the share of overall import value accounted for by key sections since 2010. Several trends emerge from this figure; the share of Vehicles, Aircrafts and Parts Thereof in total imports has on average been falling since 2010, although the series is volatile. Whereas in 2010 this section accounted for 22.18% of the value of imports, it had fallen to 8.97% in the first three quarters of 2015. Its lowest share was seen in 2013, when it only accounted for 8.86%. The share of "Prepared foodstuffs and beverages" has also been declining in recent years, and at 5.05%, is now at its lowest since 2010. By contrast, the share of Mineral Products has increased markedly, from only 2.67% in 2010 to 18.67% in the first three quarters of 2015, although these series are volatile, Just as trade statistics generarlly are.
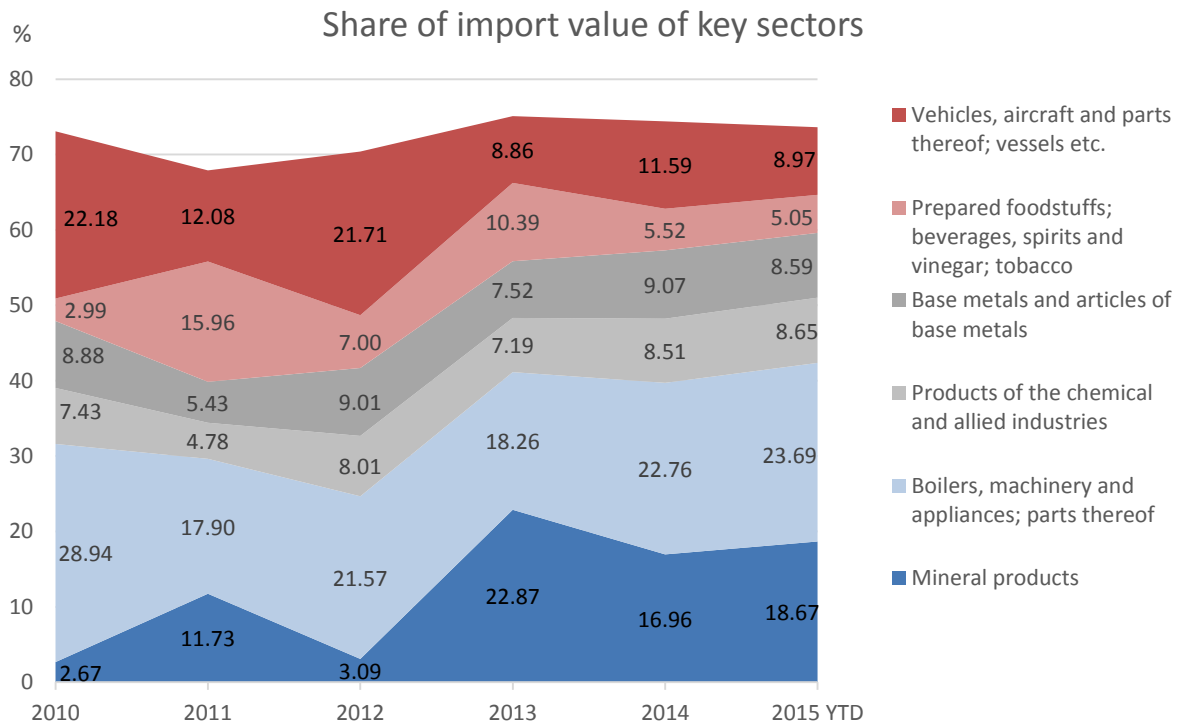

FIGURE 1.18: Share of import value accounted for by key sectors

STATISTICS ON IMPORTS AND EXPORTS OF MERCHANDISE

By content of origin, Nigeria imported N 2,157.65 billion from Asia over the first three quarters of 2015, making it the most important region for imports over this period and accounting for 42.13% of total imports. Europe was the second most important, accounting for 38.34% of the total, followed by The Americas (N 660.15 billion or 12.89%) and Africa (N 280.98 billion 5.49%), and Oceania was the least important, and accounted for only N 58.94 billion, or 1.15% of the total.

