Evaluation of HB 111: Allocating Misery of Low Prices

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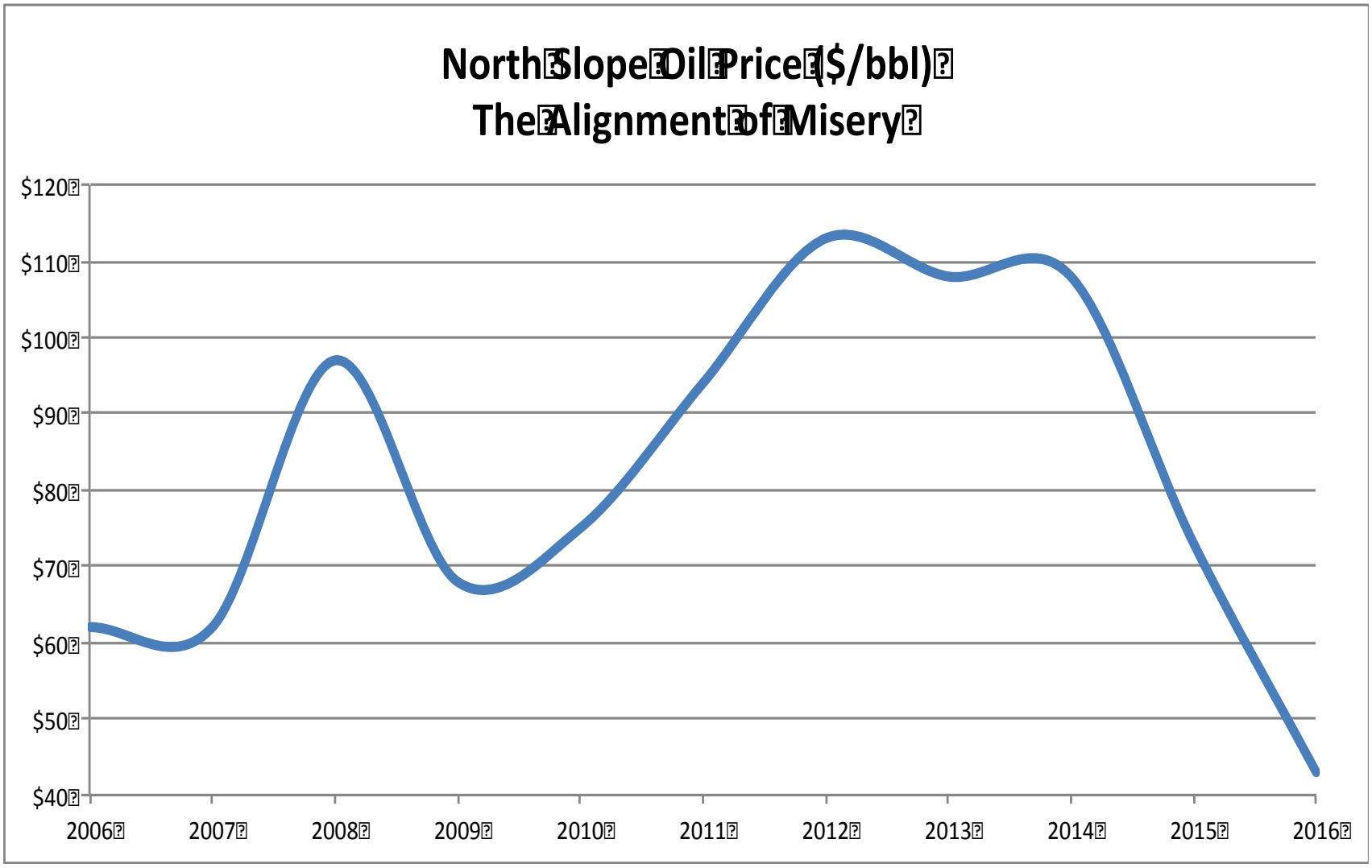
Roger Marks - Background

- **Since 2008**: Private consulting practice in Anchorage specializing in petroleum economics and taxation
  - Clients include: State of Alaska Legislature, federal government, local municipalities, University of Alaska, oil and gas explorer/producers, pipeline companies, commercial/investment banks, private equity firms
- **1983-2008**: Senior petroleum economist with State of Alaska Department of Revenue Tax Division
  - Statutory and regulatory design
  - Economic and commercial valuation of exploration, development, production, transportation, refining, marketing, taxation
  - Analysis of international competitiveness
  - North Slope gas commercialization


North Slope Oil Price ($/bbl)
The Alignment of Misery
$120
$110
$100
$90
$80
$70
$60
$50
$40
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016

Three Themes

1. The state's budget woes from lower oil taxes are matched by the taxpayers' having less income to pay them

2. The current gross based fiscal system shifts more of the low price risk to the taxpayers

3. HB 111 shifts it more

Conventional Wisdom on Future Oil Prices

- As prices approach $60/bbl most shale oil production will return
- OPEC production cuts tenuous
- Many analysts believe prices will stay below $65/bbl for at least the short-term, and could likely drop below current levels
- Low probability events may drive prices higher or lower

