

Global competitiveness of Nigeria's upstream fiscal terms

Prepared by Wood Mackenzie Ltd.
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This presentation compares the impact of current and proposed fiscal terms for upstream projects in Nigeria with those applicable in other countries.

Agenda

- › **Nigeria's share of revenue from recent JV and PSC production**
- › **Field development economics: assumptions**
- › **Field development economics: current and proposed Nigerian fiscal terms in a global context**
- › **Recent trends in global fiscal terms**
- › **Fiscal administration aspects of the proposed new terms**
- › **Conclusions**
- › **Appendix: Summary of current and proposed Nigerian fiscal terms**

Nigeria's share of revenue from recent JV and PSC production

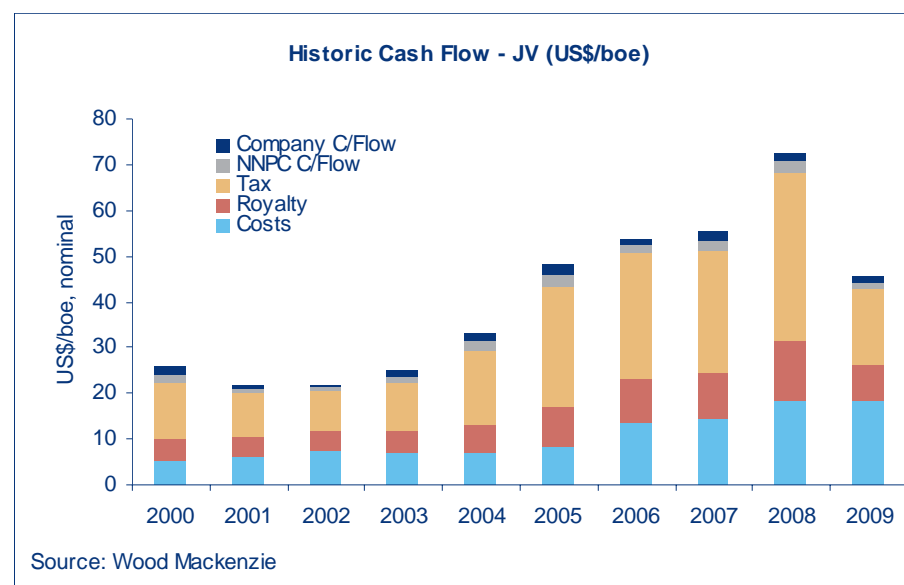
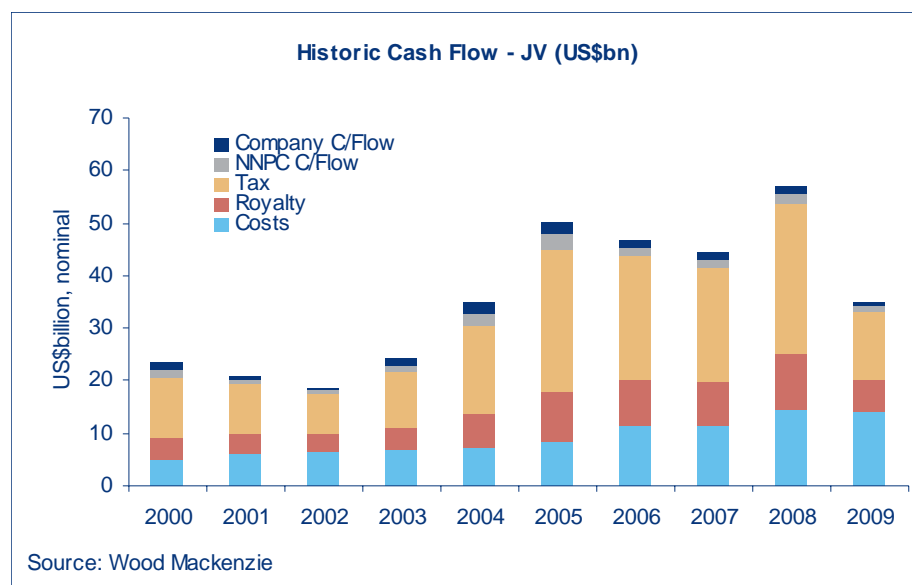
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Nigeria's share of revenue from recent JV production

Share of revenue

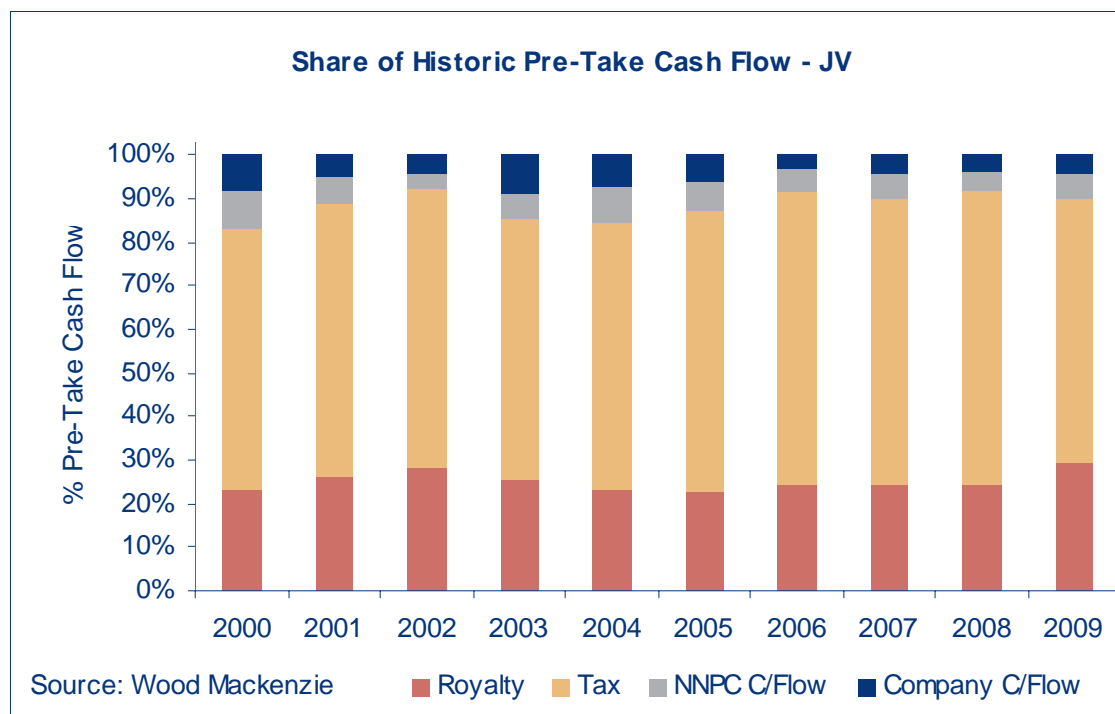
- › Reductions in production balanced the rise in prices so total JV revenue actually decreased between 2005 and 2007
- › Industry-wide inflation, lower production and heightened security mean JV unit costs have doubled between 2005 and 2008 – and there will be a lag before these come down significantly



