
Petroleum Fiscal Design HB 111

CASTLE**GAP**



Castle Gap Advisors, LLC.
April 15, 2017

Senate Resources/Finance Committees

Agenda

- Consultant experience, perspective and role
- Stage setting concepts
- Review of main economic points of HFIN CS for HB111

EXPERIENCE, PERSPECTIVE & ROLE

Experience and Perspective

- Combined over 40 years of energy industry experience
 - Engineer to Senior Management at major oil company with roles in operations, regulatory compliance, commercial and large project development
 - Executive at recognized consultancy with a primary role related to providing overall petroleum and fiscal system design advice to governments and national oil companies
 - Executive at one of the top three oil field service companies
- Fiscal Background
 - Designed or redesigned petroleum fiscal systems for multiple countries
 - From new emerging countries like East Timor with no prior energy infrastructure, to Iraq with extensive energy assets just emerging from years of war and conflict
 - Re-opening to foreign investors in Saudi Arabia and Kuwait
 - Master plans and production sharing contract design for Middle East, AsiaPac and Latin America countries
 - Multiple license rounds design and execution

Expertise

- We bring the experience of on the ground practitioners that have worked directly for over two dozen foreign governments and analyzed in depth dozens more
- We have built simple and complex models to aid in the understanding of optionality, risk management and decision making
- We have negotiated multi-billion dollar contracts with multiple governments as well as producers of all sizes
- We have upstream and midstream backgrounds, including LNG project development

OUR APPROACH

Our Approach to Fiscal Design

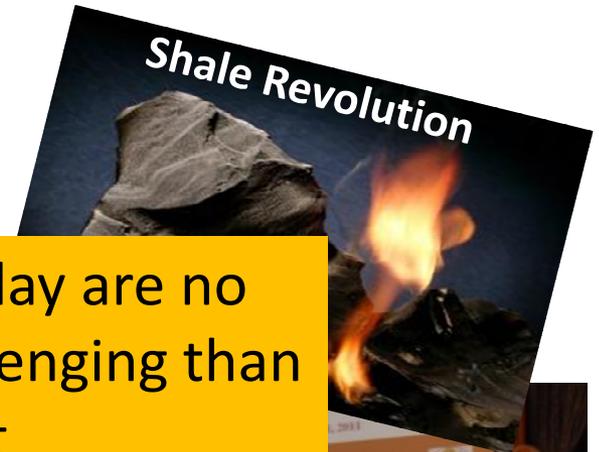
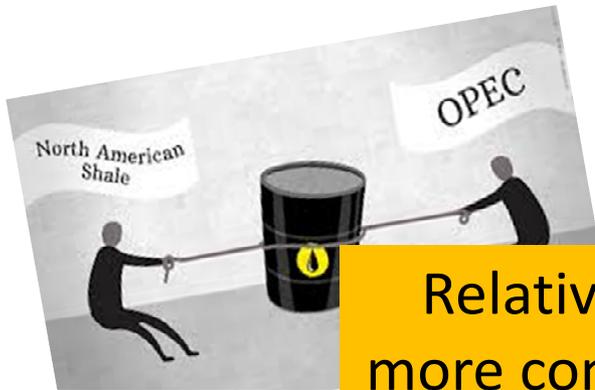
- First, understand from a high level or macro perspective the general landscape of oil and gas developments within country based fiscal systems
- Second, agree the drivers for any change to your existing fiscal structure
- Third, review multiple options played out in different future scenarios to improve chances of realizing goals
- Last, draw conclusions of competitiveness drawn from all aspects of a multifaceted system

Our 100,000 Foot Overview

- Use scenario planning to prepare for unexpected market changes
 - Now in the fifth down cycle of my career
- Change (in fiscal parameters) does not necessarily mean “instability”, but change in the “wrong direction” usually does
- Fiscal systems built for predicted future outcomes ‘fail’ sooner or later
 - Exemplified by triggers tied to specific, non-adjusting **terms like prices**
 - New trend is self-correcting terms
- For understandable reasons, sovereigns focus on the near term, many times putting longer term, more ‘profitable’ goals at risk

INDUSTRY BACKGROUND

The Oil Patch's Only Constant Change!

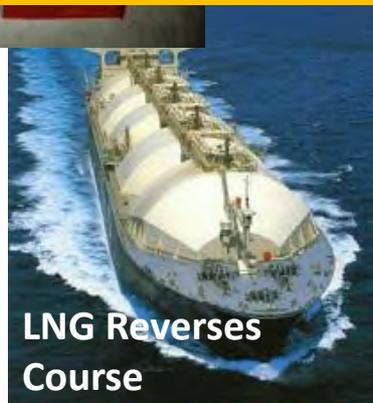


Relatively speaking, things today are no more complex, dynamic or challenging than they were in the past

Mexico Energy Reform

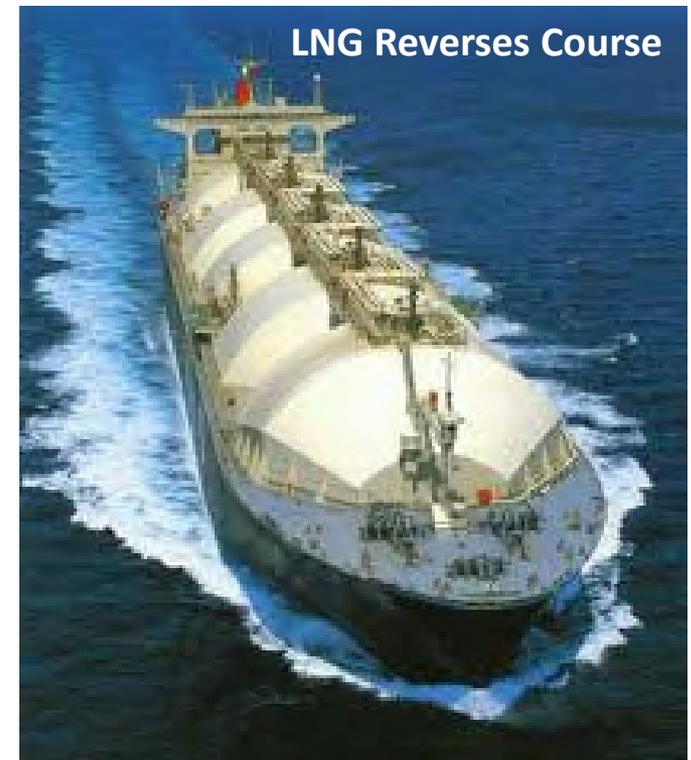
How do you design a “stable fiscal regime” in a world that is anything but stable?