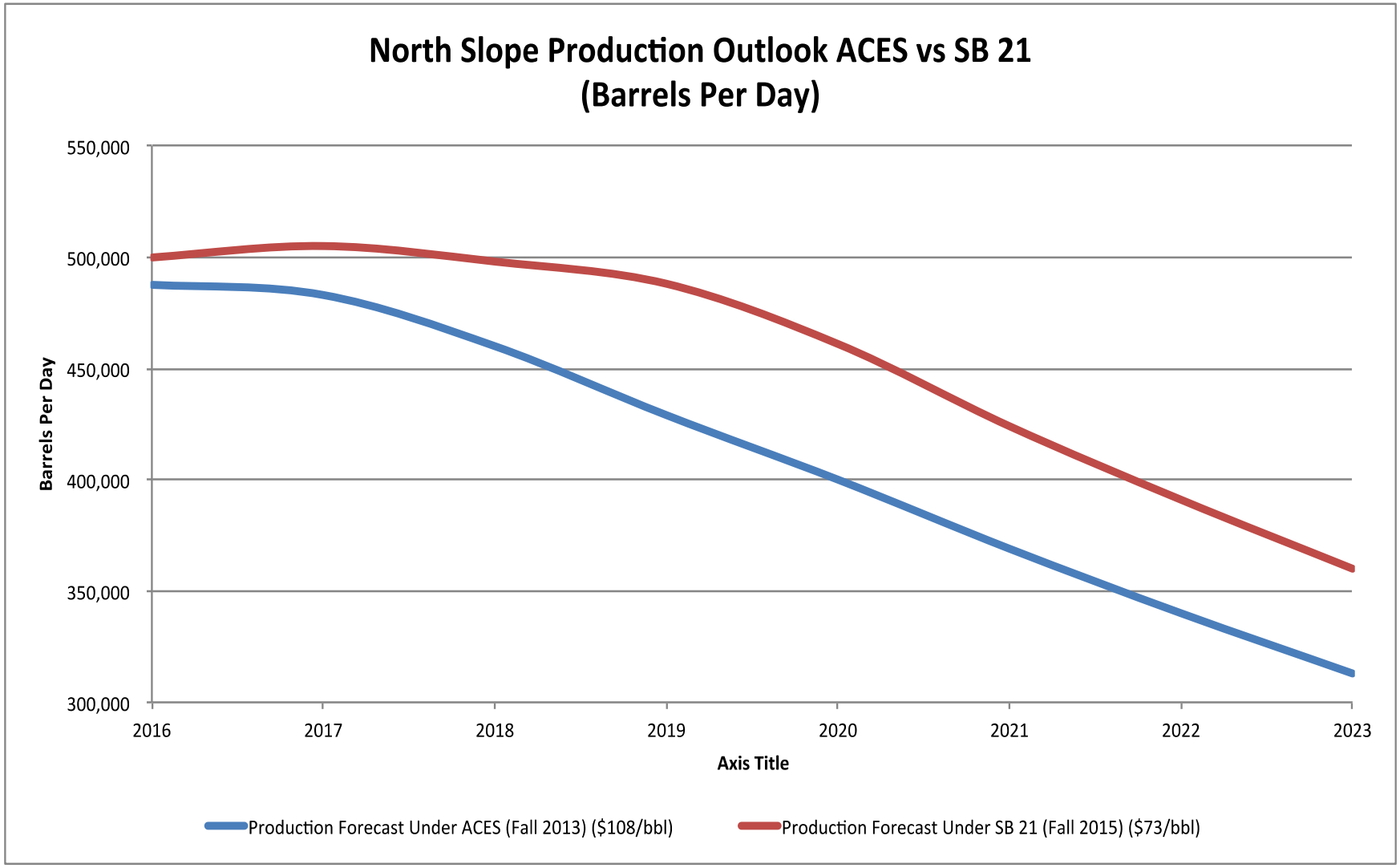
Current North Slope Income Legacy Fields (Old Oil)

ANS Market Price ($/bbl)	$55	
Less Transportation		($10)
GROSS Revenue	$45	
Less Upstream costs		($23) *
DIVISIBLE Income	$22	
Less State Taxes & Royalties		($11)
Less Federal Income Tax		($4)
PRODUCER after-tax net income	$7	

* DOR **average** estimate based on reported and audited costs. Including transportation, Alaska about $5-$15/bbl higher than average Lower 48 costs. Newer oil upwards of $10-$20/bbl more expensive.

Fair Share

- Article VIII/Section 2 of Alaska Constitution (Natural Resources):
  - " … the utilization, development, and conservation of all natural resources … for the maximum benefit of its people."
- Economist perspective
  - Investment subject to forces of competition
    - Capital finite and fluid
  - Fair share is receiving similar to what other similar jurisdictions receive
- Case Study: The ACES experience


North Slope Production Outlook ACES vs SB 21
(Barrels Per Day)
550,000
500,000
450,000
400,000
350,000
300,000
Barrels Per Day
2016
2017
2018
2019
2020
2021
2022
2023
Axis Title
Production Forecast Under ACES (Fall 2013) ($108/bbl)
Production Forecast Under SB 21 (Fall 2015) ($73/bbl)

