Renaissance Capital

Nigeria: Dangote refinery

A defining moment

Sector update
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Oil & Gas
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Aliko Dangote via Dangote Industries Limited (DIL) is building the world's largest single-train 650kb/d capacity petroleum refinery in Nigeria. The proposed completion of the refinery in early 2020 will be a defining moment for the downstream oil sector and the economy as a whole, in our view. We expect the refinery to wean the country off fuel imports and generate foreign exchange via exports. We believe the fuel subsidy is likely to be changed substantially, as our analysis suggests that the sale of petrol from the refinery at the regulated price will not be profitable. Our top pick of the fuel marketers is Total Nigeria (BUY, TP NGN 287, CP NGN183) given its large scale and affiliation with Total E&P.

The refinery

DIL's intent is that the refinery will fully satisfy Nigeria's demand for petrol, aviation fuel, kerosene and diesel, leaving a surplus for export. It budgets the cost at $12bn and expects the refinery to be commissioned in 2020. The refinery products, according to the company, will be designed to meet Euro V grade, hence products can be exported to any part of the world. The aim is that it will be well diversified and able to process African crude, Middle Eastern crudes and some American crude, thus flexibility will be built into the crude input to minimise risks from disruptions in Nigerian crude supply. In our view, the refinery will separate the wheat from the chaff as the larger oil marketers' competitive strategy starts to bear fruit and the numerous smaller players start to fall away. In particular, we believe Total's scale and upstream affiliate places it at an advantage to its peers and it could be a beneficiary through possible crude oil and fuel swaps with the refinery.

Figure 1: Dangote refinery details

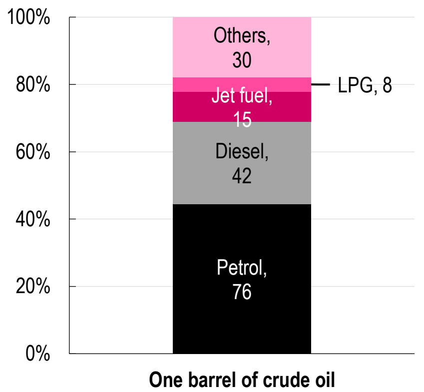
Refinery cost	$12bn
Refinery capacity	650Kbl/d
Power plant	570 MW
Subsea pipeline infrastructure	1,100km
Additional gas from pipeline	12,000MW
Forex savings for Nigeria	$7.5bn
Additional forex income	$5.5bn
Targeted completion date	early-2020

Source: DIL, OilGasNG.com

Domestic oil revenues could double

According to the Energy Information Administration (EIA), refineries in the US produce 76 litres of petrol per barrel of crude oil, which indicates to us that Dangote's 650kb/d refinery could produce c. 50mn litres of petrol per day – matching Nigeria's 2017 demand based on National Bureau of Statistics (NBS) data. However, we believe some of this demand stems from neighbouring countries, which receive products illegally smuggled out of Nigeria, thus actual demand is likely to be lower. Our Sub-Saharan Africa (SSA) economist, Yvonne Mhango, estimates Nigeria's petrol demand at 30.2mn litres in 2021, which suggests to us that the refinery's capacity is more than sufficient to meet the country's demand. We believe the government is likely to redirect some of the 445kb/d of domestic crude used for refined fuel swaps (through the Direct Sales Direct Purchase [DSDP]) to the Dangote refinery, thus increasing the government's domestic crude revenue. On our estimates, in 2017, the government would have made NGN2.7trn selling its domestic crude to the Dangote refinery vs the NGN1.5trn it made through DSDP swaps and the subsidy scheme.

Figure 2: Products from a barrel of crude oil, litres



Source: EIA

Prices in this report at close 11 October 2018

Floating of petrol prices likely

We opine that the regulated petrol price of NGN145/litre will not cover the refinery's costs even after the elimination of freight, demurrage and other costs not related to domestic refining. Our analysis, based on our 2021E oil price of $61/bl, suggests that the price of petrol at the Dangote refinery should be ($0.56 /litre) NGN169/litre –- NGN11/litre below what we estimate the unsubsidised petrol price should be if imported and NGN24/litre above the current regulated price. Therefore, we believe it would be uneconomical for the Dangote refinery to sell petrol to the domestic market at the regulated price, which is why we think a possible scenario is for the government to float petrol prices. Our analysis also reveals that in 1H18 the government spent $1.3bn on petrol subsidies; annualised this equates to $2.6bn, or 6% of Nigeria's reserves, thus the government has an incentive to float prices.

Figure 3: Petrol subsidy breakdown

	1H18	2017	2016
Oil price, $/bl	71	56	45
Petrol imported, litre mn	9,612	18, 232	17, 374
Subsidy, NGN bn	395	145	0
Subsidy, $mn	**1,295**	**475**	**0**
Annualised subsidy, $mn	**2,591**	**475**	**0**

Source: NNPC

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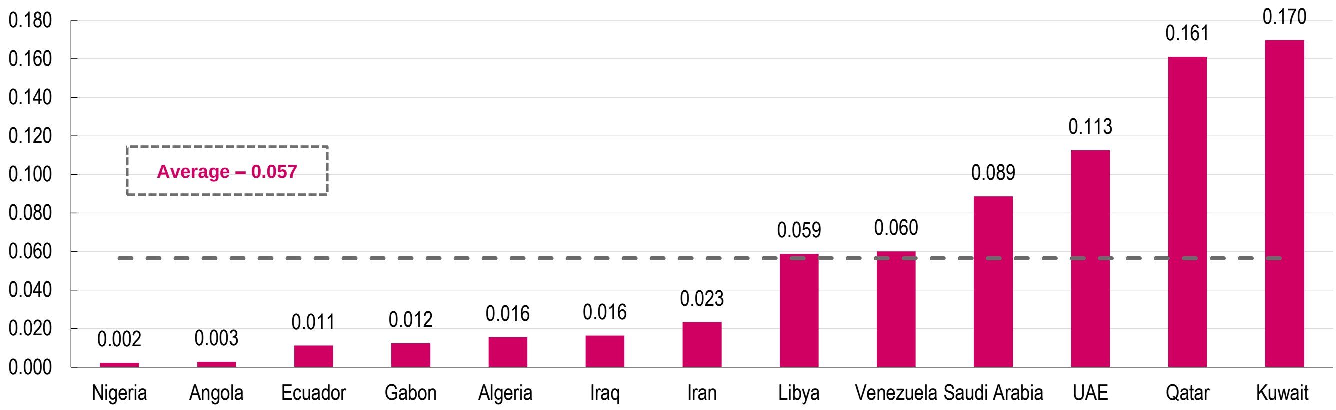
The Dangote refinery

In April 2013, Aliko Dangote made a bold move by announcing plans to build an oil refinery in Nigeria – a petroleum product import-dependent country. Nigeria produces 1.9mn b/d of crude oil (2017), but exports most of this due to insufficient refining capacity. As such, most of Nigeria's demand for refined products is met through imports.