Nigeria's share of revenue from recent JV production

Share of cash flow

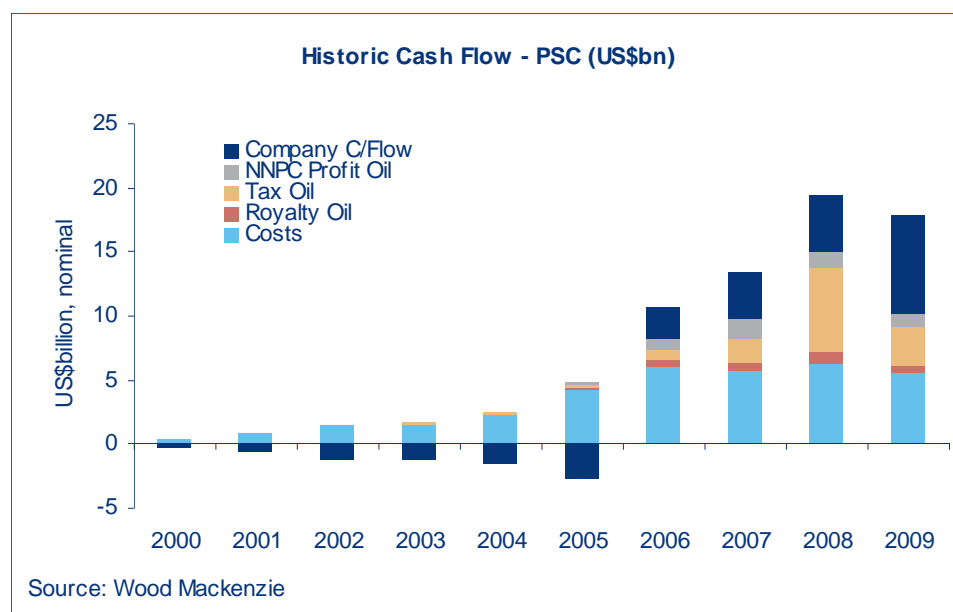
- › Although the level of profitability has varied significantly over the decade, Nigeria's share of the pre-take cash flow has remained stable at 92% - 97% each year.
- › 'Pre-Take' = project revenue – costs (i.e. before Government)



Nigeria's share of revenue from PSC production

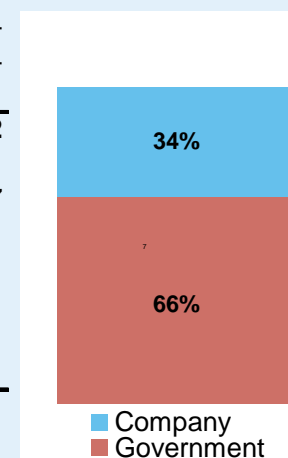
Share of revenue and cash flow

- › PSCs have only recently begun producing after a decade of significant investment
- › Companies are currently in 'cost recovery' phase
- › Significant revenue is being generated for the government, primarily in tax oil, rather than royalty oil or profit share



2000-2009 Cumulative PSC Cash Flow

US\$bn, nominal	% of Project Cash Flow
Oil Production (mmbbl)	992.4
Project Revenue	65.4
<i>less Project Costs</i>	<i>-34.2</i>
Project (Pre-Take)Cash Flow	31.2
Government Revenue (inc NNPC)	20.7
Company Cash Flow	
Cost Recovery	25.0
Profit Share	19.8
<i>less Project Costs</i>	<i>-34.2</i>
Company Cash Flow	10.5



Source: Wood Mackenzie

Field development economics: assumptions

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Field development economics: assumptions

- › A number of hypothetical oil and gas field developments have been modelled, based on Wood Mackenzie's understanding of the current cost environment in Nigeria
- › The fields have each been run under different future oil and gas price assumptions
 - Oil = US\$45, US\$60 and US\$90 per barrel
 - Gas = US\$1, US\$2 per mcf (mmbtu)
 - Note: weighted average gas price in Nigeria (domestic + export) is currently less than \$1/mcf
- › Each field has been run under the current Nigerian fiscal terms, PIB terms and the fiscal terms of a number of different global fiscal systems

Field development economics: assumptions

Oil	Reserves (mmbbl)	Capex (\$/bbl)	Opex (\$/bbl)	Total Costs (\$/bbl)	Pre-Take IRR (\$45/bbl)	Pre-Take IRR (\$60/bbl)	Pre-Take IRR (\$90/bbl)
JV onshore	100	5.7	5.9	11.6	61%	75%	96%
JV onshore	20	10.3	7.4	17.6	81%	147%	474%
PSC deepwater	100	23.6	4.4	28.0	10%	16%	24%
PSC deepwater	200	20.6	3.9	24.5	13%	19%	28%
PSC deepwater	400	16.8	3.5	20.3	18%	25%	35%
PSC deepwater	500	15.9	3.4	19.3	19%	26%	37%

Gas	Reserves (bcf)	Reserves (mmbbl)	Capex (\$/mcf)	Opex (\$/mcf)	Total Costs (\$/mcf)	Pre-Take IRR (\$1/mcf)	Pre-Take IRR (\$2/mcf)
JV onshore	250	10	1.7	0.7	2.4	6%	12%
JV onshore	2,000	80	1.4	0.5	1.9	7%	11%

Oil Price assumptions: US\$45/bbl, US\$60/bbl and US\$90/bbl (constant in real terms)

Gas Price assumptions: US\$1/mcf and US\$2/mcf (constant in real terms); associated liquids @ US\$60/bbl in both cases

Price and cost inflation: 2% p.a.

Source: Wood Mackenzie (September 2009)

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Field development economics: current and proposed Nigerian fiscal terms in a global context

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Countries included in the comparison

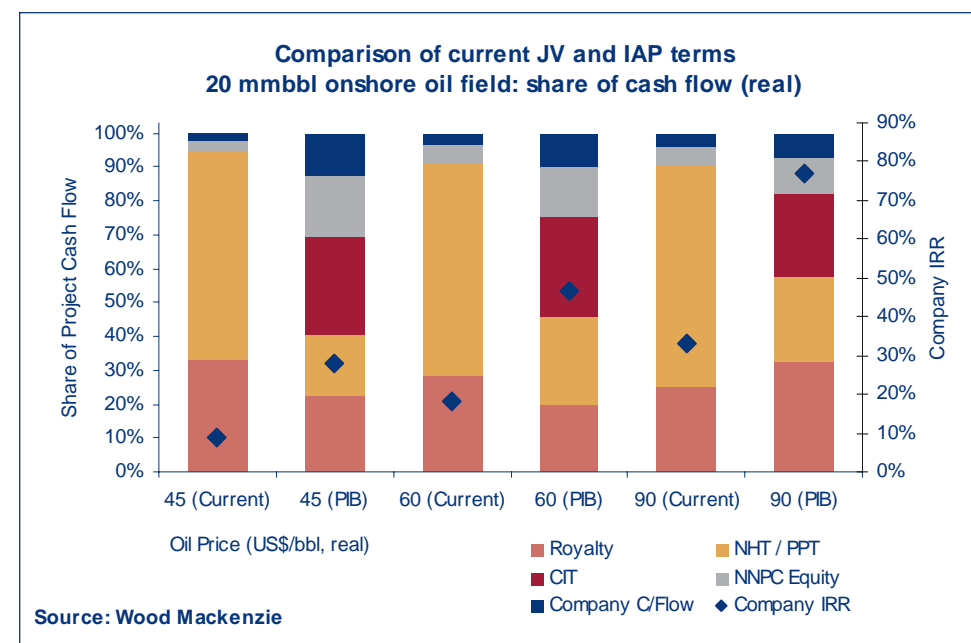
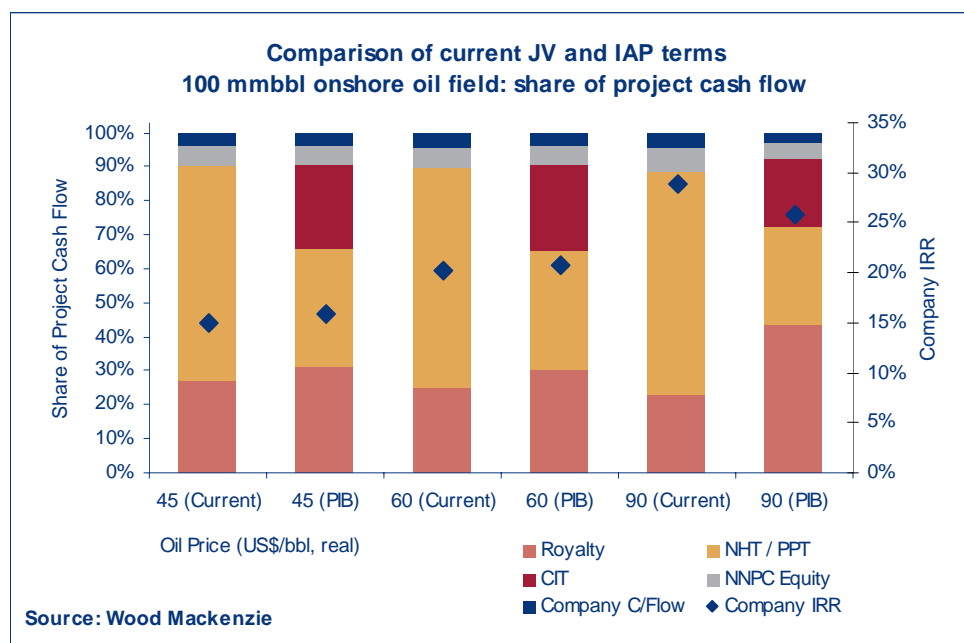


