

# Reforming Alaska's Production Tax: ELF, PPT, ACES, CIRA and beyond.

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Commonwealth North Board of Directors

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# Overview

- Reforming Alaska's Oil and Gas Production Tax
- Orienting Example
- Mathematical relationships: graphs, equations, tables
  - Marginal rates vs. average rate
- History 2005 to 2010
  - 2008!!!
- Proposals for change – 2010 & Current
  
- Production tax – or severance tax -- is a tax imposed on the production of oil, or the severance of a non-renewable resource.

## Orienting Example

- Marginal Effect of \$1/bbl increase in price.

### Who receives?

#### Way Simple Analysis

	\$/bbl	\$/bbl	Diff
<b>Destination Price West Coast</b>	<b>120.36</b>	<b>121.36</b>	<b>1.000</b>
Less Transportation Cost	6.00	6.00	-
Gross Value at Point of Production	114.36	115.36	1.000
Royalty (12.5% of Gross Value)	14.30	14.42	0.125
Less Upstream Costs*	20.00	20.00	-
"PTV" or net value	80.07	80.94	0.875
Taxable Barrels	87.5%	87.5%	
PTV / taxable bbl	91.50	92.50	
Production Tax - Progressivity Rate	24.6%	25.0%	
Production Tax - Base Rate	25.0%	25.0%	
Total Production Tax Rate	49.6%	50.0%	0.40%
Royalty (12.5% of Gross Value)	14.30	14.42	0.125
Pre Credits Production Tax (rate * PTV)	39.71	40.47	0.758
Production Tax Credits (assumed)	(10.00)	(10.00)	-
Property Tax (Assumed)	0.50	0.50	-
State Income Tax (9.4% * PTV less taxes)	4.69	4.70	0.011
Federal Income Tax (35% * PTV less taxes)	15.81	15.85	0.037
<b>Government Take</b>	<b>65.00</b>	<b>65.93</b>	<b>0.931</b>

# Orienting Example

- Marginal Effect of \$1/bbl capital investment.

## Who pays?

<b><u>Way Simple Analysis</u></b>	\$/bbl	\$/bbl	Diff
Destination Price West Coast	121.36	121.36	-
Less Transportation Cost	6.00	6.00	-
<hr/>			
Gross Value at Point of Production	115.36	115.36	-
Royalty (12.5% of Gross Value)	14.42	14.42	-
<b>Less Upstream Costs*</b>	<b>20.00</b>	<b>21.00</b>	<b>1.000</b>
<hr/>			
"PTV" or net value	80.94	79.94	(1.000)
Taxable Barrels	87.5%	87.5%	
PTV / taxable bbl	92.50	91.36	
Production Tax - Progressivity Rate	25.0%	24.5%	
Production Tax - Base Rate	25.0%	25.0%	
<hr/>			
Total Production Tax Rate	50.0%	49.5%	-0.46%
Royalty (12.5% of Gross Value)	14.42	14.42	-
Pre Credits Production Tax (rate * PTV)	40.47	39.61	(0.865)
Production Tax Credits (assumed)	(10.00)	(10.10)	(0.100)
Property Tax (Assumed)	0.50	0.50	-
State Income Tax (9.4% * PTV less taxes)	4.70	4.69	(0.003)
Federal Income Tax (35% * PTV less taxes)	15.85	15.83	(0.011)
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<b>Government Take</b>	<b>65.93</b>	<b>64.95</b>	<b>(0.980)</b>

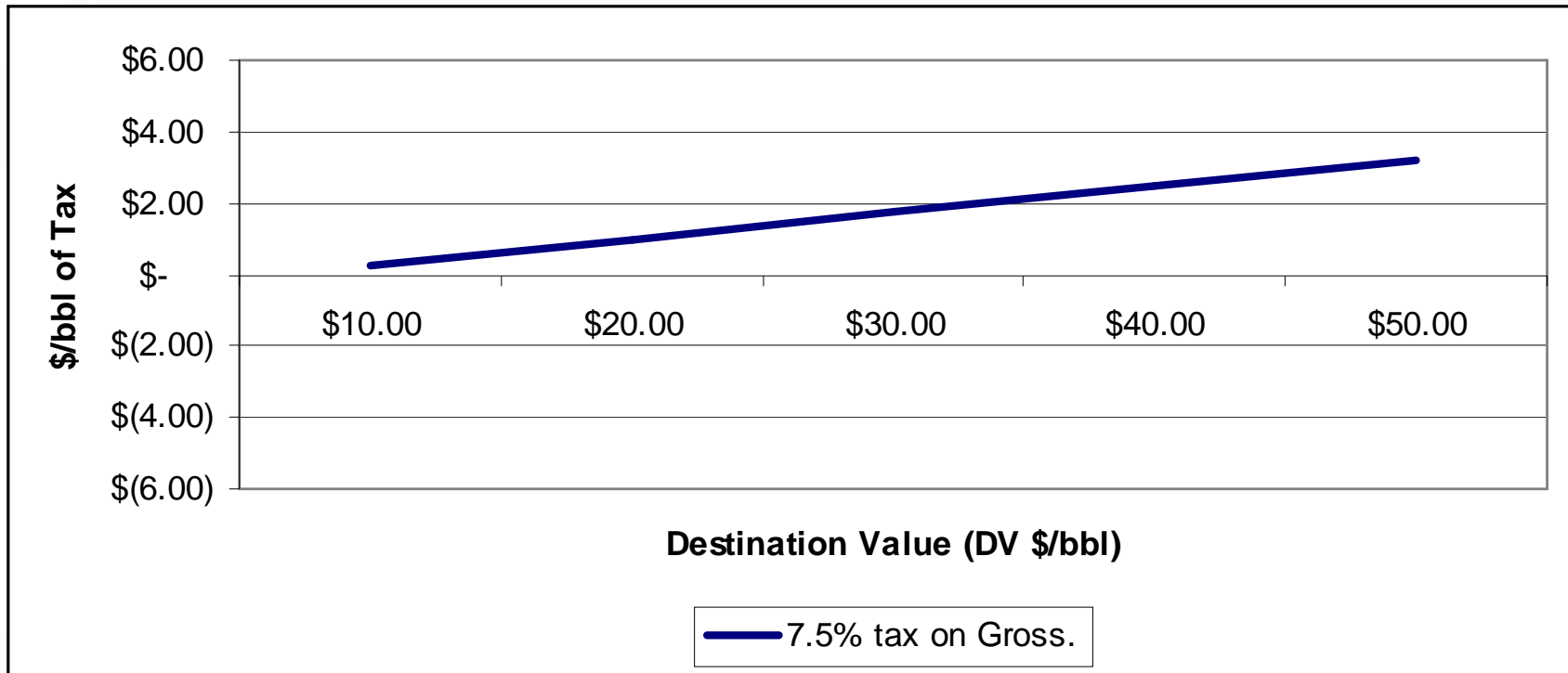
# Production Tax Math

- Production Tax Math
- Gross Tax
- Net Tax
- Net Tax with Capital Credits
- Net tax with Progressivity and Capital Credits
  
- Average Tax
- Nominal Tax
- Marginal Tax



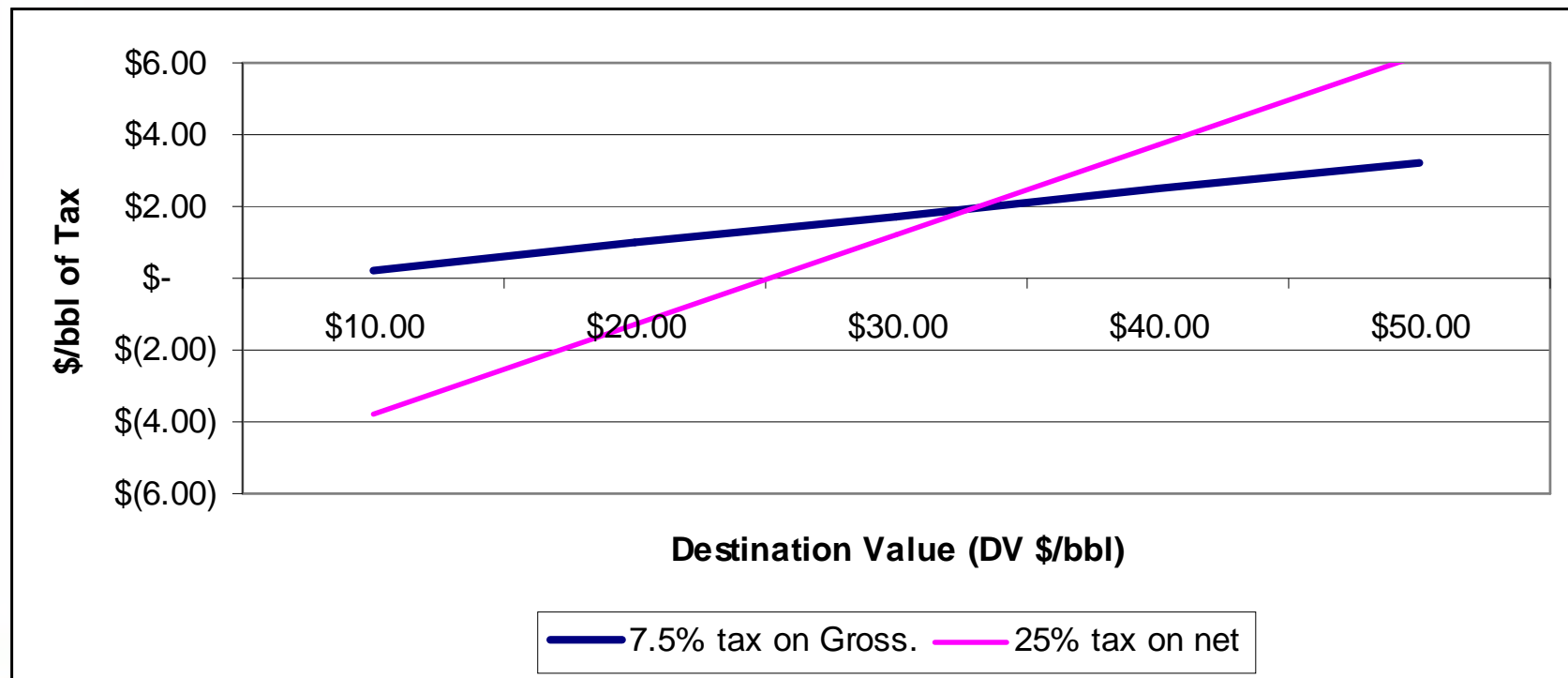
# Production Tax Math

- Gross
- Tax = (Destination Value – Transportation Cost) \* 7.5%
- Tax = (ANS WC - \$7.00) \* 7.5%



