

Economic Analysis of the Production Sharing Contract in Nigeria's Deepwater

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Motivation and Research Question

- The first oil production from a deepwater oilfield begun in the year 2005.
- Oil production from deepwater oilfields now account for 40% of Nigeria's total yearly production.
- This is bound to increase over the years due to the spate of exploration and production activities in the deepwater areas of Nigeria.
- A major source of Nigeria's government revenue is from crude oil production. With the share of oil production from deepwater oilfields increasing this study aims to find out how?
- Effective the current PSC terms is in maximizing returns for both the government and investor and how the government can increase its share of economic rent without causing distortion in exploration, production and development activities

PSC TERMS DEEPWATER	
Signature Bonuses	USD 10 million
Production Bonuses	100,000 barrels or equivalent at cumulative production of 50 MM bbls
Royalties	8% of gross revenues
Corporate Income Tax	50% of Tax Base
Investment Tax Credit	50% of Development Cost
Cost Oil Limit	80%
Profit Oil	Based on R-Factor (R): 30% for R < 1.2; 75% for R > 2.5

Data and Methodology

- A representative deepwater oilfield of 500 million recoverable oil reserves was employed.

Data for Model Oilfield

Recoverable Reserves	Million Barrels	500
Development Costs	\$ per barrel	18
Drilling Cost	% of Development cost	40
Annual Operating Expenditure	% of Accumulated Development cost	6

Using an Excel spreadsheet the discounted cash flow technique was employed.

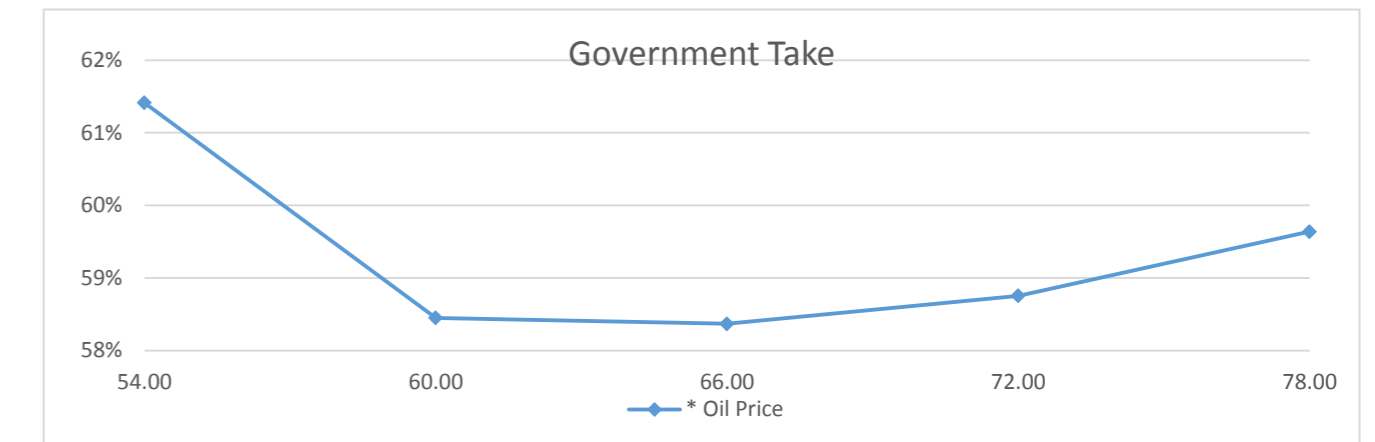
- A sensitivity analysis and Monte Carlo Simulation was used to test for the volatility in oil price and changes in cost.

Results

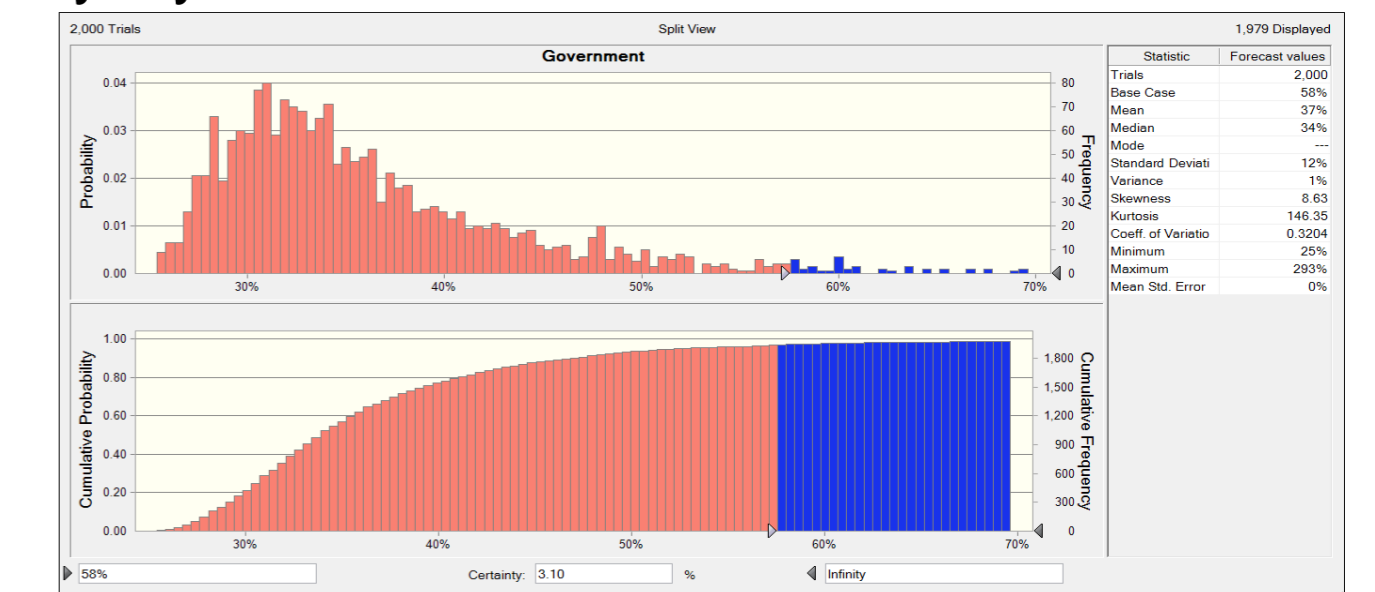
Base Case Scenario

	Present Value Terms at 12.5% discount rate	Money of the Day (MoD)
Post Tax Net Cash flows	1,997,724,268	8,887,971,106
IRR	24%	
Government Percentage Take	52%	

This result show that the PSC terms for deepwater operations are neutral.



The sensitivity analysis result indicates that the fiscal system becomes regressive when oil price falls below \$60. This is due to the presence of royalty in the PSC terms.



The Monte Carlo simulation with respect to oil price indicates that the probability of the government having a percentage take of over 52% is small.

Conclusion

- The PSC terms for deepwater operations is favorable to the investors.
- Should the government want to increase their percentage share of economic rent without causing distortion in investment decisions they should consider charging a tax rate of 60% on the profit oil share of the investor.