Nigeria currently has four government-run refineries (Warri, two in Port Harcourt and Kaduna), with a total capacity of 445kb/d. However, owing to decades of poor maintenance and mismanagement, these refineries have an average utilisation rate of only 18% (2017). Consequently, Nigeria swaps some of its crude oil for refined products in the international market through the DSDP swap.

Of the OPEC member countries, Nigeria has the lowest per capita refining capacity at 0.002bpd/capita, some way below the average of 0.057 bpd/capita. We expect the addition of Dangote's refinery will increase Nigeria's name-plate refining capacity to 1,095kb/d, the fifth-largest refining capacity amongst OPEC member countries and the largest in Africa. Below we show the refining capacity of OPEC member countries and the top 10 refineries in Africa.

Figure 4: Per capita refining capacity, bpd/capita



Source: OPEC

Figure 5: Refining capacity of OPEC member countries, kb/d

	Refining capacity
Saudi Arabia	2,886
Iran	1,901
Venezuela	1,891
UAE	1,124
Kuwait	762
Algeria	651
Iraq	640
Nigeria	445
Qatar	433
Libya	380
Ecuador	188
Angola	80
Gabon	24

Source: OPEC

Figure 6: Top 10 refineries in Africa

	Country	Company	Capacity, kb/d
Skikda	Algeria	Sonatrach	357
Ra's Lanuf	Libya	NOC	220
Port Harcourt	Nigeria	NNPC	210
Mohammedia	Morocco	SAMIR	200
Sapref	South Africa	Saprf	180
Sasol	South Africa	Sasol	160
Engen	South Africa	Petronas	150
El Nasr	Egypt	EGPC	146
Cario Mostorod	Egypt	EGPC	142
Warri	Nigeria	NNPC	125

Source: McKinsey, Company websites

In addition, plans are underway to construct small modular refineries in Nigeria, but nothing in the scale of the Dangote refinery. The most advanced in construction is: 1) Azikel Petroleum, an indigenous company which aims to complete its 12kb/d refinery located in Bayelsa State by 2019; and 2) the OPAC refinery, whose 7kb/d refinery located in Kwale, Delta State is scheduled for completion at end-2018. The Department of Petroleum Resources (DPR), has said it has granted licences for the establishment of refineries to 25 investors, and 10 have received a permit to construct.

The Dangote refinery – what you need to know

- DIL is building the world's largest single train petroleum refinery with a 650kb/d capacity. According to the company, the intent is for the refinery to satisfy Nigeria's demand for petrol, aviation fuel, kerosene and diesel, leaving a surplus for export in each of these products.
- The refinery is budgeted by the company to cost $12bn and to be commissioned in late 2019/ early 2020, although we expect a 6-9-month delay before full operation.
- The complex, which includes a refinery, petrochemical plant, fertiliser plant and a subsea pipeline project, covers an area of 2,165 hectares in the Lekki Free Zone area close to the Lekki Lagoon – to enable easy transportation of refined petroleum products to international markets.
- The company's target is for a significant portion of Nigeria's crude oil production to be refined domestically, rather than imported, thereby creating jobs within Nigeria, and bringing a halt to the current importation of refined petroleum product through DPDS swaps.
- The refinery products will be designed to meet Euro V grade, which is the highest standard in the world, hence products can be exported to any part of the world.
- It will be well diversified and able to process Nigerian crude, African crude, Middle Eastern crudes and some American crude, hence, flexibility is built into the crude input to minimise risks that may occur due to disruptions in Nigerian crude supply. The refinery will be able handle not only sweet light crude, but sour and heavier crude.
- In terms of evacuation routes, two crude oil single point mooring (SPM) buoys and three multi-product SPMs will be located within the Atlantic ocean. The buoys will transfer up to 80k/bl per hour of crude oil to a calling tanker of up to 320,000 DWT. These will be used to import crude oil to the refinery.
- The multi-product buoys will transfer up to 25k/bl per hour of segregated refined products to calling tankers of up to 160,000 DWT. These will be used to export petrol, diesel, jet fuel and kerosene.

- Each of the export product lines on these multi-product buoys shall be dedicated to a single type of product.
- In addition, there will be a road evacuation plan for domestic supply, while the SPMs will also be able to supply some parts of Nigeria such as Port Harcourt, Warri and Calabar via shuttle tankers.

Figure 7: Dangote refinery and petrochemical plant details

Refinery cost	$12bn
Refinery capacity	650Kbl/d
Power plant	570 MW
Subsea pipeline infrastructure	1,100km
Additional gas from pipeline system	Generates 12,000MW
Forex savings for Nigeria	$7.5bn
Additional forex income	$5.5bn
Targeted completion date	End-2019

Source: DIL, OilGasNG.com

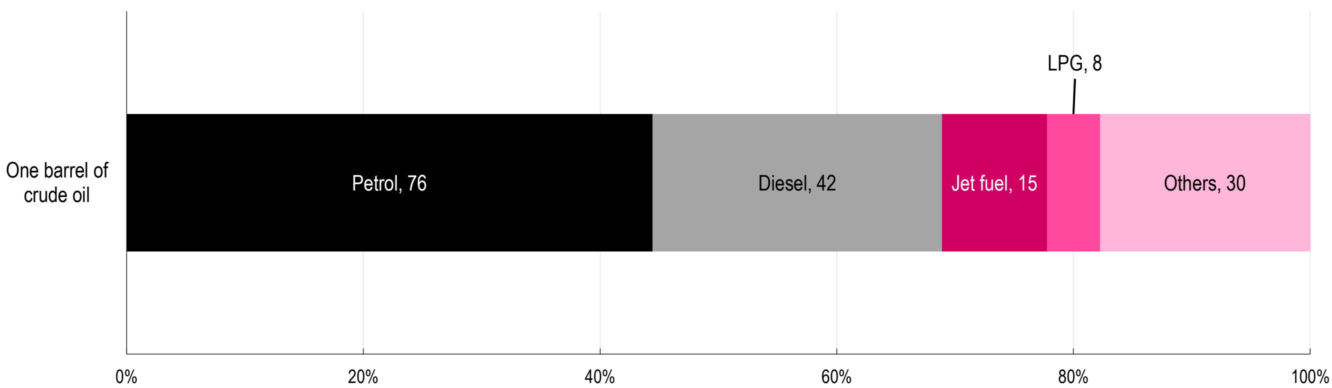
In addition to the refinery, DIL is building a 1,100km length sub-sea gas pipeline with capacity to handle 3 Bscf/d. The two parallel 550km underwater gas pipelines will gather gas along a route off the coast of Nigeria from Rivers State, for delivery to the new gas plant to be located at the Dangote refinery and sold to other businesses.