This represents the continuation of a trend that has been seen since 2010, in which Europe and Asia have been increasing in importance as import partners, and The Americas has been supplying less products consumed in Nigeria. In 2010, The Americas was the second largest supplier and accounted for 29.97% of total imports; this figure had fallen to 12.89% by the first three quarters of 2015, and had been overtaken by Europe, whose share had risen from 24.35% to 38.34% over the same period. Asia increased its dominance slightly over the period; its share rose from 37.55% to 42.13%.
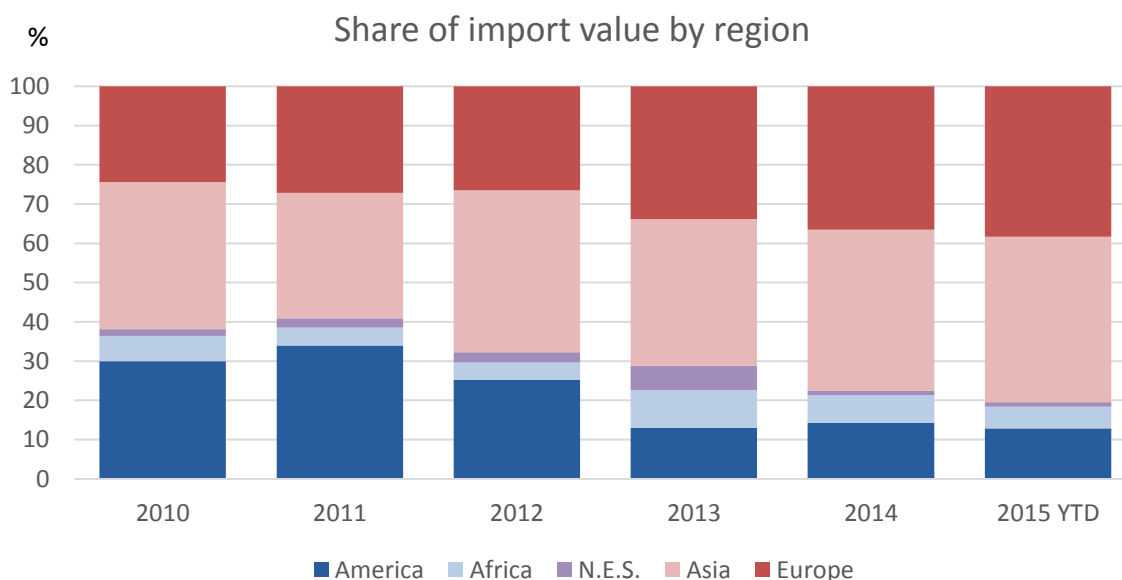

FIGURE 1.19: Share of import value accounted for by each region

Most of the decline in trade with The Americas was due to the US, which accounted for 8.38% of imports in the first three quarters of 2015, down from 17.94% in 2010. In contrast, the rise in

the value of goods imported from Europe was more wide spread, with a number of countries contributing to the increase. The most notable increases were the Netherlands, whose share of imports rose from 0.79% to 6.46% over this period, and Belgium, whose share increased from 3.86% to 7.70%. Over this period, China's share rose from 16.56% to 22.81%, which is more than the sum of the next three largest import partners combined, emphasizing China's importance as a supplier of products.
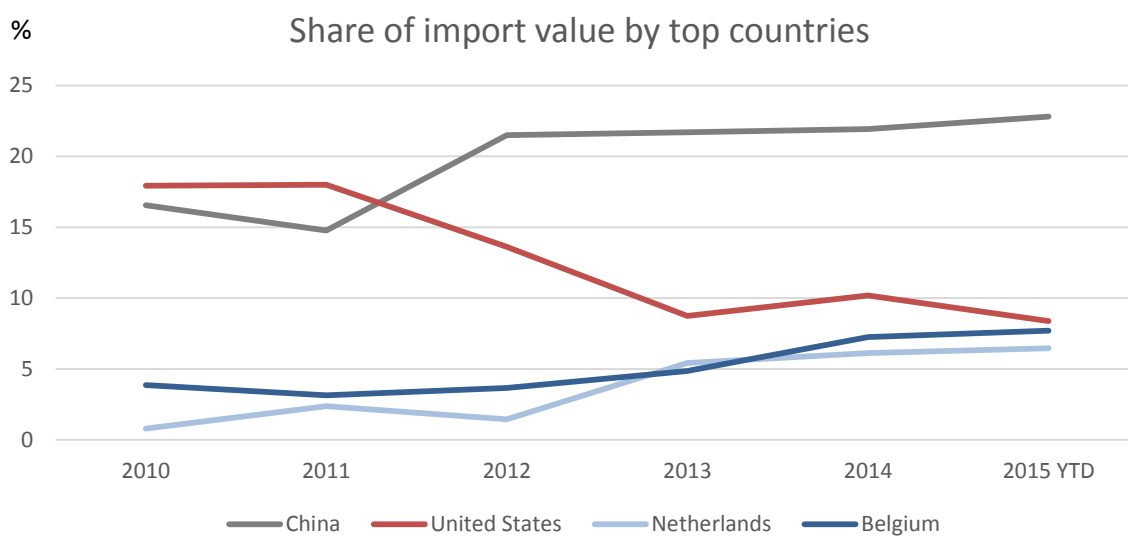
FIGURE 1.20: Share of import value accounted for by top largest import partners in 2015 Q3