## Production Tax Math

- Gross: Tax = (ANS WC - \$7.00) \* 7.5%
- Net: Subtract all the costs, lower base so higher rate
- Tax = (DV – Transportation & Upstream Costs) \* 25%
- Tax = (ANS WC - \$25.00) \* 25%

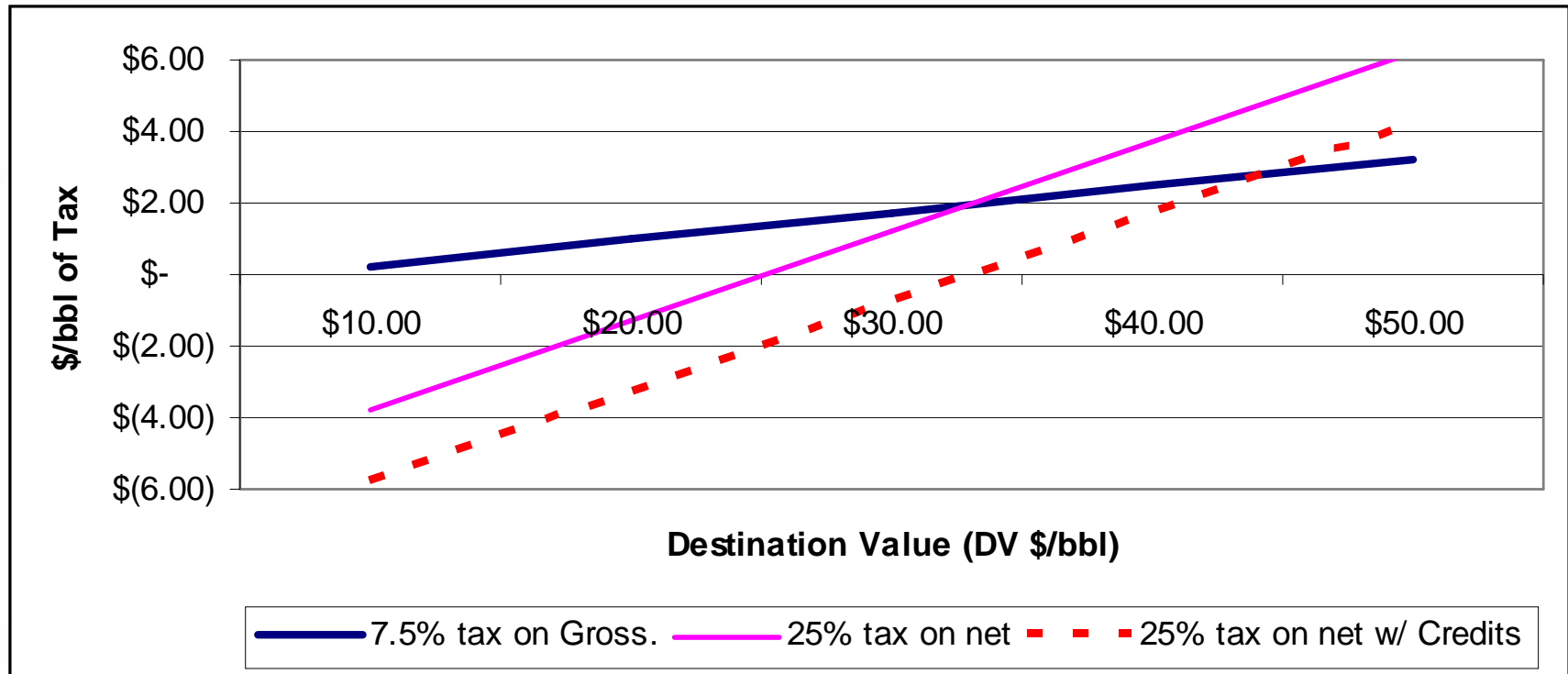


# Production Tax Math

- Gross: Tax = (ANS WC - \$7.00) \* 7.5%
- Net: Tax = (ANS WC - \$25.00) \* 25%

Less Capital Credits (assumed \$10/bbl Capex)

- Tax = (ANS WC - \$25.00) \* .25 – (10 \* 20%)



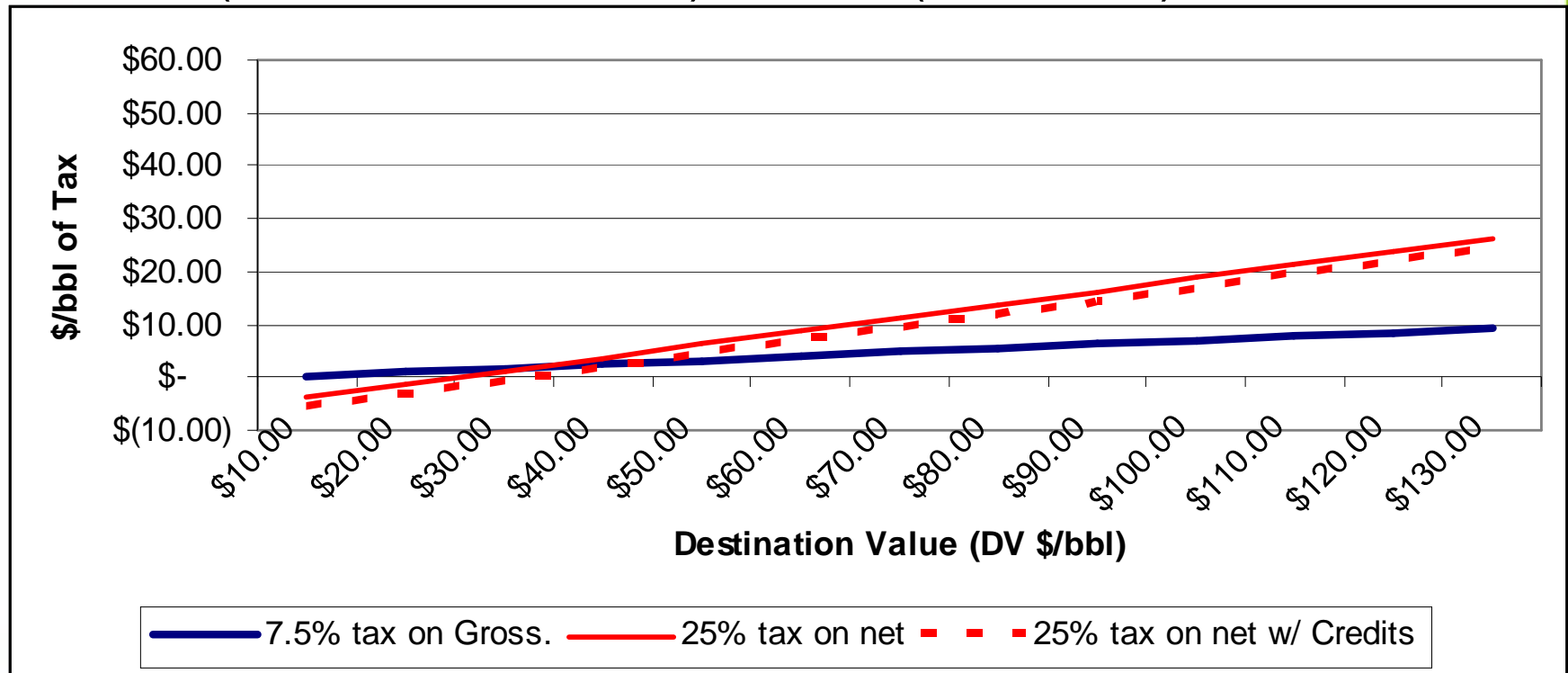


# Production Tax Math

- Gross: Tax = (ANS WC - \$7.00) \* 7.5%
- Net: Tax = (ANS WC - \$25.00) \* 25%

Less Capital Credits (assumed \$10/bbl Capex)

- Tax = (ANS WC - \$25.00) \* .25 – (10 \* 20%)