Source: Wood Mackenzie

Note: only countries with activity in relevant environment (e.g. onshore/deepwater) included in each comparison

Comparison of current and proposed Nigerian fiscal terms JV oil: share of project cash flow: current terms v PIB

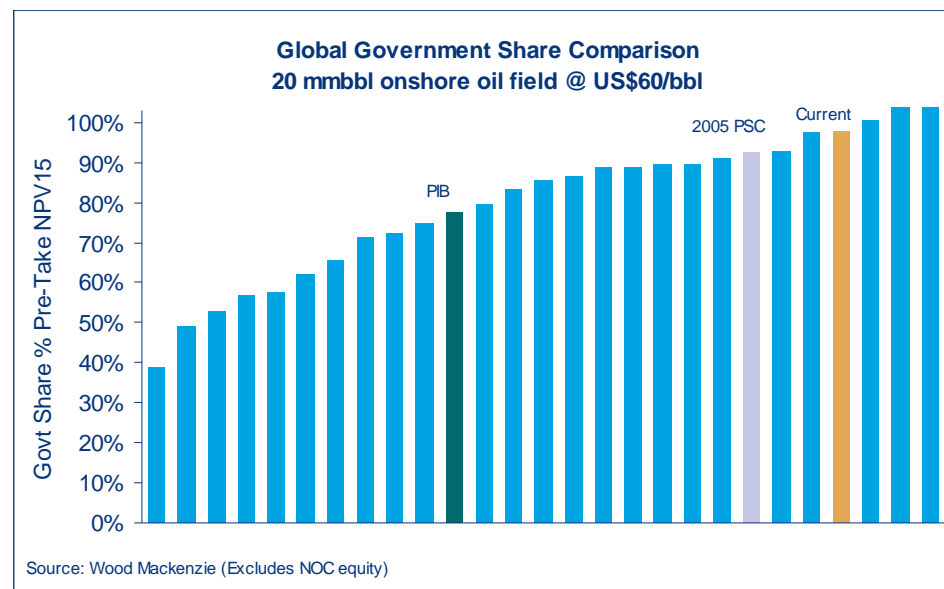
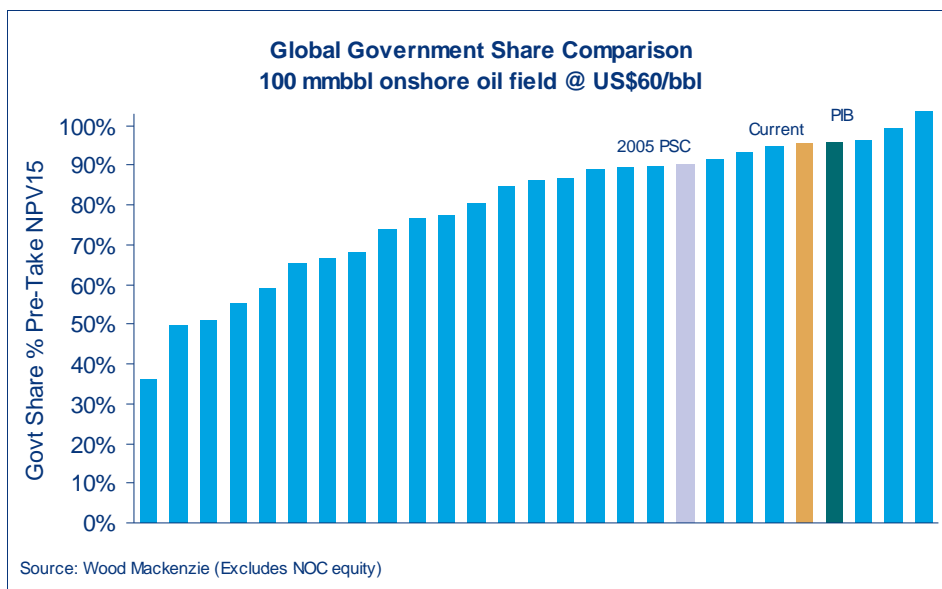
- › PIB generates very similar Government Share (90%+) from large onshore fields
- › Government Share stays the same for smaller fields under current terms
- › PIB terms provide significantly lower Government Share for small fields and is progressive
- › PIB should enhance the economic viability of small, onshore oil developments



Comparison of Nigerian and global fiscal terms

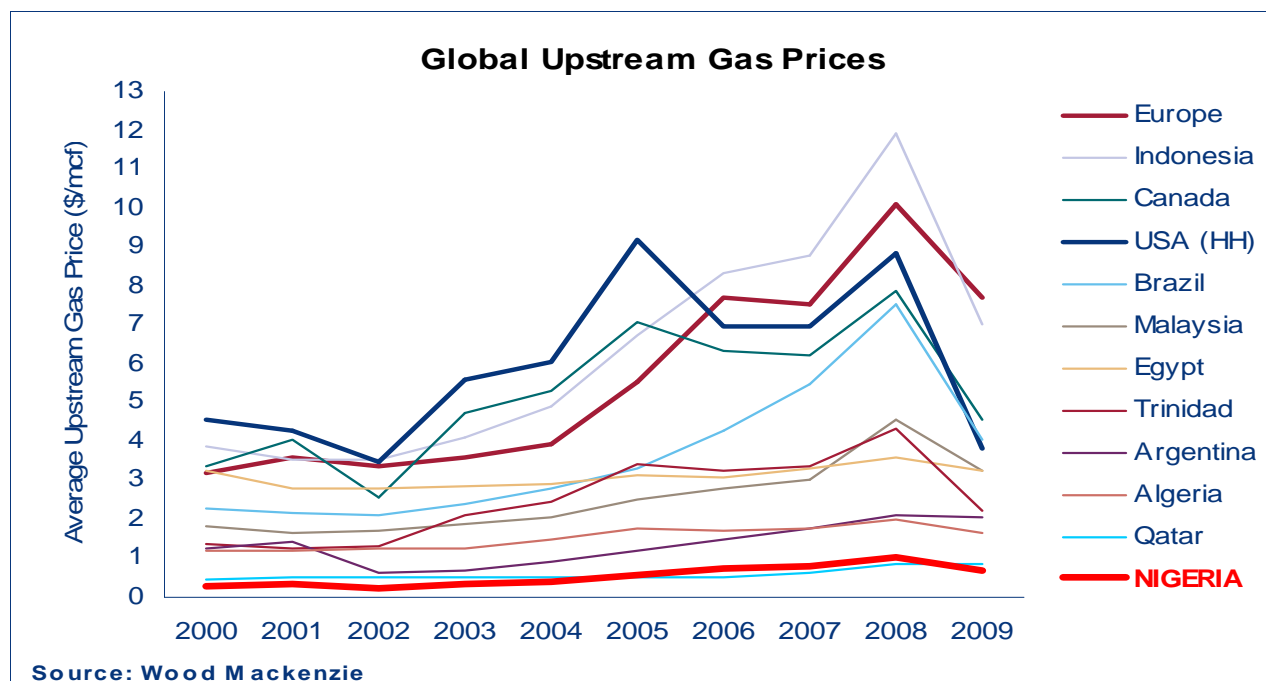
JV oil: share of project cash flow: global comparison @ \$60/bbl

- › Current Government Share from 100 mmbbl field among the highest in the world – and PIB terms generate almost exactly the same result.
- › Government Share from the smaller (20 mmbbl) field is as high under current terms. Under PIB, the Government Share reduces to 77% - still high, but far more competitive.



