

What next for Nigeria's economy? Navigating the rocky road ahead

PwC's economic scenarios for 2015 and 2016



Nigeria: in the eye of the storm

The global economy is in the midst of an oil price adjustment

The price of oil fell by 60% in the 7 months to January, driven down by:

- buoyant oil production, including from booming shale oil production;
- weakening energy demand from emerging markets; and
- the strengthening US dollar.

By late-January, Brent Crude traded at around \$50, hitting its lowest-levels since the nadir of the global financial crisis in 2009. Swift cuts in

production in the costliest Shale fields and sharp reductions in capital expenditures have seen prices recover to around \$60-65 by the end of the first quarter of 2015 – but this still represents a major adjustment from the \$90-110 average price levels we've seen over the last five years.

For net oil importers, the effect has been akin to a tax cut: paring back inflation and lowering costs for consumers and businesses. The effect on net oil exporters like Nigeria has been punishing, seeing export and government revenues decline rapidly, foreign investors fleeing domestic financial markets and imposing significant downward pressure on fixed or managed currencies.

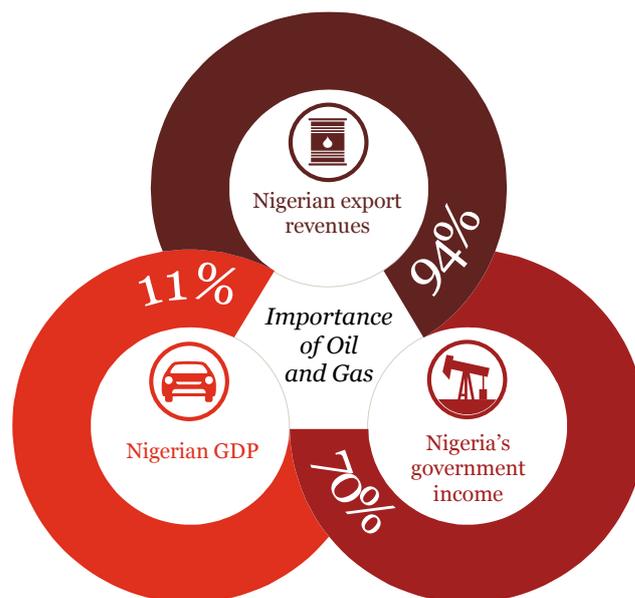
The importance of oil to Nigeria

Oil is Nigeria's main source of foreign exchange earnings and government financing (see Figure 1, right).

As a result, growth expectations for the economy have deteriorated. The Nigerian Ministry of Finance projects growth this year of 5.5%, down from 6.4% at the start of 2014. We expect that even under a benign economic scenario, the Nigerian economy will struggle to realise growth much higher than 4.0%. Nigeria's economy has tended to suffer following an oil price crash, although its resilience has improved in more recent times (see Box 1).

Getting the policy response right matters as falling economic growth imposes a real 'human' cost on the population. In our World In 2050 analysis, we expect GDP per capita to hit \$10,000 in Nigeria in 2030 – just a 1 percentage point slower growth rate per year would see this development threshold delayed by almost a decade, to 2038².

Figure 1: Importance of oil and gas¹ to the Nigerian economy in 2013



Source: PwC analysis of IMF Article IV 2014: Nigeria and Thomson Reuters Datastream

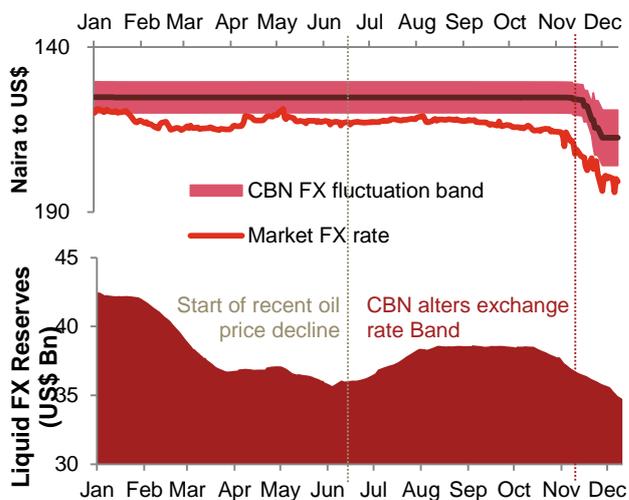
The fiscal and monetary response

In November 2014, the Central Bank of Nigeria (CBN) decided to accommodate the immediate downward pressure on the exchange rate by devaluing and widening the Naira/US\$ band from 150-160 to 160-176 (an effective devaluation of 8%). In February 2015, the central bank accommodated further – cancelling its dollar auctions and targeting a new fixed exchange rate of 196.5. The exchange rate in the parallel market – that had widened to 230 Naira/US\$ in February as the central bank tightened access to naira liquidity – finally started to realign with the official rate after a peaceful response to the election results.

The central bank is also actively drawing down foreign exchange reserves to alleviate any further pressure on the currency. This is likely to be sustainable only as a temporary measure. By the end of 2014, reserves stood at 5.3 months of imports, above the often cited 3 months threshold but down from 6.5 months at the end of 2013 and from a peak of 17 months in 2007 (see Figure 2).

In parallel, the outgoing government tightened the fiscal stance, reducing planned expenditure by c.5% in the 2015 Budget, funded through cuts in capital rather than current spending and some limited tax hikes on the luxury sector.

Figure 2: CBN response to currency pressures in 2014



Source: Thomson Reuters Datastream

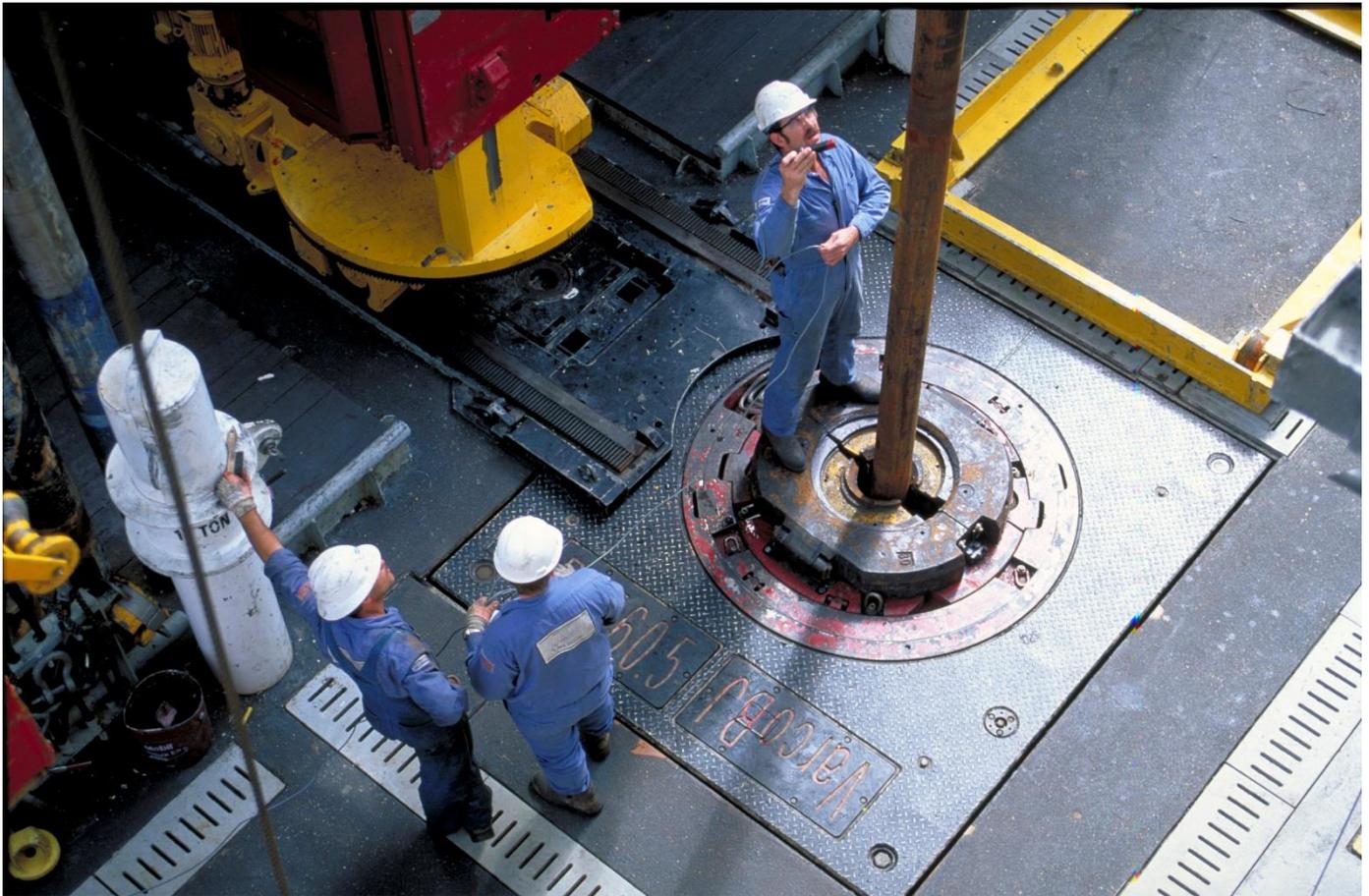
The deteriorating security situation

Whilst diversification has helped Nigeria's economy build resilience to the current oil price shock, it is unlikely to be enough to offset a second type of pressure: the vulnerable political and security outlook.