The share of trade with both the Netherlands and Belgium may be slightly misleading as a result of what is sometimes referred to as the "Rotterdam" effect. It is an international convention that trade is recorded as being with whichever country owns the "first port of unloading" (in the case of exports) or the" last port of unloading" (in the case of imports). This means that if goods pass through a country before arriving at their final destination, then trade will be recorded as being with the intermediate country. This is frequently the case with the Netherlands and Belgium, as the ports in Rotterdam and Antwerp are two of the biggest in the world, and a high volume of trade passes through them.

1.3.3 Total Trade

In the first three quarters of 2015, the decline in the total value of trade that began in 2014 Q2 continued; growth has been negative in every quarter since that period. As a result, the sum of total trade over the first three quarters of 2015 was N 12,773.84 billion, 31.67% lower than the same period of 2014 when total trade was N 18,692.82 billion.
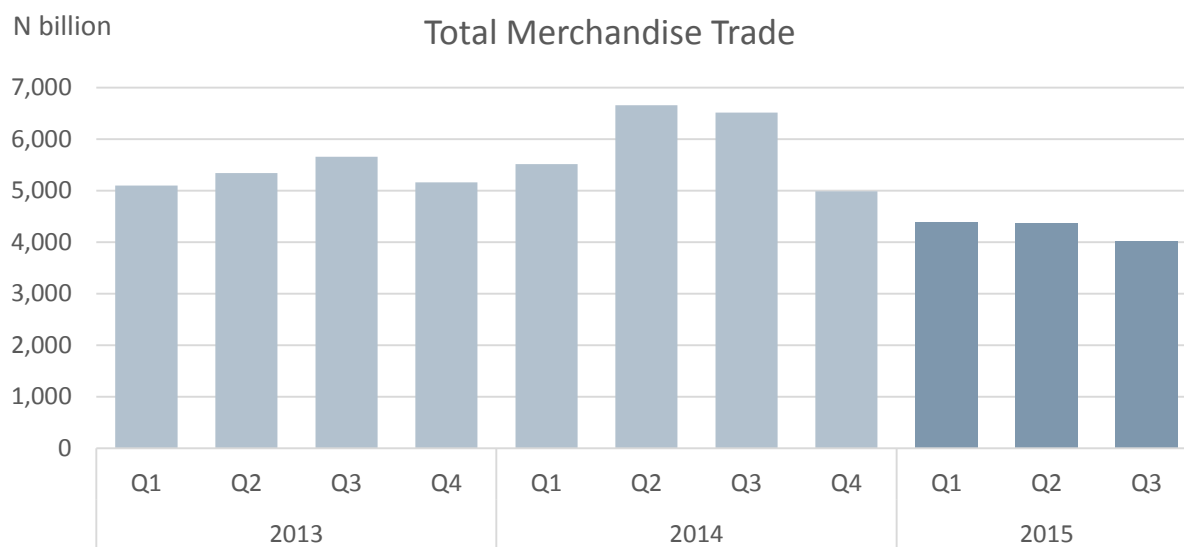
FIGURE 1.21: Value of total merchandise trade

The largest quarterly decline was seen in the first quarter of the year, when the value of total trade was N 4,392.74 billion or 11.89% lower than in the preceding quarter. The second quarter was comparatively stable, falling only by 0.76% to N 4,359.47 billion, but the third quarter saw a larger fall of 7.75%, which resulted in a value of total trade of N 4,021.44 billion in the third quarter, 38.31% lower than in the third quarter of 2014.