Dangote Exploration Assets Ltd also plans to pump around 20kb/d of crude oil from two shallow water blocks, OML 71 and 72, located in the Niger Delta river in south-eastern Nigeria. The crude pumped from these blocks will supply the refinery. The exploration company is looking for blocks to produce up to 250kb/d.

Refinery to potentially produce c. 50mn litres of petrol per day

According to the EIA, refineries in the US produce c. 76 litres of petrol and 42 litres of diesel from one barrel of crude oil (Figure 8). Nigeria's bonny light crude is sweet grade oil with a low sulphur content and we believe that one barrel of Nigerian crude oil should produce slightly more than 76 litres of petrol, as per the US. However, we opt for conservativism and use the EIA's assumptions, which on our analysis implies that Nigeria needs just c. 397kb/d of refining capacity (61% of Dangote refinery's potential capacity) to meet our 2021 petrol demand estimate of 30.2mn litres. This suggests that the 650kb/d Dangote refinery should be capable of producing c. 50mn litres of petrol per day, which should be sufficient to meet domestic demand with capacity to export products.

Figure 8: Products from a barrel of crude oil, litres



Source: EIA

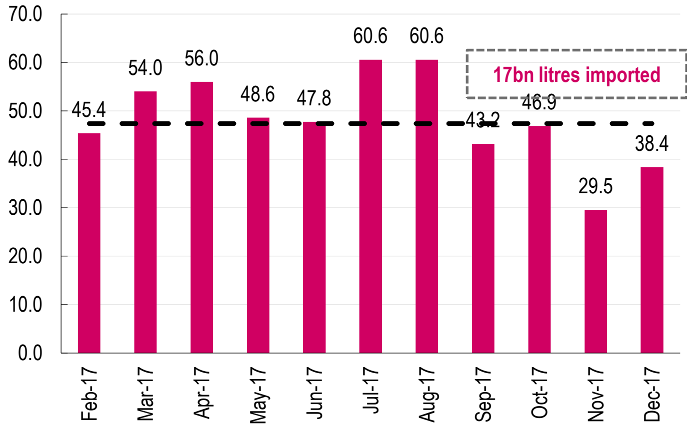
Figure 9 shows petrol consumption at 50mn litres in 2017, based on NBS data. We believe that some of this demand stems from neighbouring countries, which receive products illegally smuggled out of Nigeria as the price of petrol is often double that of Nigeria. We therefore use Yvonne Mhango's estimated petrol demand of c. 27mn litres in 2017 (Figure 12) as our base case.

Figure 9: Refined products consumed, mn litres/day

mn litres per day	2014	2015	2016	2017	1H18
PMS (petrol)	48.2	48.7	47.5	50.2	54.1
AGO (diesel)	9.1	8.9	10.6	13.0	13.3
DPK (kerosene)	8.1	4.7	2.6	2.6	3.9
Total	**65.4**	**62.3**	**60.7**	**65.8**	**71.2**

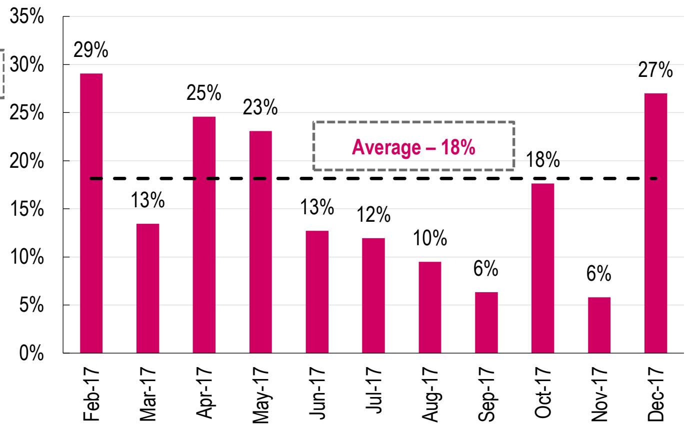
Source: Nigeria National Bureau of Statistics

Figure 10: Petrol – average daily importation in 2017, mn litres/day



Source: NBS

Figure 11: Domestic refineries capacity utilisation, (445kb/d)