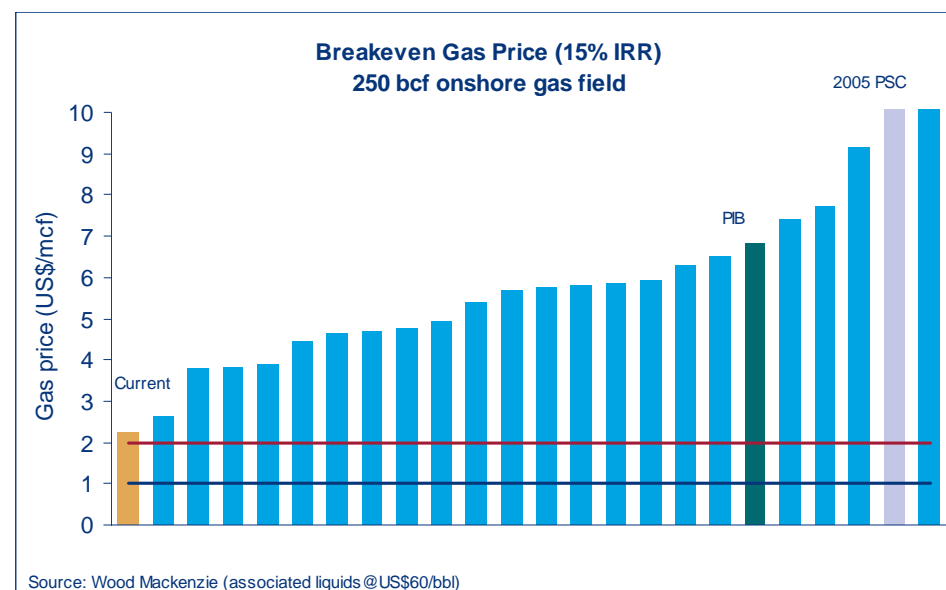
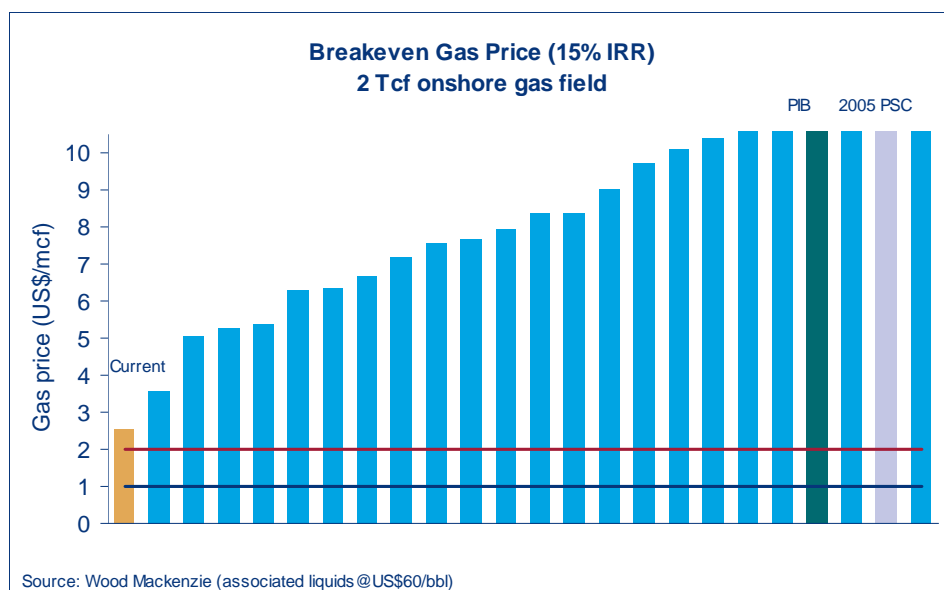
Comparison of Nigerian and global fiscal terms JV gas

- › Global upstream gas prices vary significantly
- › Nigeria has, so far, paid less for gas than other countries, with the highest (weighted average) price = \$1/mcf (2008)
- › Nigeria's Gas Master Plan expects a transition in gas prices, starting with an increase in the minimum gas price to US\$1/mcf by 2012



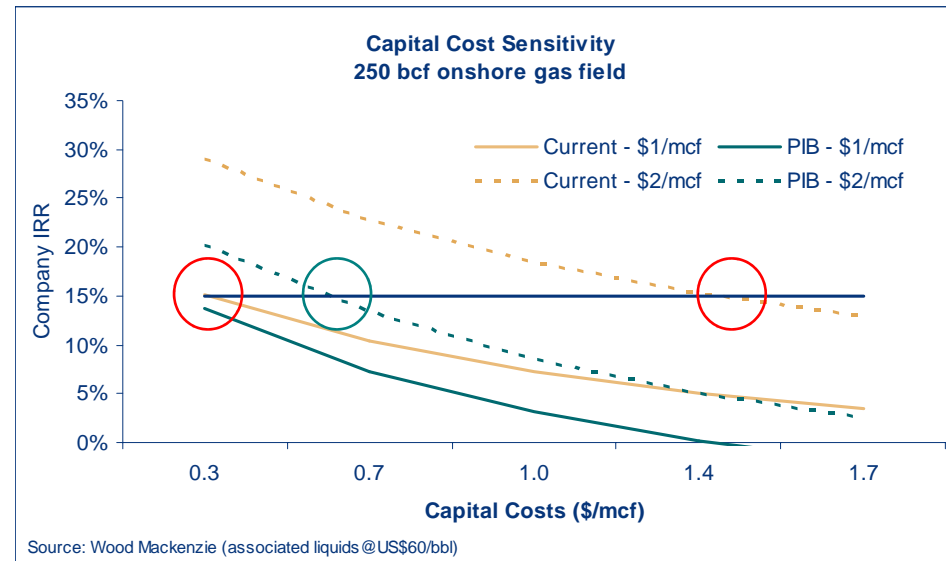
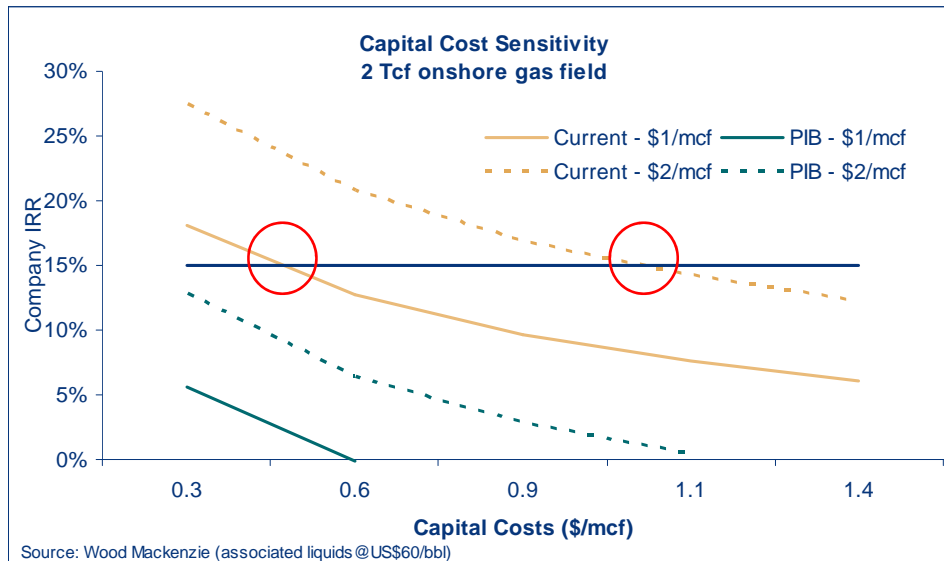
Comparison of Nigerian and global fiscal terms JV gas