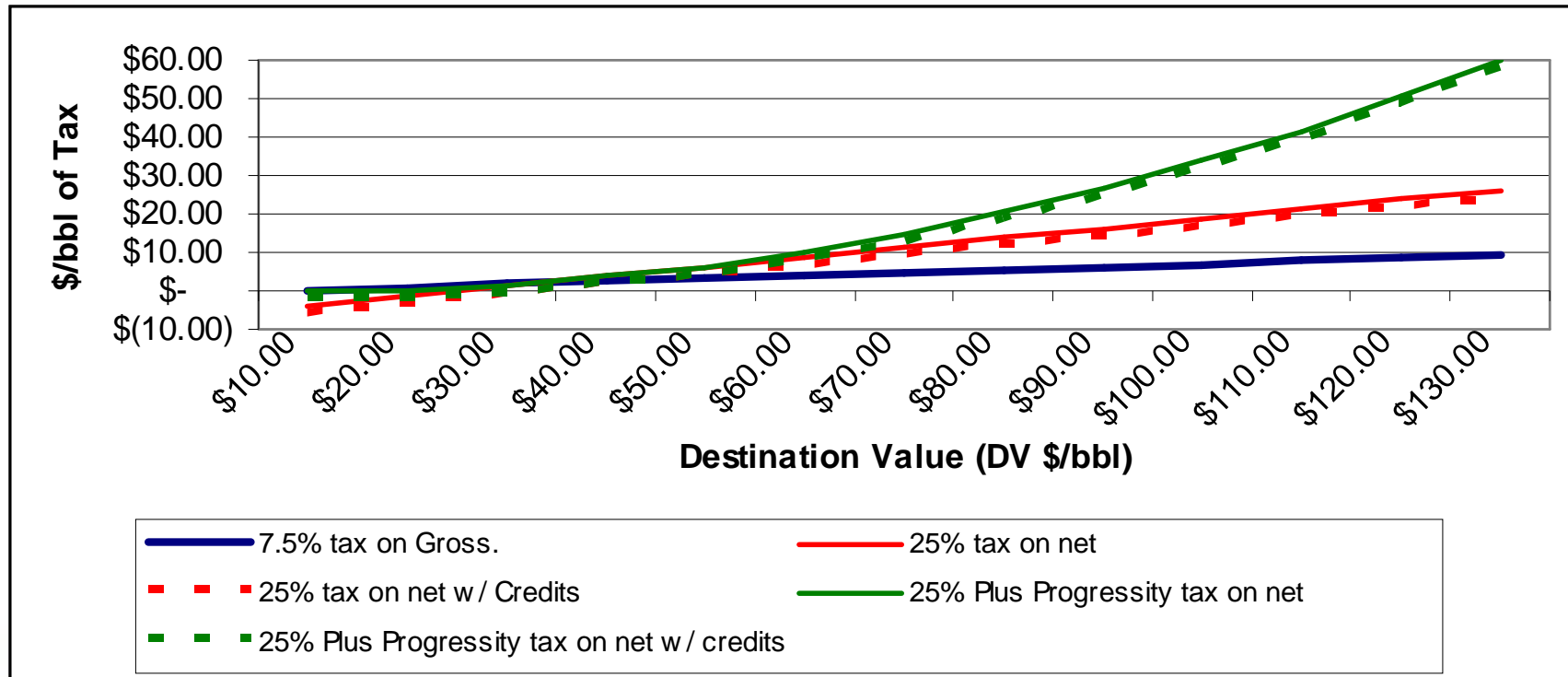


## Production Tax Math

- Focus in the Legislature on Total State Take:
- Royalties – average around 13% - of the value at the point of production
- Special Oil and Gas Income Tax – 9.4% times AK apportionment factor times World Wide Income
- Special Oil and Gas property tax (2% of Oil and Gas Assets Value) (offset by local levy on same base)
- When combined with ELF on gross, AK had one of the most regressive system (as values went up percentage of take to state went down.)
- Solution: Use the Production tax to compensate

# Production Tax Math

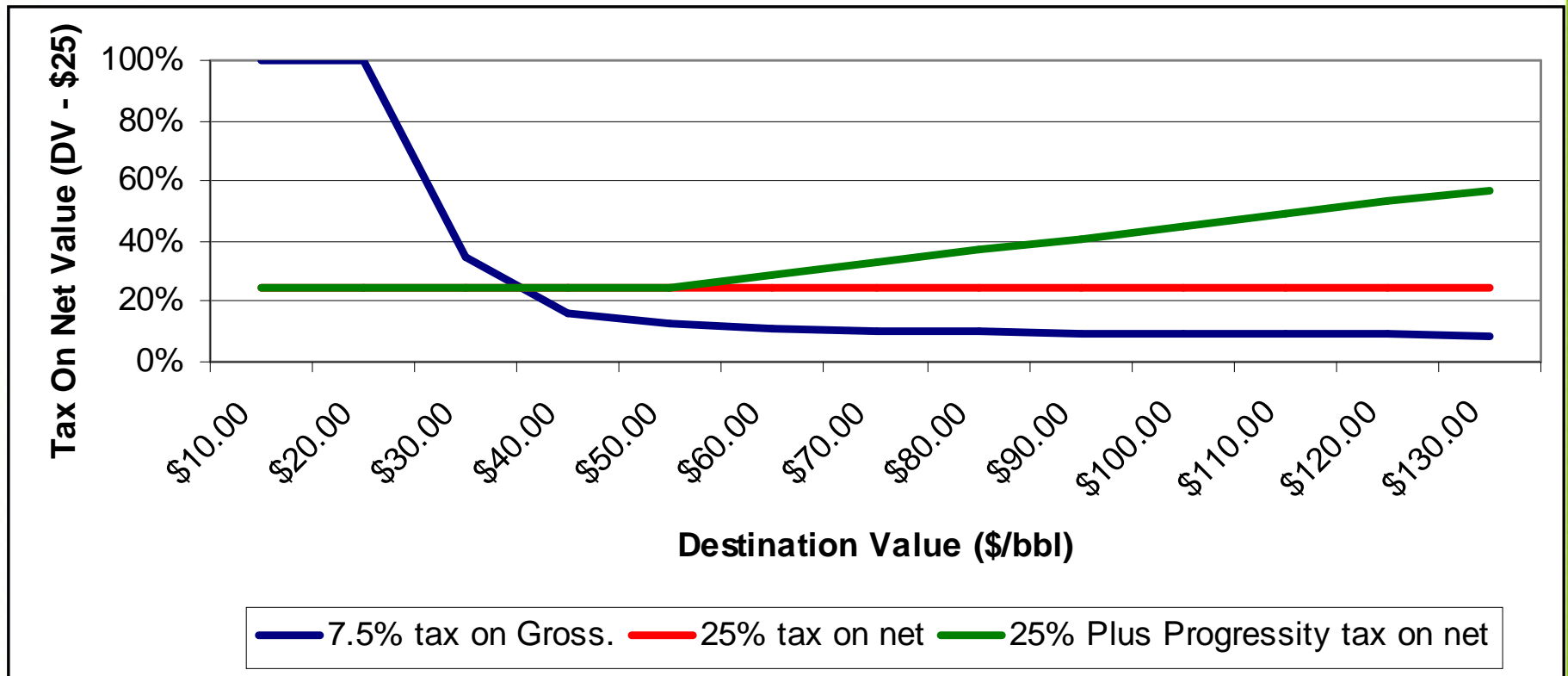
- Gross: Tax = (ANS WC - \$7.00) \* 7.5%
- Net: Tax = (ANS SC - \$25.00) \* 25%
- Net w/Cr Tax = (DV - \$25.00) \* .25 – (Cap Inv \* 20%)
- Tax = (ANS WC - \$25.00) \* (.25 + Prog) – (10\*20%)



(Prog is defined as an additional .004 of rate/\$ of PTV over 30)

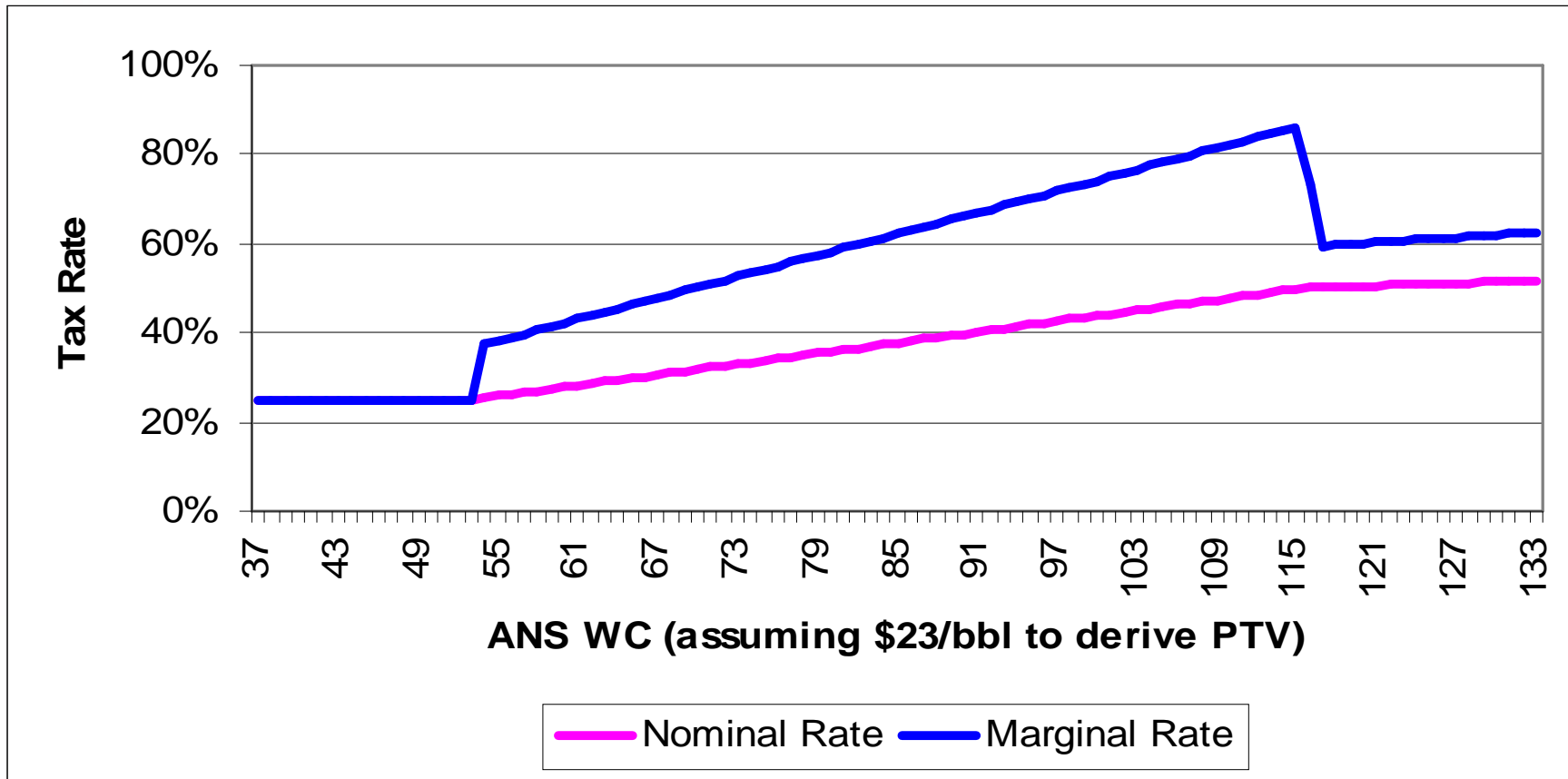
# Production Tax Math

- Comparison of Progressivity of Gross, Net, and Progressivity add on:



# Production Tax Math

- What happens when taxpayer earns the incremental dollar that starts progressivity?