Source: NNPC

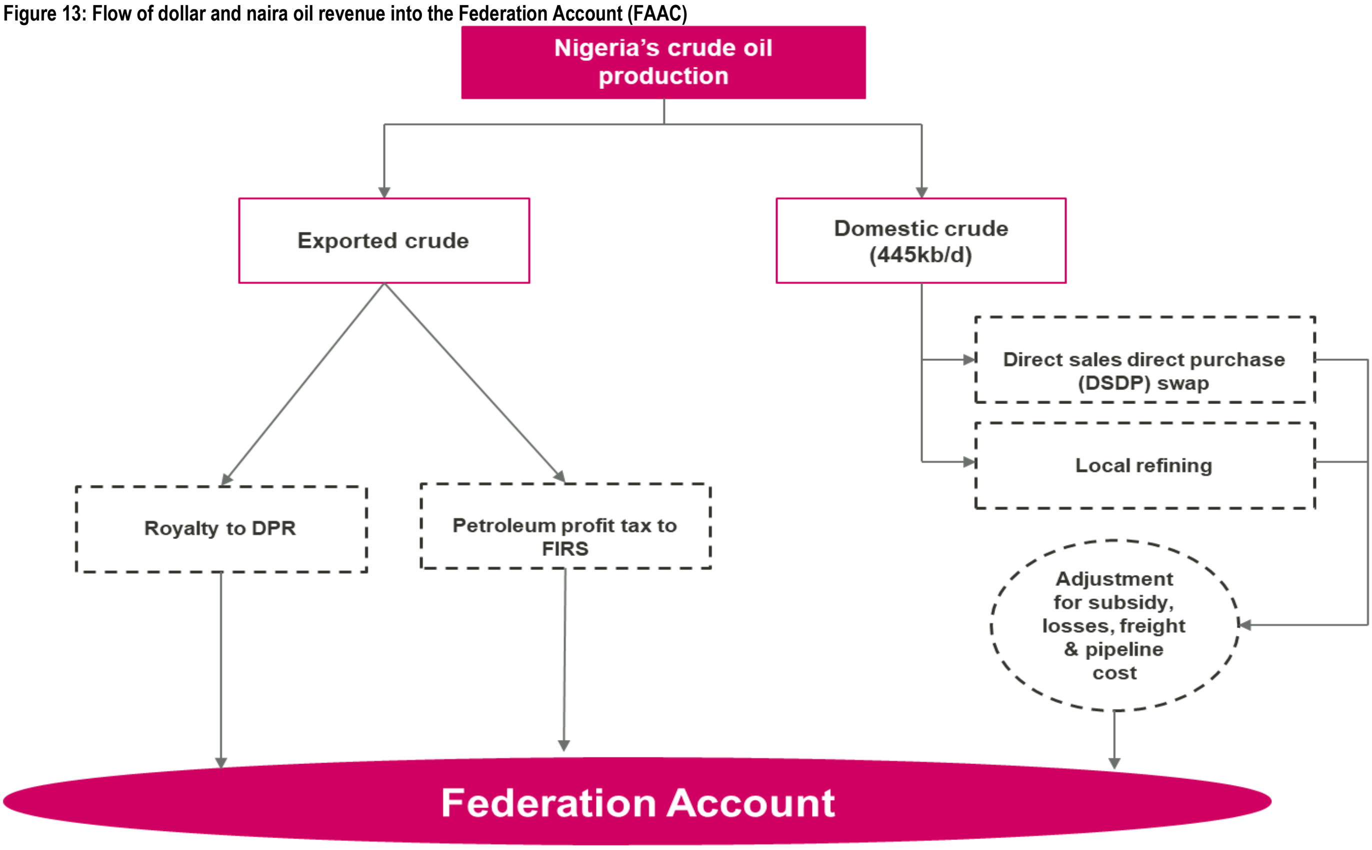
Figure 12: Consumption of refined products (adapted to include RenCap's petrol estimates), mn litres/day

	2014	2015	2016	2017
PMS (petrol)	26.1	25.7	26.4	27.1
AGO (diesel)	9.1	8.9	10.6	13
DPK (kerosene)	8.1	4.7	2.6	2.6
Total	**43.3**	**39.3**	**39.6**	**42.7**

Source: NNPC, Renaissance Capital estimates

Volume differential from DSDP swap arrangement

Figure 13: Flow of dollar and naira oil revenue into the Federation Account (FAAC)



Source: NNPC, Renaissance Capital estimates

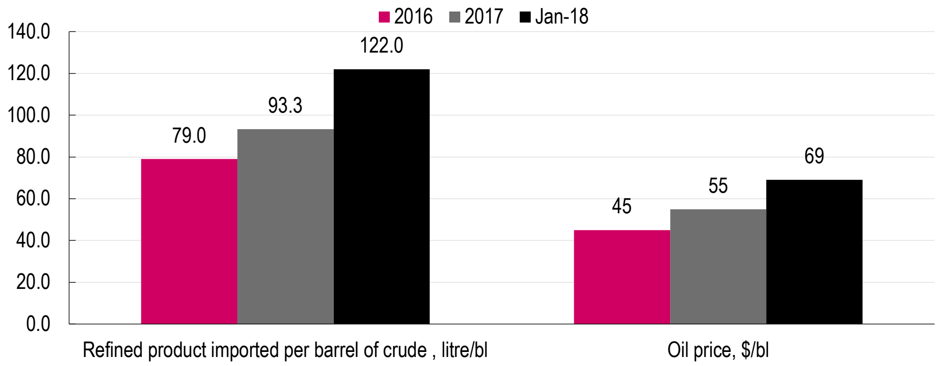
Figure 13 shows that of the 445kb/d of Nigeria's domestic crude, a small portion is refined locally with the remainder swapped for refined product in the international market through the DSDP arrangement. Based on our analysis (Figure 14), in 2017 at an average oil price of $55/bl, NNPC received 93 litres of refined product for every barrel of crude swapped, while in 2016, at an oil price of $45/bl, NNPC received less, 79 litres of refined products for every barrel of crude swapped in the international market. This means imported fuel is paid for via volume differentials and the higher the oil price the higher the amount of refined produced brought into the country per barrel. This also suggests that the cost of refined product to the government is roughly on average $0.58/litres (NGN180/litre) above the regulated NGN145/litre price of petrol.

Figure 14: Refined product imported per barrel of crude oil swapped via DSDP

	Refined products imported, litres mn	Crude swapped, bls mn	Refined product imported per barrel of crude swapped, litre/bl	Oil price, $/bl	Cost of a litre of refined product, $/litre
	a	b	c = a/b	d	e = d/c
2016	10,773.7	136.4	79.0	45	0.57
2017	13,030.4	139.7	93.3	55	0.59
Jan-18	1,497.5	12.3	122.0	69	0.57

Source: NNPC, Renaissance Capital estimates

Figure 15: Refined product imported per barrel of crude oil at various oil prices



Source: NNPC, Renaissance Capital estimates

Domestic oil revenues could more than double

NNPC sells the imported refined product to marketers at a loss (petrol price at the pump of NGN145/litre) after adjusting for subsidy, pipeline management and freight costs. This net revenue is transferred to the Federation Account (FAAC). Figure 16 shows that an average of NGN1.5trn from the sale of refined products through the DSDP swaps was accounted as domestic crude receipts in 2017 (NGN0.983trn was accounted in 2016).

In contrast, we believe that once the Dangote refinery is operational the government will sell this 445kb/d domestic crude directly to the Dangote refinery and other local refineries rather than swap it in the international market. On our estimates, this would increase its average naira revenue by approximately 76%. Using the 2017 average oil price of $55/bl, we estimate that the government would have made NGN2.7trn (Figure 16) by selling directly to the Dangote refinery vs the NGN1.5trn it made through DSDP and its subsidy scheme – implying a loss of $1.2trn ($3.9bn) on subsidy, losses and freight cost by the government in 2017.