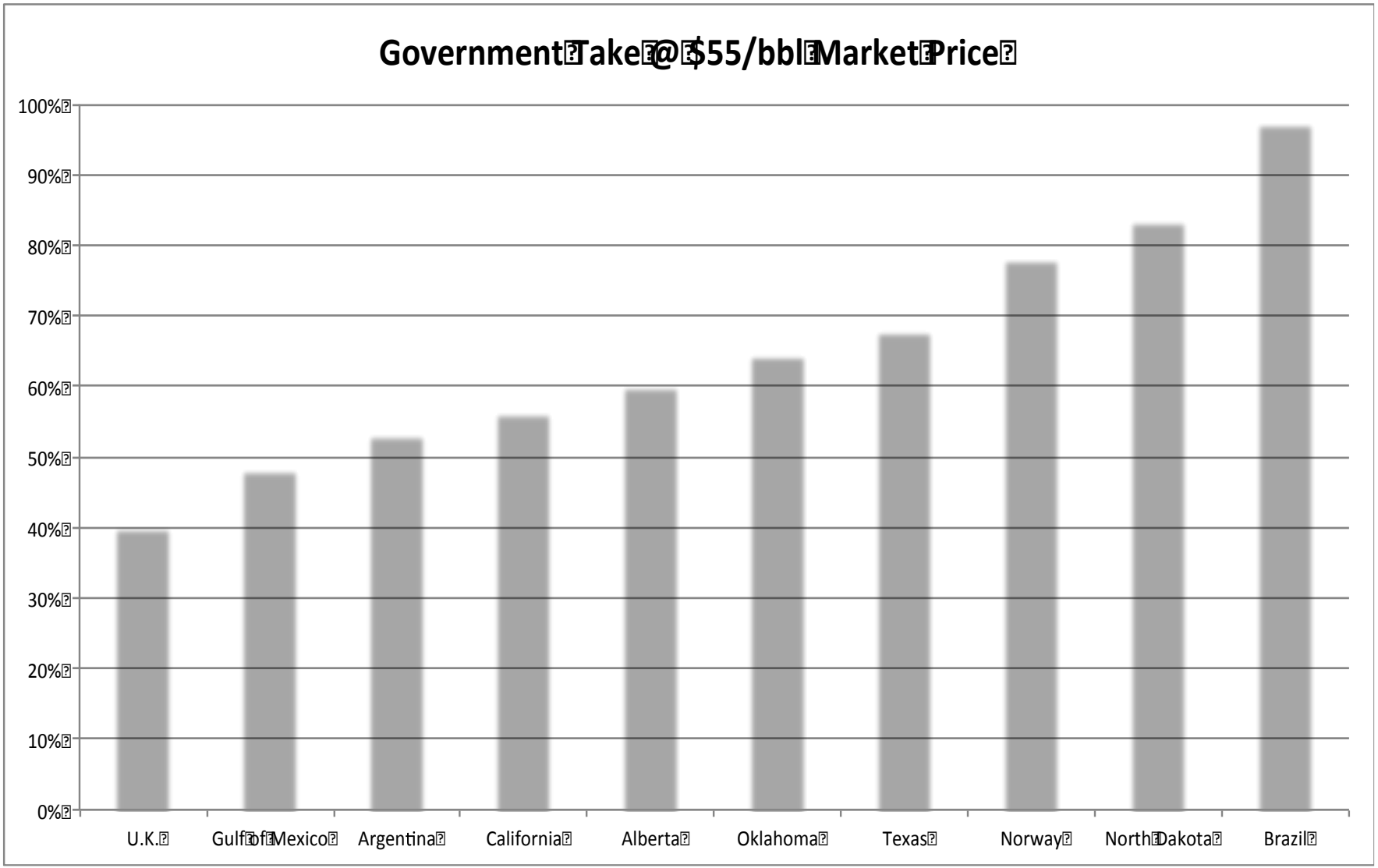
Lessons from ACES

- 2013 Analysis:
  - At high prices, with the additional royalties and other taxes from increased production, the state would have greater revenues with SB 21 over ACES if production increased by 30,000-40,000 bpd
- Be wary of any revenue comparison between ACES and SB 21 using the same volumes
- Having a competitive tax provides “maximum benefit”

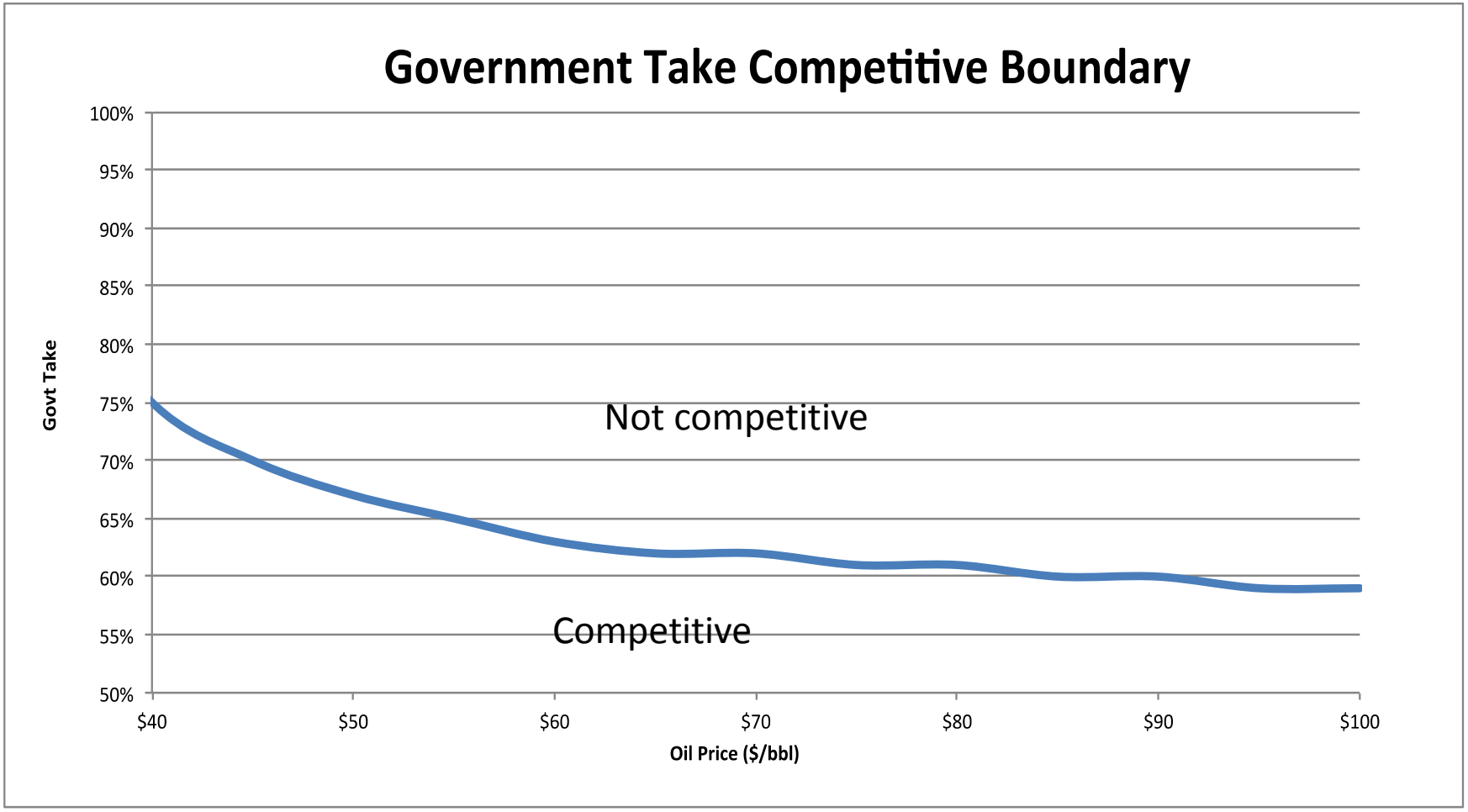
Economic Measure on Fair Share: "Government Take"