# History

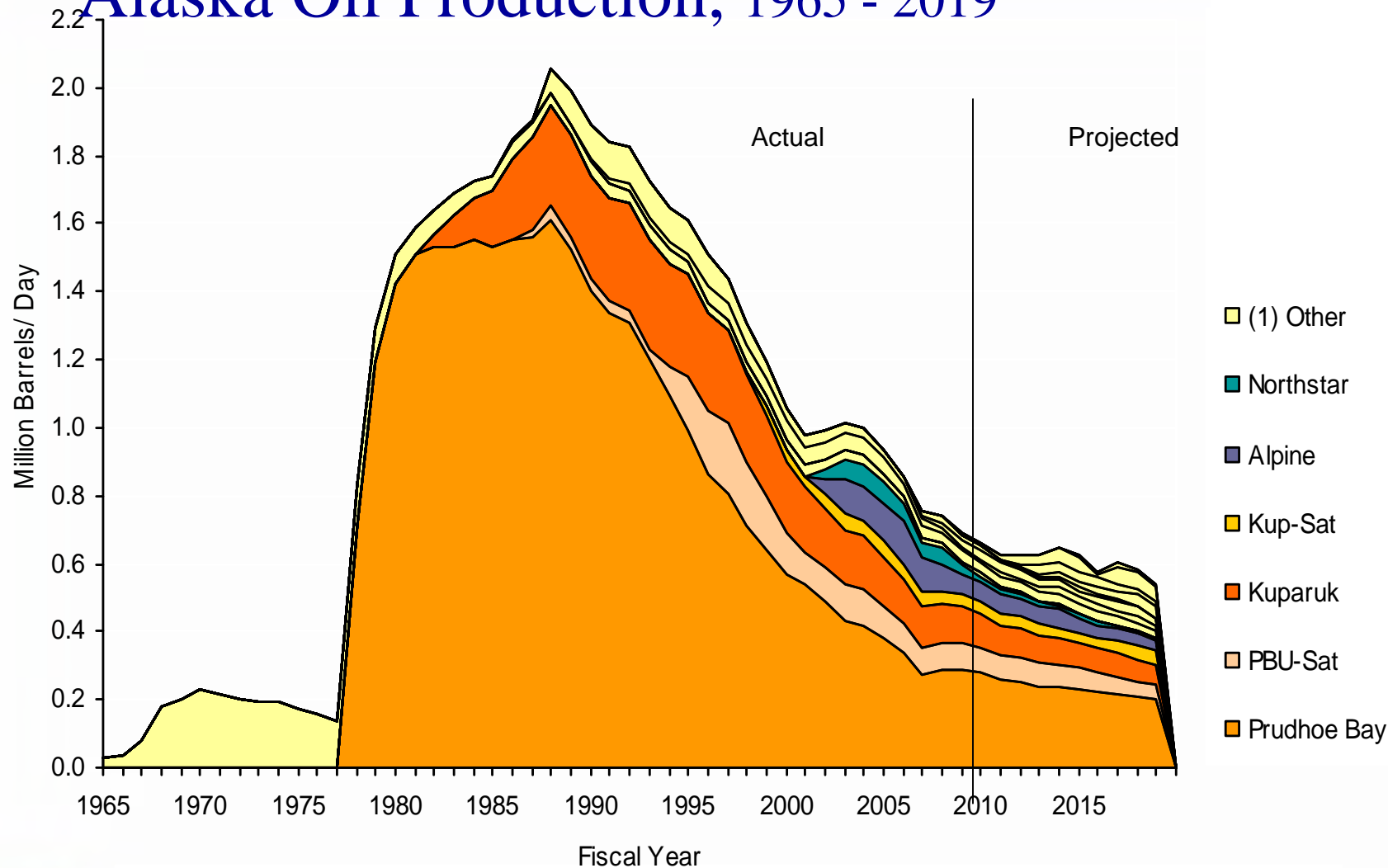
- History
- ELF (Gross Tax)
- PPT (Net Tax with Cap Credits and Progressivity)
- ACES (Net Tax with Cap Credits and Progressivity)
- CIRA (Cook Inlet Incentives)

## History – prologue to the future?

- In 1977 as Prudhoe Bay was coming on line and eclipsing the Cook Inlet
  - New property tax (on pipelines under construction) in 1973 special session (AS 43.56)
  - Raised production taxes from max rate of 8% to 12.25% and replaced “stair step” with “economic limit factor” (ELF) driven by well productivity in 1977, then in 1981 added “rounding rule” so Prudhoe Bay ELF = 1
  - Tried four years of ‘separate accounting’ income tax from 1977 to 1980
    - replaced with modified apportionment income tax in 1981
- 1989 added field size factor to ELF and dropped rounding rule. Small field taxes go down, large field taxes go up
- 2003 Exploration Credits (AS 43.55.025) added to production tax

# History

## Alaska Oil Production, 1965 - 2019



Source: Alaska Department of Revenue, Fall 2009 Revenue Sources Book & Fall 1999 RSB, DNR 2007 Oil and Gas Report  
(1) Cook Inlet, Duck Island, Milne Point, Liberty, Pt Thomson, Fiord, Nanuq, Oooguruk, Nikaitchuq and NPRA.

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## History – prologue to the future

- In 2003 Stranded Gas Development Act (SGDA) amended to include project to/thru Canada
- *In 2004 ANS WC monthly price breaks \$40 for first time*

- In 2005
- Production tax for oil was nominal 15% (reduced to 12.5% for first five years of production from a field) of “gross value at point of production” times Economic Limit Factor (ELF), which in 2005 generated an effective tax rate of about 7.5% for North Slope Crude. Cook Inlet oil ELF's were all zero so effective tax rate was zero.
- Production tax for gas was nominal 10% of “gross value at point of production” times a different Economic Limit Factor formula (ELF), which in 2005 coincidentally generated an effective tax rate of about 7.5%. Cook Inlet gas taxed.

## History – prologue to the future?

- 2005 – Dickinson signs aggregation order combining small Prudhoe satellite fields with large mother-field for ELF purposes
- *In 2005 ANS WC monthly price breaks \$60 for first time*
- In 2006 after 2 ½ years of negotiation, Governor Murkowski announced 3 largest taxpayers had agreed to production tax reform to be part of SGDA contract package to be introduced presently.
  - Key elements of “20/20” Oil Tax reform –
    - switch from “gross to net” at 20% rate
    - investment and loss carryforward credits of 20%
- Conforming law for SGDA contract and oil tax reform die in 2006 regular session
- SGDA contract introduced
- *In July 2006 ANS WC monthly price breaks \$70 for first time*
- No oil or gas bills emerge from first special session
- Production Tax reform passes in second special session



## History – prologue to the future?

- 2006 Production Tax Reform (“PPT”)
  - Switch from “gross to net”,
  - Tax on 22.5% of PTV or “net value”
  - Progressivity (above \$40 of PTV, at rate of .25% per dollar)
  - 20% investment credit
  - 20% loss carryforward credit
  - 20%/20%/40% Exploration credits incorporated
  - Transitional Investment Expenditure Credits
  - Small producer credits of up to \$12 million a year
  - US costs focus on unit operating agreement and working interest owner audits (with 18 exclusions)
  - Retroactive to April 1, 2006
    - No change to
      - royalties – generally 12.5% of gross,
      - 2% oil and gas ad val property tax and
      - special oil and gas 9.4% income tax on apportioned world wide income

## History – prologue to the future?

- Aug 2006 Governor Murkowski loses in Republican primary
- Sept 2006 FBI raids 6 legislators' offices (two of those have subsequently been convicted of felonies including bribery and are serving prison sentences of 5 years +)
- November 2006 Governor Palin Elected
  - Among her campaign issues is that switch in production tax from gross to net was mistake
- 2007 legislative session focuses on creation of AGIA license
- Sept 2007 Governor Palin announces special session that will reexamine production taxes – proposes “ACES” package of reforms
- *In Oct 2007 ANS WC monthly price breaks \$80 for first time*
- *In Nov 2007 ANS WC monthly price breaks \$90 for first time*
- November 2007 special session passes production tax reforms