As an emerging nation with developing institutions and governance structures, Nigeria faces significant challenges in building a stable business environment. In 2014, it ranked 170th

out of 189 nations in the World Bank's Ease of Doing Business Index. The security situation has made that challenge more pronounced. Despite relinquishing control of much of its northern heartland, Boko Haram is still an unpredictable force, and tensions in the Niger Delta have resurfaced following last month's Presidential elections.

1 Oil & Gas sector definitions refer to "Mineral fuels" for calculating export revenues, "Oil & gas" for calculating government income and "Mining and quarrying" for calculating contribution to GDP
2 Calculated using Purchasing Power Parity at 2014 prices

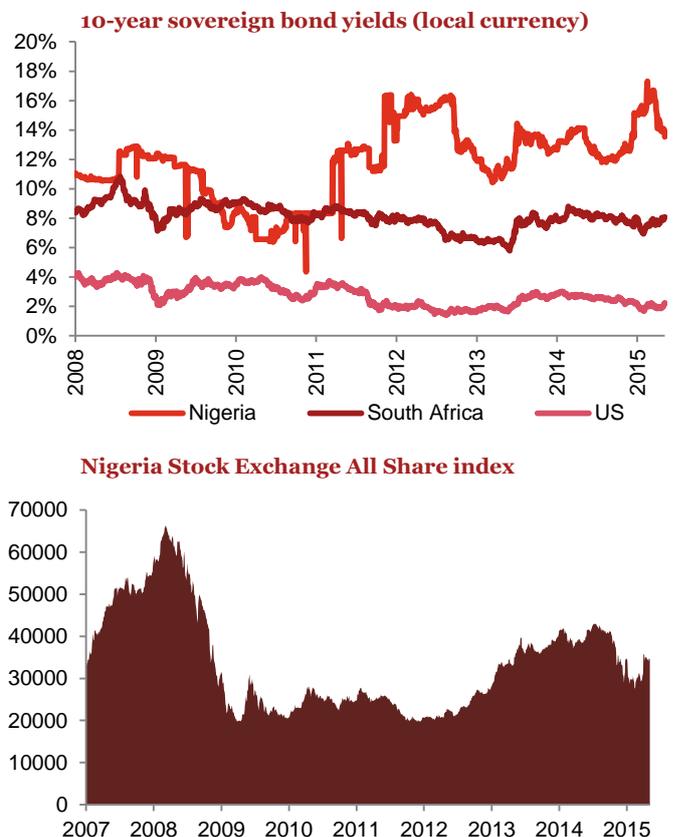


Investor sentiment is starting to turn

Investors who had previously sought exposure to Nigeria’s high growth potential appear to be getting nervous. Sovereign bond yields – at 17.3% – hit 7-year highs in February 2015 and the NSE All Share Index has fallen over 30% since July 2014 (see Figure 3). Although equities and bonds have staged a partial recovery since the election, both have underperformed emerging market peers.

Longer-term financing is also vulnerable to deteriorating security conditions. Nigeria’s *Country Risk Premium (CRP)* – our model uses sovereign bond yield and risk and credit ratings to identify the additional risk of investing in a foreign market over a ten-year time horizon – has increased by 0.7 percentage points over the last three quarters. Foreign Direct Investment (FDI) inflows also fell to their lowest level in 7 years in 2013. And over a third of capital expenditures from projects financed externally in 2014 are attributable to the Coal, Oil and Gas sector. These investments will be particularly susceptible to cost cutting from global energy majors if low oil prices persist in 2015.

Figure 3: Deteriorating investor sentiment



Source: Thomson Reuters Datastream

The next move for policymakers

Even under an optimistic outlook, it's certain that Nigeria's policy makers will face difficult choices in the short-term:

- the **government** must decide whether to borrow more to maintain expenditure levels, or cut back on commitments which may be politically sensitive; and
- the **central bank** must decide whether to draw down remaining foreign reserves to defend the exchange rate, impose painful capital controls or accept a weaker exchange rate with the possibility of losing control of inflation.

Furthermore, the oil price and the domestic security situation are both uncertain, presenting significant downside risks to the economic, commercial and financial landscape.

We believe these critical uncertainties present a strong imperative for investors, businesses and policy makers to examine how their operations and investments will be affected in the case that the economic stress deepens – or if a severe crisis takes hold. The next Section introduces three scenarios to help organisations navigate this uncertain environment.

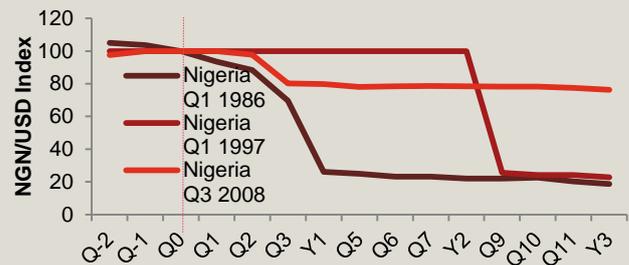
Box 1: 1986, 1998 and 2009 redux: we've been here before

Oil-related crises are not new to Nigeria. Two previous episodes of falling prices have resulted in a free-falling Naira and slowing economic growth:

- **1986 Global Oil Glut:** an oversupply of oil built up in the 1980s as demand weakened and new forms of energy were developed. Average oil prices fell 48% between 1985 and 1986. This led to an economic contraction over the next two years, with the Naira depreciating by over 70%.
- **1997 Asian Financial Crisis:** during 1997 and 1998 the oil price gradually declined in response to cooling demand as the financial crisis in Asia deepened. While the Naira initially stood firm and growth continued, the deteriorating political situation led to a devaluation of 75% in 1999.

Nigeria's performance in the wake of the 2008 global financial crisis was more encouraging. As volatility rippled out from the US-subprime crisis, Brent Crude fell from \$145/bbl to below \$40 in the space of six months. However, stronger domestic growth fundamentals combined with a weak US\$ prevented the Naira falling further than 20% against the dollar. Economic growth resumed at pre-shock levels only two years later.

Figure 4: Naira/USD exchange rate in response of an oil price shock (Index 100=timing of the shock)



Source: PwC Analysis, Thomson Reuters Datastream



Preparing for three emerging scenarios

Introducing our scenarios

We've developed three economic scenarios to help organisations prepare for an uncertain environment in 2015 and 2016. In these scenarios, we explore two types of shocks: an oil price shock and a political shock (see Figures 5 and 6, right). We recommend that you use these to stress-test your revenue projections and fortify your business planning processes.

Our approach

To assess the economic implications of these scenarios on Nigeria, we drew on three methods:

1. Quantitative modelling techniques

We used a range of analytical techniques, including:

- bespoke statistical analysis to identify correlations and causations between Nigerian macroeconomic variables;
- simulation modelling using a large-scale structural macroeconomic model;
- Nigeria-specific input-output tables and economic impact assessment methodologies to examine the structure of the economy and interdependencies between sectors; and
- using our proprietary Country Risk Premium model to quantify the effect on bond yields of a political shock.

2. Economic literature review

We conducted a review of the economic literature on oil price shocks and political shocks in net oil exporting countries (including Nigeria) and its effect on the economy. We obtained a range of coefficients from the literature review studies which we used to triangulate the results from the other components of our analysis.

We also identified how oil revenues fed through to the economy by examining Nigerian federal and state budgets and performance assessments.

3. Case studies

We investigated case studies involving historic episodes of oil and political crises in Nigeria and other net oil exporting countries around the world. From the case studies we examined:

- the impact on GDP growth compared to historical GDP trend;
- the magnitude of the exchange rate depreciation and its impact on inflation;
- effective monetary / fiscal policy responses to the shocks;
- the range and severity of political shocks using a component of the World Bank's World Governance Index; and
- the interaction between an oil price shock and a political shock.