Global Bid Rounds

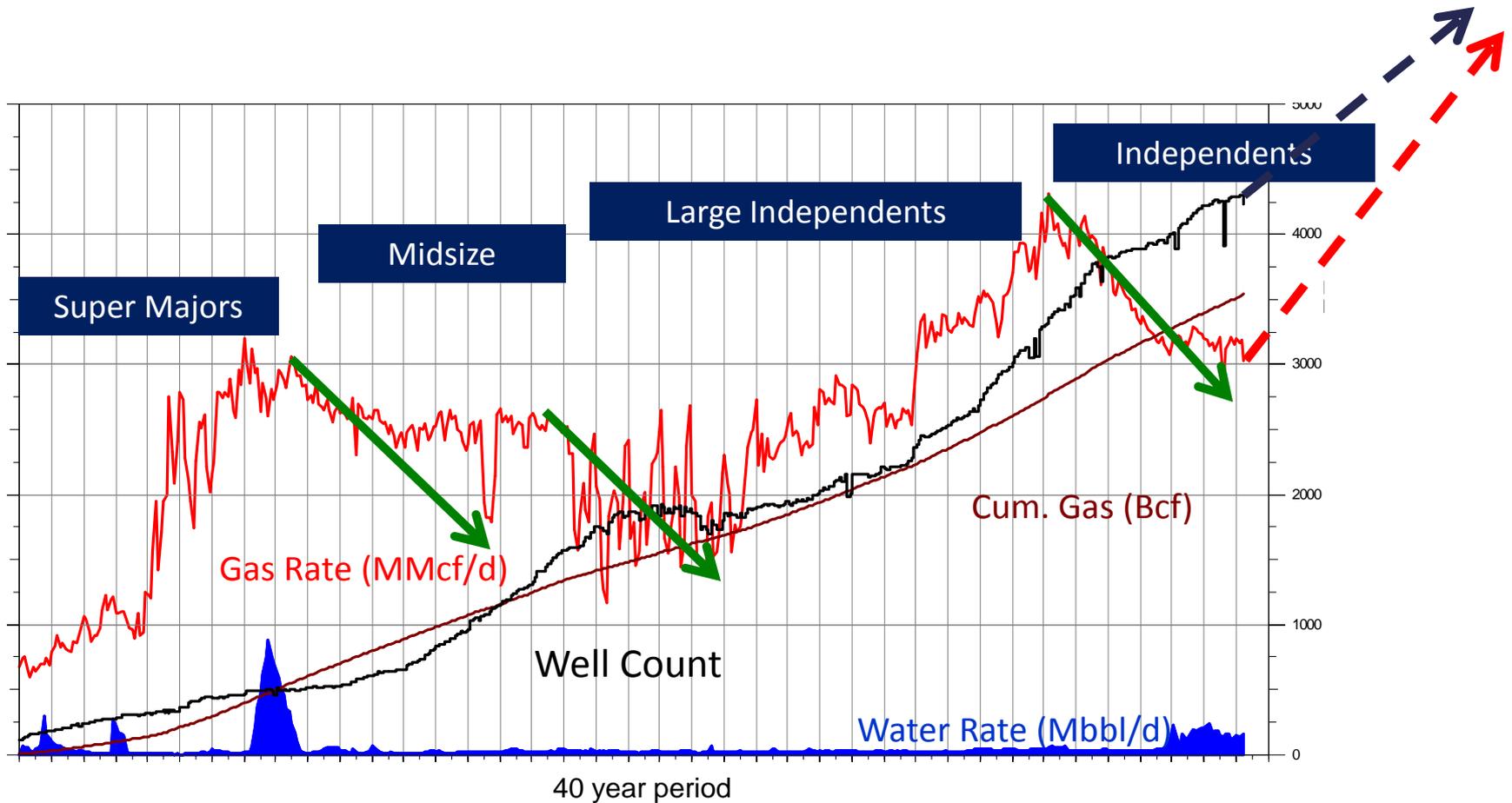


Change Can Be Rapid.....and Significant

- US 2005
 - Common wisdom was the US would be IMPORTING >8 bcf/d of LNG (gas) by 2015
 - 40+ regasification terminals in permitting
- US 2015, just one decade later
 - Developed a 180 year supply of natural gas
 - 40+ filings for liquefaction terminals
 - Plans for EXPORTING >8 bcf/d LNG
- >16 bcf/d supply/demand flip in 10 years
- This development impacted field and project timing on 5 continents

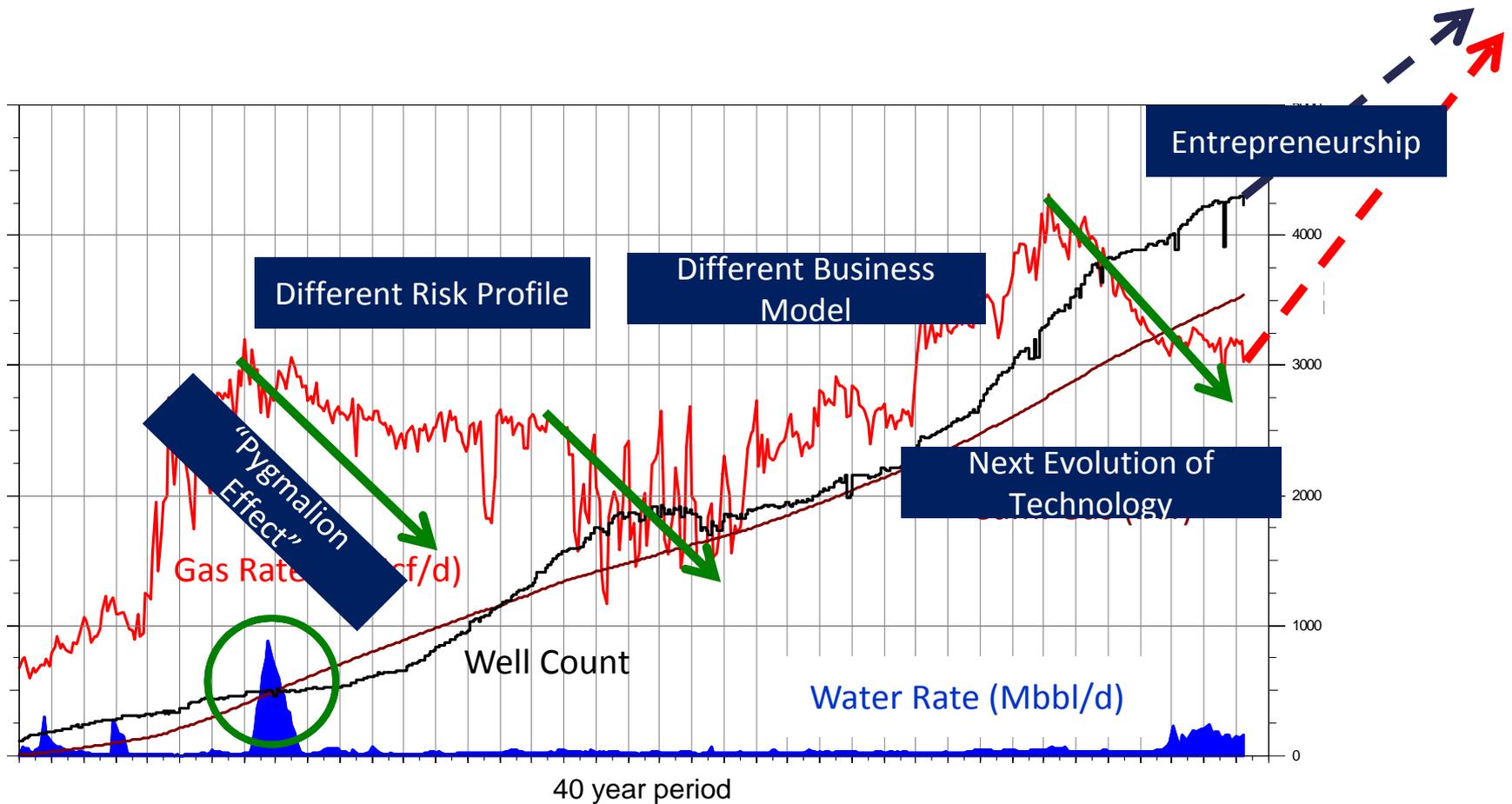


New Operators Unlock Upside Potential



Given up as all but dead, 3 times, this field has lived on another 30 years!

This Happens for a Number of Reasons



Unaware of any major field that has been developed and abandoned by the same large IOC

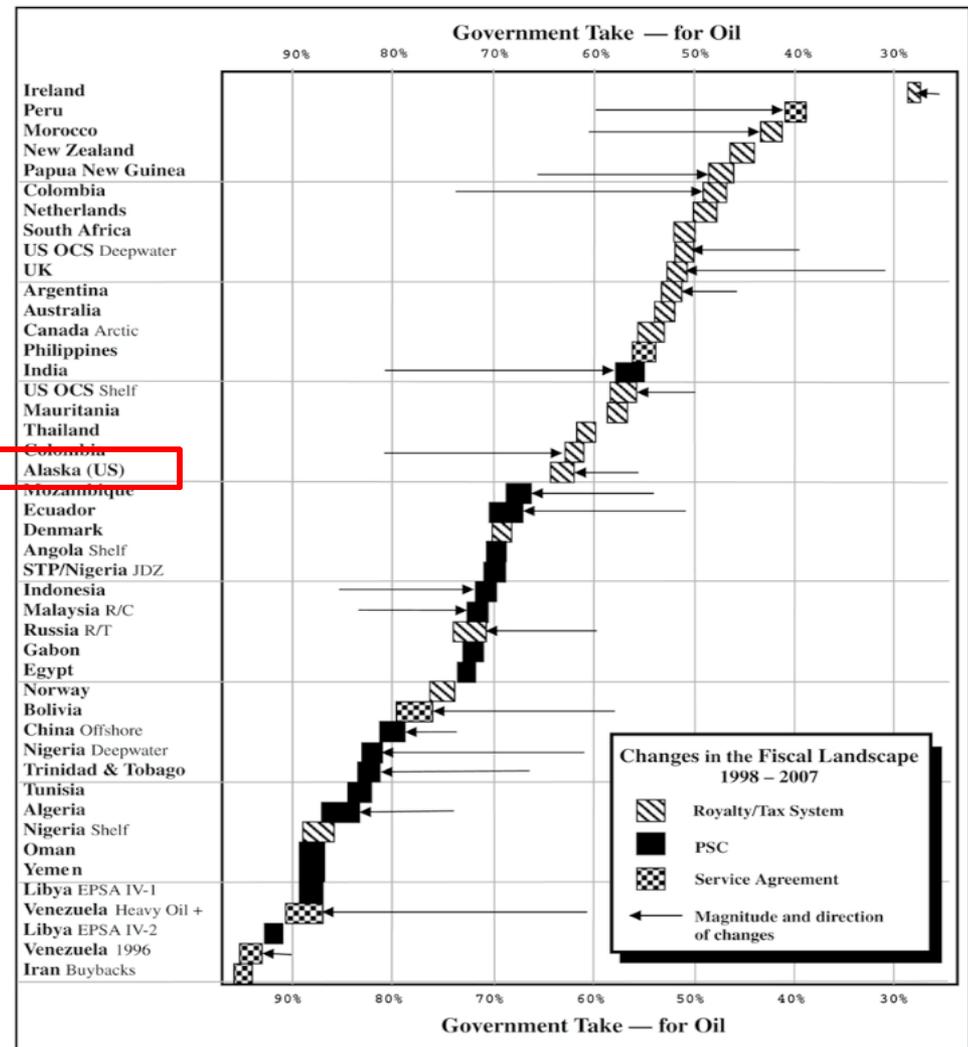
In Summary

- Change in the oil patch is continuous and that should be incorporated into your thinking as you put together a petroleum tax policy
- There is no ideal or best fiscal system as countries are very different in their resources and their needs. However, there are 'durable' key principles emerging
- Any proposed increase in taxation, no matter the magnitude, will likely not have any industry support
- New players are very important as they have an excellent track record of unlocking significantly more production from what are otherwise considered mature, even dying, areas

HOW DOES ALASKA COMPARE TO OTHER REGIMES?