## History – prologue to the future?

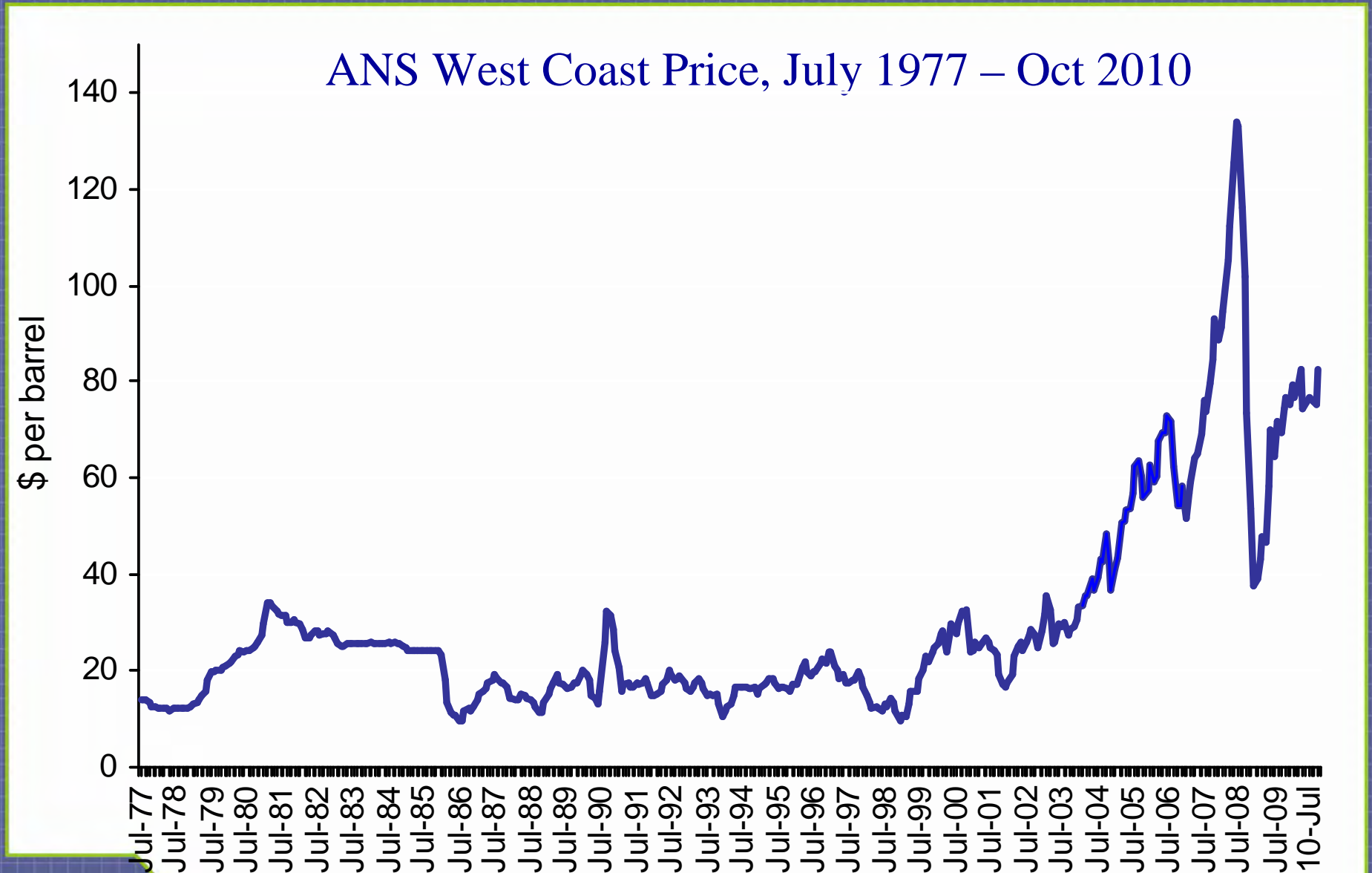
- 2007 Production Tax Reform (ACES)
  - Switch from gross to net **maintained**
  - Tax **from** 22.5% to **25%** of PTV
  - Progressivity (above \$30 of PTV, at rate of **.4%** per dollar)
    - Changed from \$40 and **.25%**
  - 20% investment credit **now spread over 2 years**
  - **25%** loss carryforward credit (from 20%)
  - **5%/30%/30%/40%** Exploration credits incorporated (from 20%/20%)
  - Transitional Investment Expenditure Credits **ended/restricted**
  - Small producer credits of up to \$12 million a year
  - US costs focus **from** unit operating agreement and working interest owner audits **to “allowed by dept. by regulation”** (with **21** exclusions)
  - Retroactive to **July 1, 2007**

## History – prologue to the future?

- *In Mar 2008 ANS WC monthly price breaks \$100 for first time*
- *In Apr 2008 ANS WC monthly price breaks \$110 for first time*
- *In May 2008 ANS WC monthly price breaks \$120 for first time*
- *In Jun 2008 ANS WC monthly price breaks \$130 for first time*
- *Then the price collapsed*
- *By Dec 2008 back below \$30 a barrel a year later*
- *Finally “stabilizing” in the 60 to 90 range since June 2009*
  
- *In May of 2010 Cook Inlet Revitalization Act and SB 309 passed*
  
- *In July of 2010 final regulations implementing 2007 (ACES) reforms implemented*



# History



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Source: Alaska Department of Revenue, Tax Division



## History - 2008

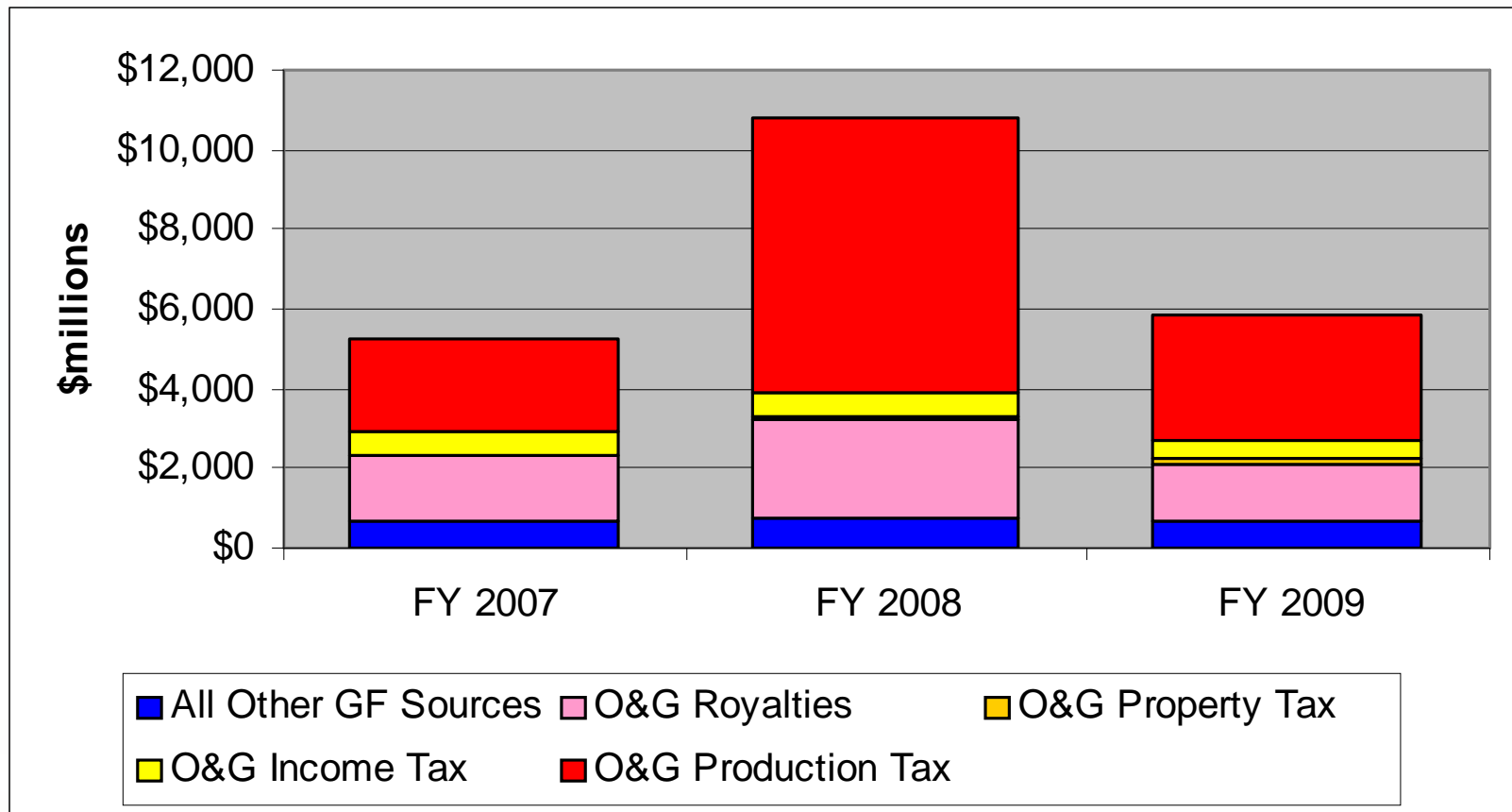
### State of Alaska General Fund Revenues (& WC ANS price)

	FY 2007	FY 2008	FY 2009
Average ANS WC Price/bbl	\$ 61.63	\$ 96.51	\$ 68.34
<i>figures in \$000,000:</i>			
O&G Production Tax	2,292.3	6,879.0	3,112.0
O&G Income Tax	594.4	605.8	492.2
O&G Property Tax	65.6	81.5	111.2
O&G Royalties	1,613.0	2,446.1	1,465.6
O&G Subtotal	4,565.3	10,012.4	5,181.0
All Other GF Sources	675.2	780.0	650.2
Total GF	5,240.5	10,792.4	5,831.2

