A Case Study of Price Sensitivity in Mexico's New Production Sharing Contracts

Claudia Eugenia Bernal Ortiz

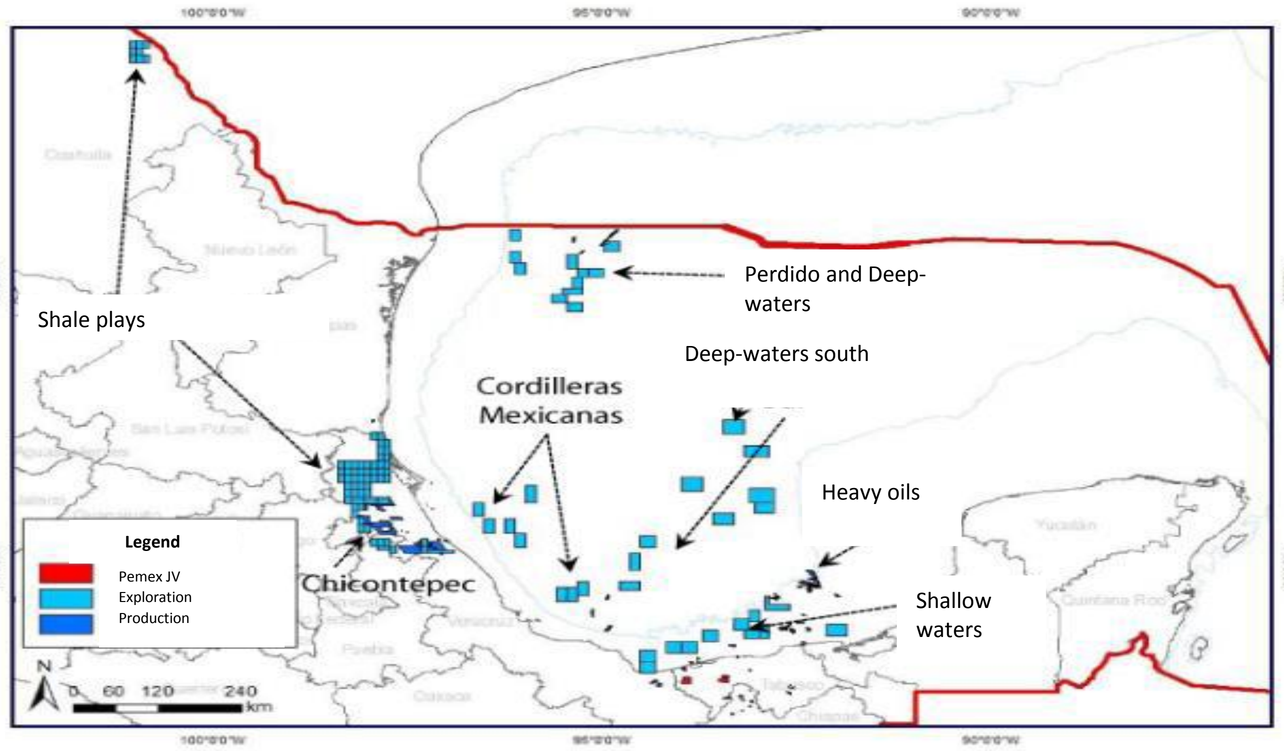
Introduction

Mexico approved an Energy Reform, opening the oil and gas market looking forward to

- Lower electricity, gas and food prices.
- Achieve reserves replacement rates of 100% or over
- Increase oil and gas production.
- Increase GDP growth.
- Create jobs by 2018.

The reform allows four types of contracts:

- Licences
- Profit Sharing Contracts
- Production Sharing Contracts
- Service Contracts



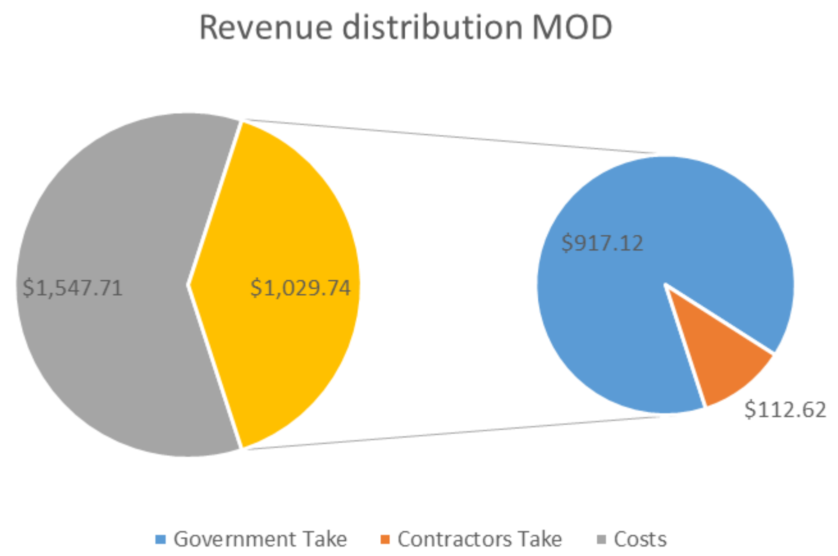
The Production Sharing Contract proposed for the First Round of Auctions was analysed.