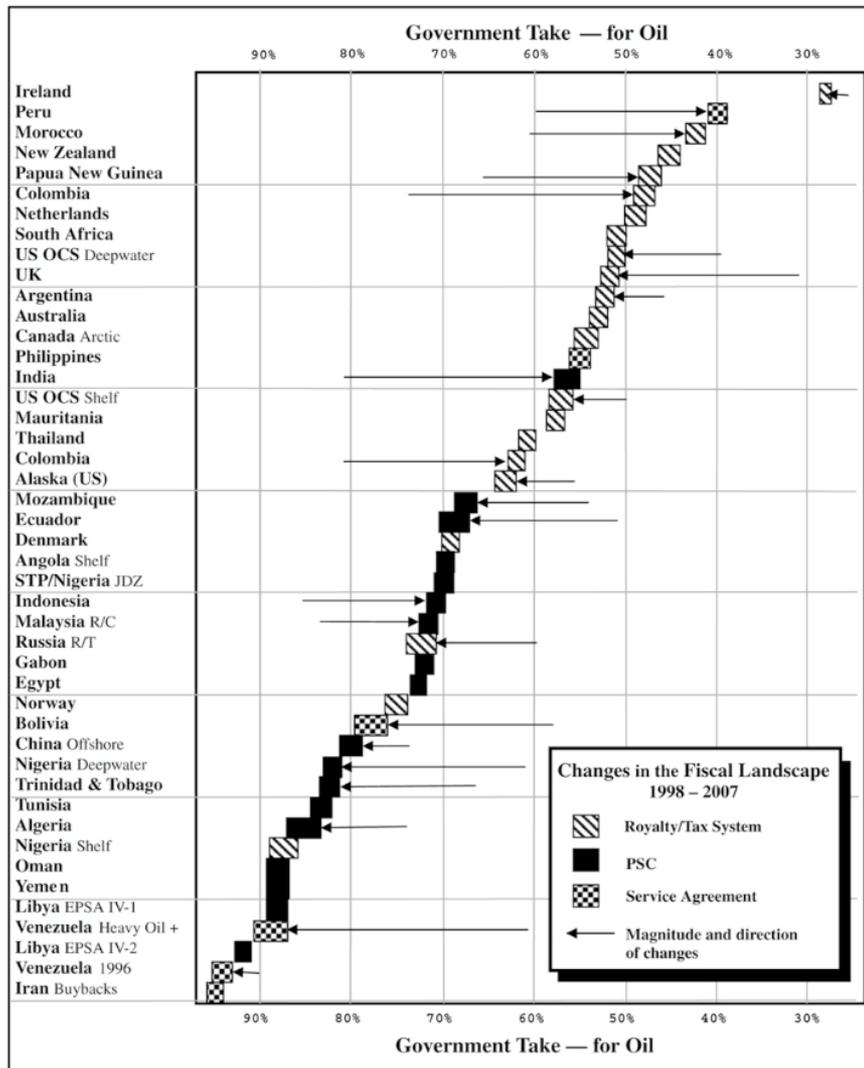
Typical Available Comparison Data

- Various consultants and data firms produce comparison reports of fiscal regimes
- Before drawing a conclusion as to your competitiveness you need to ask, “What exactly is being compared?”
 - Full Cycle Economics?
 - Marginal Dollar Splits?
- What operator payments were included and what were excluded?



Source: Daniel Johnston 2008

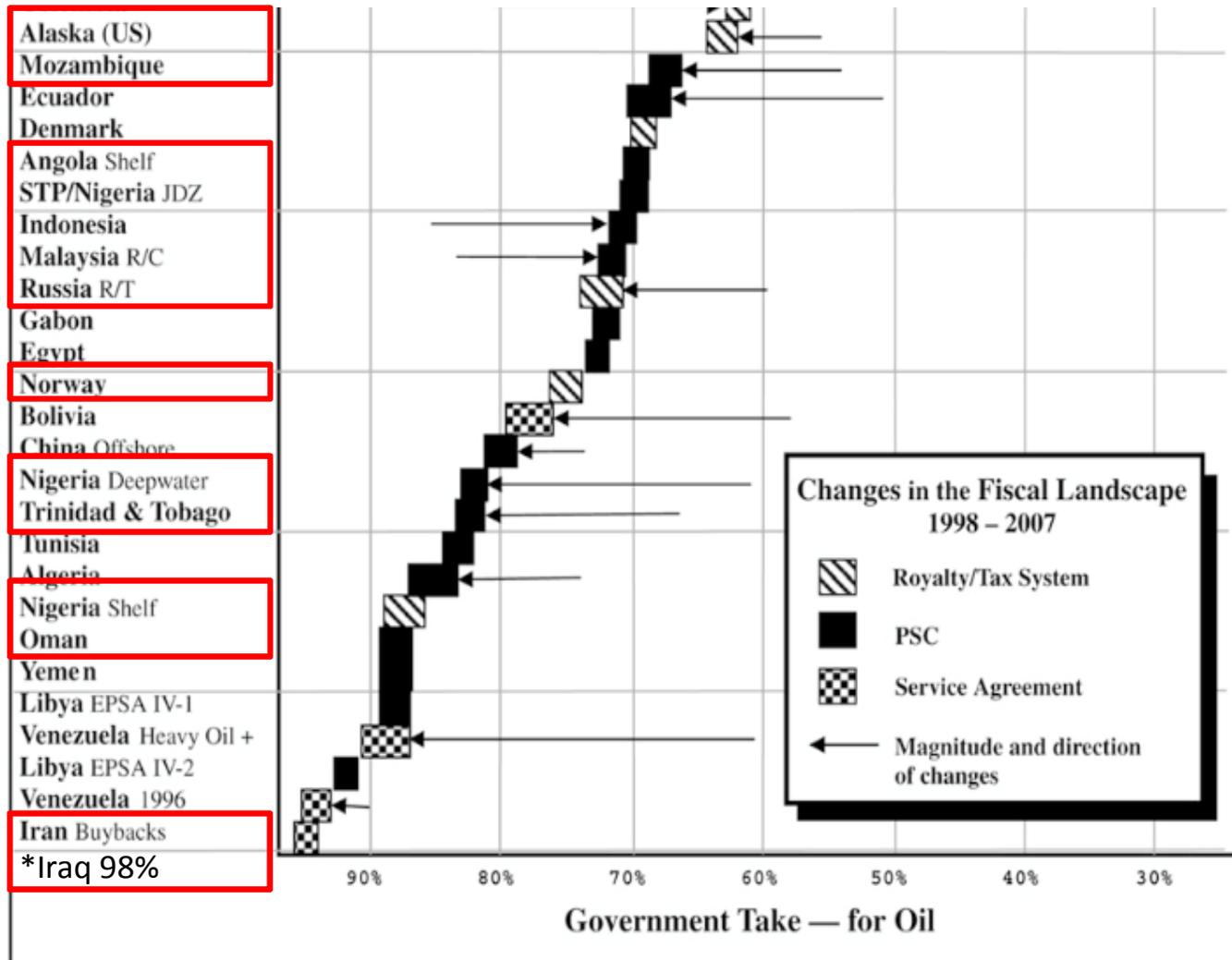
Charts such as this are Not Predictors of Producer Investment Activity or Competitiveness



Source: Plot from Daniel Johnston

- Chart shows marginal dollar take (or non-producer share)
 - Lower take on the right
 - Higher take on the left
- Arrows show movement from 1997 to 2007
- A rational argument from this chart is that the bulk of the investment dollars would be spent in countries at the top of the table
- But, where did industry spend its money?

