

# Economic Assessment of Deep-water Fields in China under Present Fiscal Scheme

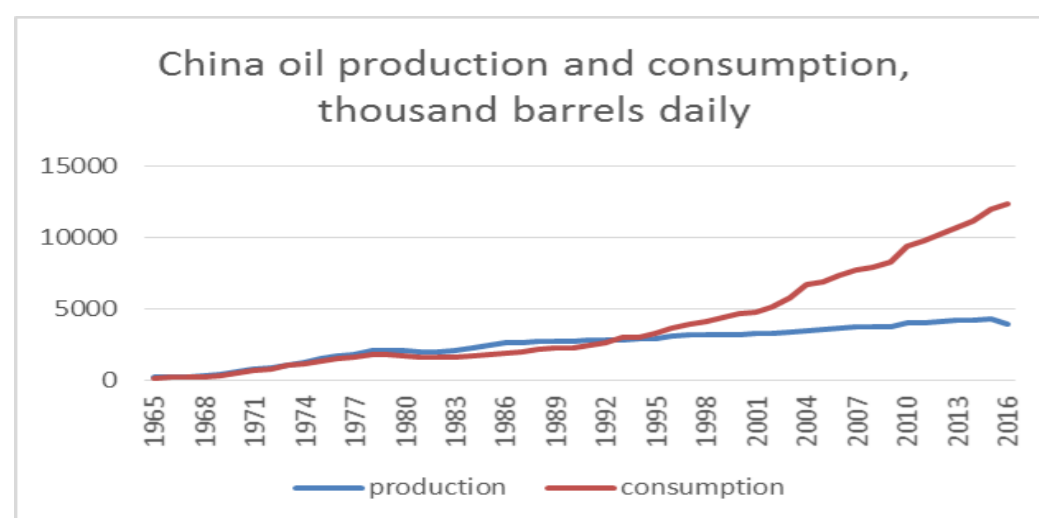
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## Introduction

- In 2016, the gap between oil production and oil consumption was 8382 thousand barrels per day for China.
- EIA estimated there were 11 billion barrels of oil reserve in South China Sea.
- Production in South China Sea was 280 thousand barrels of oil per day in 2016.



## Fiscal system

- PSC
- Resource tax—4.2%(originally 6%)
- VAT—5%
- Special oil gain levy—when oil price>65 USD
- Corporate income tax—25%, 8 year straight line depreciation

## Methodology

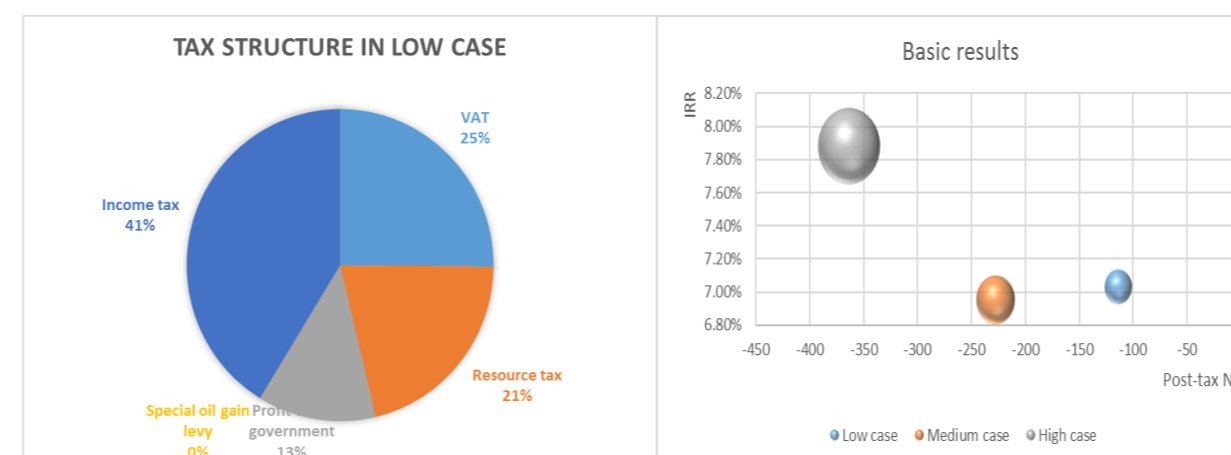
- Discounted cash flow
- Sensitivity analysis—Tornado Charts
- Monte Carlo simulation— four stochastic variables, oil price, reserve, development cost, operating cost