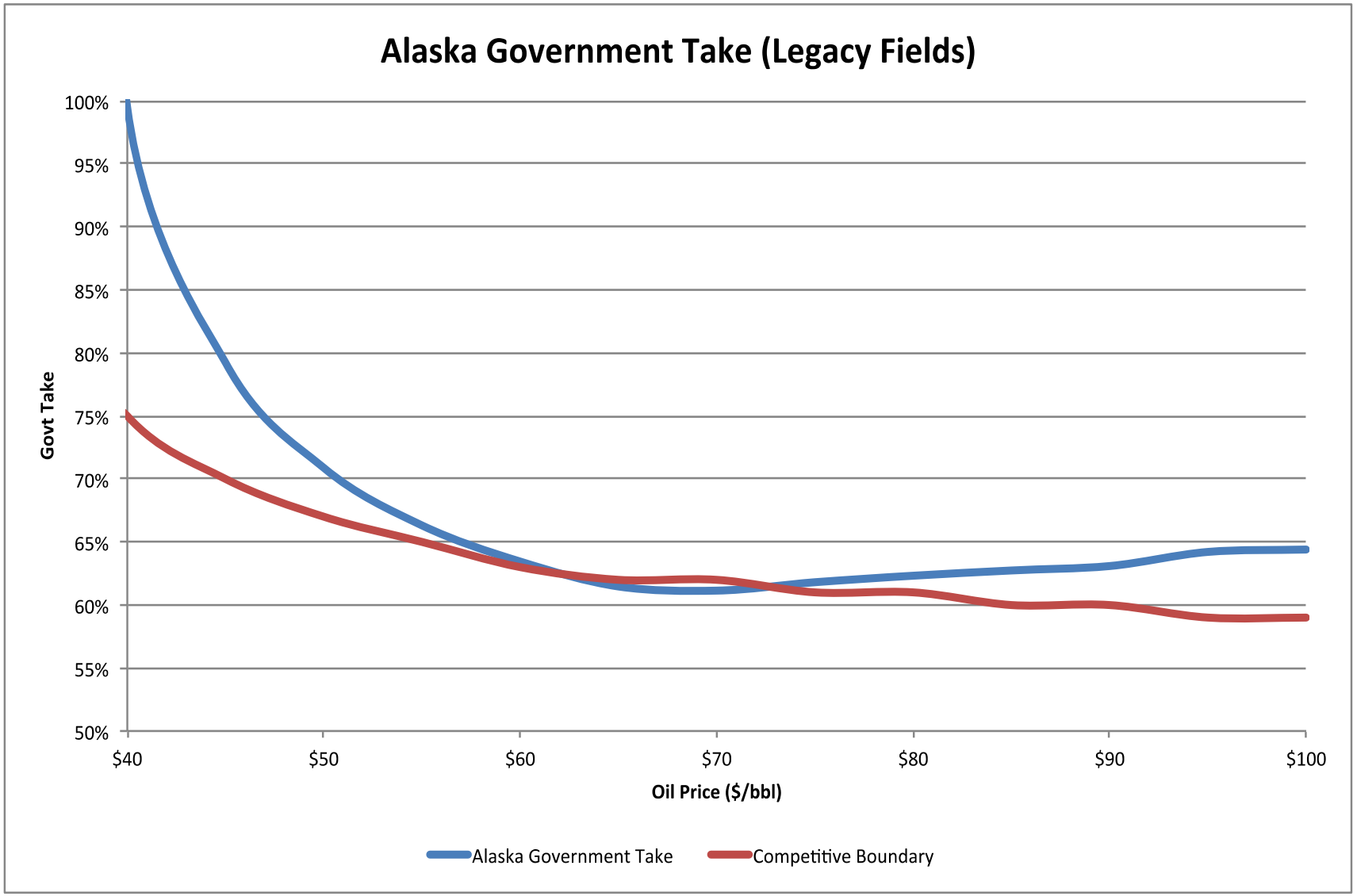
Defined: Percentage of divisible income that goes to government

Compare to other similar jurisdictions



Since 2015 North Dakota, Alberta, and U.K. have dropped tax / royalty rates subsequent to lower prices


Government Take Competitive Boundary
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
Govt Take
Not competitive
Competitive
$40
$50
$60
$70
$80
$90
$100
Oil Price ($/bbl)



At $55/bbl every 1% change in take is worth about $37 mm

Calculation of Tax

Higher of *

- Net calculation

OR

- Gross Minimum (market price less transportation):

4% of gross

Legacy fields are on gross minimum until about $70/bbl

* Most other states have production taxes based on gross
Most other national jurisdictions do not have a production tax
No other jurisdiction has a minimum tax (royalty considered minimum)

Basic Net Calculation for North Slope Legacy Fields (Old Oil)

Net calculation:

35% X Net Value

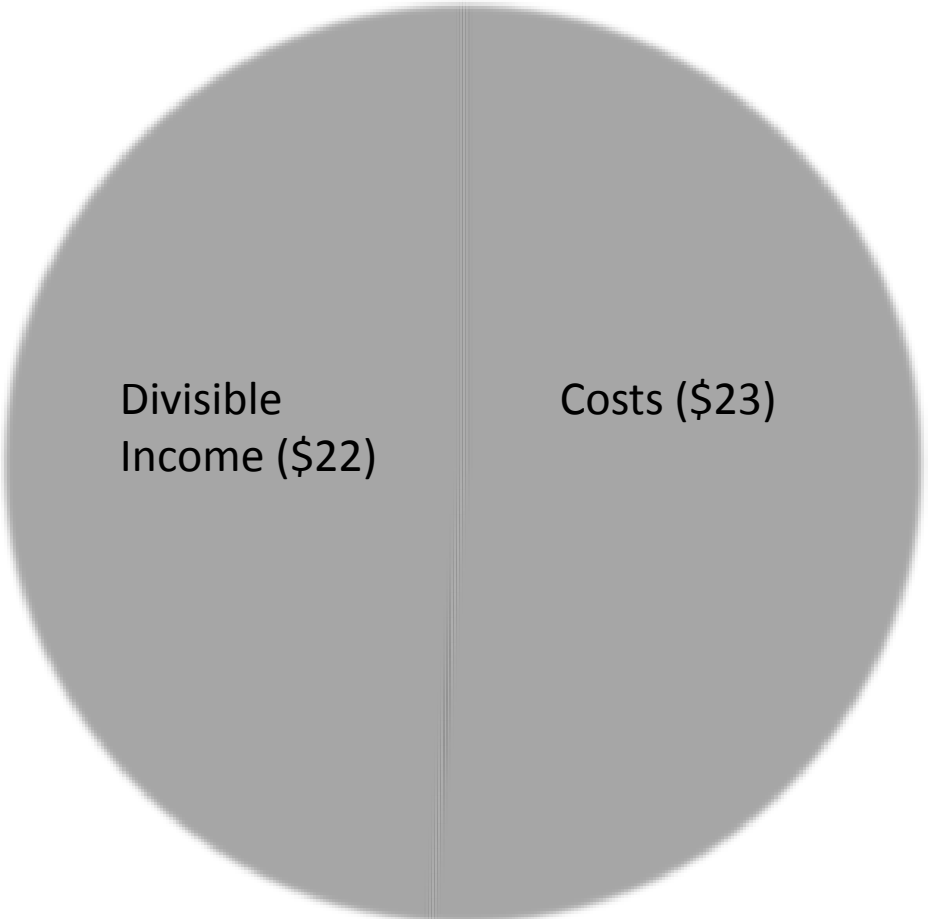
less per barrel produced credit

Per Barrel Produced Credit
Legacy Fields

- Gross value less than $80/bbl: $8/bbl
- $80-$90/bbl: $7/bbl
- $90-$100/bbl: $6/bbl
- $100-$110/bbl: $5/bbl
- $110-$120/bbl: $4/bbl
- $120-$130/bbl: $3/bbl
- $130-$140/bbl: $2/bbl
- $140-$150/bbl: $1/bbl
- Over $150/bbl: $0/bbl
- **For old oil cannot use credit to bring tax below floor**