Billions of Industry Capital is Spent in Countries with a “Worse” Government Take



Source: Plot from Daniel Johnston, Projects from BP, XOM & COP Analyst Presentations

What These Charts Don't Tell Us - Quick Comparison AK v. TX

- First, chart does not include “private” royalty
 - Legacy lease: 12.5% royalty
 - New state land lease: 20% royalty or
 - New private leases: ranging from 15% to over 30% royalty?
- TX state severance and ad valorem gross taxes range from 4% to 10%
- Acreage is changing hands at \$2500/acre to over \$30,000/ acre
- Typical 300M to 500M bbl EUR Eagleford horizontal shale well on 160 acre spacing
 - 1. Acreage purchase, averages from \$5 to \$15/bbl
 - 2. Drilling Capex roughly \$4-7MM or \$8 to \$18/bbl
 - 3. Operating expenses \$8 to \$10/bbl
 - Total estimate operator cost ~\$20 to \$40/bbl
- Using \$60 flat oil pricing, in Texas the split is roughly 30% Operator, 70% Others

} Compare
new

Other US jurisdictions would yield a similar comparison

Norway, High Government Take, Yet High Activity

Loss carry forward

- Companies that do not have any taxable income may carry forward losses and uplift to subsequent years, with interest. These rights follow the ownership interest and may be transferred. Companies may also apply for a refund of the tax value of exploration costs in connection with the tax assessment. These rules are intended to ensure that exploration costs are treated in the same way for tax purposes regardless of whether or not a company is liable to pay tax.
- The petroleum taxation system is based on the rules for ordinary company taxation. Because of the extraordinary returns on production of petroleum resources, the oil companies are subject to an additional special tax. In 2017 the ordinary company tax rate is 24 %, and the special tax rate is 54 %. This gives a marginal tax rate of 78 %. In 2016 the rates were 25 % and 53 %.

Investment based deductions

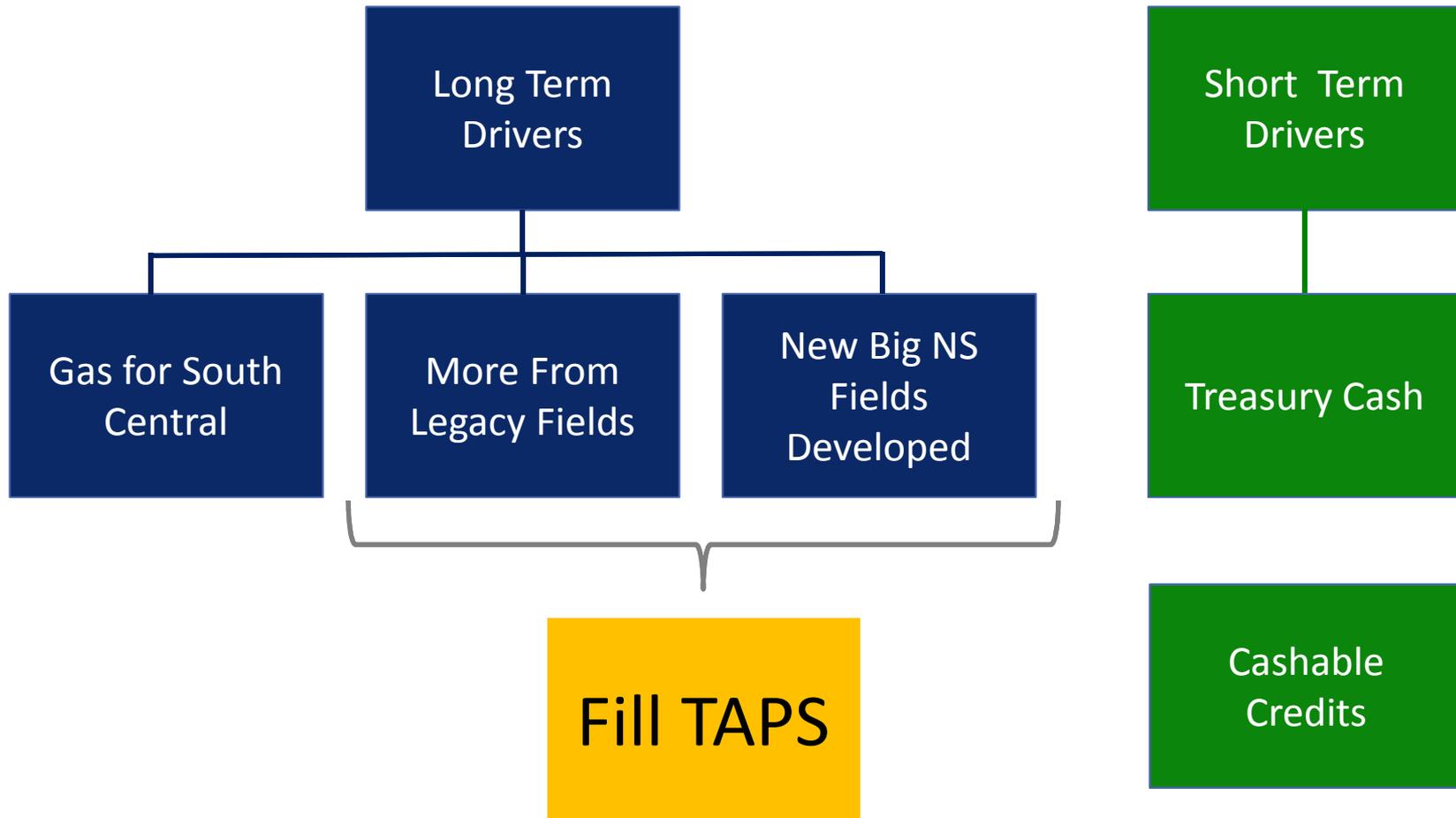
- When the basis for ordinary tax and special tax is calculated, investments are written off using straight-line depreciation over six years from the year the expense was incurred.
- To shield normal returns from the special tax, an extra deduction is allowed in the special tax base, called uplift. This currently amounts to 21.6 % of the investments (5.4% per year for four years starting with the investment year). In 2016 the total uplift was 22 %.

In Summary

- Position on a marginal dollar tax curves is not an indicator of competitiveness or likely capital investment amounts
- All other parameters equal, an increase in non-producer take will generally negatively impact producer economics
- Because all things are never equal, an increase in the tax rate does not automatically mean a regime is less competitive
- A proper comparison requires investigation into and understanding of all the key aspects of competing fiscal structures