- › On a pre-take basis, the gas projects modelled are uneconomic (i.e. IRR < 15%) if the gas price is either \$1/mcf or \$2/mcf
- › The minimum gas price needed to generate a 15% IRR for the company on a post-tax basis has been calculated under various fiscal systems
- › The existing ability to consolidate gas capital costs with PPT generates the lowest 'breakeven' gas price – but this still exceeds the range of prices expected in Nigeria



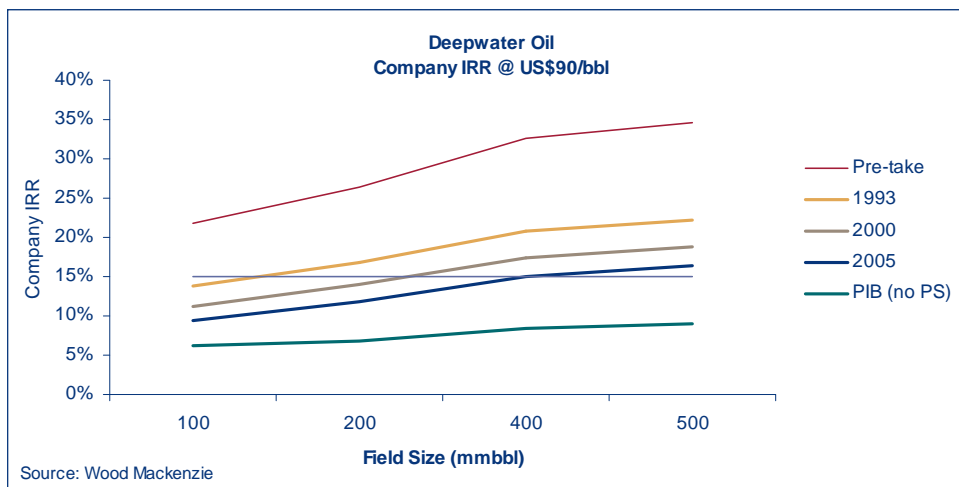
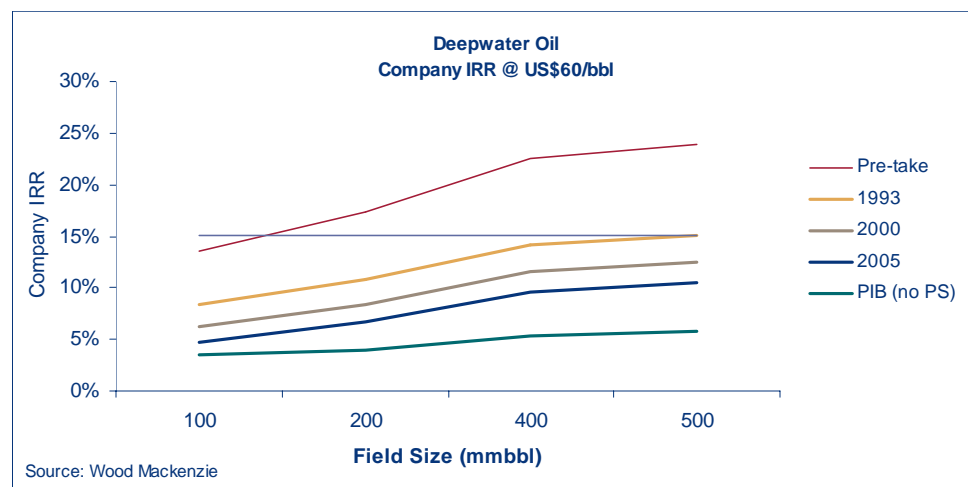
Comparison of current and proposed Nigerian fiscal terms JV gas

- › Without higher gas prices, capital costs need to decrease significantly
- › Sensitivities on capital costs show a 15% post-tax IRR can be generated:
 - For the large field, **only** under current (PPT consolidation) terms
 - If price = \$1/mcf and capex < \$0.5/mcf or if price = \$2/mcf, capex < \$1.0/mcf
 - For the small field, under PIB terms only if price = \$2/mcf and capex < \$0.6/mcf
 - Under current terms if price = \$1/mcf and capex < \$0.3/mcf or if price = \$2/mcf and capex < \$1.5/mcf



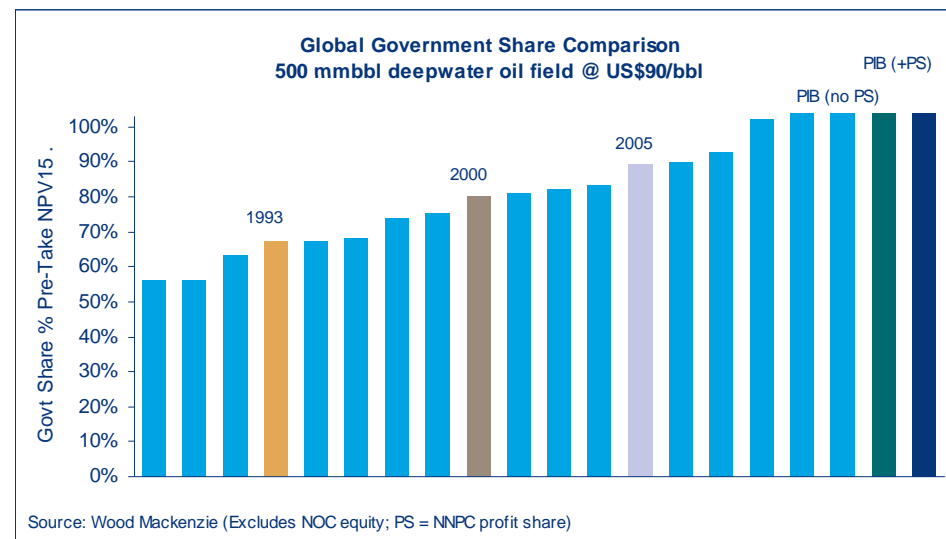
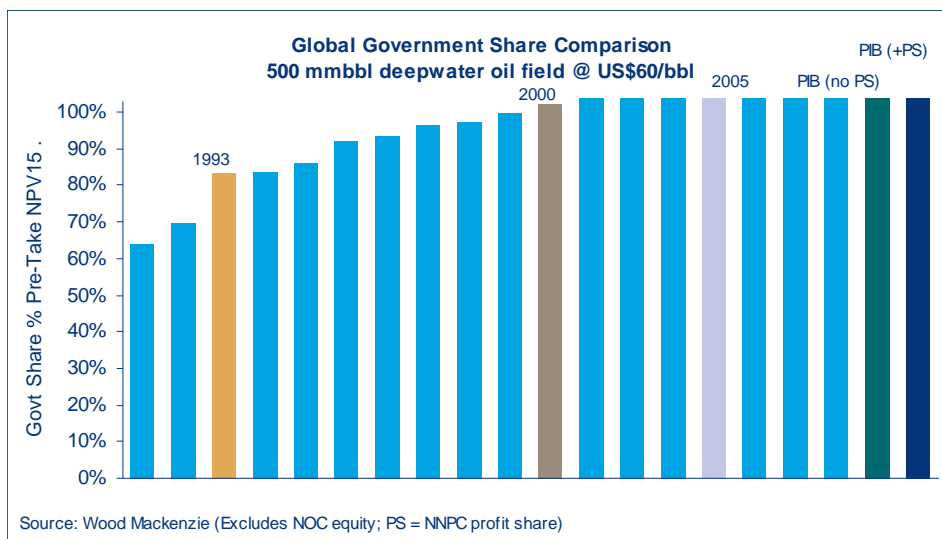
Comparison of current and proposed Nigerian fiscal terms Deepwater oil (500 mmbbl field)