The $45/bbl Gross Pie

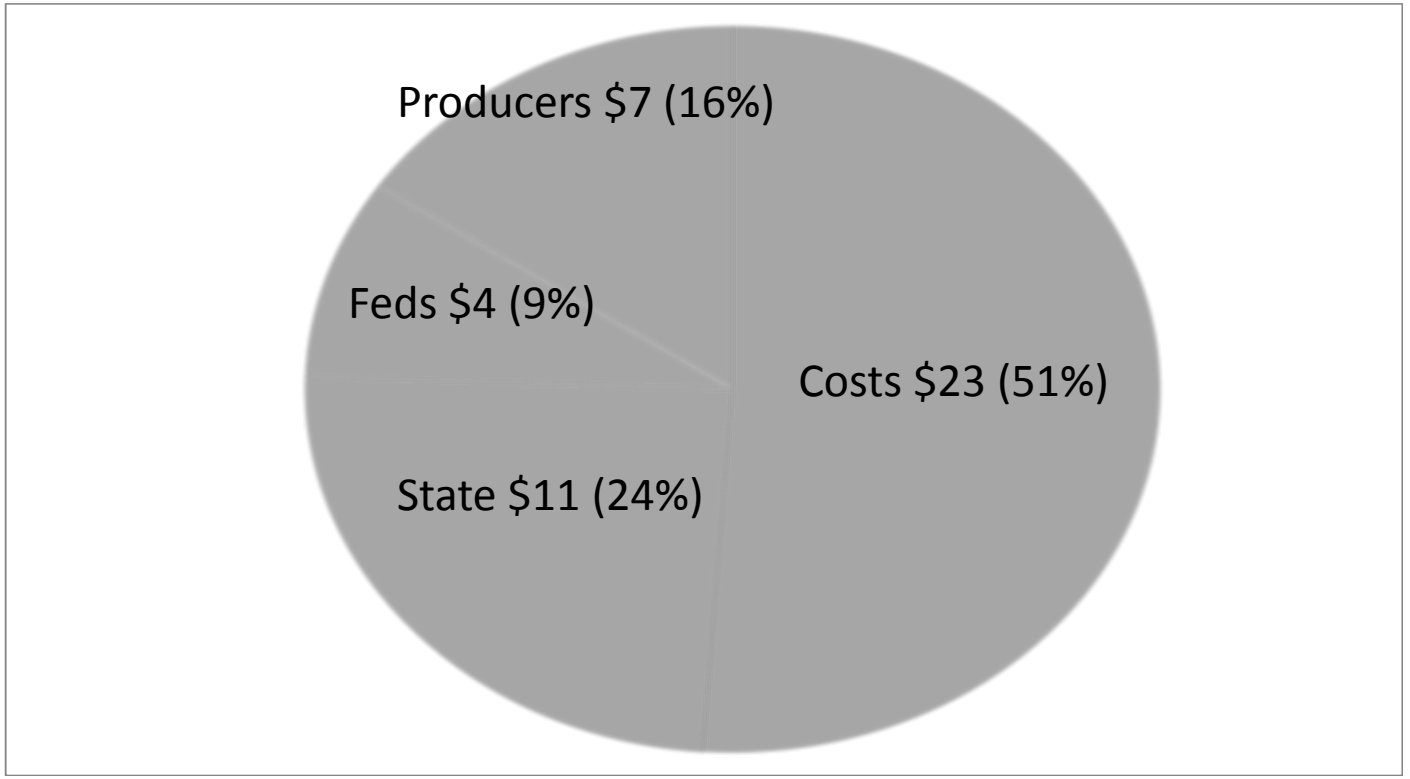
($55/bbl market price)



With gross as the basis, half of the tax and royalty is a payment on cost

The $45/bbl Gross Pie

($55/bbl market price)



The $20/bbl Gross Pie

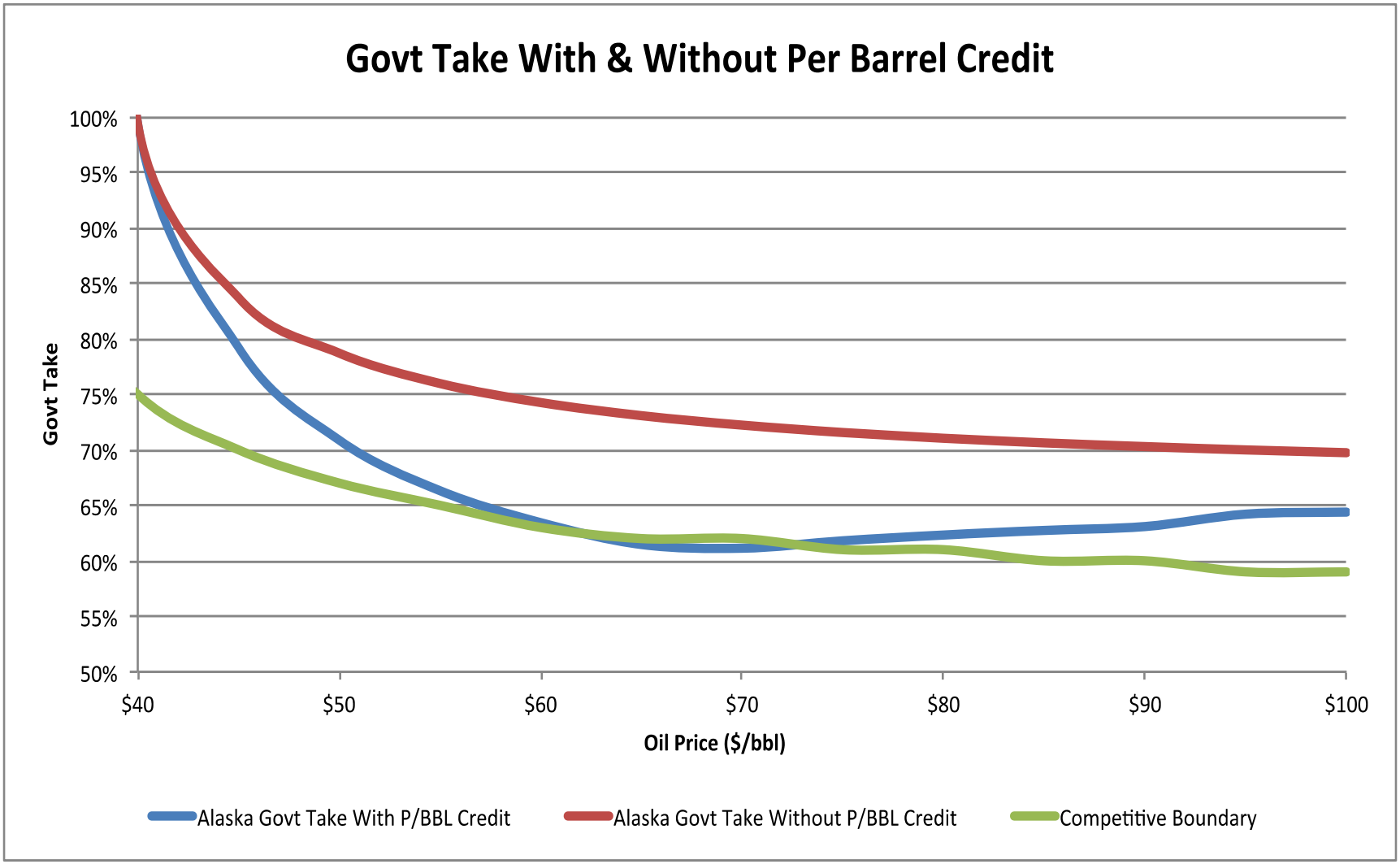
($30/bbl market price)