OUR ALASKA UNDERSTANDING

This is How We See Alaska's Priorities

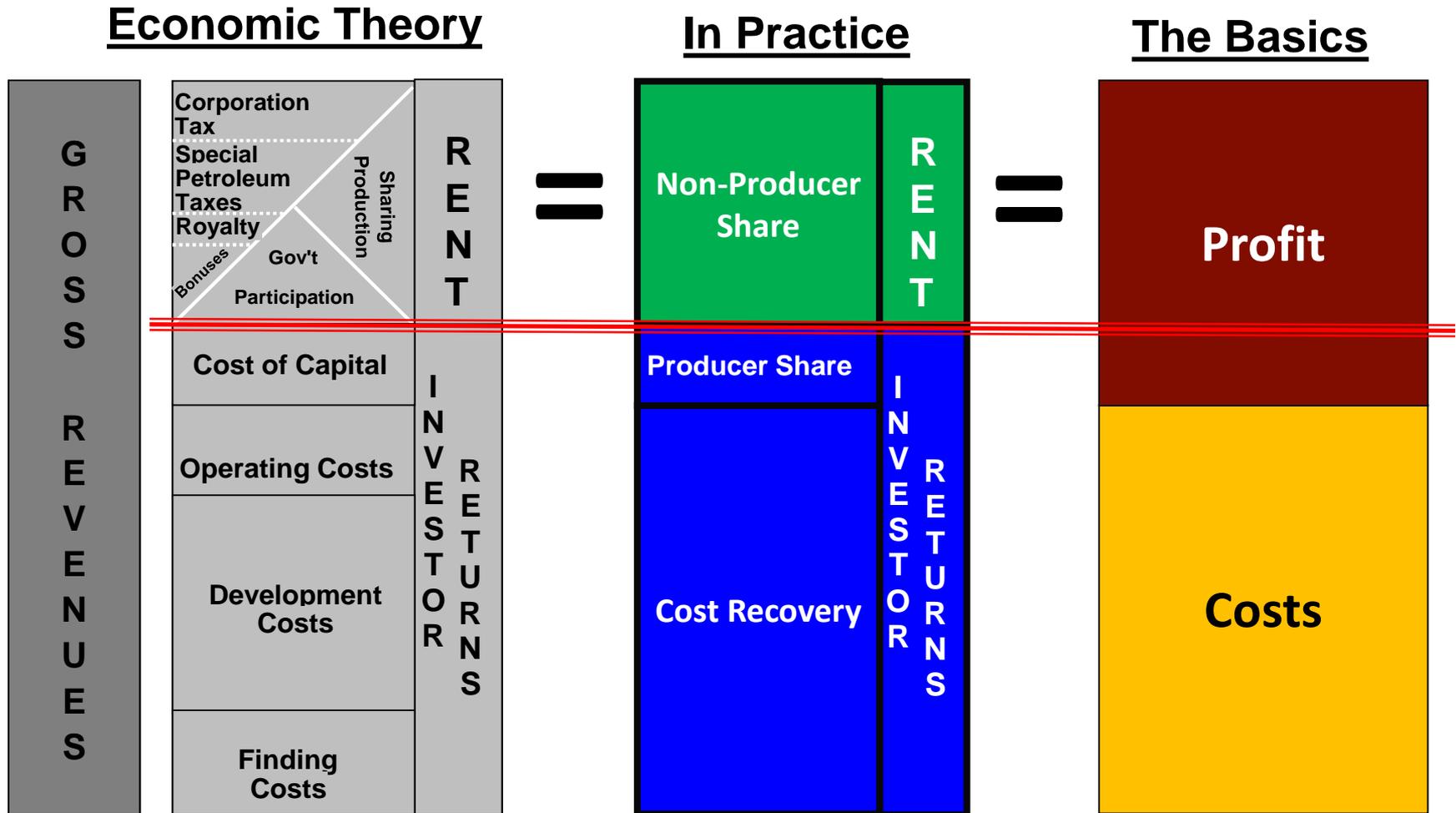


Our Recommendations via Prior Testimony

- Restructure to a mainly net based self-correcting petroleum taxation system that automatically takes less at low **margins** and more at high **margins** that would have durability and compete extremely well against most other regimes
- Through a multi-step building progressive system, eliminate most of the other special and unique aspects of the current system like barrel credits, CI/ME/NS ring fencing, heavy oil extras, etc. while offering a degree of differentiation
- Eliminate cashable credits. With the elimination of special features, carry forward NOLs should be near 100% used and useful with producers receiving the “full” tax benefit of deducting their costs and NOLs
 - With some form of uplift to account for time value of money

GENERAL CONCEPTS

Philosophy of Fiscal Design



Reality is a constant adjustment of terms to achieve goals.

How is a “Fair” Split of Profit Viewed?

■ Company perspective

– Cover their cost of capital plus some ‘extra’ to cover:

- Location or situational risk premium
- Exploration success rate (i.e. successes have to pay for failures)
- Research and Development (i.e. new technology means more oil recovered)
- Corporate overhead
- **Non-allowed expenses** (varies by regime)

■ Government Perspective

– New to energy or highly dependent on energy income

- Guaranteed revenues from day 1
- Local content – people, services, materials

– When ‘experienced’ and not really dependent on oil income

- Constant activity and jobs
- Multi-generational value generation and growth
- Local company participation

Example of Alaska Change

- This chart exemplifies how quickly things can change from when particular legislation was passed

	Spending (\$millions)	Production / day (000)	Production Year (million)	Per Barrel			
				Tarriff & Transport	Opex & Capex	Total Cost	
2007	3,201	734.2	268.0	\$ 5.40	\$ 11.94	\$ 17.34	PPT
2008	3,560	715.4	261.1	\$ 6.05	\$ 13.63	\$ 19.68	ACES
2009	3,688	692.8	252.9	\$ 6.38	\$ 14.58	\$ 20.96	
2010	3,525	642.6	234.5	\$ 6.01	\$ 15.03	\$ 21.04	
2011	3,858	599.9	219.0	\$ 6.67	\$ 17.62	\$ 24.29	
2012	2,975	579.3	211.4	\$ 8.37	\$ 14.07	\$ 22.44	SB21
2013	4,442	531.6	194.0	\$ 9.76	\$ 22.89	\$ 32.65	
2014	5,212	530.4	193.6	\$ 10.42	\$ 26.92	\$ 37.34	
2015	5,615	501.0	182.9	\$ 9.72	\$ 30.71	\$ 40.43	HB247
2016	4,842	514.9	187.9	\$ 9.88	\$ 25.76	\$ 35.64	HB111

Source: DOR, Ken Alper

- Any further changes to fiscal policy needs to anticipate change in parameters and all possible scenarios

Let's Go Back to Circa 2006

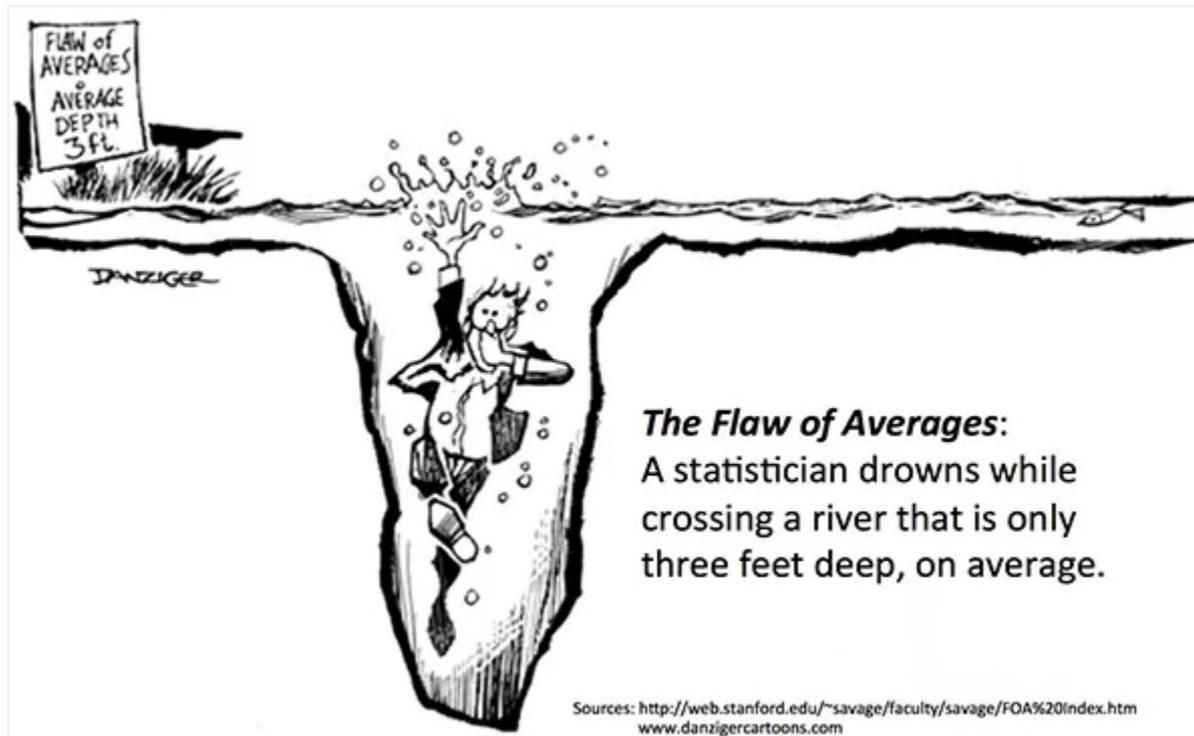
- Total Costs were about \$15/bbl
 - Gross tax is 0% at \$15 and below,
 - Appears not meant to be any tax when there was no profit
 - The 4% at the \$25 price was meant to be applicable once PTV rose to \$10/bbl
- While the cost structure of Alaska has changed the structure of the gross minimum tax has by default become something very different than when it was enacted
- As a regressive tax, the gross minimum hits low profitability operations hardest
 - As prices rise, PTV may not rise but the amount of the minimum tax grows

Fiscal Design Takeaways

- There is no ‘ideal’ structure for taxing oil and gas, thus each taxing regime is to an extent unique
 - Over time some aspects or tools have consistently worked better than others
- Regimes generally try to level the playing field or provide as much balance as possible between:
 - Incumbents and new operators
 - Large companies/producers and small companies/producers
 - Exploration for new resources and production enhancement of existing fields
- **All petroleum taxation structures in use today have biases**
 - Companies will optimize their operations and profits
 - Which sometimes leads to unintended results

Flaw of Averages – Avoid Unintended Consequences

- Building a system off of economic runs based on “averages” does not address outliers, which are the very things that need to be addressed