- › Company IRR compared under 1993, 2000, 2005 PSC terms and PIB terms
- › PIB terms include new royalty and tax rules, but no NNPC profit sharing
- › At \$60/bbl, only the 500 mmbbl field under 1993 terms is economic
- › At \$90/bbl, fields larger than 100 mmbbl are economic under 1993 terms. Larger fields are economic under 2000 and 2005 terms
- › No fields are economic under PIB terms



Comparison of Nigerian and global fiscal terms Deepwater oil (500 mmbbl field)

- › At \$45/bbl, the field is uneconomic (IRR<15%) under all fiscal systems
- › At \$60/bbl, the field is only economic under 1993 PSC terms, of the Nigerian variations – and a small number of other systems
- › At \$90/bbl, the field is economic under most fiscal systems – but not under PIB terms



Recent trends in global fiscal terms

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Recent trends in global fiscal terms

1) When prices were rising (2003-2008)

› 'Resource nationalism' in some countries

- Higher state equity participation where NOCs were already operators
- Contracts cancelled by a few governments (which led to some companies leaving the country)

› Increase in expected Government Share

- Some countries increased royalty/taxes payable by existing producers
- Others increased demands from new licences / developments
- Introduction of bidding for acreage based on fiscal terms (e.g. highest Government profit share)

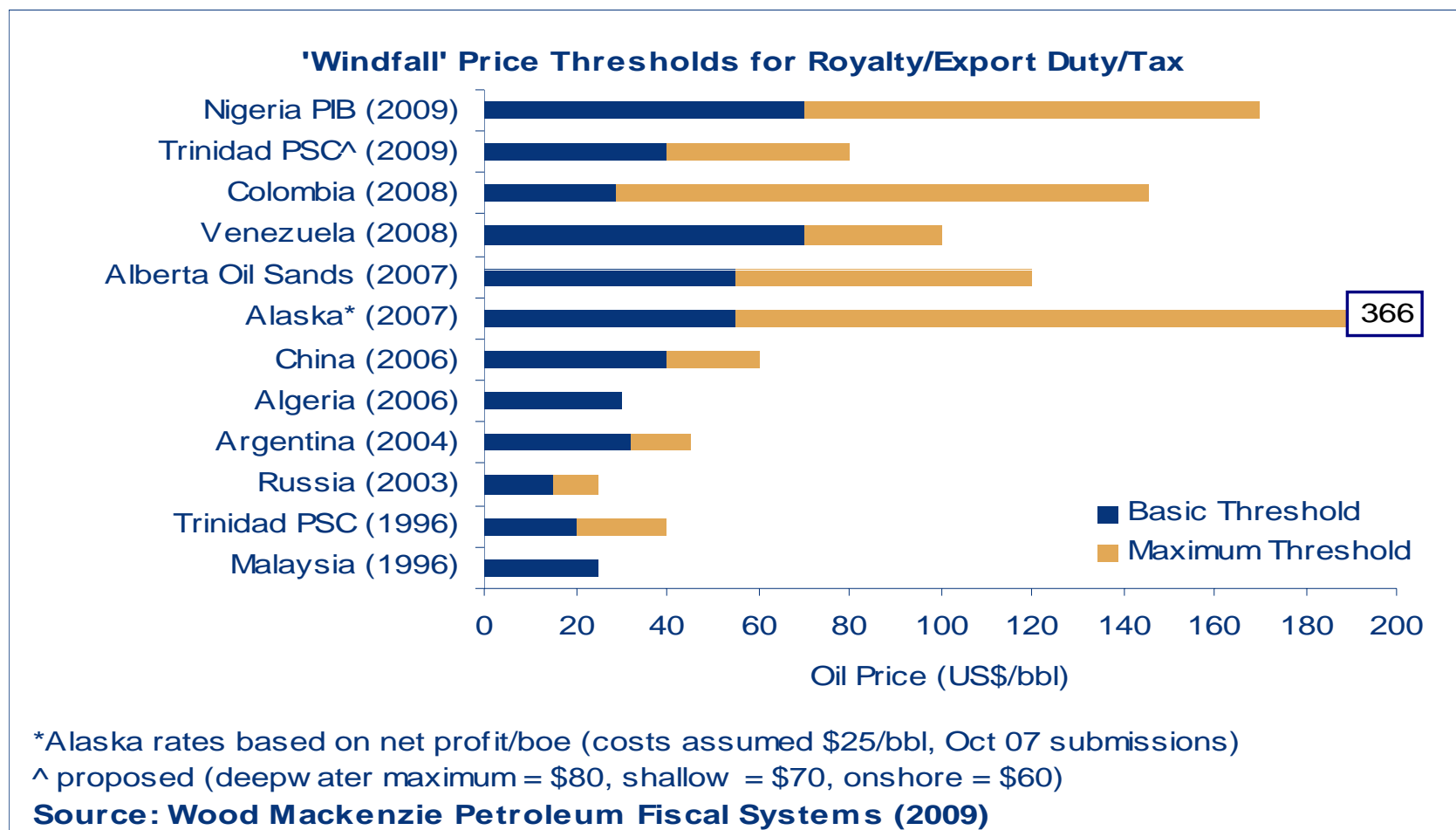
› Increase in early Government revenue

- Higher royalty, export duty rates and lower cost recovery ceilings

› Linkage of royalty/export duty/ tax rates to prevailing prices

- Ensuring automatic adjustment to Government Share as prices increase or decrease

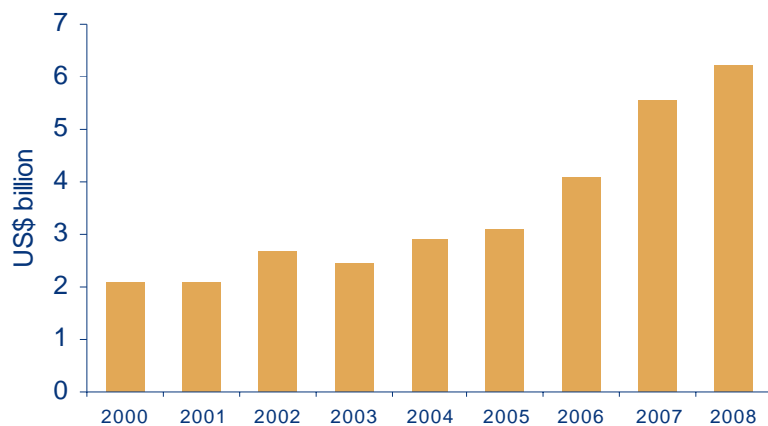
Recent trends in global fiscal terms 'Windfall' prices