2.1 Introduction and Overview of Methodology

In this section, the report provides further analysis of the trends described in Section I, and makes projections on their likely direction for 2016 to 2019. In addition, econometric evidence using a Bayesian vector autoregressive (BVAR) model is provided. The objective is to give baseline projections of the Nigerian economy over 2016 to 2019 given historical data.

Projecting key macroeconomic indicators is one of the main tasks of policymakers, and it is a prerequisite ingredient in facing the unknown with greater levels of confidence. The key macroeconomic variables used in projections are GDP, Inflation, Exchange rate, T-bill rates, the value of Oil and Non-Oil exports and Total Trade. In addition to GDP, Inflation, and trade, we consider it important to forecast their growth rates as well. That Nigeria is a small open economy informs that it is necessary to incorporate a measure of foreign demand into the projections. This is proxied by the US GDP. Also important to the analysis is that Nigeria is a major oil exporting economy, hence an attachment of the importance of crude oil price in forecasting the future trends of the endogenous variables. In this section of the report, results of the analysis and implications for the Nigerian economy are provided.

In going about the set objective, the estimation technique used is called the Bayesian vector Autoregressive (BVAR) approach. In forecasting, it is a basic prerequisite that the estimated system be stable, otherwise such instability will filter into the data, implying that the forecasts cannot be carried out with an acceptable measure of reliability. An associated problem also is that one is not able to control much of the classical VAR model conventionally and generally used for this purpose. Hence, the BVAR is employed. In BVAR, the analyst is granted some measure of control through the use of prior information. What is done is to downplay past influences on the present by weighing the lags appropriately. The model emphasizes the importance of own-lags of a variable relative to those of the other explanatory variables. Stability was achieved by invoking the Litterman priors and the model yielded more reliable results in comparison with the VAR.

It is important to highlight that the following projections are based on quarterly data from 1999 through the 2015. Specifically, the projected growth rate for real GDP are computed from the trends of the historical GDP series, extracted using the HP filter. Thus, the report presents a forecast from 2016-2019 given historical trends in the economy up through 2015.

2.2 Into the Future: 2016 through 2019 Macroeconomic Projections

The projections for the annual growth rate of real GDP, annual Inflation rate, and the annual growth rate of the Value of Total Trade from 2016 through 2019 are reported in Table 1 (See Appendix I) and Table 2 gives the forecast levels for Real GDP, Nominal GDP and Value of Total Trade from the BVAR model

2.2.1 Gross Domestic Product

Years prior to 2015, the Nigerian economy was largely supported by the non-oil sector as supply disruptions hampered oil output. In 2015 however, various factors: political uncertainty prior to and six months after the elections, and intermittent supply shocks of refined petroleum products, and others weighted on both oil and non-oil output. The entire economy took a hit. Growth in 2016 is expected to be tepid at best. The declines in prices of crude oil and related fined products give the Nigerian government the opportunity for some potential savings as subsidies payments on PMS and other refined products may be diverted into more productive aspects of the economy. The government has taken a step further to repeal subsidies on Kerosene products. As it stands there are no subsidies on PMS and this should bode well for government coffers going forward. In 2016, the economy is expected to grow by 3.78%, as output in the oil and non-oil sectors are expected to perform marginally better relative to 2015. In the near term, support to the non-oil sector is expected to come through initiatives by the Central Bank of Nigeria and the Government at Federal and State levels. One of such initiatives is the N300 billion naira export stimulation fund by the CBN. Increased efforts by State governments to boost internally-generated revenue, when combined with more prudent and targeted infrastructure spending, is likely to lead to better output performance.