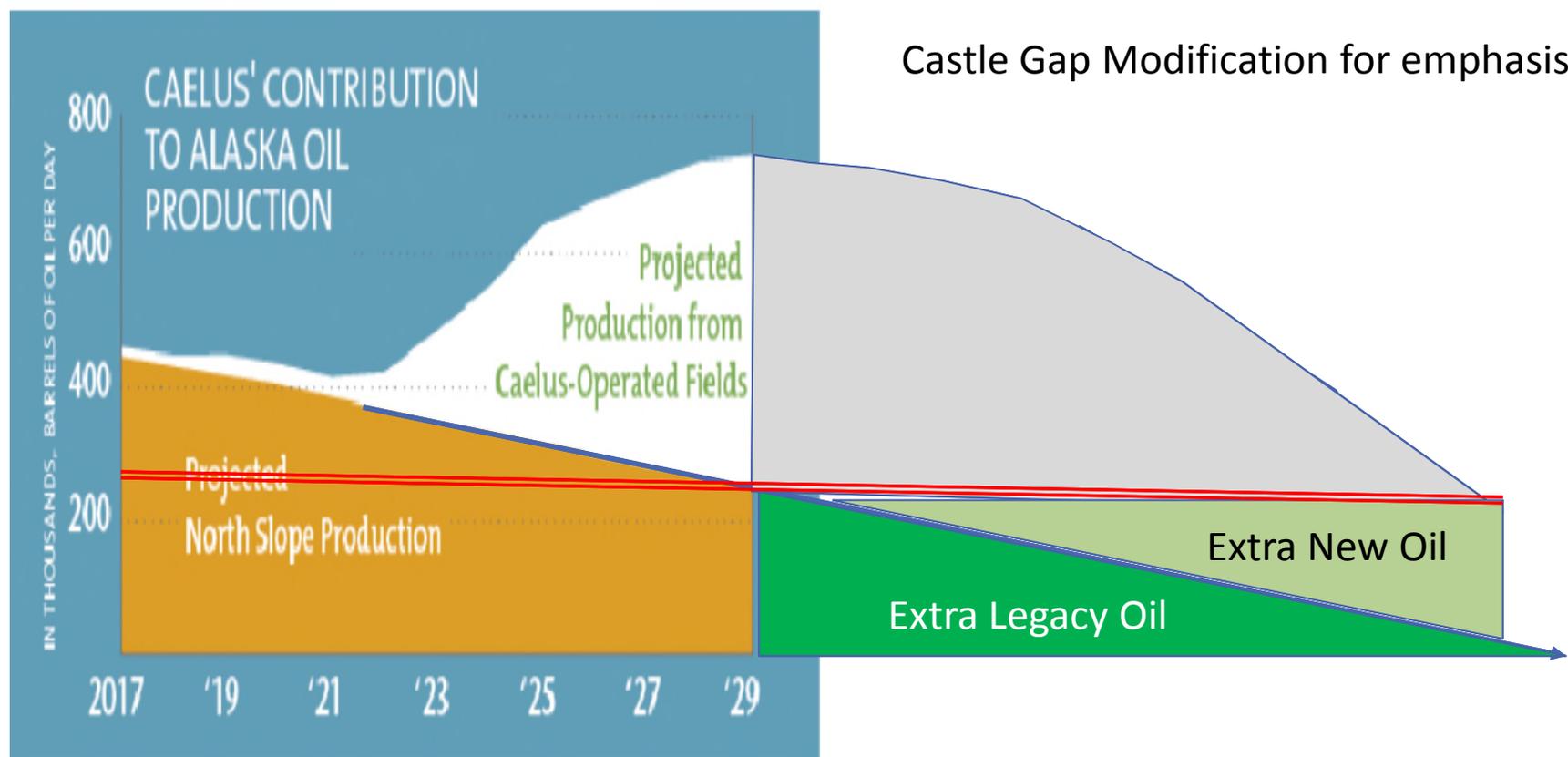
- There is no existing or proposed field or operator that matches Alaska averages of +/- \$10 transport and \$30 lease costs

Design Fiscal System Around Real Possibilities

- It is realistic to only think in terms of 1 or 2 new prospects coming on line each year
- Each of those prospects will have a +/- 5 year lead time in practice
- Thus, there are only 5 to 10 different possible new fields to look at for what may be possible in the next 5 years
- They should each be modeled independently and collectively to understand the impact of your fiscal system on their economics

MORE OIL IN THE PIPELINE

Longer Life of TAPS – Needs New NS Production



- **\$8Bn to \$50Bn** additional revenue to Alaska
 - This needs to be included in any ‘analysis’ when looking at how to incentivize major new NS discoveries through the extended development and production phases
 - Existence of extended life of TAPS may also encourage additional work in legacy fields

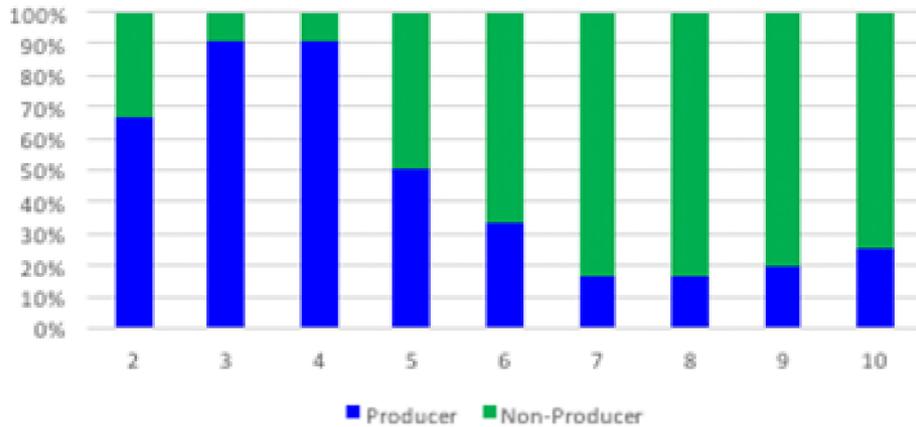
**TIME VALUE OF MONEY
OR
WHY IT'S NOT ALL ABOUT THE RATE**

Time Can Have More Impact Than Tax Rate

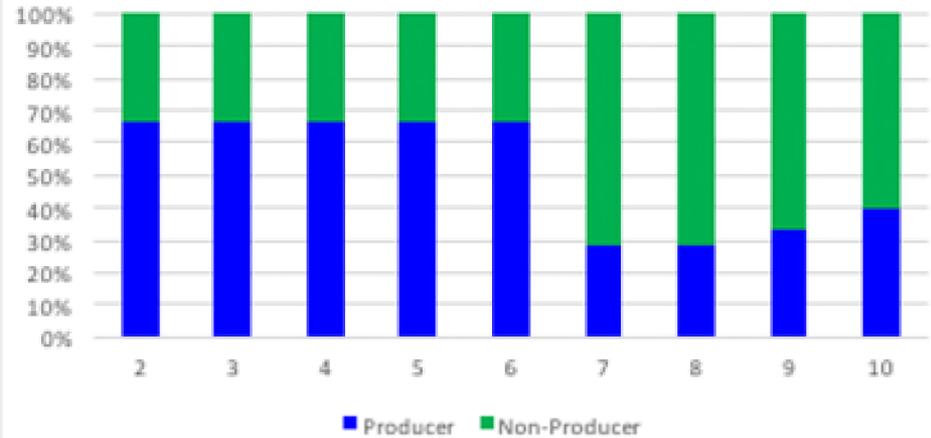
- Modeled a hypothetical field for purposes of only showing the effect of timing on producer economics
- All model runs are based on the same data
 - Year 1 an investment of 100
 - Years 2 through 10 there is 400 of revenue
 - 100 cost recovery
 - 300 of profit split between producer and government
- Depending on how cost recovery is handled, the results range from very doable and profitable project to a project that would not get developed