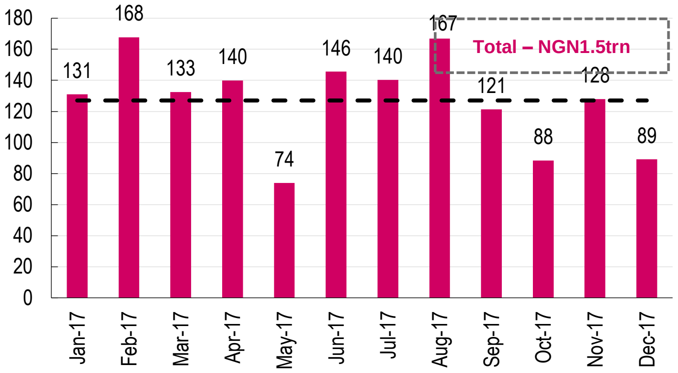
Based on our 2021E oil price of $61/bl, we estimate domestic oil revenue could more than double (to NGN3.1trn) vs NGN1.5trn in 2017, if the government sells its domestic crude directly to the Dangote refinery in 2021.

Figure 16: 2017 domestic oil revenue via DSDP vs Dangote refinery potential revenue

	DSDP swaps	Dangote refinery (E)
Oil production, kbl/d	445	445
Annual production, kbl	162,425	162,425
Oil price, $/bl	55	55
Dollar revenue, $bn	-	8.9
Naira revenue, NGNbn	**1,524**	**2,725**

Source: NNPC, Renaissance Capital estimates

Figure 17: Monthly naira crude oil receipts, NGNbn



Source: NNPC

Figure 18: 2017 domestic oil revenue via DSDP vs Dangote refinery potential revenue in 2021E

	DSDP swaps	Dangote refinery (E)
Oil production, kbl/d	445	445
Annual production, kbl	162,425	162,425
Oil price, $/bl	55	61.2
Dollar revenue, $bn	-	9.9
Naira revenue, NGNbn	**1,524**	**3,051**

Source: NNPC, Renaissance Capital estimates

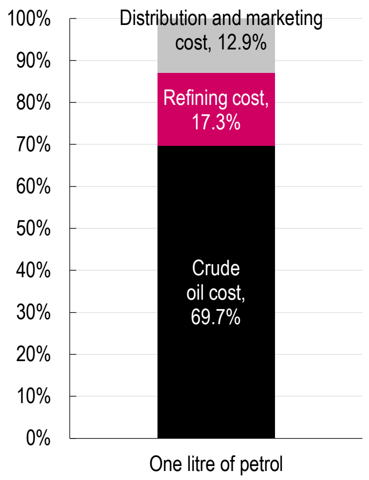
Floating of petrol prices likely in our view

We try to estimate what the cost will be to produce a litre of petrol at the Dangote refinery. According to the EIA, crude oil represents 70% of the operating cost of a litre of refined petrol, while refining and distribution costs represent 17% and 13%, respectively. Therefore, on our estimated oil price of $61/bl in 2021, the price of petrol should be $0.56/litre, which implies NGN169/litre –17% above the current regulated price of NGN145/litre. A spot oil price of $80/bl suggests that the price of petrol should be NGN222/litre – 53% above the current regulated price (Figure 20).

We estimate that petrol from the Dangote refinery will be NGN11/litre below what we estimate the unsubsidised petrol price would be if imported (using our 2021E oil price of $61.2/bl); we estimate petrol from the refinery to cost NGN169 /litre vs NGN180/litre for imported fuel.

Our analysis suggests that it would be uneconomical for the Dangote refinery to sell petrol to the domestic market at the regulated price, which is why we believe a possible scenario is that the government will have to float petrol prices.

Figure 19: Petrol – production cost breakdown



Source: EIA

Figure 20: Estimated selling price of petrol

Crude oil price, $/bl	61	65	70	75	80	100
Litres/bl	158	158	158	158	158	158
Crude oil price, $/litre	0.39	0.41	0.44	0.47	0.51	0.63
Crude oil portion of operating cost	70%	70%	70%	70%	70%	70%
Total cost of petrol, $/litre	0.56	0.59	0.64	0.68	0.73	0.91
Total cost of petrol, NGN/litre	**169**	**180**	**194**	**208**	**222**	**277**
% above regulated price	*17%*	*24%*	*34%*	*43%*	*53%*	*91%*

Source: EIA, Renaissance Capital estimates

Should the government decide not to float petrol prices, we believe there are various ways in which it could remove FX and oil price risk from the refinery value chain:

1. Sell crude to the refinery at a discount to the current market crude oil price, effectively subsidising the price for consumers and removing oil price risk.
2. Sell crude to the refinery at a fixed $/NGN exchange rate, especially as the government already gets naira revenue from its 445kbl/d of domestic crude swaps.

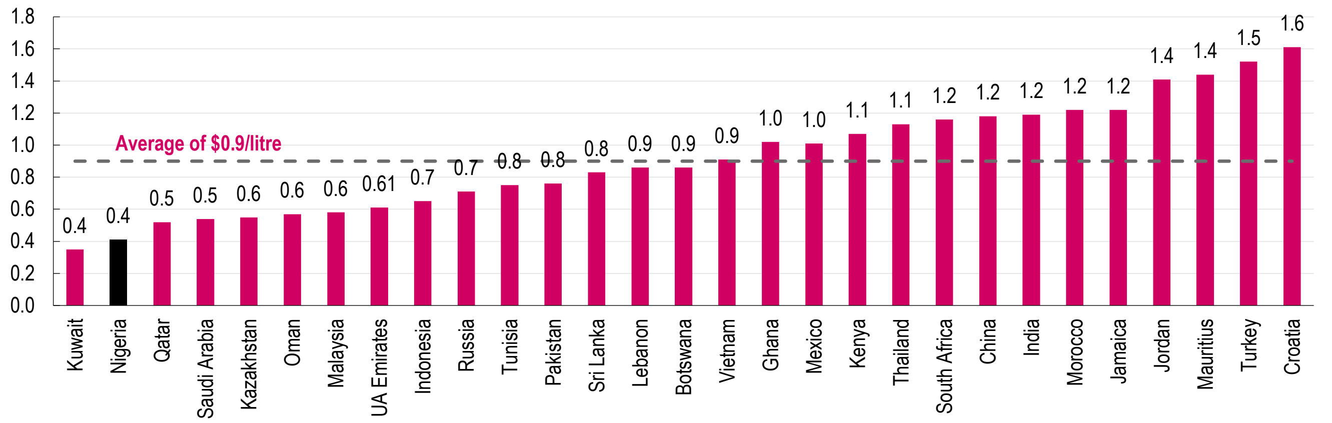
Whatever method or pricing template is agreed between the parties, domestic sales would have to be profitable for the refinery, or it would be more economical for the company to export products. If the government is not willing to let consumers bear the brunt of oil price increases and FX risk, it will have to bear some of these costs. Put another way, the government would receive reduced revenues for the domestic sales of some of its crude oil but would still save money vs swap contracts and direct subsidies.