Constant price annual GDP growth

%

| | 2011 | 2012 | 2013 | 2014 | 2015e | 2016f | 2017f | 2018f | 2019f |

FIGURE 2.1: Constant price GDP growth, and projections for 2016 - 2019

The 2017 to 2019 period is expected to reap the benefits of the extra N1.6 trillion into capital expenditures in the 2016 budget. In particular, plans by the government authorities to increase power supply by developing critical infrastructure to transport gas to the power plants in order to add 2,000 MW to the country's stock of power within the next 12 to 15 months will have multiple effects on both the manufacturing and services sectors. Other measures expected to spur growth include fiscal measures such as the implementation of the Treasury Single Account (TSA), improvements in tax collection efforts and the creation of an Efficiency unit in the Federal Ministry of Finance to ensure that scare resources are adequately deployed. Over the 2017 to 2019 period, growth is expected to average 5.42%.

2.2.2 Inflation

In NBS's outlook for the previous year, we predicted that curbing inflation would be harder to achieve as a result of the devaluation of the Naira, which occurred in November 2014. Indeed the first half of the year recorded more macroeconomic volatility as the headline rate, year-on-year, recorded a wider range relative to the second half of the year. In the Second half of the year speculative pressure on the Naira compounded supply shocks exhibited in the first half of the year. As expected administrative measures by the CBN helped curb some inflationary pressure.
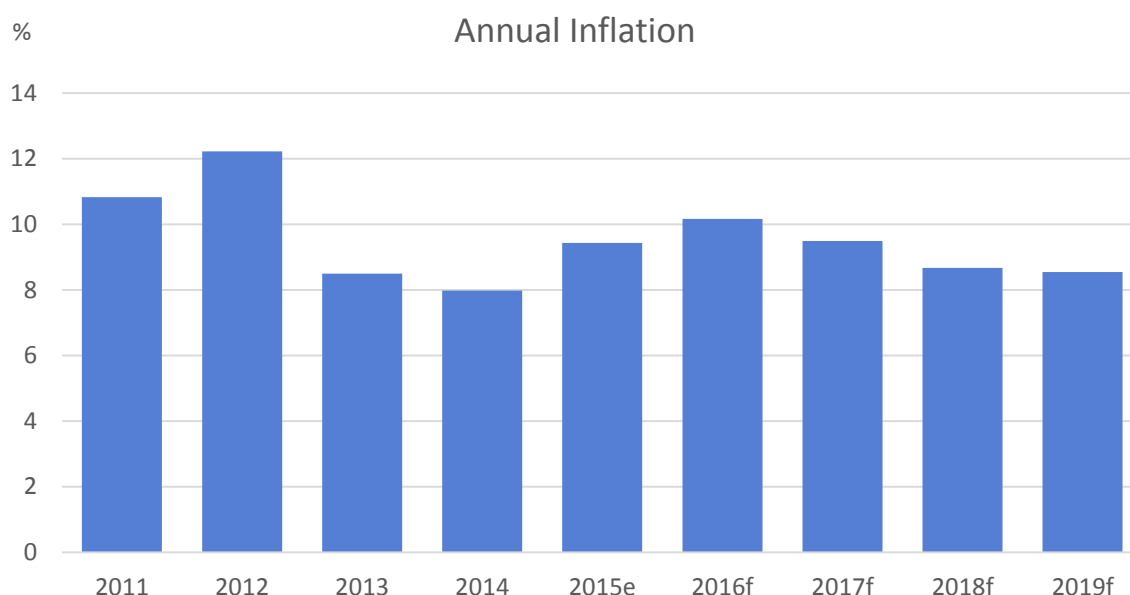

FIGURE 2.2: Annual inflation (CPI) and projections for 2016-2019

Speculative pressure on the Naira is likely to exist in 2016 in light of the current state of foreign reserves and inflation may rise to 10.16 by year end. While administrative measures will help provide some cover, the downside risk of such measures is that by making imported goods more difficult to obtain, they increase the price of such goods, leading to higher inflation. We expect that the Central Bank's adjustment of the foreign exchange management framework will be steady in the year and will thus mean a gradual easing in prices beyond 2016. Over the 2017 to 2019 period, Headline inflation is expected to average 9.01%.