Costs	$23/bbl	(115%)
State	$4/bbl	(20%)
Feds	-$2/bbl	(-10%)
Producers	-$5/bbl	(-25%)

- Taxpayers pay 16% of $20, plus property tax, while they are $3 in the hole:
- They are paying money they do not have
- Government take is off the charts **(Slide 13)**

Disadvantage of Taxing on Gross (Advantages of net)

- Ever increasing gross/net value divide
- Net more reflective of actual economics
  - Under gross a field with $20/bbl costs is taxed the same as a field with $50/bbl costs
  - A net system automatically adjusts
- Some other jurisdictions do tax on gross
  - Alaska's high costs exacerbate the problem
- At prices under $70/bbl Alaska essentially operating on a gross system

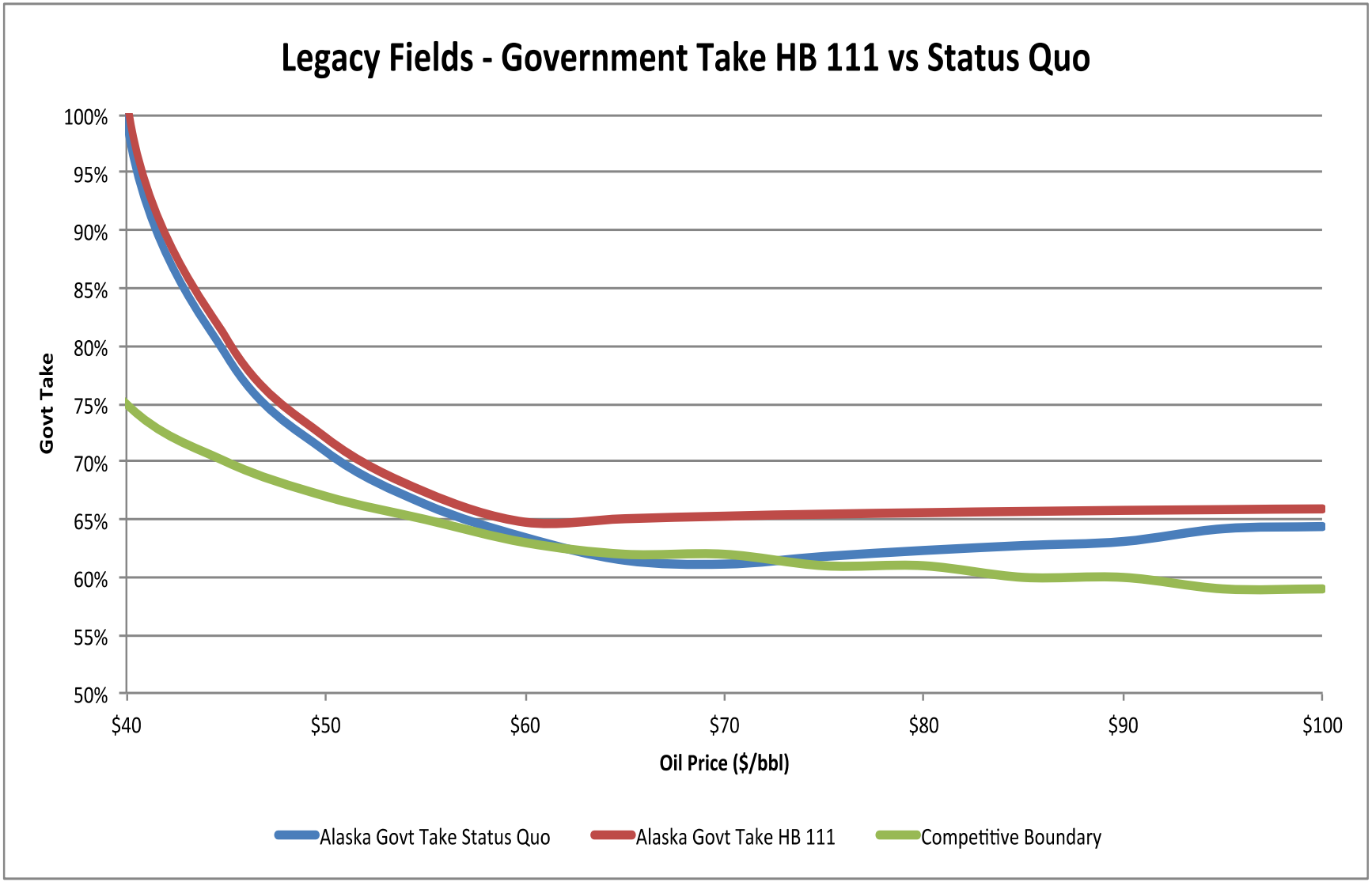

Govt Take With & Without Per Barrel Credit
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
Govt Take
$40
$50
$60
$70
$80
$90
$100
Oil Price ($/bbl)
Alaska Govt Take With P/BBL Credit
Alaska Govt Take Without P/BBL Credit
Competitive Boundary