SOURCE: SOA DOR Fall 2007, Fall 2008 & Fall 2009 Revenue Sources Book

## History -2008

# State of Alaska General Fund Revenues (& WC ANS price)



SOURCE: SOA DOR Fall 2007, Fall 2008 & Fall 2009 Revenue Sources Book

## History - 2008

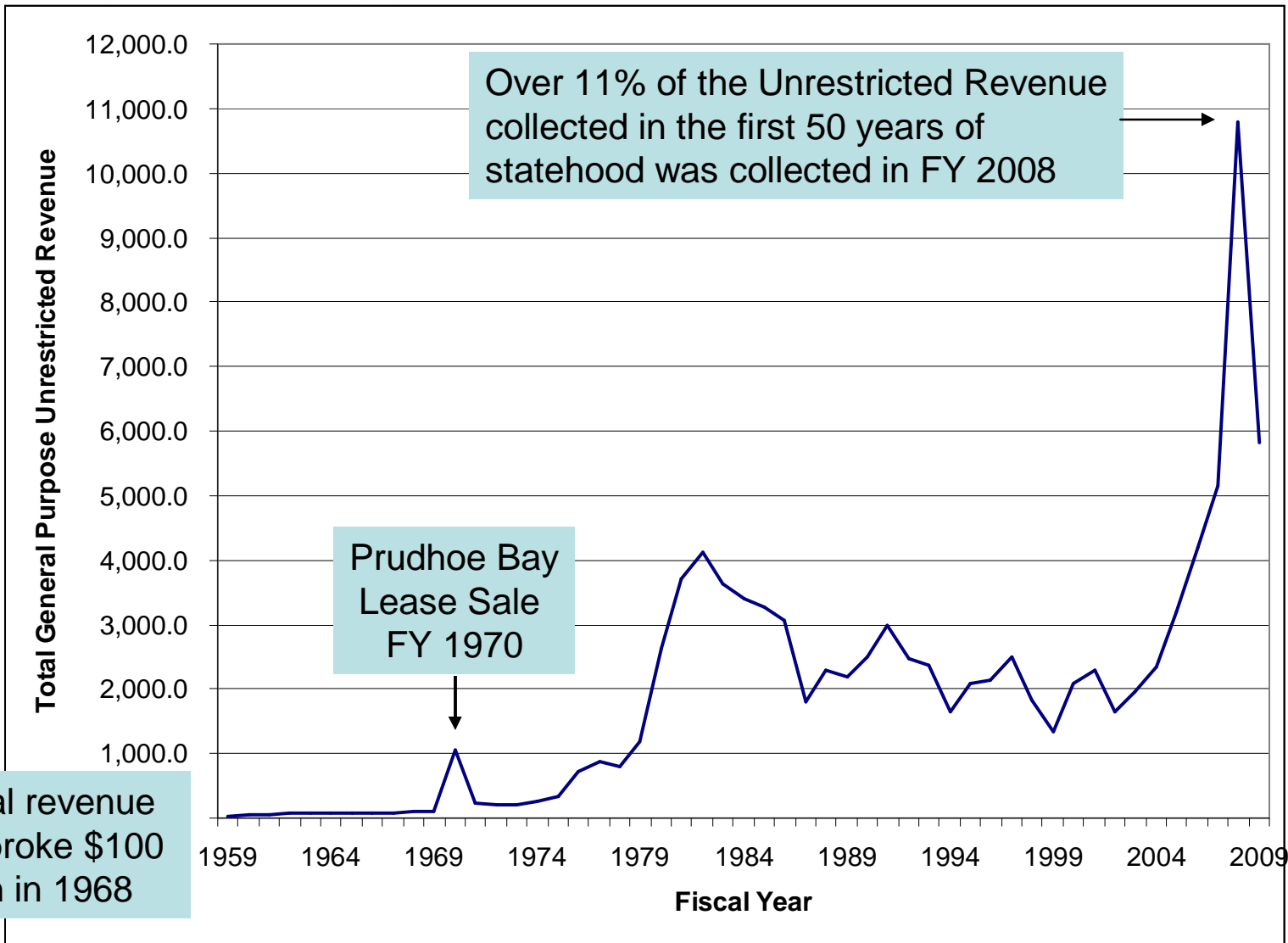
- Order of magnitude increase in production tax '04 -.08
- Half of the increase – a quintupling of production tax – from the changes to law

Fiscal Year	Production Taxes			X Check			Royalty				
	Prod Tax Rev (\$ 000 000)	Less CI gas (\$000 000)	Apples to Apples Rev (\$000 000)	2008\$ / 2004 \$	WC Price	Million bbls daily Prod	Million bbls annual Prod	Price times volume	2008\$ / 2004 \$	Royalty Rev (\$ 000 000)	2008\$ / 2004 \$
	(A1)	(A2)	(A)	(B)	(C)	(D)	(E) = (D) * 365	(F) = (C) * (E)	(G)	(I)	(J)
2004	651.9	(24.7)	627.2		31.74	0.999	364.6	11,573.5		1,056.1	
2005	863.2	(24.4)	838.8		43.44	0.931	339.8	14,761.6		1,419.9	
2006	1,199.5	(33.2)	1,166.3		60.80	0.858	313.2	19,040.7		1,784.1	
2007	2,208.4	(6.0)	2,202.4		61.83	0.750	273.8	16,926.0		1,613.0	
2008	4,940.5	(6.0)	6,879.0	11.0	96.51	0.730	266.5	25,715.1	2.2	2,446.1	2.3

**Tax Increase attributable to changes in rules= 11.0 /2.2 = 5**

\*Note: Tax revenues from some North Slope gas sales will be included in revenues with no corresponding volume effect. That adjustment (adding .004 to the daily volume) will not materially affect the outcome. NS NGL are in both vols and \$. Data from Fall 2008 Revenue Sources Book, from Appendix A-4a (royalty sum of royalty & Bonuses etc.), C-2a and B-1 a. Cook Inlet Gas adjustment from Fall 2007 RSB, Appendix A-5a (CI data not broken out in Fall 2008 RSB)  
 Note: Historical volume and price data in Fall 2008 RSB differ from same historical data series in Fall 2007 RSB and earlier.

# How Significant was FY 2008?



Annual revenue  
First broke \$100  
Million in 1968

Prudhoe Bay  
Lease Sale  
FY 1970

Over 11% of the Unrestricted Revenue  
collected in the first 50 years of  
statehood was collected in FY 2008

Source: Alaska DOR Fall 2008 Revenue Sources Book (2009 data point from 2009 RSB)

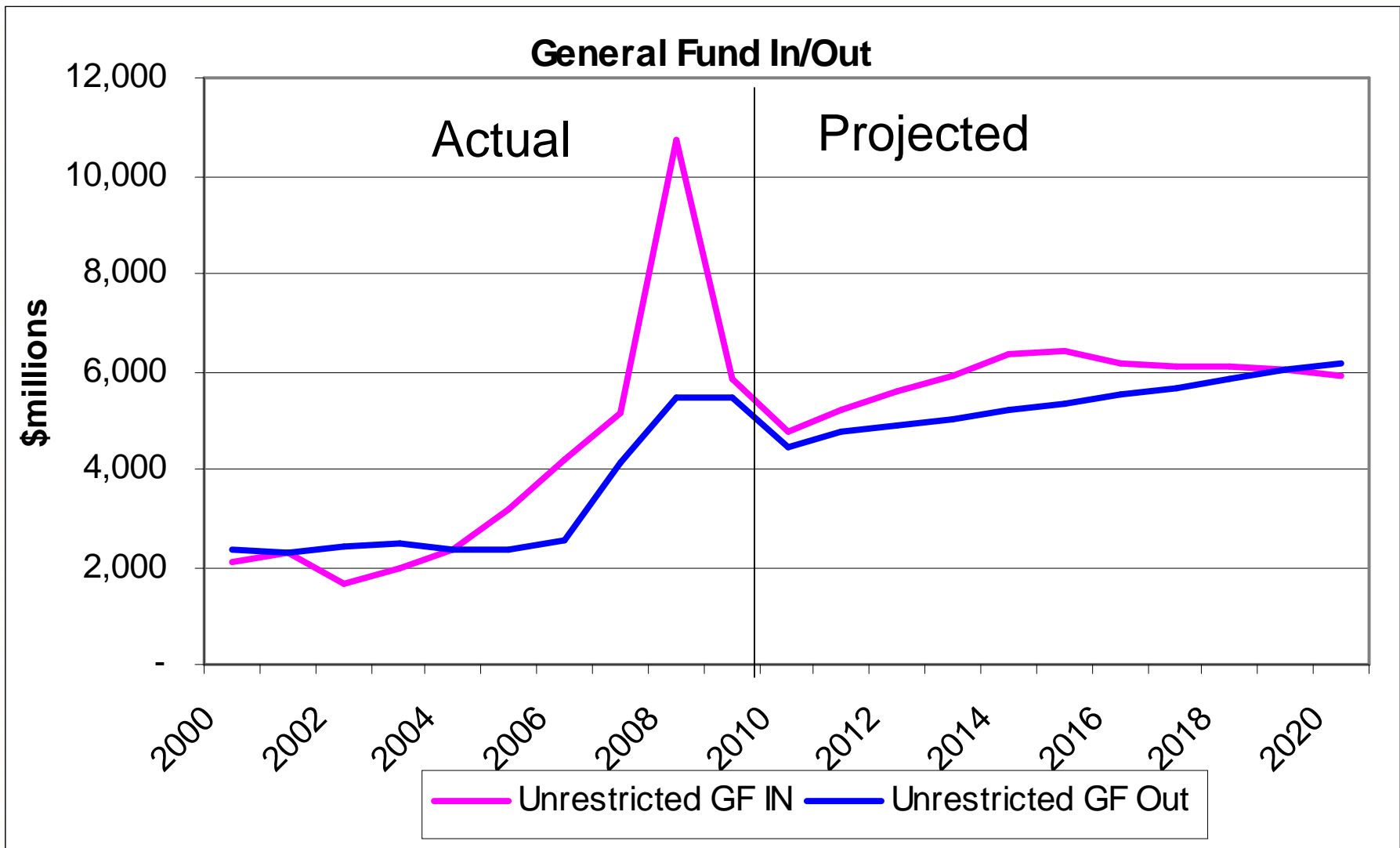
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# History - 2008