Figure 5: PwC scenarios of Nigeria's economy

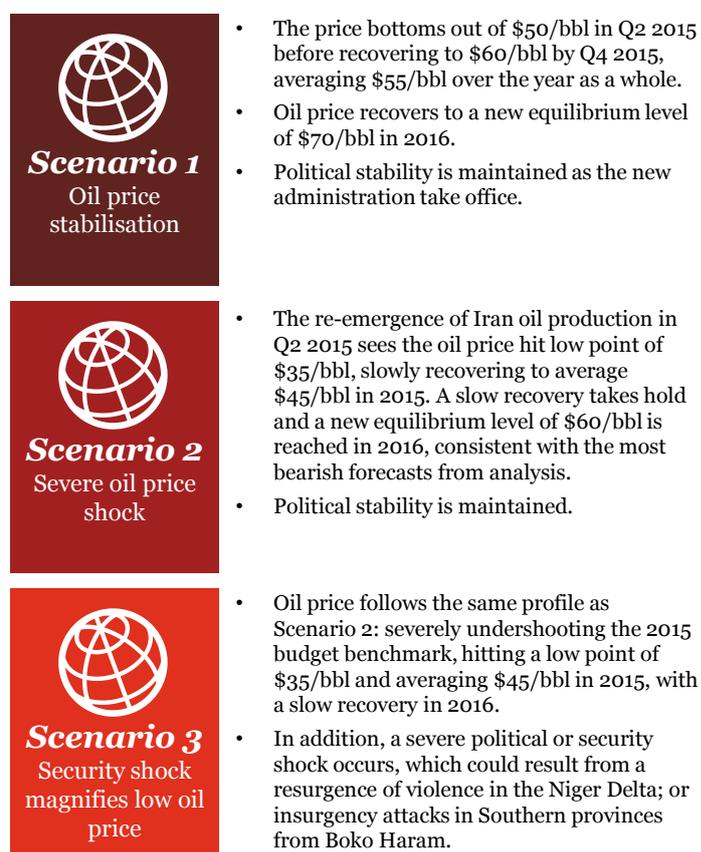
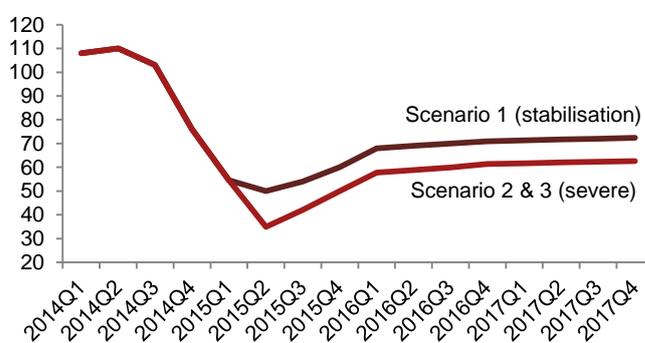


Figure 6: Assumed oil price profiles



Source: PwC Analysis, Thomson Reuters Datastream

Using these approaches, we estimated the change in GDP growth, inflation, exchange rates and gross oil revenues, which were applied on a baseline calibrated to our projections from the October 2014 edition of the Global Economy Watch (see Table 1).³

Our findings

GDP growth

We expect that the Nigerian economy will continue to grow, even if oil prices fall to \$35/bbl and average just \$45/bbl this year. A large services and agriculture sector has developed independently of the oil sector, and this should help to insulate the real economy from a downturn in oil prices.

However, we expect that a deterioration of the political and security landscape could unnerve investors and tip the country into recession. If a 'medium' political shock occurs against the backdrop of a severe oil price scenario⁴, Nigeria's economy could see zero growth or even contract by in 2015 and again in 2016.

Exchange rate

If the oil price continues to stabilise, we consider that the CBN's recent adjustment of the exchange rate regime will be sufficient to ease pressure on the Naira in 2015. If oil prices deteriorate further, we expect that a further c.10% devaluation of the Naira will be necessary in 2015. When combined with capital flight from a political or security shock, we expect the Naira may need to fall by a third against the USD by the end of 2015, matching the extent of the devaluation expected by the futures market at the height of the pre-election volatility in February.

Inflation

Nigeria's heavy reliance on imports will see inflation accelerate as the Naira depreciates. Although some of this inflationary pressure will be offset by falling domestic fuel prices and lower rates of GDP growth, we expect inflation to be at least 3 percentage points higher than in 2014.

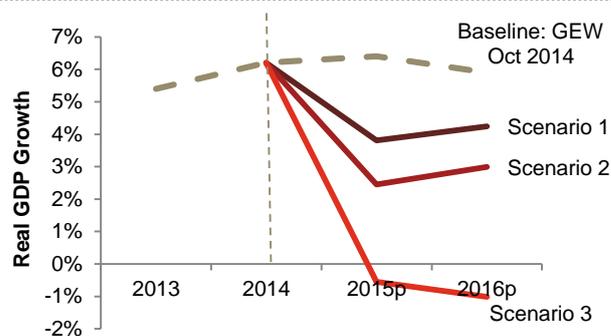
In scenario 3, the central bank is likely to lose its influence on the short-term inflation rate as the Naira sheds its value, with consumer prices rising by around 20% in both 2015 and 2016.

Table 1: Economic projections – base case

	2015 (p)	2016 (p)
Real GDP growth (%)	6.2%	5.7%
CPI Inflation growth (%)	8.6%	7.3%

Source: PwC projections (Global Economy Watch, October 2014)

Figure 7: PwC Real GDP growth projections



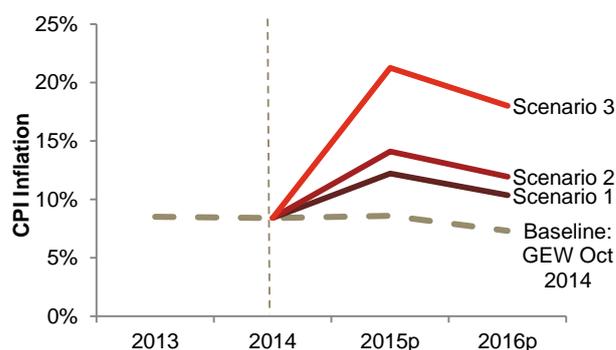
Source: PwC projections, PwC Global Economy Watch (GEW) October 2014, Thomson Reuters Datastream

Table 2: PwC exchange rate projections

Naira per US\$	2013	2014	2015 (p)	2016 (p)
Scenario 1	159	165	200	200
Scenario 2	159	165	225	225
Scenario 3	159	165	270	280

Source: PwC projections, Thomson Reuters Datastream

Figure 8: PwC scenarios inflation projections



Source: PwC projections, PwC Global Economy Watch (GEW) October 2014, Thomson Reuters Datastream

3 The October 2014 Global Economy Watch projections reflects our baseline growth expectations for the Nigerian economy without a significant decline in global oil prices

4 We define a 'medium' political shock as a 1 point fall in Nigeria's Political Stability Index in 2015 (as defined by the World Bank). See Scenario 3 for more details.

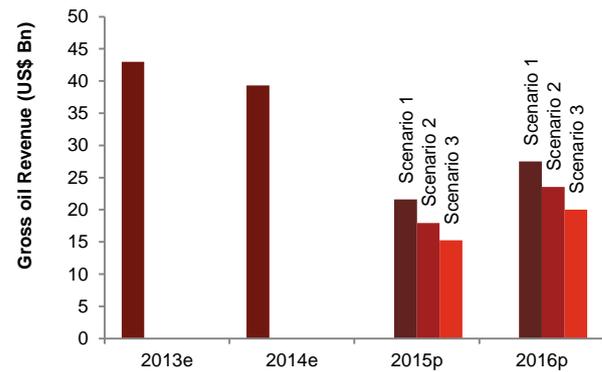
Government oil revenues

If recent oil production trends continue, gross government oil revenues will fall dramatically from their 2013 level: by \$21bn alone in Scenario 1 (equivalent to a 50% decline). In this case, a c.\$ 5bn revenue shortfall is likely to emerge in 2015 compared to the outgoing administration's Budget calculations.

This financing hole could widen to c.\$10bn in Scenario 2, where significant debt issuance and cuts to recurrent expenditure will be needed. State governments could struggle to borrow on financial markets or pay their workers. Some highly-indebted states may miss planned interest payments on their debt.

In scenario 3, we assume that oil production would fall by 15% through bunkering and other supply disruptions. Gross oil revenues would fall to a third of their 2013 level. Combined with difficulties administering tax collection from unstable parts of the country, we would expect the federal government to fall over three months behind on paying employee wages and government bond yields on US\$-debt could approach 20%.