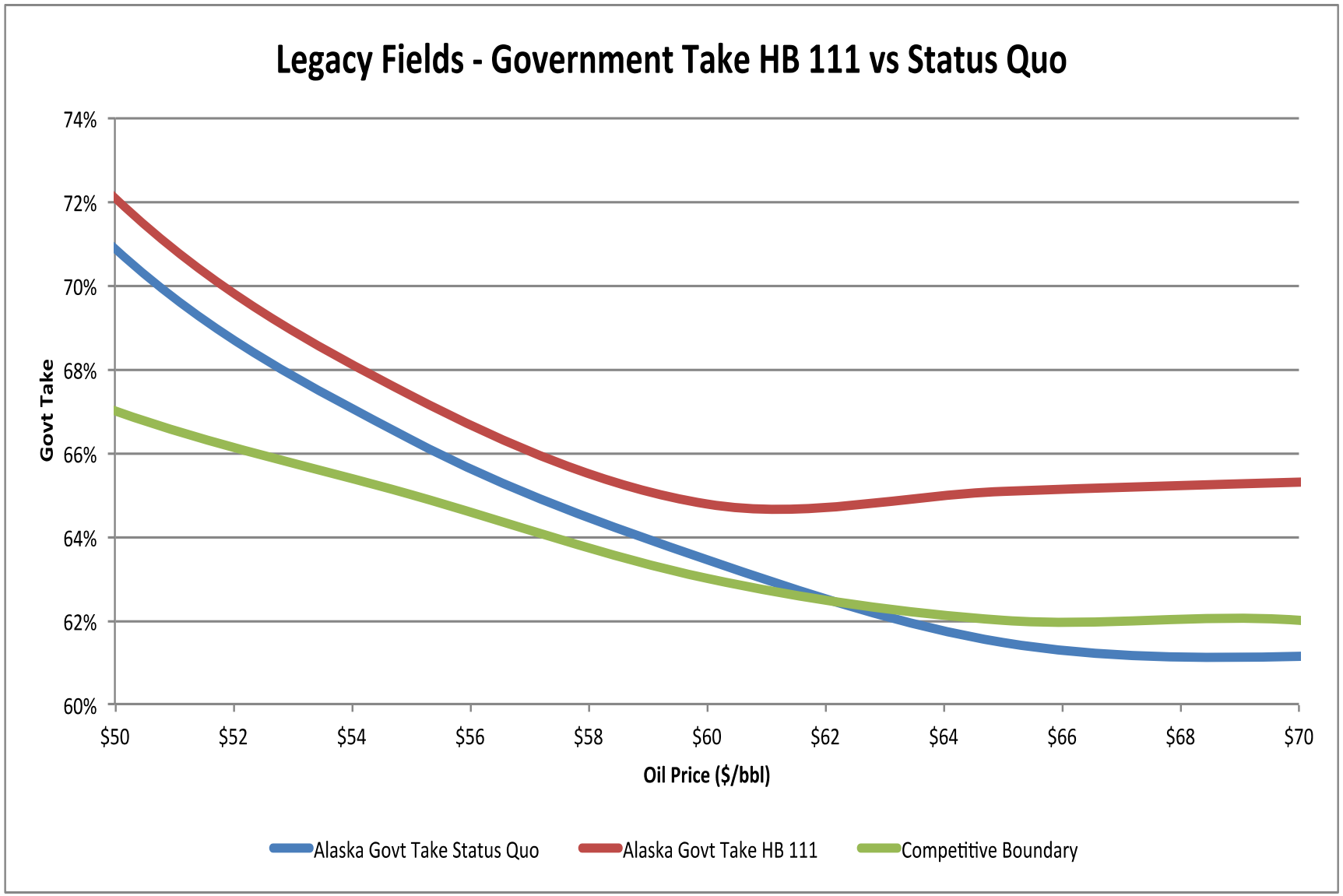
Per Barrel Produced Credit

- Adjustment of effective tax rate to offset high royalty at low prices
- Economically should not be considered a credit or called a credit
- An important feature

Provisions of HB 111

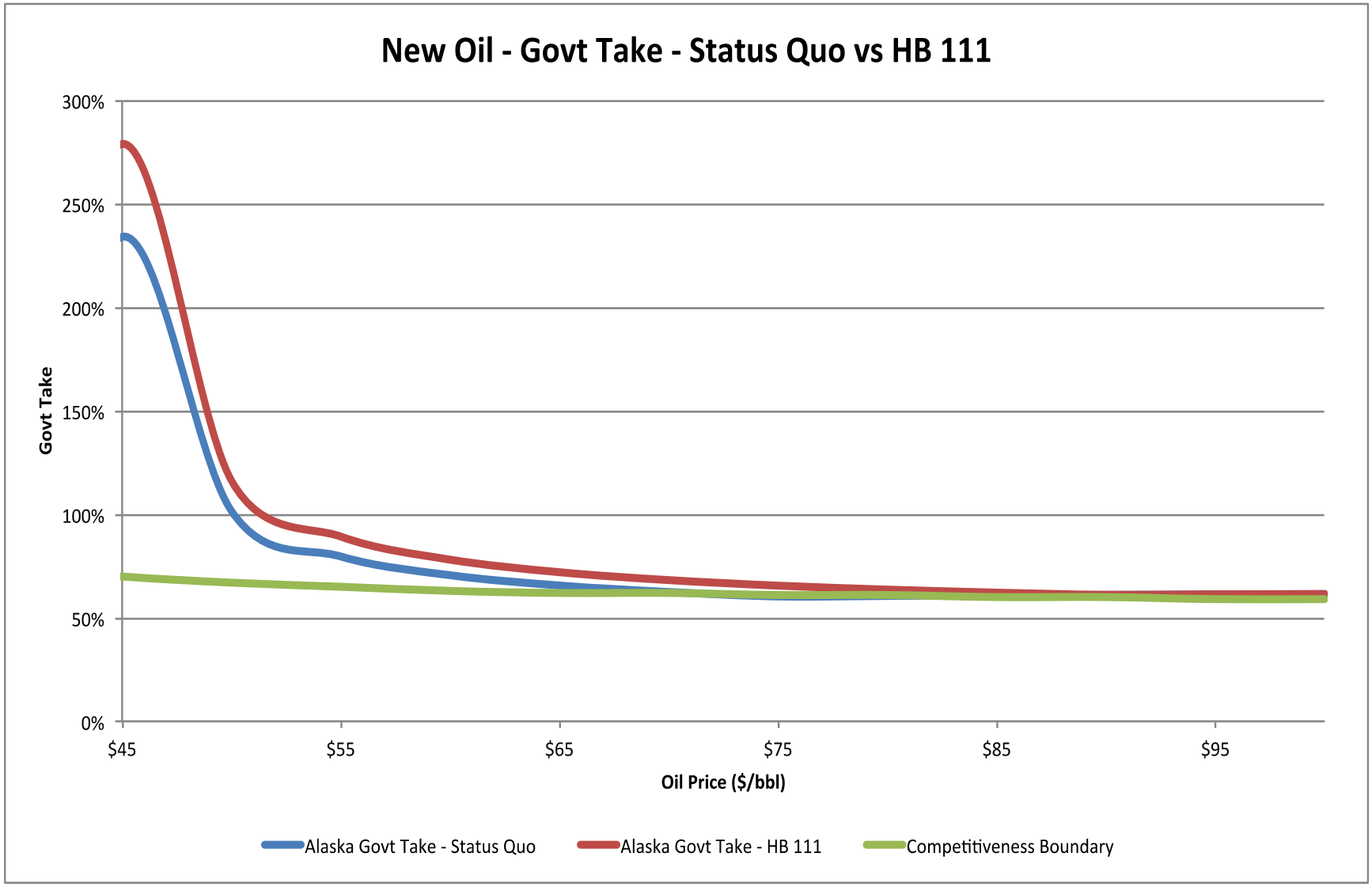
- Provisions that exacerbate gross taxation problem
  - Minimum tax increased from 4% to 5% of gross
  - Per barrel credit decreased from $8/bbl to $5/bbl at prices below $110/bbl