2.2.3 Trade

2015 saw a decline in both the values of imports and exports. Exports were weighed upon by the decline in the price of crude, while overall sluggish growth as well as foreign exchange restrictions weighted on the value of imports. Going forward the relative lower price of the Nigerian Naira is expected to result in cheaper prices of non-oil exports, and again curb increases in imports. Nevertheless, Total Trade is forecasted to increase on the margin, increasing by 2.41% as Imports increase by 2.88% and exports increase by 2.16%

Annual change in total trade

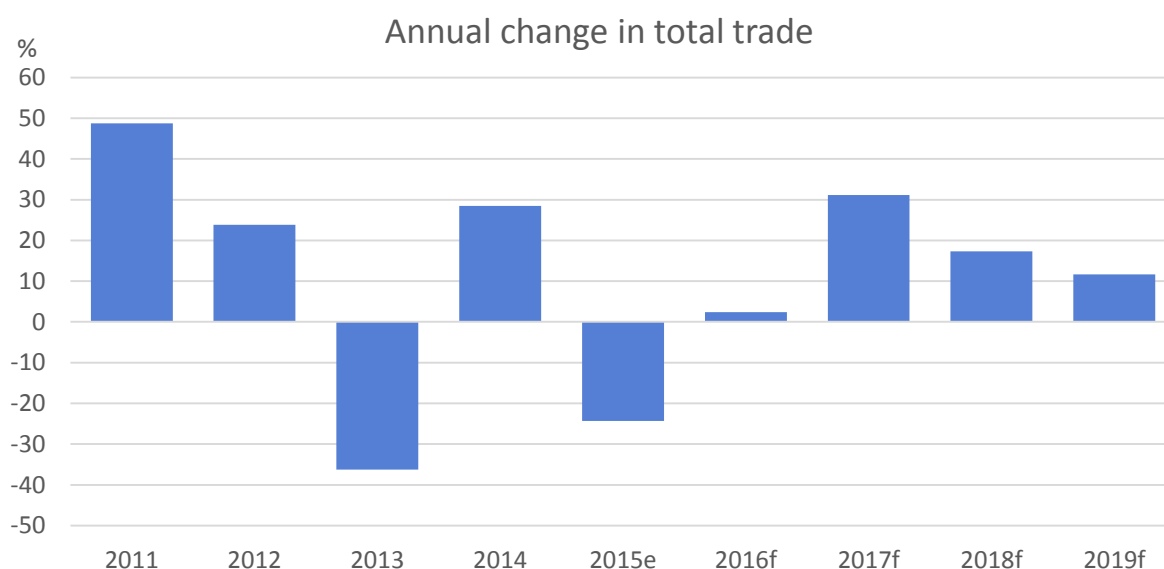*FIGURE 2.3: Annual change in the value of total trade, and projections for 2016 - 2019*

Beyond 2016, a stabilization in oil prices while not expected to reach 2014 levels in the medium term in combination with a more competitive economy is expected to yield a rebound in both imports and exports. Total Trade is projected to increase by 2.41% in 2016, and grow by an average 15.62% yearly over the forecast period.

APPENDIX: TABLES AND METHODS

Appendix I: Tables

Table 1: Historical and Projected growth rates for GDP, Inflation and trade, annual (%)									
Year	**2011**	**2012**	**2013**	**2014**	**2015e**	**2016f**	**2017f**	**2018f**	**2019f**
Real GDP growth	5.31	4.21	5.49	6.22	2.97	3.78	5.03	5.61	5.61
Inflation	10.83	12.22	8.5	7.98	9.55	10.16	9.49	8.67	8.54
Total Trade	48.75	-4.30	-24.26	10.34	-24.30	2.41	31.11	17.31	11.64