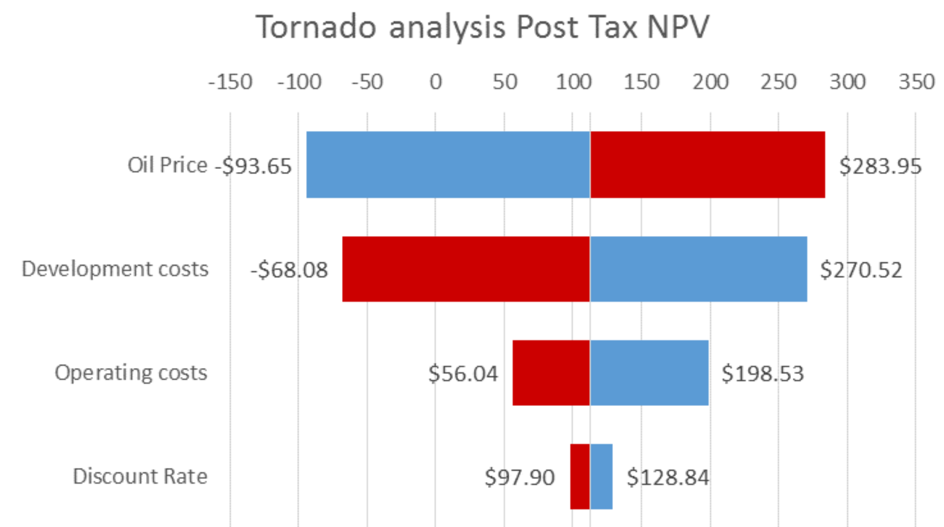
Methodology

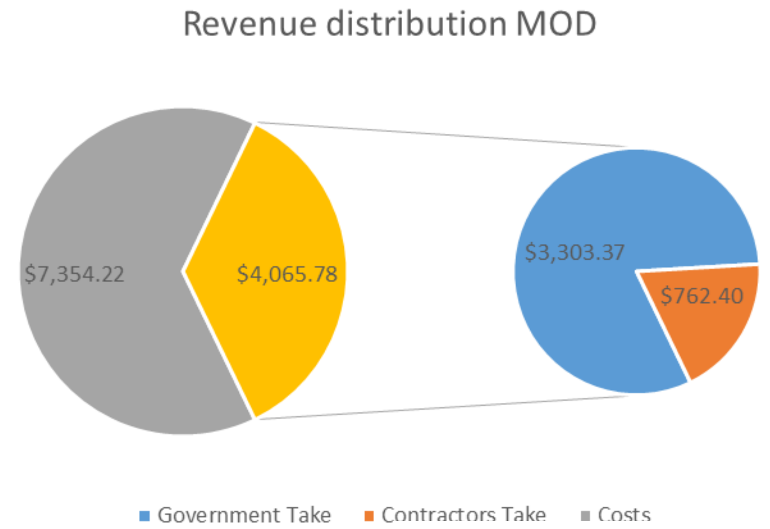
- Discounted deterministic cash flow model fo different model fields (small, medium an large)
- Sensitivity analysis
- Monte Carlo simulation

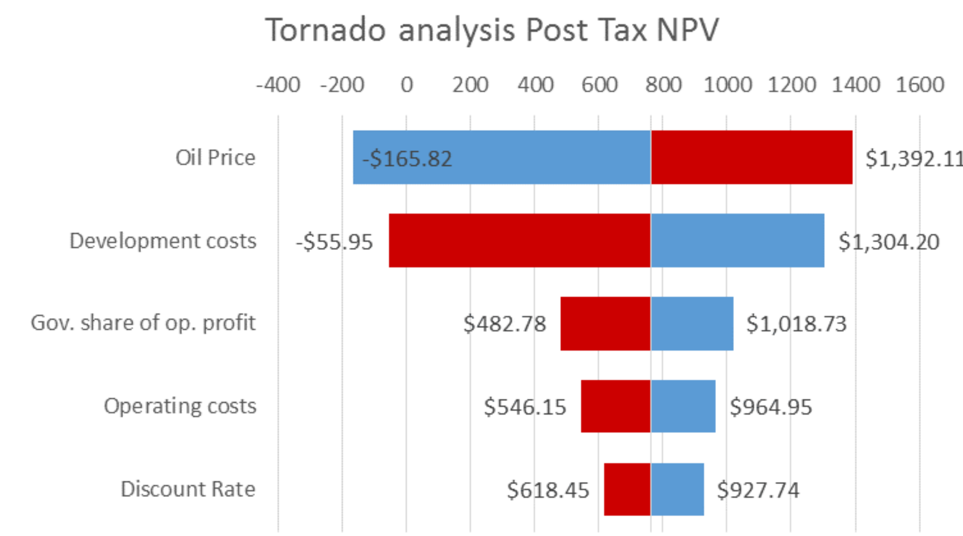
FISCAL REGIME		unit
Exploration phase payments until month 60	13800	MXN/km
Exploration phase payments as of month 61	33000	MXN/km
Royalties if price below 48 US$/b	7.5%	% of oil value
Royalties if price above 48 US$/b	9.0%	% of oil value
Government share of operating profit	50%	Depending on PSC
Income Tax	30%	taxable Income
State Tax during exploration	18000	MXN/km
State tax during production	72000	MXN/km
Cost recovery limit	60%	of revenue

Results









The Monte Carlo Analysis indicates a 2.4% probability of loss before taxes and a 19.88% after taxes for the small field. The figures for tge big field are 2.05% probability of loss before taxes and 14.3% after taxes

Conclusion

- The system is regressive, despite the adjustment mechanism.
- While the NPV is positive for all analysed fields with IRRs between 23 and 33%, they are risky and extremely sensitive to price fluctuations. Only the bigger field that can hold a 10% reduction of prices or increase of costs.
- Clustering the proposed fields into bigger areas can be more attractive to investors.

Claudia Bernal c.bernalortiz.14@aberdeen.ac.uk +44 (0)07541490463 www.abdn.ac.uk
University of Aberdeen, King's College, Aberdeen, AB24 3FX