Figure 9: PwC scenarios government gross oil revenues projections



Source: PwC projections, Nigeria budget implementation report Q4 2013



Scenario 1: Oil market stabilization

The oil market stabilizes in 2015 as emerging markets post higher-than-expected growth and the Eurozone recovers, encouraged by a successful resolution to the Greek debt negotiations. Oil majors' dramatic cuts in capital expenditure start to bring supply and demand back into balance.

The oil price falls to \$50/bbl in the second quarter of 2015, before recovering to an equilibrium level of \$70/bbl in 2016. At \$55/bbl in 2015, the average oil price falls short of Nigeria's proposed federal budget benchmark, of \$65/bbl.

Slowing growth prospects

As the oil sector contracts, GDP growth posts its worst performance in fifteen years, falling to around half the level seen over the last decade. Exports fall and the current account, which has been in a surplus since 1999, dips into a deficit worth around US\$20-30bn in 2015 (see Figure 10, right).

The Central Bank's pre-emptive devaluation in February offers support to the Naira which holds its ground as oil prices remain weak.

Inflationary pressure from a depreciating currency exceeds deflationary pressure from lower economic growth. As a result, inflation rises to levels not seen since 2012, as the price of imported materials and food rises. Estimate based on an extrapolation of the historical relationship between the oil price and current account (1980-2005)⁵.

Resilience of the real economy

Some middle-class consumers postpone purchases at the margin as inflation starts to bite, particularly high-end retail which passes on the costs of rising import prices and additional luxury taxes.

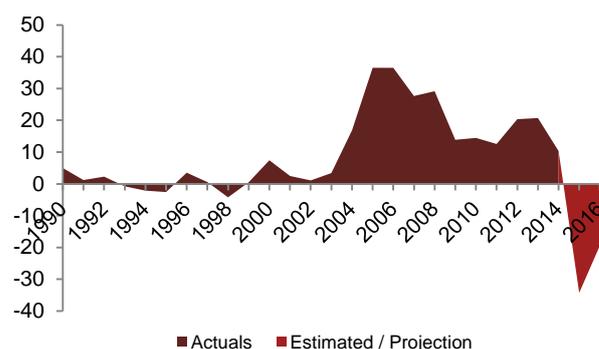
However, non-oil GDP remains largely unaffected as rising real wages spur a growth in consumer spending (which makes up three quarters of the overall economy). The real economy is largely resilient to an oil price shock as the benefits of oil revenue are not equally distributed around the economy (see Box 2 on the following page). It's possible that some sectors may even experience a small positive benefit from falling oil prices.

Table 3: Economic outcomes – Scenario 1

	2013	2014 (e)	2015 (p)	2016 (p)
Real GDP growth (%)	5.4%	6.3%	4.0%	4.5%
CPI Inflation growth (%)	8.5%	8.1%	12.0%	10.0%
Official exchange rate (Naira to US\$)	159	165	200	200

Source: PwC projections. Historical GDP and Inflation data based on IMF World Economic Outlook Apr 2015. Historical exchange rate data based on Thomson Reuters Datastream. Oil revenue 2013 baseline based on the 2013 Consolidated Budget Implementation Report, Budget Office of the Federation.

Figure 10: Current Account balance 1990-2016



Source: PwC projections, Thomas Reuters Datastream

Excess Crude Account dries up

As recent production trends continue, the falling oil price sees the government's largest source of revenue dry up. By the end of 2015, oil revenues stand at half the level collected in 2013. A c.US\$5bn revenue shortfall emerges⁶. This gap is higher than the total remaining resources of the Excess Crude Account, which is depleted by the end of the year, so the remainder is closed through a combination of spending cuts and debt issuance.

Spending cuts to politically sensitive current expenditure are avoided, but capital expenditure is slashed further. 1,500 federal-financed projects are cut with the capital budget standing at a third of the levels budgeted for 2014. Additional borrowing is absorbed by the market due to the current low levels of government debt outstanding (at c.10% of GDP) – however, investors demand a premium. State governments continue to struggle to pay wages and only survive by further slashing capital budgets.

⁵ Estimate based on an extrapolation of the historical relationship between the oil price and current account (1980-2005)

⁶ Revenue shortfall compared to the December 2014 Federal Budget Proposal for 2015

Box 2: The role of oil in the Nigerian economy

The 1986 oil price glut resulted in a severe recession in the Nigerian economy, which contracted at a rate of 8% for two consecutive years. However, Nigeria's rapid growth in the non-oil sector over the subsequent two decades has seen it build resilience to an oil price shock. In 1980, oil accounted for nearly a quarter of total output – today it contributes around a tenth. In the aftermath of the two most recent oil price shocks in 1997 and 2008, the economy continued to grow strongly (see Figure 11, right). By 2008, the government had accumulated US\$22bn in the Excess Crude Account, which it was able to draw from to smooth volatility in the oil sector. In doing so, it outperformed many other net oil exporting countries (see Figure 12, bottom-right).

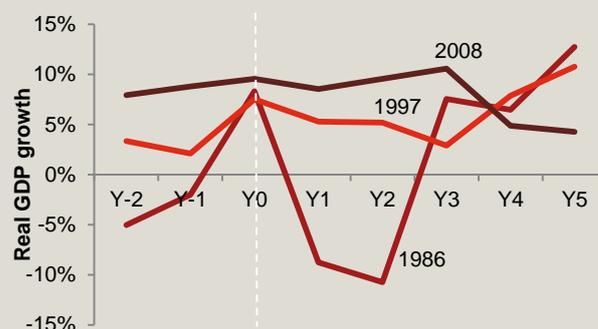
Many economic studies investigating the historic relationship between oil prices and Nigeria's GDP growth suggest that there is little significant relationship between the two^{7,8}. One study found that movements in oil prices account for less than 1% of the variance in GDP growth⁹.

Why doesn't a fall in the oil price slow growth further?

Despite oil's importance to Nigerian exchequer, the real economy is largely insulated against falling oil prices. This is driven by the fundamental structure of Nigeria's economy and how the oil and public sectors interact with the non-oil sector:

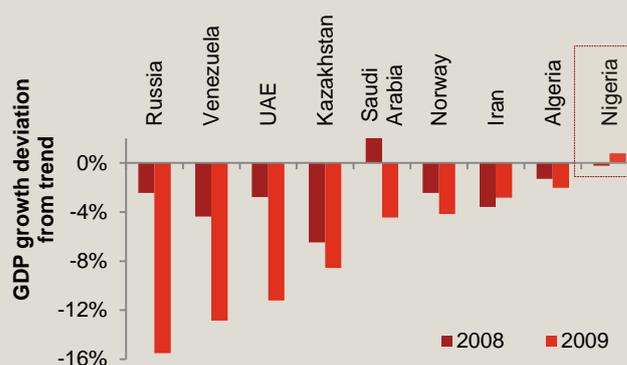
- 1. The oil sector's importance in the economy has been falling over time.** In 2013, the oil sector contributed to 11% of Nigerian GDP, in comparison to a peak of 48% in 2000. The growth of large services and agricultural sectors has fuelled economic development, with active fiscal and monetary policy encouraging this trend.
- 2. The oil sector is not highly integrated with other sectors in the economy.** Oil sector workers account for less than 1% of total employment, with a high proportion of expatriates. And much of the oil supply chain is based abroad. As a result of these dynamics, our analysis suggests a decrease of 1% in GVA in Nigeria's oil sector would lead to just a 0.03% decrease in the GVA in other sectors.
- 3. A relatively small proportion of oil revenue flows through to the real economy.** Federal government spending in areas that would boost the economy (i.e. capital expenditure, welfare and public services) is dwarfed by current expenditure (80% of which is paid as wages to public sector workers). Several studies have shown that there is little relationship between current expenditure by the government and economic growth¹⁰.

Figure 11: GDP impact of oil price shocks in Nigeria



Source: PwC analysis of data from Thomson Reuters Datastream

Figure 12: GDP deviation from trend 2008, 2009



Source: Thomson Reuters Datastream, PwC Analysis. Note: GDP trend is calculated as compounded average growth over the past 3 years before the oil price shock.

- 4. Nigerians are largely un-banked.** The proceeds of oil do not find their way to the real economy through the banking sector. Micro, small and medium sized enterprises officially contribute to 14% of Nigeria's GDP, but account for just 2% of total bank lending. Instead they rely on alternative financing mechanisms, including private investors, microfinance banks and intervention funds from development banks and the central bank. Consumer lending is also minor: private credit makes up 12% of GDP, compared to 52% of GDP in comparable frontier economies.