Can the Nigerian population withstand deregulation?

On whether the consumer can bear the price increase in petrol, although we agree that the subsidy is not sustainable in the long run, there is a school of thought that this may be the only way to support consumers in Nigeria, who are burdened by high dependency on fuel and low GDP per capita.

Nigeria's petrol price is one of the lowest in the world at $0.41/litre, the lowest in Sub-Saharan Africa, the third-lowest in frontier/emerging markets and 64% lower than the world average of $1.15/litre. Frontier markets that produce significantly more crude oil than Nigeria, such as Saudi Arabia and Oman, have higher domestic prices at $0.54/litre and $0.6/litre, respectively. Developed countries such as the UK, US and Germany have the highest prices at $1.7/litre, $0.8/litre and $1.7/litre, respectively.

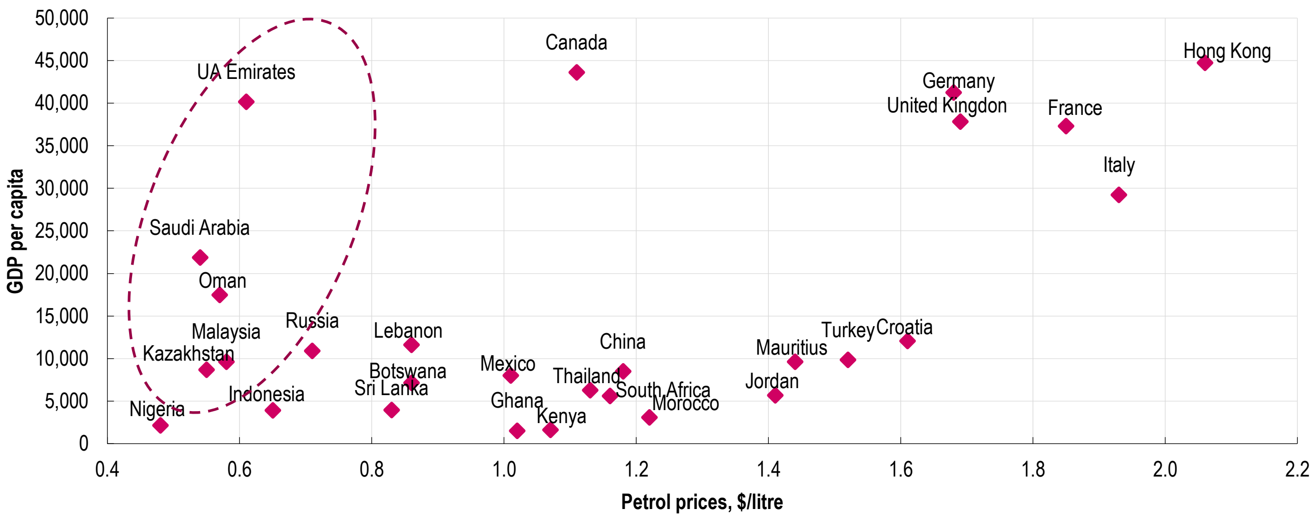
Figure 21: Fuel prices in frontier and emerging markets, $/litre



Source: GlobalPetrolPrices.com

Reviewed in isolation, the raw discount in Nigeria is significant, as the above comparisons suggest. However, factoring in relative GDP per capita alters the picture considerably: for example, Saudi Arabia's GDP per capita is 10 times higher than Nigeria's, while Mexico, although it currently produces similar amount of crude as Nigeria, has a GDP per capita that is four times higher, which means it can afford higher petrol prices.

Figure 22: Petrol prices vs GDP per capita



Source: IMF, GlobalPetrolPrices.com

From Figure 22 we observe that non-oil producers with a strong GDP per capita can afford to pay higher petrol prices while those with a lower GDP per capita pay the average price. In contrast, most oil producers pay a discount for petrol, although unlike Nigeria, these countries tend to have high GDP per capita. As an oil producer that also has low GDP per capita, Nigeria's position on the graph may be justified.

Comparing Saudi Arabia and Nigeria, we find that:

1. Most fuel in Nigeria is used to power generators as well as cars, while in Saudi it is used mostly for cars alone.
2. Saudi has uninterrupted power while Nigeria still suffers blackouts
3. Businesses in Nigeria run on generators, which is not the case for Saudi
4. Saudi has a more developed transportation system, while Nigerians do not have the option of using trains or a good public transport system to get to work and must therefore resort more to driving.

The opposing argument is that the low tax paid by Nigerians vs other countries is already subsidising the economy and given that the average petrol price in January 2018 was NGN191/litre, according to Nigerian Bureau of Statistics (although this has since reduced) most consumers are already paying higher prices and will not materially feel the impact of a price increase. More importantly, with oil prices now in the 80s and the government estimated to spend c. 6% of current reserves on subsidies in 2018, it is unrealistic for the government to continue subsidising petrol. Whatever decision is made, we believe the subsidy is ultimately not sustainable.

Implications for the downstream sector

We expect the economics of this refinery to have a significant impact on Nigeria's domestic products market by reducing the demand for FX and marketers' operating costs. However, the risk remains that although the cost of refining domestically would be lower than importing, the regulated petrol price of NGN145/litre may still not be enough to cover the refinery cost, and thus the government may eventually have to float petrol prices. Should the government decide not to do this we believe it would then be more profitable for the Dangote refinery to supply the international market.