Table 2: Historical and Projected estimates for Real GDP and Trade (N' Millions)									
Year	**2011**	**2012**	**2013**	**2014**	**2015e**	**2016f**	**2017f**	**2018f**	**2019f**
Real GDP	57,511,041.77	59,929,893.04	63,218,721.73	67,152,785.84	69,144,885.84	71,758,121.29	75,369,068.74	79,596,971.23	84,064,363.50
Nominal GDP	62,980,397.22	71,713,935.06	80,092,563.38	89,043,615.26	94,268,428.58	104,203,951.07	114,054,967.67	124,332,323.63	134,950,445.87
Trade	29,333,001.12	28,071,190.67	21,261,086.29	23,459,656.50	17,759,239.59	18,186,765.55	23,844,677.11	27,973,242.33	31,228,982.25

Appendix II: Methods

Vector autoregressive (VAR) model

One of the major workhorses available for forecasting is the VAR model. In an N-variate VAR model, variable i∈N is expressed in terms of its own lag and the lags of the other N-1 variables and, if available, the exogenous variables. However, given that the number of parameters in a VAR model quickly increases, consuming the degree of freedom and rendering inference imprecise, an alternative VAR method grounded in the Bayesian tradition has been applied to estimate the model. The VAR(p) model estimated has a general form given by

$$y_t = \theta_0 + \theta_1 y_{t-1} + \theta_2 y_{t-2} + \cdots + \theta_p y_{t-p} + \varepsilon_t \tag{1}$$

It is sometimes convenient to put this model compactly as a VAR(1) model such as

$$\mathbf{Y}_t = \boldsymbol{\theta}_0 + \boldsymbol{\Phi}\mathbf{Y}_{t-1} + \boldsymbol{\varepsilon}_t \tag{2}$$

with Φ is the companion matrix in which the p matrices containing the coefficients are stacked together to form order 1 matrix.

$$\Phi = \begin{bmatrix} \theta_1 & \theta_2 & \cdots & \theta_p \\ 1 & 0 & \ddots & 0 \\ \cdots & \cdots & \cdots & \cdots \\ 0 & 1 & \cdots & 0 \end{bmatrix}$$

and $\mathbf{Y}_t = [y_t \; y_{t-1} \cdots y_{t-p}]'$ is also conformably defined. Since our goal is to forecast over h periods ahead, our forecast is generated by the following system

$$\mathbf{Y}_{T+h} = \hat{\mathbf{\Phi}}^h \mathbf{Y}_T + \sum_{i=0}^{h-1} \hat{\mathbf{\Phi}}^i (\mathbf{\theta}_0 + \varepsilon_{T+h-i}) \tag{3}$$

with the forecast starting from the end of the historical data , T.

If the system is stable in the sense that the eigenvalues of $\hat{\mathbf{\Phi}}$ are all within the unit circle, then forecasting with the above system will be reliable. However, if the system is unstable, the powering up of $\hat{\mathbf{\Phi}}$ will magnify the instability and render the forecasts from the system unreliable. Hence, we need to ensure that the system is stable so that the forecasts too are accurate enough. We examine the stability of the system by examining the placement of eigenvalues in relation to the unit circle. The occurrence of eigenvalues outside the unit circle indicates that the system is unstable. If the system contains unit roots or the variables are near cointegration, the equilibrium-correction model (EqCM) becomes a better choice of estimation.

Due to the proliferation of parameters in the VAR model as stated above, the degree of freedom is quickly consumed up as a higher order is entertained. One way not feasible in our case is to use longer dataset to be able to estimate the system and ensure the adequacy of the forecasts. In particular, given the small sample size we have had to work with, an alternative approach might need to be adopted. In this respect, Doan, Litterman and Sims (1984) have suggested a Bayesian alternative, namely Bayesian VAR, to the pure frequentist approach outlined previously. A major difference between these approaches is that the BVAR model is grounded in the Bayesian paradigm, in which the variables are considered as fixed, while the environment

(the set of model parameters) is seen as stochastic. This is a diametrically opposing paradigm to the classical where the environment is considered as fixed and the variables stochastic. This method is thought superior to the classical VAR estimation method because it allows a fair control over the estimation procedure. In particular, it allows us to input our judgments regarding the importance of a given variable in the dynamic equation endogenizing another variable and the importance of the past in influencing the present. In the BVAR model, as time goes by the past will have less and less impact on the present such that the further in the past the less influence on the estimated and consequently the predicted time series. This is achieved by imposing a Minnesota prior on the VAR model specified in Equation (1) above.