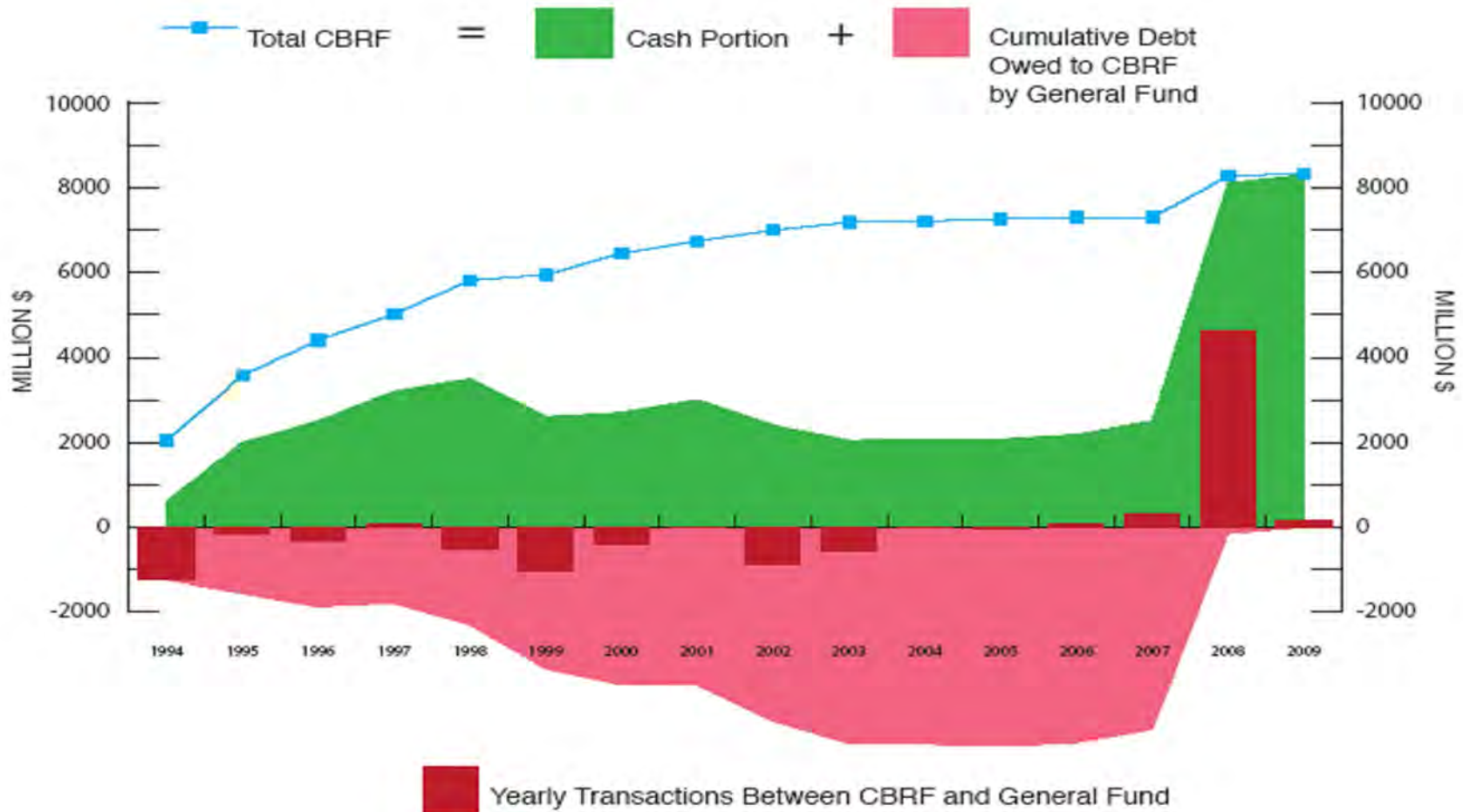


Source: SOA DOR Fall 2009 Revenue Sources Book; OMB, 2010 Long Range Fiscal Plan



# History - 2008

## Constitutional Budget Reserve Fund: Composition



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Source: SOA FY 2009 Comprehensive Annual Financial Report and DOR Fall 2009 Revenue Sources Book

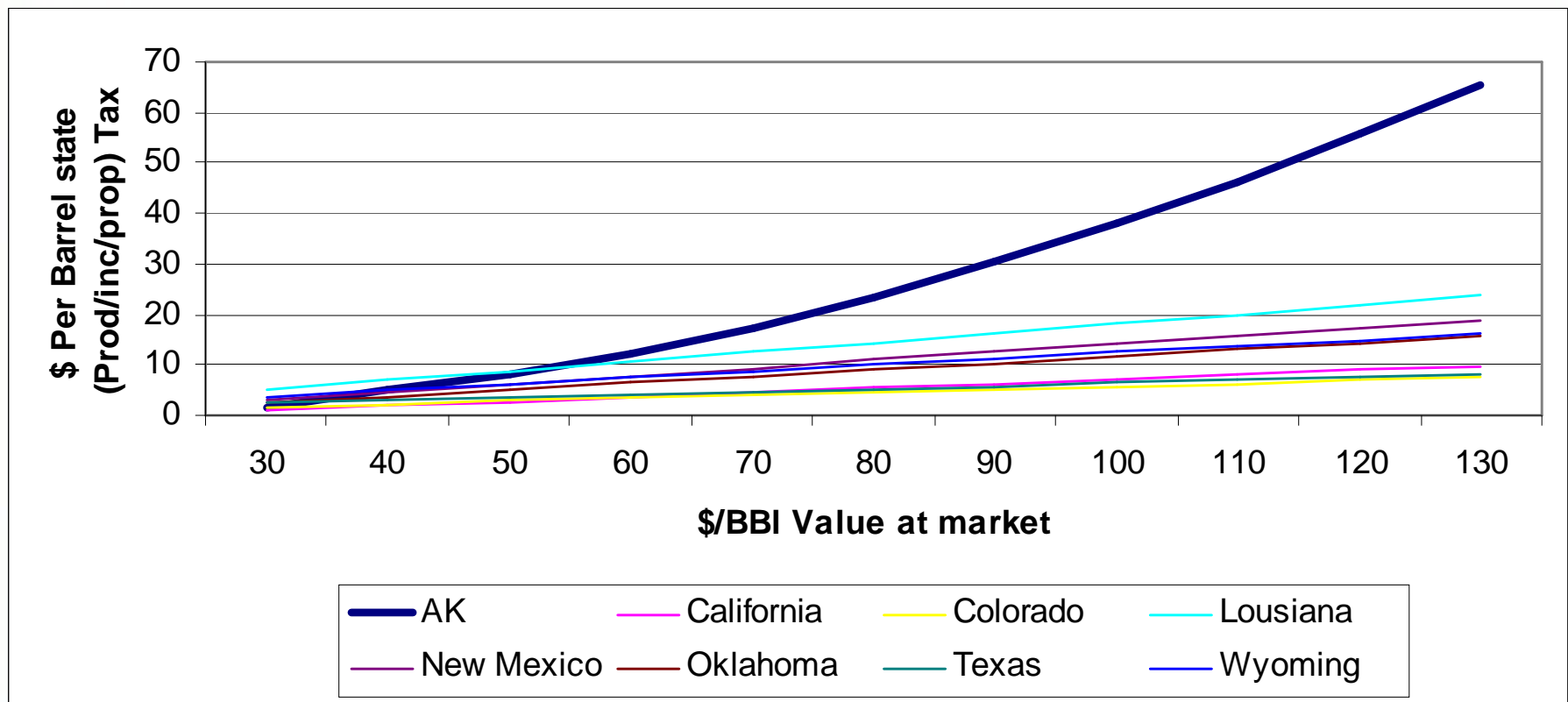
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## History - 2008

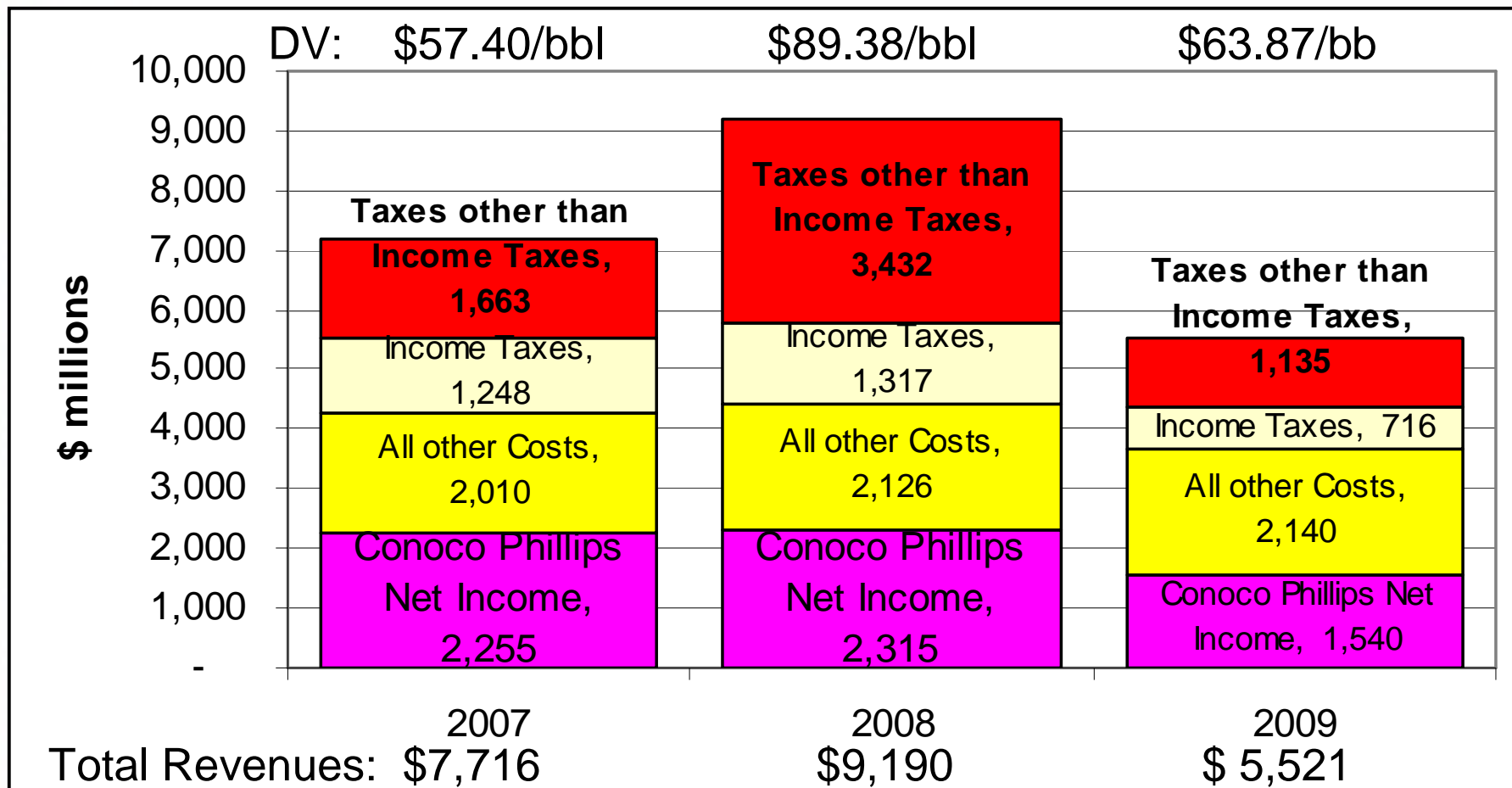
- What if Prudhoe Bay had been producing in the other seven big producing states in 2008 (with no or gross based production taxes)?