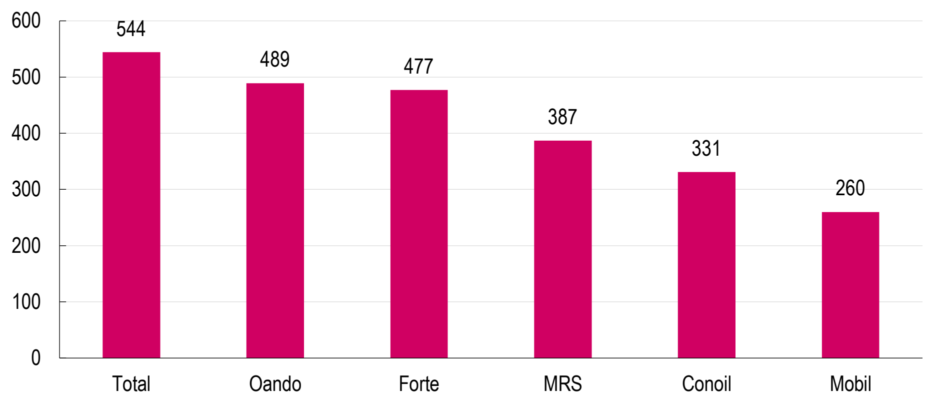
Our top pick in the sector is Total Nigeria, as we think its large scale (market leader) storage capacity and strong balance sheet will enable it to compete aggressively in this market. Total upstream affiliation also sets it apart from its peers and we think a possible crude oil and refined product swap agreement is possible. Once the Dangote refinery comes on board, the competitive strategy of the major players (Oando, 11 Plc, Total, Forte, MRS and Conoil) should enable them to reduce their fixed costs through an increased supply of product. We believe the smaller players will begin to fall off as the major marketers with greater scale start to play with margins.

We believe that the biggest benefit to marketers could come in the form of better working capital management and FX demand; they will no longer have to commit substantial sums of dollars to import diesel, kerosene and aviation fuel. As we assume that the refinery will result in an unregulated pump price, we believe the greater impact will be on the elimination of subsidy receivables which the governments owes to the marketers.

We do not believe the refinery will have any impact on Seplat (**BUY**, TP GBP2.35, CP GBP 1.43), Eland (**BUY**, TP GBP1.60, CP GBP1.07) and Lekoil (**HOLD**, TP GBP0.19, CP GBP0.14), although Lekoil's Ogo field is strategically located close to the refinery, implying it could be a supplier of gas and crude to the refinery.

On our estimates, Total Nigeria is trading at a 2018 P/E of 5.7x, a 39% discount to peers.

Figure 23: Retail outlets breakdown (major marketers), 2017



Source: Company data, Renaissance Capital estimates

Figure 24: Peer group comparison

Company	Ticker	Country	MktCap, $mn	P/E, x		EV/EBITDA, x		Dividend yield, %	RoE, %
				2018E	2019E	2018E	2019E	2018E	2018E
Abu Dhabi National Oil	ADNOCDIS UH	UAE	7,827.4	13.1	11.3	10.8	9.5	5.4	58.8
Vivo Energy	VVO LN	UK	1,912.7	11.4	10.3	5.7	5.3	2.9	34.8
Total Maroc	TMA MC	Morocco	1,070.5	9.5	9.5	5.9	5.6	5.7	38.1
Jordan Petroleum	JOPT JR	Jordan	342.4	7.4	7.1	6.2	5.9	8.2	14.9
Aldrees Petroleum	ALDREES AB	Saudi Arabia	399.9	21.3	19.0	11.3	11.1	4.0	11.6
Ghana Oil	GOIL GN	Ghana	203.8	-	-	-	-	-	-
Oando Plc	OANDO NL	Nigeria	172.4	-	-	-	-	-	-
Total Kenya	TKNL KN	Kenya	174.6	5.2	5.2	-	-	5.8	16.4
Total Nigeria*	**TOTAL NL**	**Nigeria**	**170.6**	**5.7**	**5.5**	**3.3**	**3.3**	**8.2**	**35.2**
11 Plc	MOBIL NL	Nigeria	173.2	6.1	6.0	3.0	2.9	5.0	31.0
KenolKobil*	**KNOC KN**	**Kenya**	**215.8**	**6.5**	**6.3**	**4.5**	**3.9**	**4.8**	**24.6**
Total Ghana	TOTAL GN	Ghana	109.3	-	-	-	-	-	-
Forte Oil	FO NL	Nigeria	72.4	7.0	6.0	5.2	6.3	8.2	11.0
Average FM				**9.3**	**8.6**	**6.2**	**6.0**	**5.8**	**27.7**

*Renaissance Capital estimates for all companies in bold; Bloomberg consensus estimates for the rest
Total Nigeria: BUY, TP NGN287, CP NGN183; KenolKobil: BUY, TP KES22, CP KES14.9
Priced at close 11 October 2018

Source: Bloomberg, Renaissance Capital estimates

We believe the Dangote refinery will have the following impact on the downstream sector:

1. Reduce the need for marketers and the government to import refined products.
2. Decrease demand for foreign exchange – a large portion of foreign exchange demand is made up of refined product imports.
3. Make petroleum refined products more readily available, thus reducing scarcity and petrol queues.
4. Reduce subsidy receivables owed to the marketers by the government.
5. Reduce the cost of non-regulated products such as diesel and jet fuel due to the removal of demurrage, shipping and storage costs, etc.

Increase competition as product will be more readily available, enabling marketers to review margins and pricing.

Appendix: Site visit feedback

We recently visited the Dangote refinery again and some progress has been made since our last visit in mid-2017. A lot of the equipment for the refinery is now on site and post completion of the ground work the next phase is to assemble this equipment. The plan is for all equipment to be on site this year. We met the Head of Quality Assurance for the project, Mr Putta Ramarao and he believes the refinery is on track to be completed at end-2019, and commissioning should start about 2-3 months from completion.

The piling is at 35% completion and is expected to be completed by year end. It is particularly important as the site was formerly swampland. Julius Berger is the contractor and about 1bn tonnes of cement is needed for the project. There are currently 6,000 local workers, and 300 expatriates on the site. The company expects the number of local workers to increase to 60,000 once 'building up' starts.

In terms of the impact to the downstream sector Mr Ramarao believes it will increase the availability of refined crude; however, there are still some questions over logistics and distribution to the domestic market. Would more roads need to be built? What ports will be used, etc? The refinery's jetty can handle 3,000 metric tonnes and has started transporting the equipment. Approximately 3,600 pieces of major equipment are required, some of which cannot be transported by road.