7 Olomola, P.A. and A.V. Adejumo (2006): Oil Price Shocks and Macroeconomic Activities in Nigeria, *International Research Journal of Finance and Economics* 3:28-34.
 8 Ayadi, O.F., A. Chatterjee and C.P. Obi. (2000): A Vector Autoregressive Analysis of an Oil-Dependent Emerging Economy – Nigeria. *OPEC Review*: 330-349.
 9 Adeniyi, O. and Oyinlola, A. and Omisakin, O. (2011): Oil Price Shocks and Economic Growth in Nigeria: Are Thresholds Important? *OPEC Energy Review*, Vol. 35, Issue 4, pp. 308-333.
 10 Ekor, M. and Adeniyi, O. (2014): Government Spending and Economic Growth: A Revisit of the Nigerian Experience. *African Economic and Business Review* Vol. 12, No. 1, Spring 2014.

Scenario 2: Severe oil price shock

The oil market enters a “double dip” as the new supply enters the market after export sanctions on Iran are lifted. Demand for oil remains weak due to slow economic growth in both emerging markets and the Eurozone as Greek crisis culminates in a messy exit from the Eurozone. Decisions by oil majors to reduce production fail to flow through to supply conditions in the short-term, resulting in a continued imbalance between demand and supply.

The oil price vastly undershoots the 2015 budget benchmark, hitting a low point of \$35/bbl and averaging \$45/bbl in 2015 (consistent with the most pessimistic estimates from financial analysts). The oil price recovers slowly to a new equilibrium of \$60/bbl in 2016.

Depressed growth prospects

As oil prices hit the bottom in Q2, pressure on the Naira builds. Pre-empting a further sell-off, the CBN allows the currency to fall to 225 ₦/US\$. This takes the overall exchange rate decline to c.40% from its 2014 level, consistent with historical instances of price shocks to commodity-dependent economies (see Box 3¹¹).

As a result, imports quickly become more expensive, leading to strong inflationary pressures. Consumer confidence deteriorates as real wage growth freezes and the central bank struggles to rein-in inflation, which stands at its highest point in four years. All non-oil growth sectors see their growth prospects fall.

Falling investor confidence

An uncertain security environment and the Naira’s slide scare away investors. All externally-financed oil-related investments are put on hold, which sees FDI inflows fall by a third to levels not seen since 2008, before recovering somewhat as the oil market stabilizes in 2016.

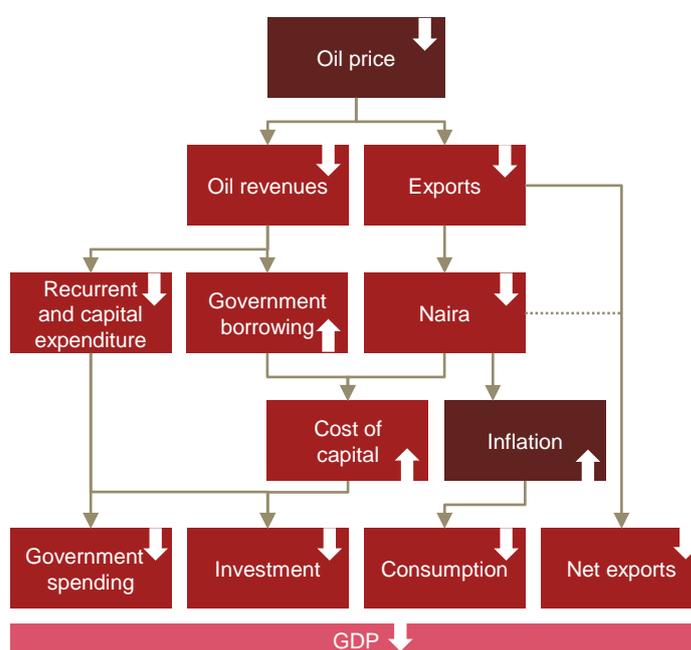
The Nigerian economy continues to grow, but at a slower pace than many of the G7 countries and significantly underperforming its long term growth potential (we expect real GDP growth between 2015 and 2025 to average around 7%).

Table 4: Economic outcomes – Scenario 2

	2013	2014 (e)	2015 (p)	2016 (p)
Real GDP growth (%)	5.4%	6.3%	2.5%	3.0%
CPI Inflation growth (%)	8.5%	8.1%	14.0%	12.0%
Official exchange rate Naira to US\$)	159	165	225	225

Source: PwC projections. Historical GDP and Inflation data based on IMF World Economic Outlook Apr 2015. Historical exchange rate data based on Thomson Reuters Datastream. Oil revenue 2013 baseline based on the 2013 Consolidated Budget Implementation Report, Budget Office of the Federation.

Figure 13: Stylized impact of falling oil price on Nigeria’s GDP



Source: PwC analysis

11 <http://www.ft.com/fastft/263662/nigerias-currency-slides-new-nadir>

Widening hole in the fiscal budget

As oil revenues fall by nearly half the level seen in 2014, the federal government struggles to make ends meet. A financing hole of up to \$10bn opens up, which cannot be plugged without cutting recurrent expenditure. The government imposes a freeze on public sector wages and some departments reduce headcount. This is carried out in an orderly way and political stability is largely maintained. The new government abolishes oil and kerosene subsidies, even as the oil price moves above the \$60 subsidy threshold rate in September 2016.

Significant debt issuance is also called for: and as the Naira continues to fall, the government is only able to issue this denominated in dollars, further exacerbating downward pressure on the currency.

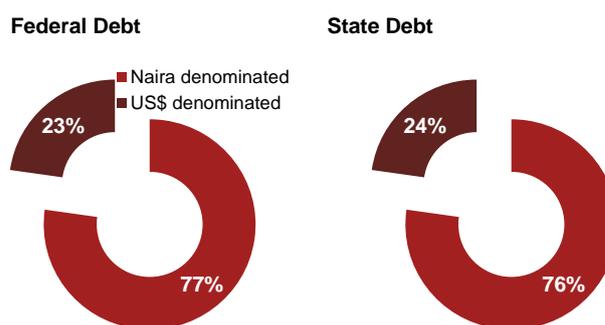
State government standstill

The state governments' finances are particularly perilous. The Naira's plunge makes it difficult for state governments to finance their external debt, which makes up a quarter of their overall debt stock (see Figure 14, right, and our analysis of the precarious nature of state finances, in Box 4, on the next page).

As revenues are diverted to service debt, most states fall behind on wages owed to their workers. Significant worker strikes bring most state governments to a standstill and public services such as education and healthcare are disrupted. All infrastructure projects, including road development and water and sanitation programmes, are abandoned.

Unable to raise short-term debt in increasingly illiquid and shallow national capital markets, some highly-leveraged states miss scheduled interest repayments.

Figure 14: Government debt stock breakdown, 2013



Source: PwC analysis, Debt Management Office Nigeria, Capital IQ, IMF World Economic Outlook October 2014. Note: the federal debt stock, at c.₦4.5trillion, is nearly double the size of the state debt stock, at c.₦2.5trillion

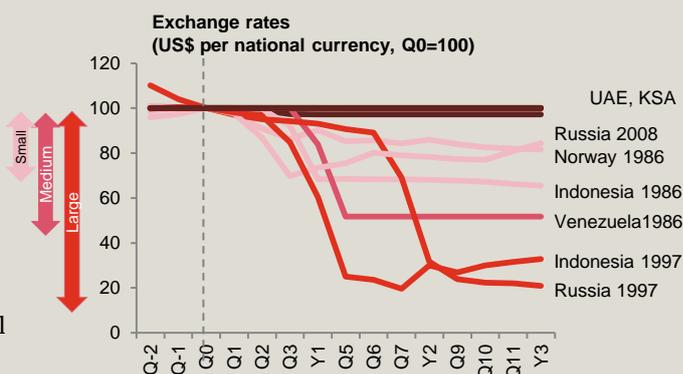
Box 3: Exchange rate depreciation and successful policy responses

The impact of a severe oil price shock is likely to go hand-in-hand with a depreciation of the currency. The impact on GDP is likely to be negative in the short-term as inflationary pressures build and imports become more expensive, reducing business and consumer spending. However, if a weaker exchange rate is sustained, imports can be substituted by local alternatives and the non-oil export sectors develop as they gain external competitiveness, leading to a recovery in GDP.

This 'J-curve' helps explain why policy makers are keen to avoid painful exchange rate adjustments in the short-term. However, our analysis of commodity-dependent countries that have experienced an oil price shock shows that in most instances a depreciation cannot be delayed for long (see Figure 15, right). Only a handful of countries with large fiscal reserves, such as UAE and Saudi Arabia, have been able to maintain exchange rate pegs through significant oil price declines. Others saw their currency depreciate across a range of severities:

1. **A relatively small depreciation of 10%-20%.** In 2008, Russia was able to stop the Rouble from spiralling downward by widening its target band and undertaking substantial interventions in the foreign exchange market, drawing down nearly a third of its reserves over the first year following the oil shock¹².