## Data

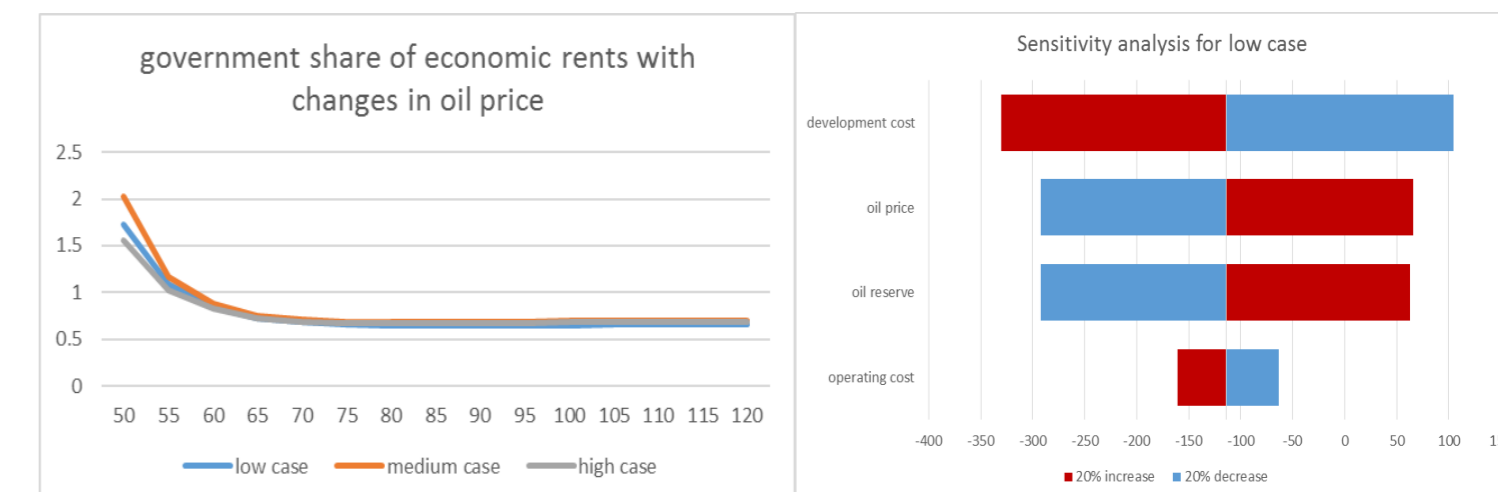
Field	Low case	Medium case	High case
Reserves, MMbbl.	50	100	250
Development costs, \$/bbl.	20	17.5	15
Annual operating costs, % of acc. Devex	7.75%	7%	6.25%
Drilling cost, % of devex	45%	45%	40%

## Results

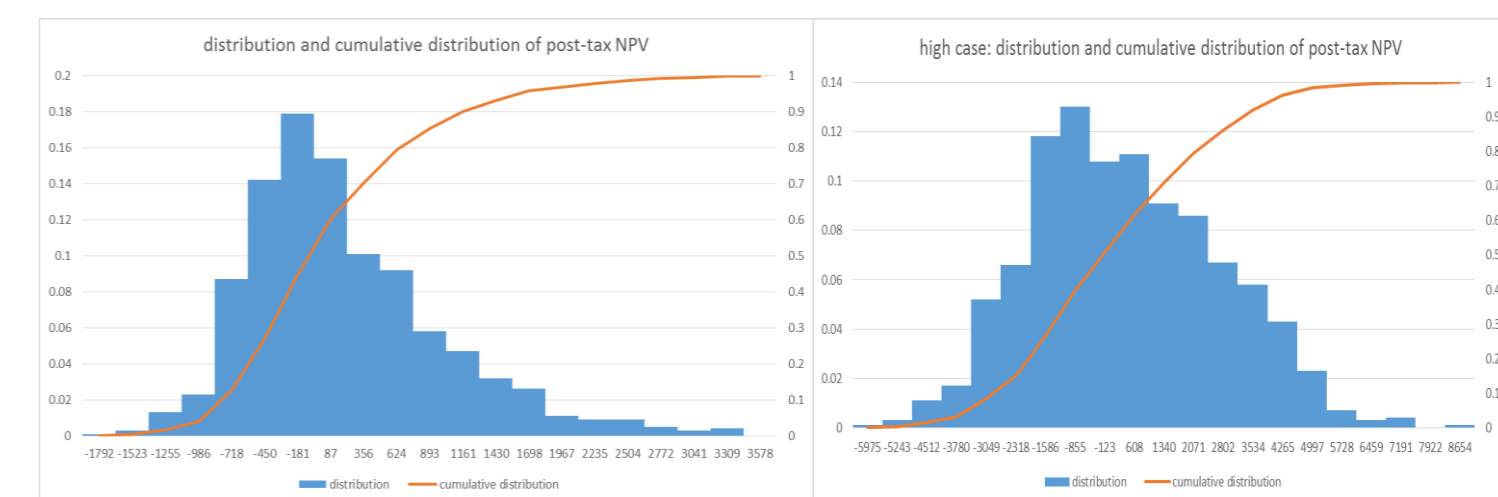
Field	Low case	Medium case	High case
Pre-tax NPV, MM dollars	157.47	221.06	649.04
Post-tax NPV, MM dollars	-113.74	-227.62	-363.57
NPV/I	-0.11	-0.13	-0.1
Post-tax IRR	7.03%	6.95%	7.88%
Government take,	54.762%	52.04%	50%
Economic rent share to government	172.23%	202.97%	156%
Breakeven oil price, \$/bbl.	57	58	56
Breakeven oil price to get threshold rate of return, \$/bbl.	77	80	78



- All post-tax NPV and NPV/I are negative
- Breakeven oil price is 57, 58, 56 USD respectively
- Corporate income tax is the biggest part
- High reserve has better IRR



- Whole fiscal system is regressive.
- The biggest influencing factor is development cost. Then oil price and reserve.



Probability of loss is higher than 50% in most circumstances. 55.6% and 53.2% for low case and high case respectively.

## Conclusion

- Due to high cost, low oil price and high tax burden, all the fields are marginal fields and not worth to invest now.
- Economic rent share to government is high.
- Fiscal system is regressive, especially for low oil price.
- High tax burden appears at early time.