The pictures on the following page show the Dangote refinery site currently vs mid-2017.

Figure 25: Dangote refinery in 2017

Source: Renaissance Capital

Figure 26: Dangote refinery in 2018

Source: Renaissance Capital

Figure 27: Refinery equipment on site

Source: Renaissance Capital

Figure 28: Jetty at the refinery

Source: Renaissance Capital

Disclosures appendix

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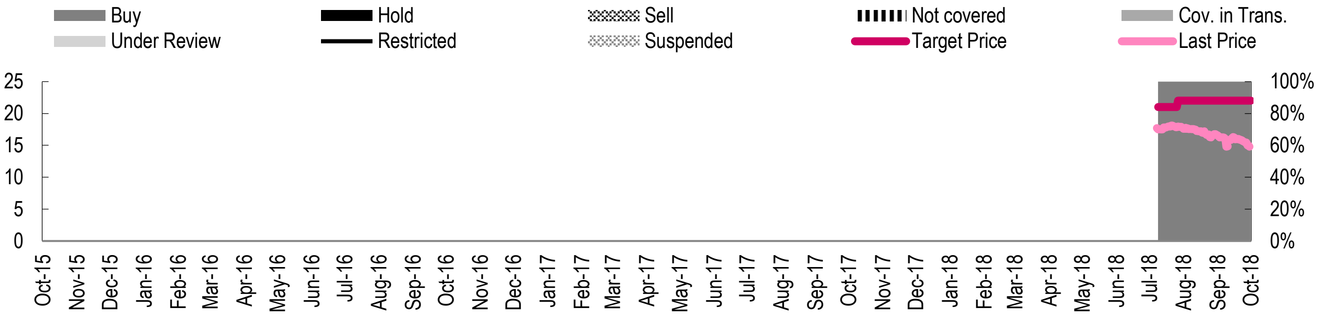
Eland O&G share price, target price and rating history

Source: Bloomberg

KenolKobil share price, target price and rating history



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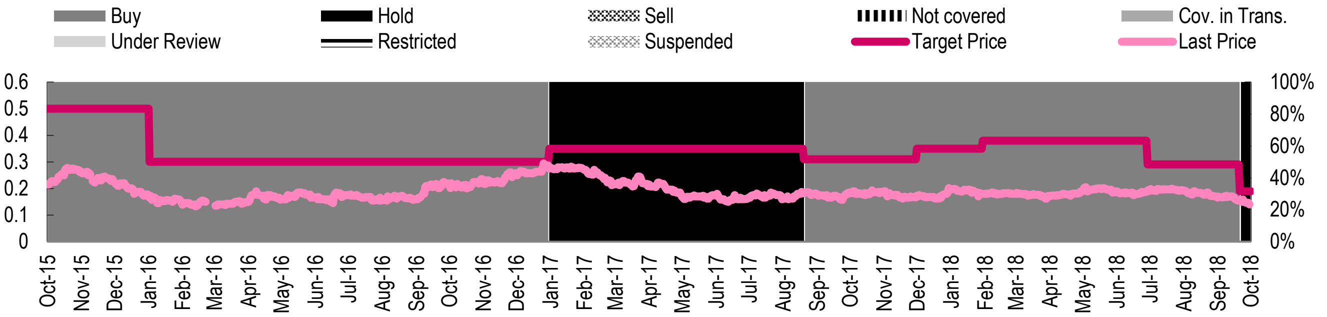
Lekoil share price, target price and rating history



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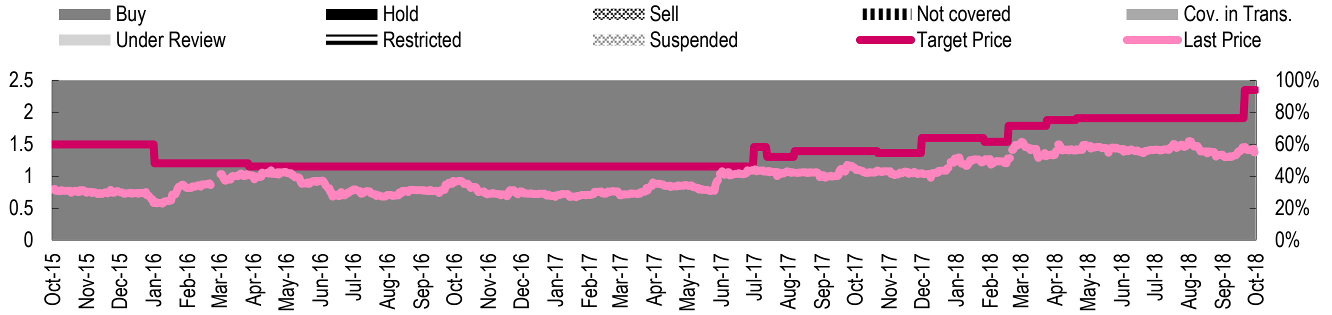

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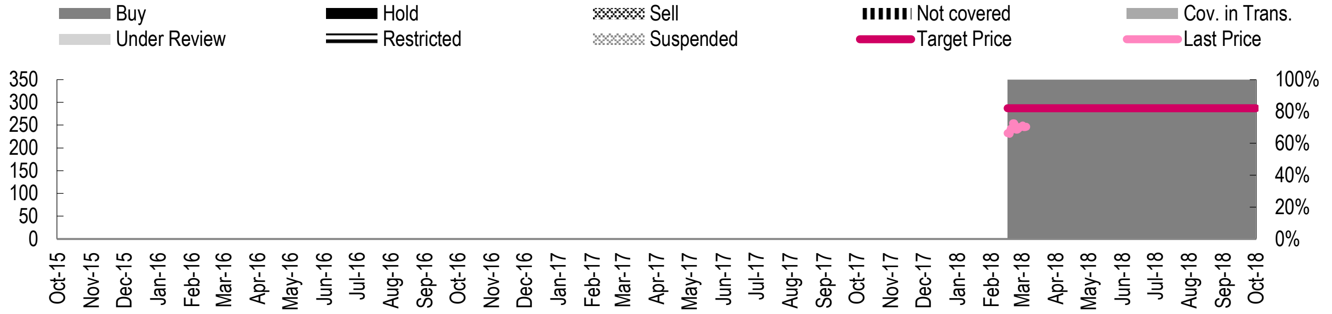
Total Nigeria Plc share price, target price and rating history



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