Timing of Producer Take – Traditional

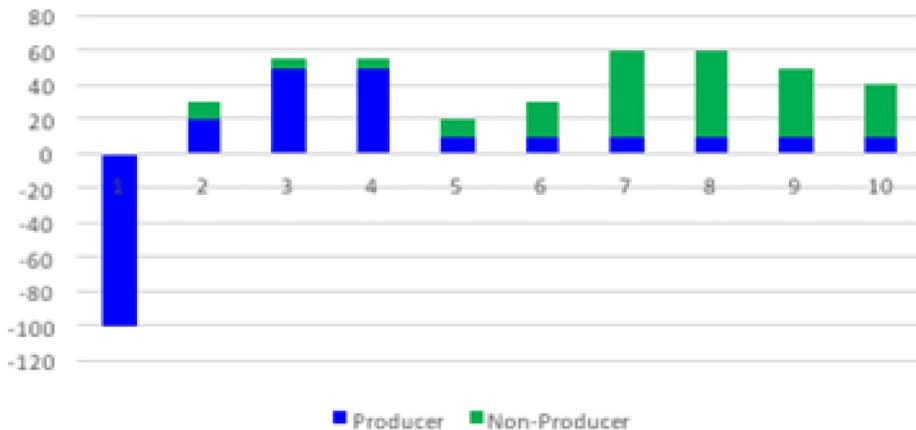
Accelerated Cost Recovery



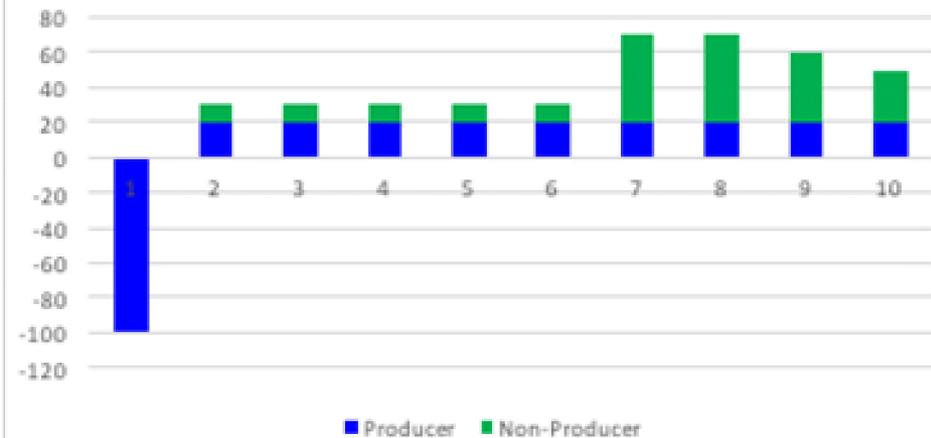
Delayed Cost Recovery



IRR=20%, NPV=\$27

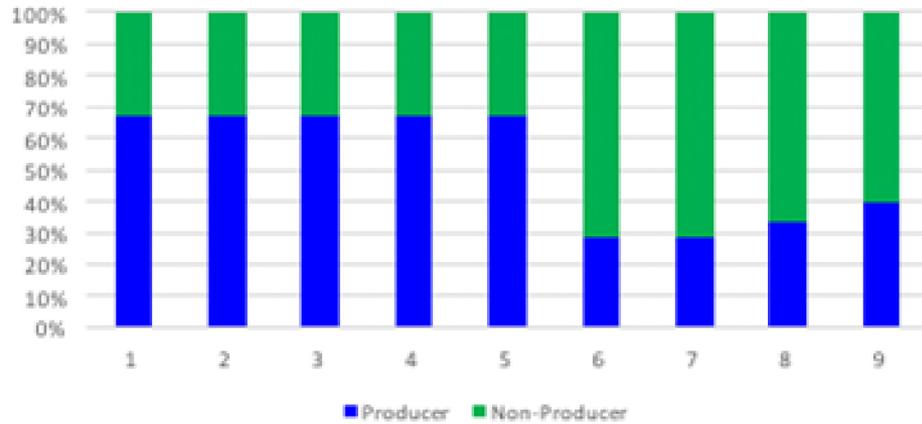


IRR=14%, NPV10=\$14

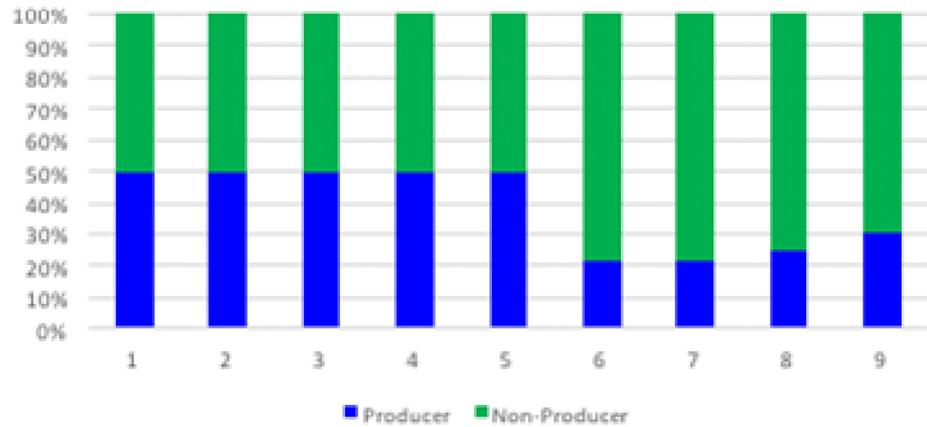


Non-Traditional Take

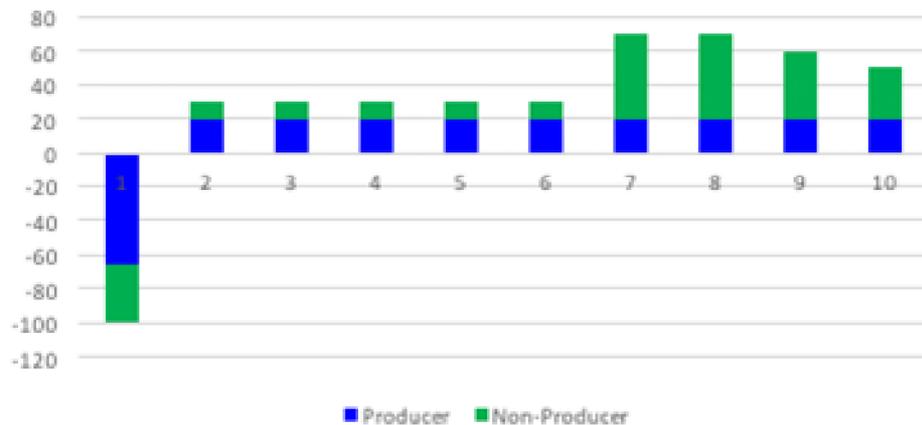
Cash Credits



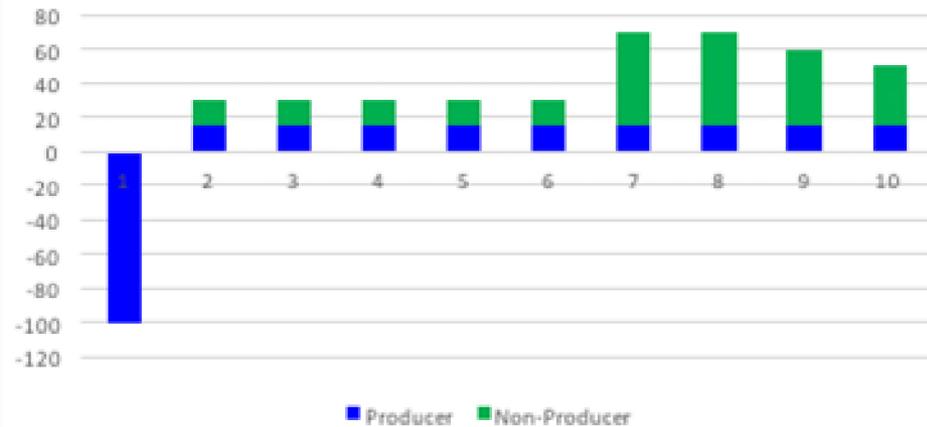
50% NOL



IRR=27%, NPV=\$46



IRR=6%, NPV=-\$12



IMPACT OF CSHB 111

Price Range Model Results

- Assumptions
 - Non-GVR is about 450,000 bpd
 - GVR is about 50,000 bpd
 - \$10/bbl transportation and shipping
 - \$30/bbl operating and capital costs
 - 12.5% royalty
- Two Effective tax rate curves
 - Status Quo (SB21/HB247)
 - With changes to structure parameters
- After a change is made a green Delta State Take bars will appear
 - This shows how much state revenues increase or decrease with each structural change