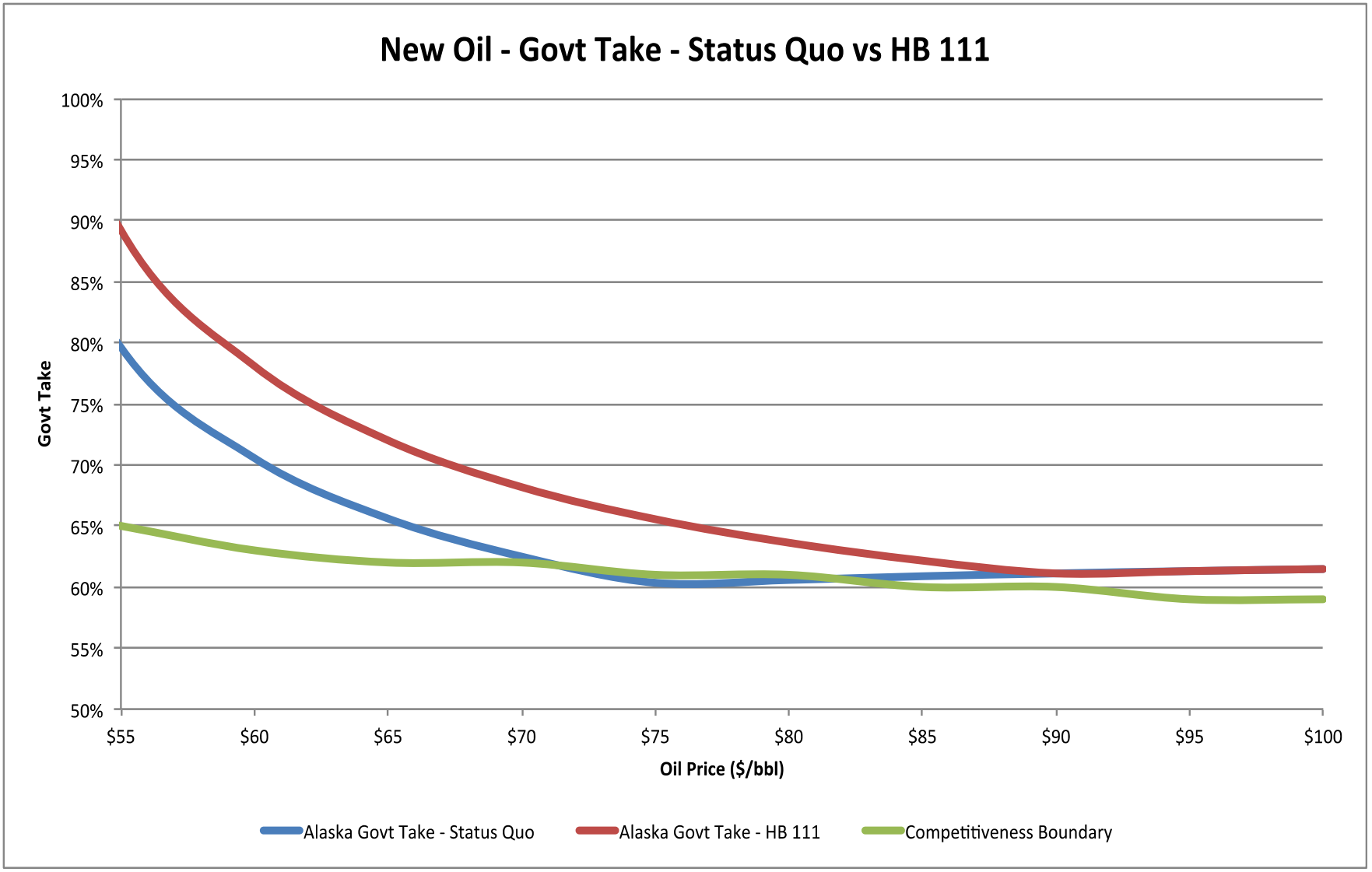

Legacy Fields - Government Take HB 111 vs Status Quo
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
Govt Take
$40
$50
$60
$70
$80
$90
$100
Oil Price ($/bbl)
Alaska Govt Take Status Quo
Alaska Govt Take HB 111
Competitive Boundary


Legacy Fields - Government Take HB 111 vs Status Quo
74%
72%
70%
68%
66%
64%
62%
60%
Govt Take
$50
$52
$54
$56
$58
$60
$62
$64
$66
$68
$70
Oil Price ($/bbl)
Alaska Govt Take Status Quo
Alaska Govt Take HB 111
Competitive Boundary

New Oil

- Defined
  - Units created after 2002
  - Fields in older units created after 2011
  - Extensions of existing fields
- Can cost $10-$20/bbl more than legacy fields
- Differential tax provisions
  - Gross reduced by 20% in calculating net value (GVR)
  - Per barrel credit set at $5/bbl at all prices
  - Currently can use per barrel credits to bring tax down to zero
- HB 111 Provisions
  - Increase in minimum tax from 4% to 5% of gross
  - Cannot use per barrel credit to bring tax below gross minimum


New Oil - Govt Take - Status Quo vs HB 111
300%
250%
200%
150%
100%
50%
0%
Govt Take
$45
$55
$65
$75
$85
$95
Oil Price ($/bbl)
Alaska Govt Take - Status Quo
Alaska Govt Take - HB 111
Competitiveness Boundary


New Oil - Govt Take - Status Quo vs HB 111
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
Govt Take
$55
$60
$65
$70
$75
$80
$85
$90
$95
$100
Oil Price ($/bbl)
Alaska Govt Take - Status Quo
Alaska Govt Take - HB 111
Competitiveness Boundary

Conclusion: Sharing the Risk / Reward Balance

- Regressive Systems
  - High take at low prices / Low take at high prices
  - Government not share in low price risk / Does not share in upside potential
- Neutral Systems
  - Same take at all prices
- Progressive Systems
  - Low take at low prices / High take at high prices
  - Government shares in low price risk / Shares in upside potential
- A system with high take at low prices and high take at high prices is not progressive
  - An unprecedented uncompetitive way to share risk

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