Investment levels have been affected by fiscal changes

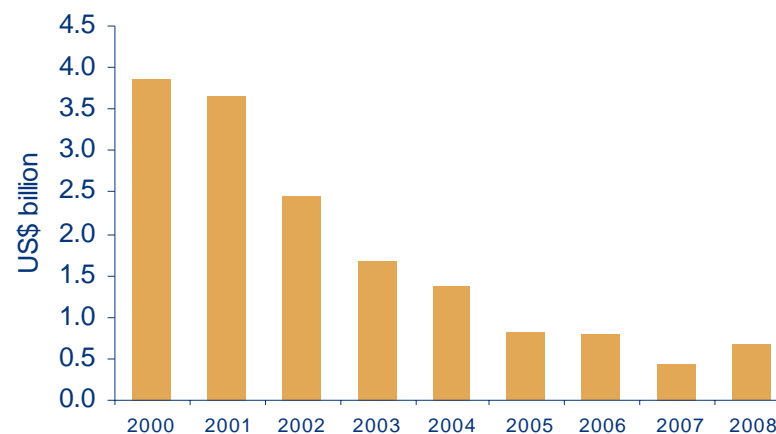
- › During the period of rising prices, investment in most countries increased (e.g. Indonesia)...
- › ... but not in Venezuela, where contracts were cancelled and NOC equity, royalty and tax rates increased... and investment decreased dramatically

Indonesia: Recent IOC Development Expenditure



Source: Wood Mackenzie

Venezuela: Recent IOC Development Expenditure



Source: Wood Mackenzie

Recent trends in global fiscal terms

2) The price crash (2008-09)

› Rapid fall of prices while costs at an all-time high

- Projects postponed, capital spending plans curtailed
- Taxable income significantly reduced
- High levels of Government Share making projects uneconomic

› Governments respond in different ways

- Some making terms more attractive – e.g. Russia
- Others making small allowances to encourage marginal fields – e.g. UK
- But others are seeking higher royalty/taxes to help balance recent huge government while other sources of tax income are decreasing – e.g. USA

Fiscal administration aspects of proposed new terms

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Fiscal administration aspects of proposed new terms

› Multiple collectors of revenue from oil companies:

- Signature bonus, rents and royalty => Inspectorate
- Indirect taxes, NHT and CIT => FIRS
- Production bonuses and PSC profit share => NNPC
- Niger Delta development levy => NDDC

› Separation of oil and gas activities for fiscal purposes

- Need to allocate costs of shared facilities between operations

› Separation of PMLs for fiscal purposes

- Need to allocate costs of shared facilities between OMLs (e.g. midstream infrastructure)

› Benchmarking and verification of costs

- New test to ensure cost deductions are reasonable

› Fiscal metering, revenue collection and administration has been inadequately resourced in the past – and the demands are about to increase significantly

› Will additional, appropriate resources be available?

Conclusions

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Competitiveness of Nigeria's fiscal terms

- › Under current JV terms, the extremely high Government Share (90%+) is among the highest in the world and is a significant disincentive to new investment
- › Under the PIB terms, the Government Share is progressive and generally lower from smaller fields and should enhance the economic viability of these fields
- › Larger fields, however, remain subject to an extremely high level of Government Share
- › Given the current high cost of developing deepwater fields, only the 1993 PSC terms provide investors with a return of 15% or higher under most of the possible developments considered
- › 1993 PSC terms are favourable, compared to many other deepwater regimes, reflecting their vintage (i.e. best terms for high risk frontier exploration)
- › PIB terms – before any NNPC profit share – render the fields uneconomic, even at \$90/bbl
- › Given the very low levels of gas prices expected in the short to medium term (\$1 - \$2/mcf), only a very significant reduction in costs will generate economic projects, regardless of the fiscal terms

Some concluding comments on PIB

› PIB – the positive

- Introduces flexibility in Government Share
- Enhances viability of small fields
- Provides automatic response to significant price movements

› PIB – the negative

- Apart from small fields, the Government Share under PIB is extremely high
- As much as a third of costs may be disallowed as deductions for tax – this is severe and a disincentive to invest in Nigeria
- Emphasis on local content is likely to result in higher costs and project delays in the short-term
- Significant complexity added to the existing fiscal administration role

› Gas

- Gas projects are likely to remain uneconomic at anticipated gas prices – even if the Government Share is zero

Appendix: summary of current and proposed Nigerian fiscal terms

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Current and proposed terms for JV oil

Nigeria Fiscal Terms: JV oil

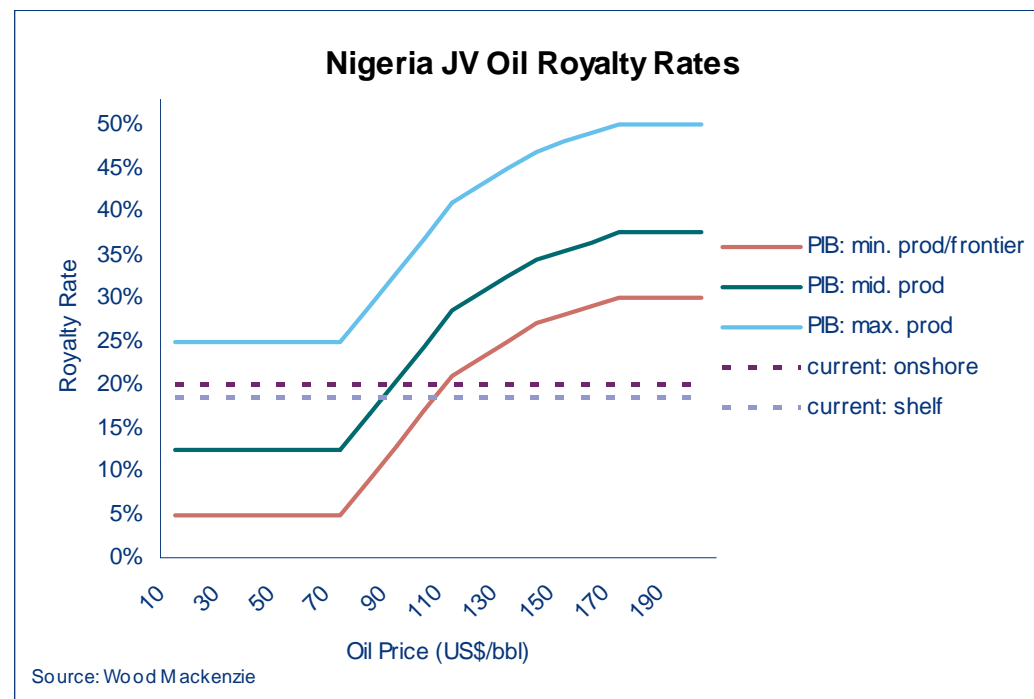
Fiscal Term	Current Terms	PIB v3.2 (Inter-Agency)
Area Rental	OPL: \$10/sq mile OML: \$20/km (years 1-10) OML: \$15/km (year 11+)	PEL: \$10/km PPL: \$100-500/km PML: \$1,000/km Gas retention: \$10,000/km
NDDC Levy	3% of all costs	3% of all costs
VAT	5% of all costs	5% of all costs
Import Duty	variable (c. 7% of all capex)	variable (c. 7% of all capex)
Royalty	onshore: 20% shelf < 100m: 18.5%	5%-25% (production based) + 0%-25% (price based) max. rate as pre-PIB for existing assets
Institution Levy	n/a	2% of revenue
Education Tax	2%	2%
PPT / NHT	85% of net profits	50% of net profits (min 2% of revenue)
Disallowed costs	n/a	20% of overseas costs financing costs head office costs
Depreciation	5 years straight-line	5 years straight-line
PIA (uplift % capex)	onshore: 5% shelf < 100m: 10%	replaced with small oil and gas fields production allowance
CIT	n/a	30% of net profits
Withholding Tax	n/a	10% of post-tax profits
Minimum Govt Share *	18.5% - 20%	7% - 52%
Marginal Govt Share **	88%	84% - 92%
NNPC Equity	55%/60%	55%/60%
Total Nigeria Share	66% - 95%	61% - 97%