Figure 15: Effect of an oil price shock on exchange rates



Source: Thomson Reuters Datastream, PwC Analysis

12 "Market Volatility and Foreign Exchange Intervention in EMEs: What Has Changed?", BIS, No. 73, 2013, IMF Data

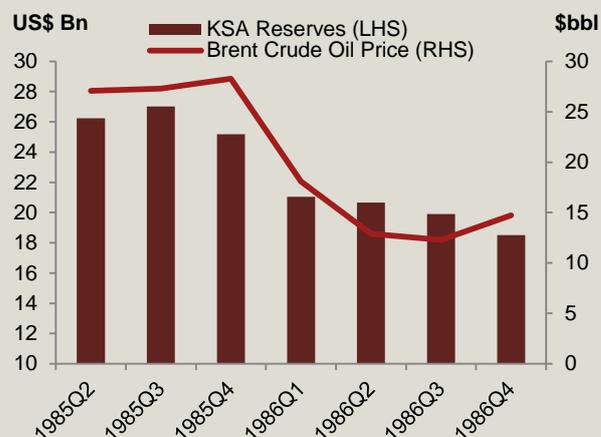
2. A mid-sized depreciation of around 30-50%. Venezuela was less successful in combatting the depreciation of the Bolivar in 1986 following years of other economic pressures. Investment was already depressed before the oil price shock and a large debt burden squeezed public finances¹³.
3. A large depreciation of around 70-80%. Severe exchange rate depreciations generally occur when the oil price shock is coupled with serious economic or political crisis. For example, in 1997/8, a combination of depressed oil prices, political instability and investor speculation following the Asian Financial crisis caused the Russian Rouble and Indonesian Rupiah to tumble to a fifth of their original value¹⁴.

Currency defence policies during an oil price fall

Saudi Arabia is the world's largest exporter of oil. When a vast oversupply in the market precipitated oil prices halving in 1986, the Saudi government and central bank undertook a coordinated policy response to steer it through the crisis.

The Saudi Arabian Monetary Authority (SAMA) maintained the exchange peg to the US\$ by conducting substantial foreign exchange transactions, utilising 27% of total reserves in 1986 alone (see Figure 16, top-right). The government, on the other hand, maintained public expenditure levels through a large debt issuance (government debt still stood at 100% of GDP a decade later)¹⁵. Both of these policies saw the economy weather the storm and recover quickly from the crisis, achieving over 8% growth by 1988.

Figure 16: KSA uses reserves to counter falling oil price



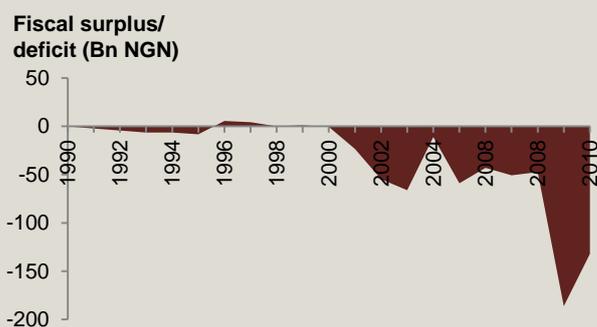
Source: Thomson Reuters Datastream, PwC Analysis

Box 4: How will a severe oil price decline effect state budgets?

The Nigerian public sector is relatively decentralised, with around 40% of gross government revenues allocated to state and local authorities¹⁶. Many state governments rely heavily upon federal allocations and oil revenue derivations to fund public programmes and capital expenditure.

Over the past decade, states have overspent their budget, resulting in a deteriorating fiscal position. The aggregate state budget balance has declined from a surplus of ₦1bn in 1999 to a deficit of over ₦130bn in 2010 (See Figure 17, right). To finance public expenditure, many states have started to issue their own debt. In 2013, total state-issued debt amounted to almost ₦2tn.

Figure 17: The declining state budget position



Source: CBN Statistical Bulletin 2010, Kano, Delta and Lagos State Budget Proposals 2014/15. * Note: Kano revenue contributions are estimates

13 "Venezuela Country report, Rivas and Revello", Emerging Countries Critical Comparative Studies

14 "A case study of a currency crisis: the Russian default of 1998", Chiodo and Owyang, the Federal Reserve Bank of St. Louis, 2002

15 "Facing new glut, Saudis avoid 1980's mistakes to halt price slide", Reuters, 14/10/14

16 PwC Analysis of the 2013 Federal Budget of Nigeria

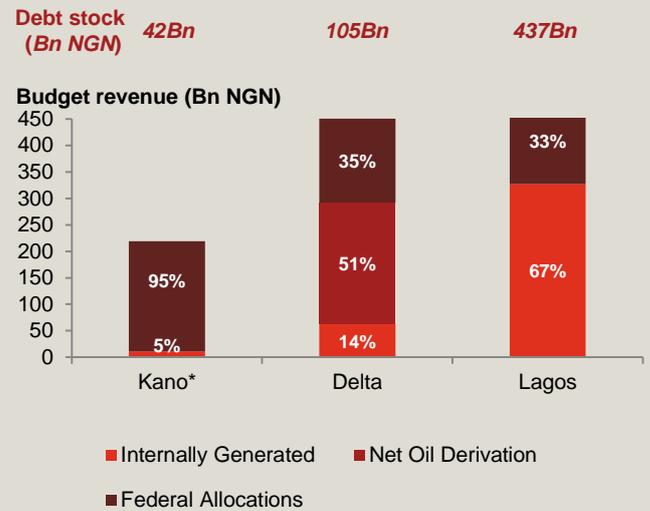
The impact of the fall in oil prices on three different states

Kano is the sixth largest state by GDP and is heavily reliant on federal transfers, which make up over 95% of 2014 budgeted revenues (see Figure 18)¹⁷. Given its low tax base, Kano will struggle to find other sources of revenue if federal allocations dry up. Unlike the federal government, which spends the majority of its budget on current items such as payroll, Kano dedicates around 75% of expenditure to capital projects. A squeeze on Kano's state budget would see these capital projects come to a halt. For the economy, this could inhibit productivity growth: but for its population, this means uncompleted roads, and lower quality water and sanitation infrastructure.

Delta is Nigeria's premier oil-producing state with over 60% of revenues directly-related to oil production¹⁸. Given a heavy reliance on federal and internally generated revenue from the sector, Delta would feel the pinch more immediately than Kano and the other states. The squeeze on Delta's budget would force significant cuts in both current expenditure (which were budgeted at 36% of 2014 expenditure) and capital expenditure. Where these capital projects relate to the oil sector, this would inhibit state production levels further down the line.

Lagos is the largest state by GDP and the commercial centre of Nigeria. It is the most self-reliant state in the country with around two thirds of revenue from internally-generated sources¹⁹. Lagos' greater degree of self-sufficiency is likely to insulate it from an oil price downturn compared to its peers. However, the state is one of the most exposed to deteriorating investor sentiment. Its pile of US\$-denominated debt, at US\$1bn, accounts for one-third of foreign debt issued by all of Nigeria's 36 states. As the Naira continues to depreciate, foreign debt will become increasingly expensive to service, closing off an important source of short-term financing.

Figure 18: Sources of revenue for different state types



Source: CBN Statistical Bulletin 2010, Kano, Delta and Lagos State Budget Proposals 2014/15. * Note: Kano revenue contributions are estimates



17 "2014 Kano Budget Proposal" Address by Gov. Rabiumusa Kwankwaso of Kano State, December 2013, Service.Gov.NG

18 "2015 Kano Budget Proposal" Address by Gov. Emmanuel Eweta UduaghanDelta State, 17/12/2014, Service.Gove.NG

19 Lagos 2014 State Budget Summary Report, Lagos Ministry of Economic Planning and Budget, December 2014, Service.Gov.NG

Scenario 3: Political instability magnifies oil price shock

The oil market continues its downward trend, with prices evolving as described in Scenario 2: hitting a low point of \$35/bbl and averaging \$45/bbl in 2015.

In parallel, the improving security environment is derailed by a security or political shock that arises in Q2 2015 as the new administration takes office.

Calibrating a political shock

We have used the World Bank's Political Stability Index to quantify the severity of political shocks that have occurred in emerging markets over the last two decades (see Figure 19, right). Taking the mid-point of these cases, we assume that Nigeria's Political Stability Index will fall by 1 point in 2015.

In 2016, we assume that political stability fails to recover. Our case studies highlight that political shocks tend to persist for at least two or three years before the security environment improves, and are particularly hazardous for net commodity exporters (see Box 5, on the following page). We cannot say exactly how this political shock will unfold; it could be a re-emergence of pockets of insurgency from Boko Haram; a return to arms for militants in the Niger Delta; an alternative unexpected event or a combination of these. But we've assumed the ramifications for citizens would be just as severe as Nigeria's experience in 1998, where social unrest followed the death of General Sani Abacha.