The Bayesian VAR model warrants some conceptual clarifications, which are now discussed. Let $\alpha_i \sim N(1, \sigma_{\alpha_i}^2)$ be the priors on the coefficients associated with the lagged dependent variable in each of the equations and $\alpha_j \sim N(0, \sigma_{\alpha_j}^2)$ the priors on the coefficients of any other dependent variable in the equation. The assumed priors therefore assign a mean value of 1 to the lagged dependent variable since this variable is thought to be most important in dynamically determining its own future behavior. The mean value of 0 assigned to the coefficients of other variables featuring in this equation, on the other hand, is indicative of the lesser role they are to play in driving the dynamics of the dependent variable. If the assumed variances are tight enough, therefore, one can downplay the importance of these other variables as desired. To overcome the proliferation of parameters, which informs our choice of the BVAR method of

estimation in the first place, we used the method suggested by Doan, Litterman and Sims (1984) to shrink the deviation of variable j in equation i at lag k:

$$\sigma_{ijk} \sim \phi \omega(i,j) k^{-\eta} \left(\frac{\tilde{\sigma}_{\varepsilon_j}}{\tilde{\sigma}_{\varepsilon_i}} \right)$$

where $\dfrac{\tilde{\sigma}_{\varepsilon_j}}{\tilde{\sigma}_{\varepsilon_i}}$ is a scaling construct adjusting for the varying magnitudes across the equations, ϕ is a measure of overall tightness and $0 \leq \eta \leq 1$ gives the rapidity with which lags in the model get discounted in the shrinkage formula. Lastly, $\omega(i,j)$ is the weighting function assigning tightness to variable j in relation to the own-lags in each equation.

The Bayesian Vector Autoregression Model

We estimate the BVAR model on seven endogenous variables over the period between the first quarter of 1999 and the last quarter of 2015. The seven endogenous variables are those for which the data were available. The data on real GDP, inflation rate, exchange rate, interest rate, oil exports, nonoil exports, trade, price of crude oil and US real GDP were obtained from the NBS, CBN and the U.S BEA. The last two variables – the price of crude oil and US GDP – were considered as exogenous variables. Real GDP, exchange rate, oil exports, nonoil exports, trade, price of crude oil and US real GDP were transformed to their logarithm for estimation.

APPENDIX: TABLES AND METHODS

We adopt a two-stage estimation approach to forecasting using the BVAR model. The approach can be understood as follows. In the first stage, we estimate a BVAR model for the exogenous variables considering these variables as endogenous variables at this stage. In that case, the model estimated has the form:

$$X_t = AX_{t-1} + \xi_t$$

where X= [USGDP, OilPrice] . Based on the estimated model, we carry out the forecast for the projection period. We therefore obtain the forecast, X_t^f , for the US GDP and crude oil price. In the second stage, we bring on the historical as well as the projected series in the first stage for the two exogenous variables. These projected estimates serve as new information in estimating the BVAR at the second stage. Thus, at the second stage, we employ the seven endogenous variables namely real GDP, inflation rate, exchange rate, interest rate, oil exports, nonoil exports and trade. We the estimate the BVAR model again using the model of the form stated above with the modification that the variables now include the seven endogenous variables as well as the exogenous term:

$$Y_t = AY_{t-1} + BX_t^f + \varepsilon_t$$

Given the above formulation, we then forecast the endogenous variables as reported in this Outlook.

APPENDIX: CITATIONS

Reference

Doan, T., Litterman R.B. and Sims C., 1984. Forecasting and conditional projection using realistic prior distribution, *Econometric Reviews*, vol. 3, pp 1-100

http://budgetoffice.gov.ng/pdfs/2016/2016BudgetSpeech.pdf
http://ec.europa.eu/economy_finance/explained/economies_of_europe/european_economic
    _outlook/index_en.htm

Central Bank of Nigeria's Monetary Policy Communique No. 105 of January 25 - 26, 2016

National Bureau of Statistics

Plot 762 Independence Avenue Central Business District

Tel 07070269841

www.nigerianstat.gov.ng