* government share of revenue from first barrel, excluding rental and levies on expenditure

** government share of revenue from an incremental barrel, excluding rental and levies on expenditure

Ranges reflect minimum and maximum royalty rates

Source: Wood Mackenzie, September 2009



Current and proposed terms for JV gas

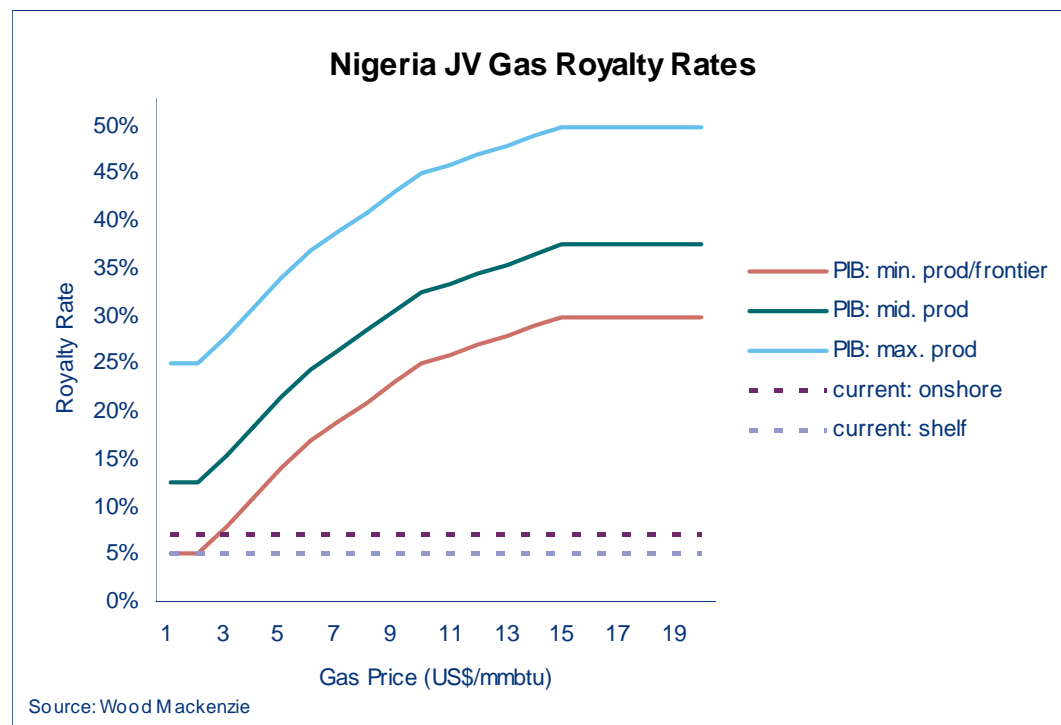
Nigeria Fiscal Terms: JV gas

Fiscal Term	Current Terms	PIB v3.2 (Inter-Agency)
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NDDC Levy	3% of all costs	3% of all costs
VAT	n/a	5% of all costs
Import Duty	n/a	variable (c. 7% of all capex)
Royalty	onshore: 7% shelf < 100m: 5%	5%-25% (production based) + 0%-25% (price based)
Institution Levy	n/a	2% of revenue
Education Tax	2%	2%
PPT / NHT	capex consolidated with oil	50% of net profits (min 2% of revenue)
Disallowed costs	n/a	20% of overseas costs financing costs head office costs
Depreciation	5 years straight-line	4 years straight-line
PIA (uplift % capex)	onshore: 5% shelf < 100m: 10%	replaced with small oil and gas fields production allowance
CIT	30% of net profits	30% of net profits
Withholding Tax	n/a	10% of post-tax profits
Minimum Govt Share *	5% - 7%	7% - 52%
Marginal Govt Share **	36%	84% - 92%
NNPC Equity	55%/60%	55%/60%
Total Nigeria Share	61% - 74%	61% - 97%

* government share of revenue from first mmbtu, excluding rental and levies on expenditure

** government share of revenue from an incremental mmbtu, excluding rental and levies on expenditure
Ranges reflect minimum and maximum royalty rates

Source: Wood Mackenzie, September 2009



Current and proposed terms for PSC oil

Nigeria Fiscal Terms: PSC oil			
Fiscal Term	1993 PSC	2005 PSC	PIB v3.2 (Inter-Agency)
Signature Bonus	c.\$10-15 million	<u>minimum bids</u> frontier: \$0.5 million onshore: \$5 million shelf: \$5-10 million deepwater: \$50 million	signature and production bonuses expected to be payable
Area Rental	OPL: \$10/sq mile OML: \$20/km (years 1-10) OML: \$15/km (year 11+)	OPL: \$10 /km OML (years 1-10): \$20 /km OML (thereafter): \$15 /km	PEL: \$10 /km PPL: \$100-500 /km PML: \$1,000 /km Gas retention: \$10,000 /km
NDDC Levy	3% of all costs	3% of all costs	3% of all costs
VAT	5% of all costs	5% of all costs	5% of all costs
Import Duty	variable (c. 7% of all capex)	variable (c. 7% of all capex)	variable (c. 7% of all capex)
Royalty (including production charge)	Inland: 10% 200m-500m: 12% 500m-800m: 8% 800m-1000m: 4% >1000m: 0%	Inland: 10% Onshore: 20% < 100m: 18.5% 100m-200m: 16.5% 200m-500m: 12% > 500m: 8%	5%-25% (production based) + 0%-25% (price based)
Cost Recovery Ceiling	100%	inland/deepwater: 80% onshore/shelf: 70%	maximum 80% of revenue less royalty
Profit Sharing (contractor)	< 350 mmbbl: 80% 350 - 750 mmbbl: 65% 750 - 1000 mmbbl: 55% 1000 - 1500 mmbbl: 50% > 1500 mmbbl: 40%	R < 1.2: 70% 1.2 < R < 2.5: 70%-25% R > 2.5: 25%	unknown (to be based on sliding scales other than IRR)
Institutional Levy	n/a	n/a	2% of revenue
Education Tax	2%	2%	2%
PPT / NHT	50%	inland/deepwater: 50% onshore/shelf (first 5 years): 65.75% onshore/shelf (thereafter): 85%	30% of net profits (min 2% of revenue)
Disallowed costs	n/a	n/a	20% of overseas costs financing costs head office costs
Depreciation	5 years straight-line	5 years straight-line	5 years straight-line
PIA (uplift % capex)	50%	inland/deepwater: 50% onshore: 5% < 100m: 10% 100m-200m: 15%	replaced with small oil and gas fields production allowance
CIT	n/a	n/a	30% of net profits
Withholding Tax	n/a	n/a	10% of post-tax profits
Minimum Govt Share *	deepwater: 0%	deepwater: 14% onshore: 26%	13%-58%
Marginal Govt Share *	80%	deepwater: 89% onshore: 97%	90% - 95%
NNPC Equity	0%	0%	0%
Total Nigeria Share	80%	deepwater: 89% onshore: 97%	90% - 95%

* government share of revenue from first barrel, excluding rental and levies on expenditure
 ** government share of revenue from an incremental barrel, excluding rental and levies on expenditure
 Ranges reflect minimum and maximum royalty rates

Source: Wood Mackenzie, September 2009

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