The economic shockwaves

In 1999, this episode saw Nigeria's GDP growth grind to a halt – with its currency losing three quarters of its value. We expect the economic shockwaves would be similar this time around: sending the Nigerian economy into a tailspin and leading to a recession that lasts two years.

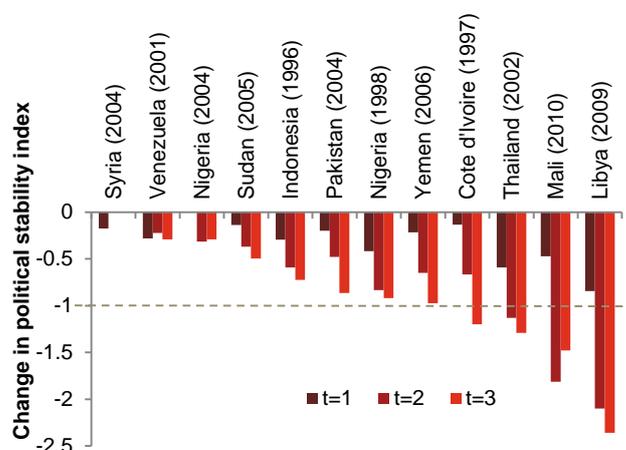
Oil production facilities are severely disrupted as production falls by 15% in the wake of heightened thefts, bunkering and strategic attacks on oil-producing facilities. This mirrors falling production levels seen during conflicts in key oil exporting nations of Yemen, Sudan and Libya.

Table 5: Economic outcomes – Scenario 3

	2013	2014 (e)	2015 (p)	2016 (p)
Real GDP growth (%)	5.4%	6.3%	-0.5%	-1.0%
CPI Inflation growth (%)	8.5%	8.1%	21.0%	18.0%
Exchange rate (Naira to US\$)	159	165	270	280
Estimated gross oil revenues (US\$ Bn)	43	39	15	20

Source: PwC projections. Historical GDP and Inflation data based on IMF World Economic Outlook Apr 2015. Historical exchange rate data based on Thomson Reuters Datastream. Oil revenue 2013 baseline based on the 2013 Consolidated Budget Implementation Report, Budget Office of the Federation.

Figure 19: Severity of a political shock (change in World Bank Political Stability Index)



Source: PwC analysis, World Bank World Governance Indicator

Freezing the function of government

As price and production projections disappoint, government oil revenues fall to levels not seen since 2003. Taxes become difficult to collect as some parts of the country become unreachable. All revenue that is collected is diverted to bolstering the military's resources. The sharp slowdown in revenues sees both state and federal government grind to a halt as the majority of workers go on strike after going unpaid for over three months.

With state government already locked out of capital markets, credit rating agencies cut Nigeria's sovereign debt to the brink of default status. Yields on existing US government debt spike at 20%, and yields on Naira debt hit 45%. Priced out of long-term bond issuance, the government turns to high-yield and distressed debt investors to finance short-term spending needs, paying in dollars at exorbitant rates.

Banking fragilities re-surface

Pressure on the banking sector mounts as loans to state government and the oil and gas sector default. This sees non-performing loans rise to the 25%-30% levels seen during the 2008-2009 banking crisis.

Corporate borrowing becomes prohibitively expensive as banks only extend loans against the safest assets. The central bank becomes the last fully-functioning public institution. It is forced into a severe devaluation of 70-80% as the majority of planned FDI projects are cancelled and capital outflows accelerate as some foreign multinationals start to wind down local operations. Capital controls are imposed in 2016 to stop the exchange rate falling further. As a result of these interventions, the central bank loses control of interest rates.

Production in the non-oil sector will be severely disrupted, as the market exchange system fails as social unrest takes hold. As significant price increases hit the real economy, consumers and businesses wind down spending to subsistence levels.

Box 5: Analysing the impact of a political shock on a large commodity exporter

Historical episodes suggest that political shocks go hand-in-hand with a period of low (or negative) economic growth. This is often coupled with currency depreciation and inflationary pressures. While the impact of military coups in Pakistan (2004) and Thailand (2002) were limited, Mali's economy under-performed by between 2 and 5 percentage points compared to its trend growth rate in the three years following a deterioration of the security situation in 2010. Nigeria's own economy suffered between 2004 and 2007 as ethnic violence took hold in the Niger Delta region (see Figure 20).

The hazards of a political and a commodity crisis: the case of Indonesia

Political instability is particularly hazardous when combined with a downturn in commodity prices. Like Nigeria, Indonesia is a major exporter of an energy commodity. Its exports of liquefied natural gas (LNG) accounted for more than a third of global LNG exports in the 90s. At the same time, its total oil and gas sector contributed towards approximately 10% of its GDP and a quarter of government revenues.

In early 1997, Indonesia was hit by the Asian financial crisis while facing a LNG price that fell 27% in a year. The Rupiah fell by 7% in one single day alone as the central bank announced a widening of the exchange rate band (see Figure 20, above). In the wake of extreme pressure on the exchange rate, in August, Indonesia decided to float its currency rather than draw down its vast foreign exchange reserves which amounted to US\$20bn. Within 2 months from the free float, the Rupiah had depreciated by a third, sparking inflation which hit 13.7% by January 1998.

On 12th May 1998, troops fired at a peaceful protest at Jakarta University causing huge political turmoil which led to President Suharto's resignation. Foreign investor confidence spiralled downwards as the Rupiah continued to depreciate to an all-time low of 15,500 to USD. By the end of June 1998, new President Habibie secured a package with the IMF, imposing aggressive reforms but setting in motion a slow recovery. Indonesia's GDP contracted by 13% in 1998, compared to trend growth of close to 8% prior to the shock. Economic growth resumed the following year, but it took a decade to recover to its pre-crisis level.

Figure 20: Impact of political shock on GDP (GDP growth deviation from trend, %)

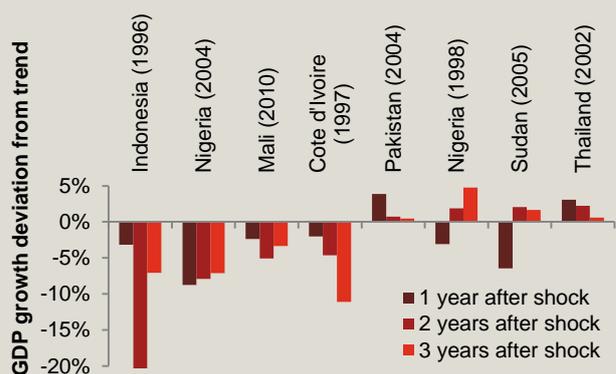


Figure 21: Rupiah exchange rate during the 1998 Indonesian crisis



Source: PwC analysis, IMF World Economic Outlook October 2014, Thomas Reuters Datastream. Note: trend calculated as 3-year CAGR prior to the shock

How can policy makers and business leaders prepare and respond?

Each scenario can be viewed as an escalation of the previous one. So understanding the tipping points between them – where ‘linear’ economic growth (i.e. in Scenarios 1 and 2) spills over into a ‘non-linear’ crisis (i.e. Scenario 3) – can be a critical leading indicator.

Three types of tipping point

Policy makers and business leaders should scan the economic, commercial and financial landscape for broadly two types of tipping point:

- **Event-driven:** key events (e.g. activities, milestones or announcements) that could spill-over in a systemic way to other actors in the economy. These could be political (i.e. an election timetable, a response to civil unrest), commercial (i.e. failure of a significant institution) or economic (i.e. a sovereign debt auction or financial market reaction).
- **Threshold-driven:** key economic thresholds that once approached or breached, pose a systemic risk to investor confidence. These thresholds most often develop as “rules of thumb” that investors hold dear (i.e. 3 months of reserves relative to imports or the size of the current account balance). Sometimes, they are empirically developed (i.e. debt/GDP thresholds developed by Reinhart & Rogoff²⁰).

Potential tipping points for Nigeria

In Nigeria, the most prominent potential tipping points are related to the evolving security environment in response to the April national and local government elections.

We cannot tell exactly where this shock would come from; it could be a re-emergence of pockets of insurgency from Boko Haram; a return to arms for militants in the Niger Delta; an alternative unexpected event or a combination of these. Our hope is that the improving security environment continues to build steam – however the situation remains vulnerable and public and private organisations should stress-test their business plans against alternative scenarios.

The market’s reaction to the unfolding events in Nigeria will be tested at various points in the debt management cycle. Financial market indices such as debt yields and equity market prices should be monitored closely around the time of large principal repayments or new issuance.