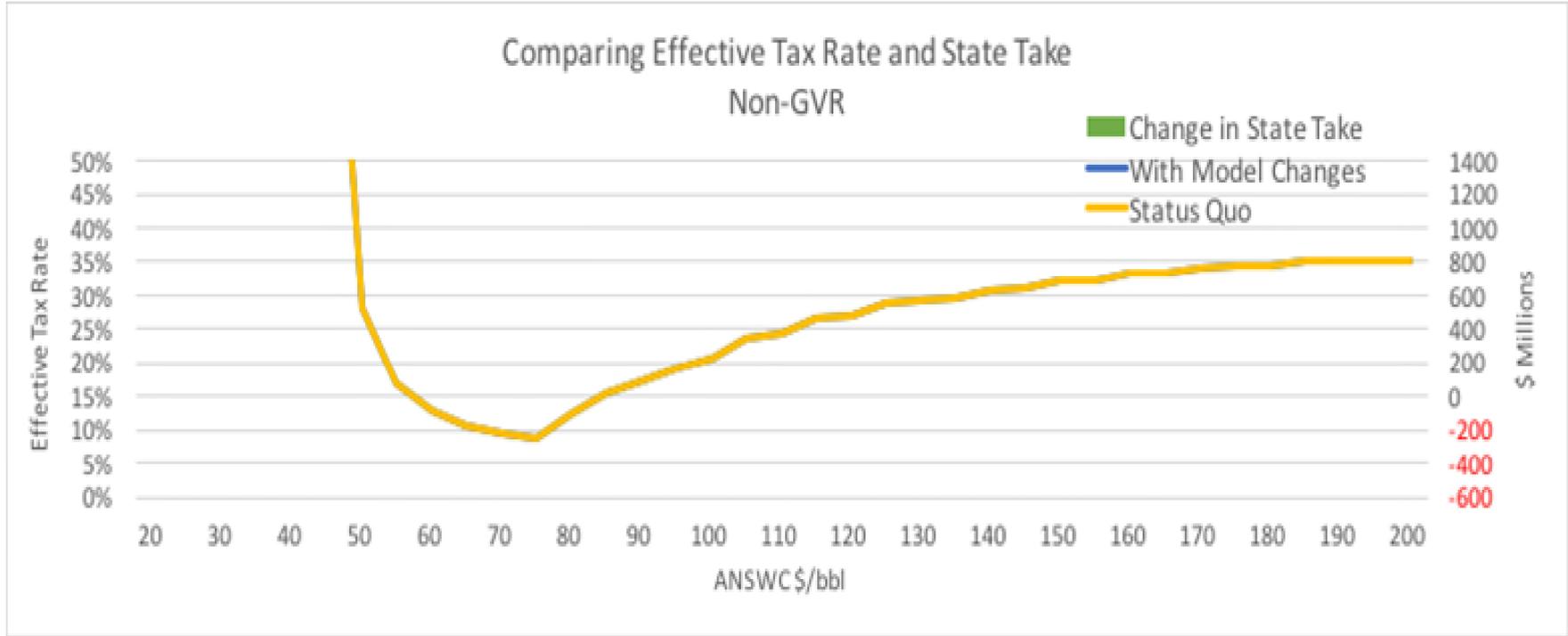
Current tax credits price based

Proposed changes PTV based.

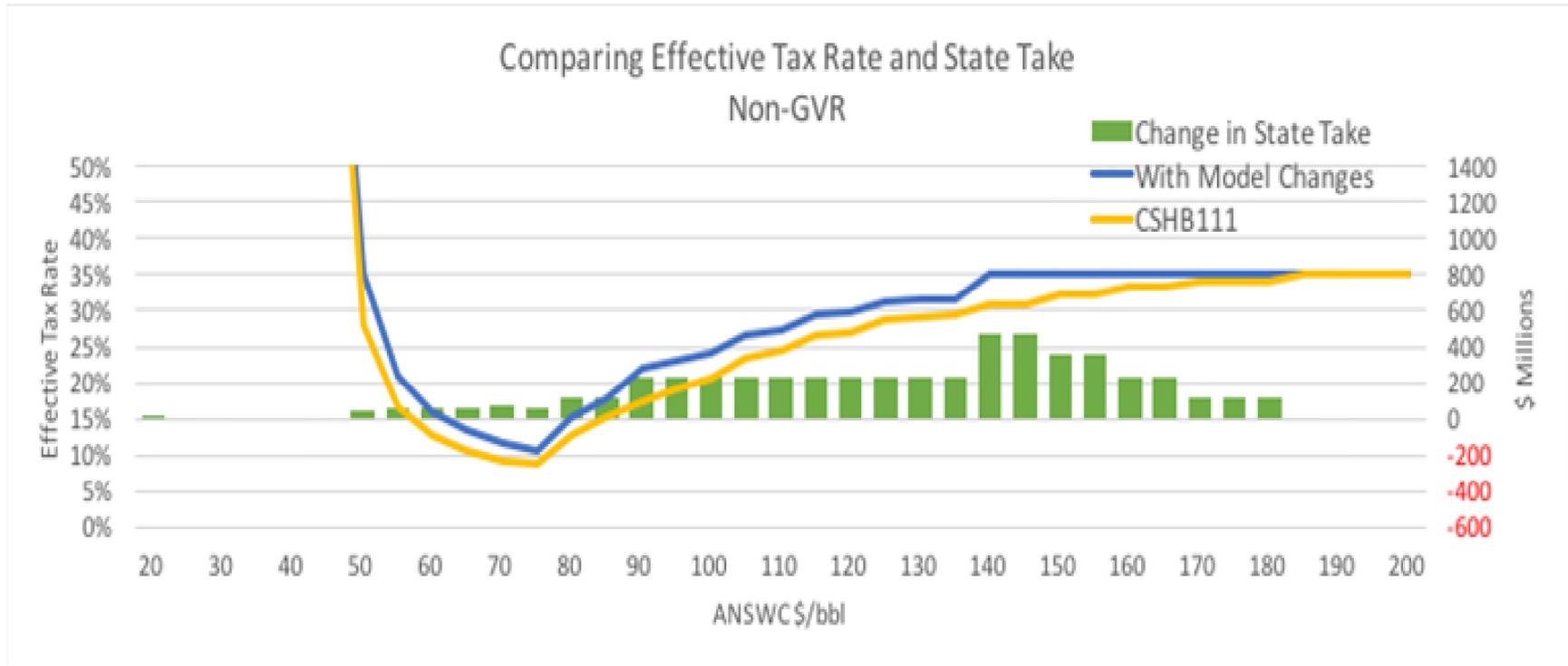
A different cost structure yields a totally different set of gains and losses

Status Quo.....\$10 T&S, \$30 Lease Costs

- The curve is the effective petroleum tax rate
- The per barrel credits reduce the effective tax to less than 10% at which point the gross minimum tax is controlling



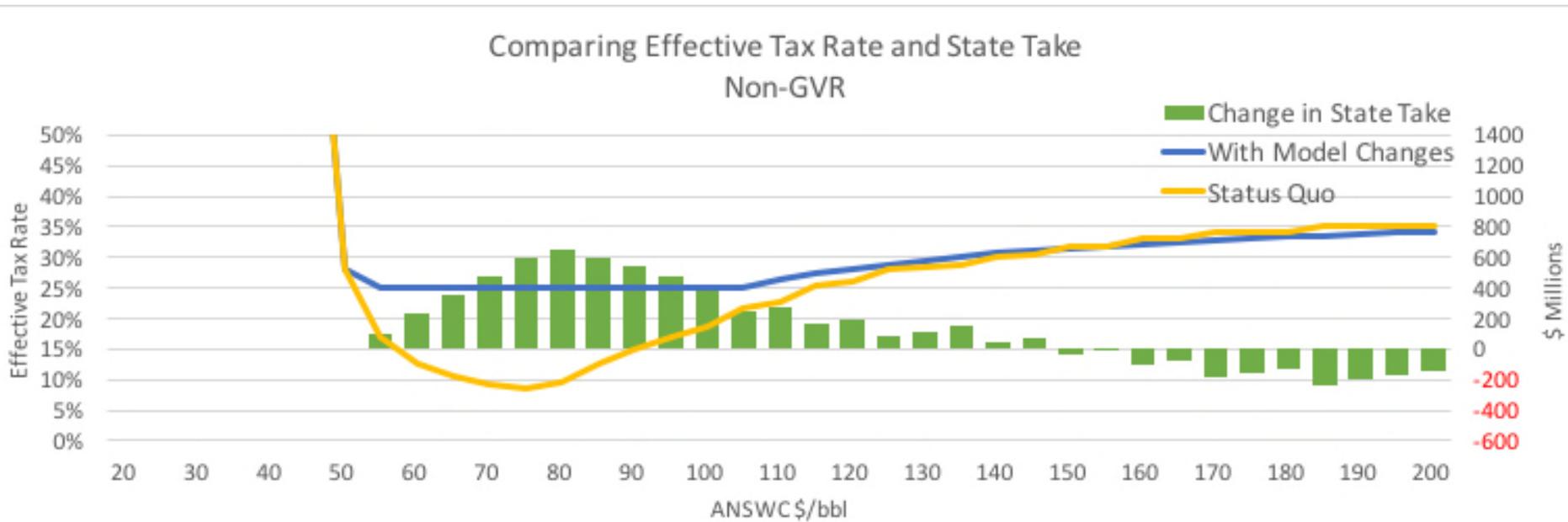
CSHB 111 (HRES)



- Between \$50 and \$90/bbl relatively small amount of state take increase
- Per barrel credits degrading sooner cause the increases above \$90/bbl

CSHB 111 (HFIN)

- Tracks the Status Quo relatively closely above \$120 per barrel
- Between \$80 and \$120/bbl, the state take rapidly rises as the per barrel credits reduce the status quo relative to a flat proposed 25% net tax
- Under \$80/bbl, the difference shrinks as the gross minimum tax controls
- Largest increase about \$600 million per year at \$80/bbl



HANDLING NOLS

Handling NOLs

- Standard is to allow producers to recover their costs
 - Preferred regimes assess tax mainly after costs are recovered
- Two key parameters to NOL recovery
 - Time
 - Uplift
 - Dozens of variations involving these parameters
- In Alaska, the presence of per barrel credits and gross minimum tax render a significant portion of the NOLs ineffective at lowering taxes owed
- This is covered in the next presentation.