Alongside the oil price, a key economic variable for organisations looking to understand the future path for the currency is the size of the CBN’s foreign exchange reserves. The CBN is likely to devalue the Naira once it breaches its threshold reserves level. The direction of this variable can also help signal the extent of the downward pressure on the currency.

Managing through the period of uncertainty

In the short-term, Nigeria’s policymakers have relatively little ability to influence which scenario the country may enter (particularly relating to the oil price). However, policymakers can take actions that will help mitigate the potential impact on the economy if a crisis does materialise.

On the monetary policy side, the central bank will need to take the lead in closely scrutinising the evolving risk environment (particularly around market, credit and liquidity risks). It should stand ready to intervene with a wide-ranging toolkit including extensive liquidity facilities and contingency plans for maintaining the cash money supply in regions afflicted by bouts of instability.

The Government can also take responsibility for developing a set of priorities for federal and state expenditure, aligned to the national development plan. A policy principle might be to protect and support a few strategic industries during a crisis period, such as agriculture and MSMEs, who provide a large number of jobs to citizens.

‘Normalising’ out of the crisis

In the longer-term, Nigeria’s policymakers should aim to encourage a more resilient economic model, learning the lessons from this period and building an economic strategy fit to harness the country’s strong growth fundamentals, particularly that of a young, entrepreneurial and increasingly well-educated workforce.

A first priority should be restore fiscal credibility by widening the tax base – Nigeria currently has one of the narrowest in the region (see Box 6 on the following page) – and distributing the benefits of the country’s oil endowment more evenly across the population. Nigeria was able to navigate through the last oil price crisis in 2008 by drawing down its plentiful fiscal reserves. Today’s policy makers should re-ignite this ambition to protect future generations, learning from those commodity exporters who have successfully implemented anti-cyclical fiscal policy, such as Chile (see Box 6 on the following page).

20 <http://www.reinhartandrogoff.com/data/browse-by-topic/topics/9/>

Box 6: The importance of resuming anti-cyclical fiscal policy and widening the tax base

Economies dependent on revenue from selling commodities are inherently exposed to fluctuations in their price. Often the proceeds of high prices are poorly managed, leaving insufficient resources to cover periods where revenues underperform.

Figure 22: Pro cyclical fiscal policy in Nigeria

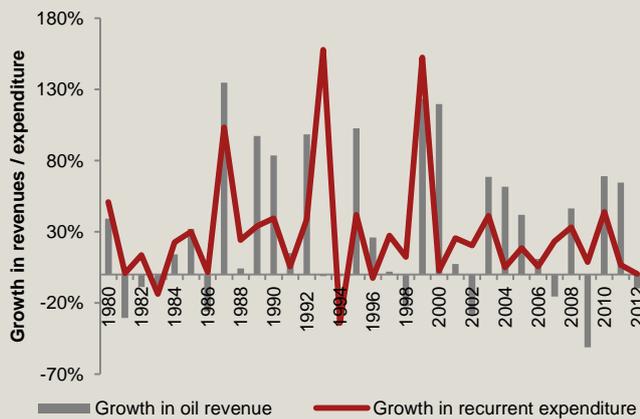
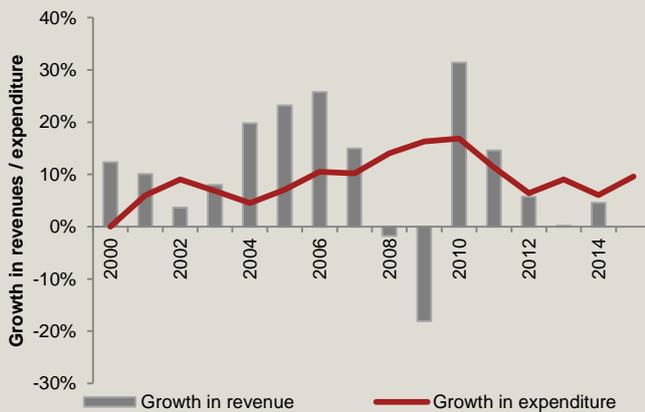


Figure 23: Expenditure smoothing in Chile



Source: CBN Statistical Bulletin, Thomson Reuters Datastream, PwC Analysis

Chile’s government has historically relied on the proceeds of copper exports to fund its budget spending²¹. More recently, Chile has actively smoothed its government expenditure against the commodity cycle. For example, as copper prices doubled from 2004 to 2006, Chile’s government revenues grew at an ever increasing rate. However, rather than increase expenditure, it stored fiscal surpluses in its sovereign wealth fund (SWF). This meant that when copper prices declined in 2008 the government had enough fiscal reserves to finance its expenditure.

From 2003 to 2009, Nigeria made a similar effort to save during times of high oil prices. The creation of the Excess Crude Account (ECA) in 2003 and its successor, the Nigerian Sovereign Investment Authority (NSIA) in 2013, provided the government vehicles in which to store excess revenues. From 2003 to 2008, the ECA rose to \$22bn. This meant when oil prices declined in the third quarter of 2008, the government was able to drain the ECA of \$15bn over the next year to insulate the economy²². Since 2009, the ECA has continued to be drawn down despite high oil prices, and currently stands at just US\$2.5bn as of January 2015.

Building resilience to commodity market downturns will also mean widening the tax base. Nigeria is a low-taxed economy compared to its peers – according to World Bank the country collected the equivalent of less than 2% of its national income in tax receipts in 2012, compared to an average of 16% for emerging markets and 18% for Sub-Saharan African economies. In its latest Article IV report, the IMF noted that non-oil revenue stood at just 5% of non-oil GDP – where as the average oil-producing country collects around three times as much.

Whilst administrative improvements will deliver incremental revenues over the coming years, we believe a more ambitious programme will be needed to both put the budget on a sustainable footing and meet Nigerians’ rising expectations from their government. As Nigeria moves up the development spectrum, and a middle-class flourishes, the ‘contract’ these citizens enter into with their government will be very different to previous generations, demanding better quality education, health care and infrastructure. Expanding the tax base in a way which is equitable, efficient and promotes Nigeria as a great place to do business will be crucial as to whether the country can fulfil these expectations over the coming years.

21 Thomson Reuters Datastream, Bloomberg

22 “Nigeria Economic Report”, The World Bank, 2013

Supporting your response

These scenarios present important issues to consider for all organisations exposed to Nigeria. We are already supporting several public and private clients across a range of sectors to help them understand what these scenarios could mean for them and how they can build preparedness through their business planning processes.

All parts of an organisation could be affected in any one of our scenarios: Business Planning, Treasury, Legal, Procurement, IT, Finance, HR and Tax. We recommend companies prepare a coordinated response. Companies that prepare contingencies in functional silos will miss important interlinkages and potentially underestimate the risks.

If scenario 3 were to unfold, there are potentially significant changes and disruption to the operations of many organisations. In this situation, moving quickly will be paramount. The companies with the best contingency plans in place, with agreed actions and appropriate delegated authority allowing quick decisions; are the ones that will come out of this crisis the in the best shape.

Our dedicated team of macroeconomists working alongside our strategy and operations consultants, can help your organisation prepare and execute a strategy for building competitive advantage around a changing economic and risk environment. We are experienced in using economics techniques; including scenario building, stress testing and forecasting, to provide evidence-based yet creative and insightful solutions.

If your organisation has exposures to Nigeria, we would like to discuss the material in this report in more detail, please contact:

Uyi Akpata

*Country Senior Partner,
PwC Nigeria*

uyi.n.akpata@ng.pwc.com

+234 (0) 708 140 5542

252E Muri Okunola Street, Victoria Island, Lagos

Taiwo Oyedele

*Partner and Head of Tax & Regulatory Services,
PwC Nigeria*

taiwo.oyedele@ng.pwc.com

+234 (0) 806 019 6593

252E Muri Okunola Street, Victoria Island, Lagos

Blog: www.pwc.com/nigeriataxblog

Dr. Andrew S. Nevin, PhD

*Advisory Partner and Chief Economist,
PwC Nigeria*

andrew.x.nevin@ng.pwc.com

+234 (0) 806 059 3528

252E Muri Okunola Street, Victoria Island, Lagos

Richard Boxshall

*Senior Economist,
PwC UK*

richard.boxshall@uk.pwc.com

+44(0)20 7213 2079

7 More London, Riverside, London, UK

Robert Vaughan, CFA

*Economist,
PwC UK*

robert.p.vaughan@uk.pwc.com

+44(0) 207 212 2521

Yih Lin Teh

*Economist,
PwC UK*

yih.lin.teh@uk.pwc.com

+44 (0) 752 528 3493

7 More London, Riverside, London, UK



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