# History 2008

## ConocoPhillips Revenues (and uses) for Alaska Segment

- Caution – Calendar Year, GAAP based, include CI gas (product price are US total)



Source: CP 10K filings, pages 40, 41, 148, 149, 150

## Some 26<sup>th</sup> Legislature Legislative Proposals - Rate

- Rep Johnson's Proposal HB 308/(Sen McGuire: SB 267)
- Progressivity rate dropped from .4% to .2%
- Resident Hire rebates can drive 25% base rate down to 20%
- *Discussed introducing brackets into Progressivity*
  
- Rep Millet's Proposal HB 321
- 25% base rate down to 20%
- *No change to progressivity*
  
- Rep Kelly's Proposal HB 351
- Production tax holiday for "new production"
- Credit = (production from leases or properties with out commercial production before 2012/all production) \* total tax



## Some 26<sup>th</sup> Legislature Legislative Proposals

### Rep Crawford's Proposal HB 48

- Gas Reserves Tax – 1 billion a year on major lease holders (3 cents per mcf times 35 tcf) until they commit to an AGIA licensed project; could reclaim as credit when gas is shipped

### Rep Crawford's Proposal HB 189

- Continue formulaic calculation of non capital lease expenditures at Kuparuk and Prudhoe as 3% annual markup of 2006 costs

### Reps Gruenberg, Seaton, Cissna, Tuck, Peterson & Gatto Proposal HB 11

- “When interpreting a lease entered into under this section, ambiguous language shall be construed in favor of the state and against the interpretation offered by the person challenging the state’s interpretation.



## Some 26<sup>th</sup> Legislature Legislative Proposals

- Interest Issues
  - Rate
  - No interest arising from retroactive regulations (SB 309)
- Credits for Well Work
  - General Production Well Tax Credit
  - Specific geographical credits for non NS (HB 280)
  - Income Tax Credits for CI work (SB 309)
  - Eliminate special constraints on CI ‘generated’ credits (HB 280)
- Statute of Limitations drops from 6 years back to 3

## Some 26<sup>th</sup> Legislature Legislative Proposals

- Governor Parnell's Proposed Production Tax Changes SB 271/HB 337
- (1) Interest not due on retroactive changes (SB 309)
- (2) Credits Purchased without "forward spend" (SB 309)
- (3) Credits not spread over two years (HB 280 – for some non-North Slope credits)
- (4) 30% credit for well work (HB 280 – 40% credit for non North Slope well work)

## Proposals for Further Reform

- Proposals for reform
- Governor's proposal
- Roger Mark's proposal
  
- One approach:
  - First achieve a high level notion of what the reform should achieve
  - Second, define mechanics of achieving that end.
  
- Another approach:
  - Are X, Y and Z better ideas than not-X, not-Y or not-Z?

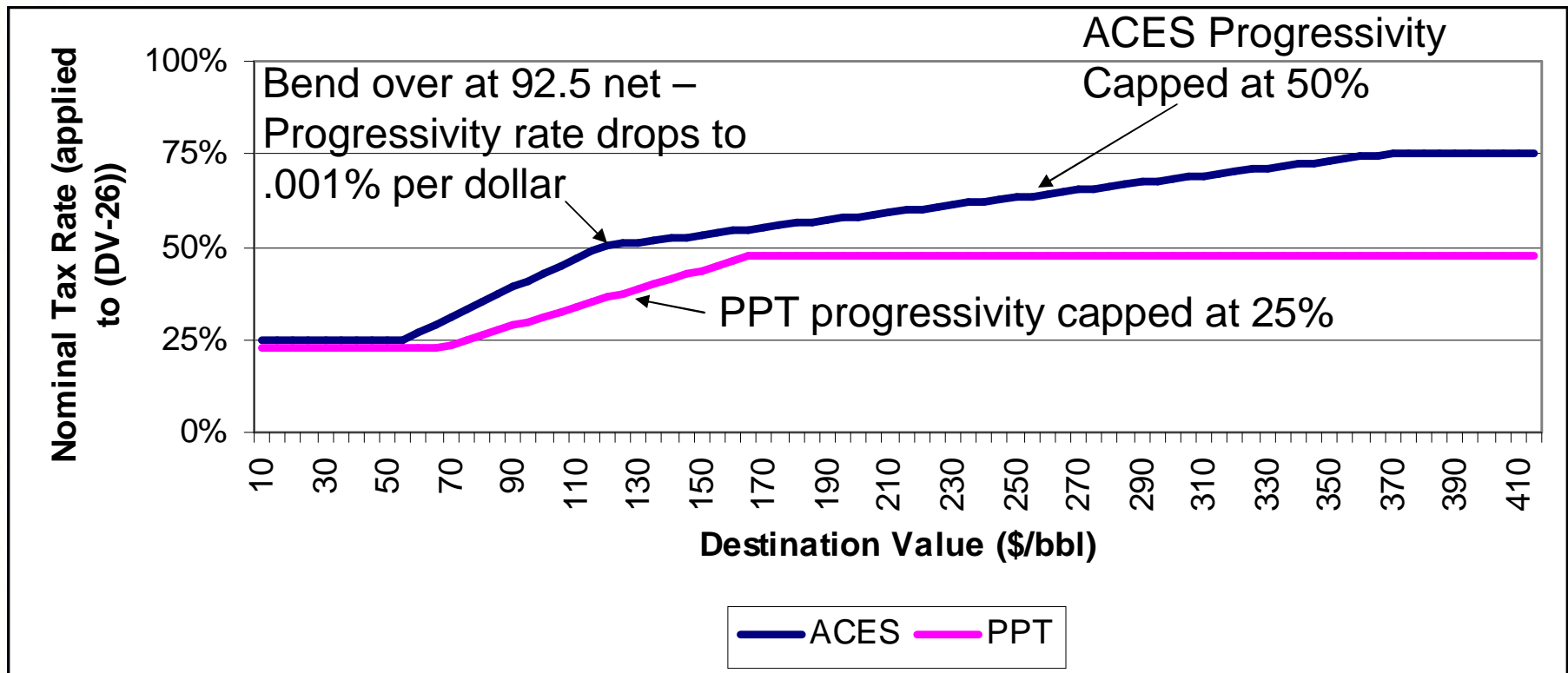
## Proposals for Further Reform

- Governor Parnell's Campaign Suggestions
- (October 15 2010 presentation at Resource Development Council)
  
- Put more oil into the Pipeline
- Make Alaska more competitive
  
- Cap Progressivity at higher prices
- Tax credits for technically challenged fields

Source: <http://www.akrdc.org/membership/events/special/parnell.pdf>

# Proposals for Further Reform

- Caps under PPT and ACES:
- (Assume 26 dollar a barrel total costs in this example)





## Proposals for Further Reform

- 2009 Credits – (a) “room to work” and (b) Goldplating effects

Producer:	Estimated (allocated by volume) base tax	Less Small Producer Credit	Result	Less Investment Credits Per RSB (allocated proportionally)	Resulting Tax	Percentage of Total Tax	
CP	1,490.6		1,490.6	(147.0)	1,343.6	46.1%	} 102%
BP	1,114.8		1,114.8	(110.3)	1,004.5	34.5%	
EM & XTO	690.8		690.8	(66.0)	624.8	21.5%	
Anadarko	118.1	(12.0)	106.1	(11.0)	95.1	3.3%	} 5%
Chevron & Unocal	69.5	(12.0)	57.5	(14.4)	43.1	1.5%	
Pioneer NR	14.2	(12.0)	2.2	(1.3)	0.9	0.0%	
Marathon	8.4	(8.4)	-				
ML&P	2.1	(2.1)	-				
Pacific Energy	-	-	-				
ENI	6.1	(6.1)	-				
Aurora	0.2	(0.2)	-				
Murphy	1.9	(1.9)	-				
Nana	0.3	(0.3)	-				
Doyon	0.1	(0.1)	-				
Petro-Hunt	0.0	(0.0)	-				
	<u>3,517.1</u>	<u>(55.1)</u>	<u>3,462.0</u>	<u>(350.0)</u>	<u>3,112.0</u>		
Paid To 15 Explorers (per Revenue Sources Book)					(200.0)	-7%	-7%
Total					<u>2,912.0</u>	<u>100%</u>	<u>100%</u>

## Proposals for Further Reform

- Roger Marks writing in the Oil and Gas Financial Journal
- “Alaska's production tax is unique in that there is **no bracketing**. When progressivity occurs it applies to the very first dollar of value, as well as all subsequent dollars. Thus as value increases, additional tax is extracted from all previous value.
- This can create high marginal tax rates. At higher prices a large share of incremental value goes to the government, which can significantly suppress upside potential. Given the importance of upside potential in portfolio analysis, Alaska's international attractiveness for investment may be uncompetitive.”

Source:

<http://www.ogfi.com/index/article-display/3934072006/articles/oil-gas-financial-journal/volume-7/issue-9/features-/alaska-s-oil-and-gas.html>

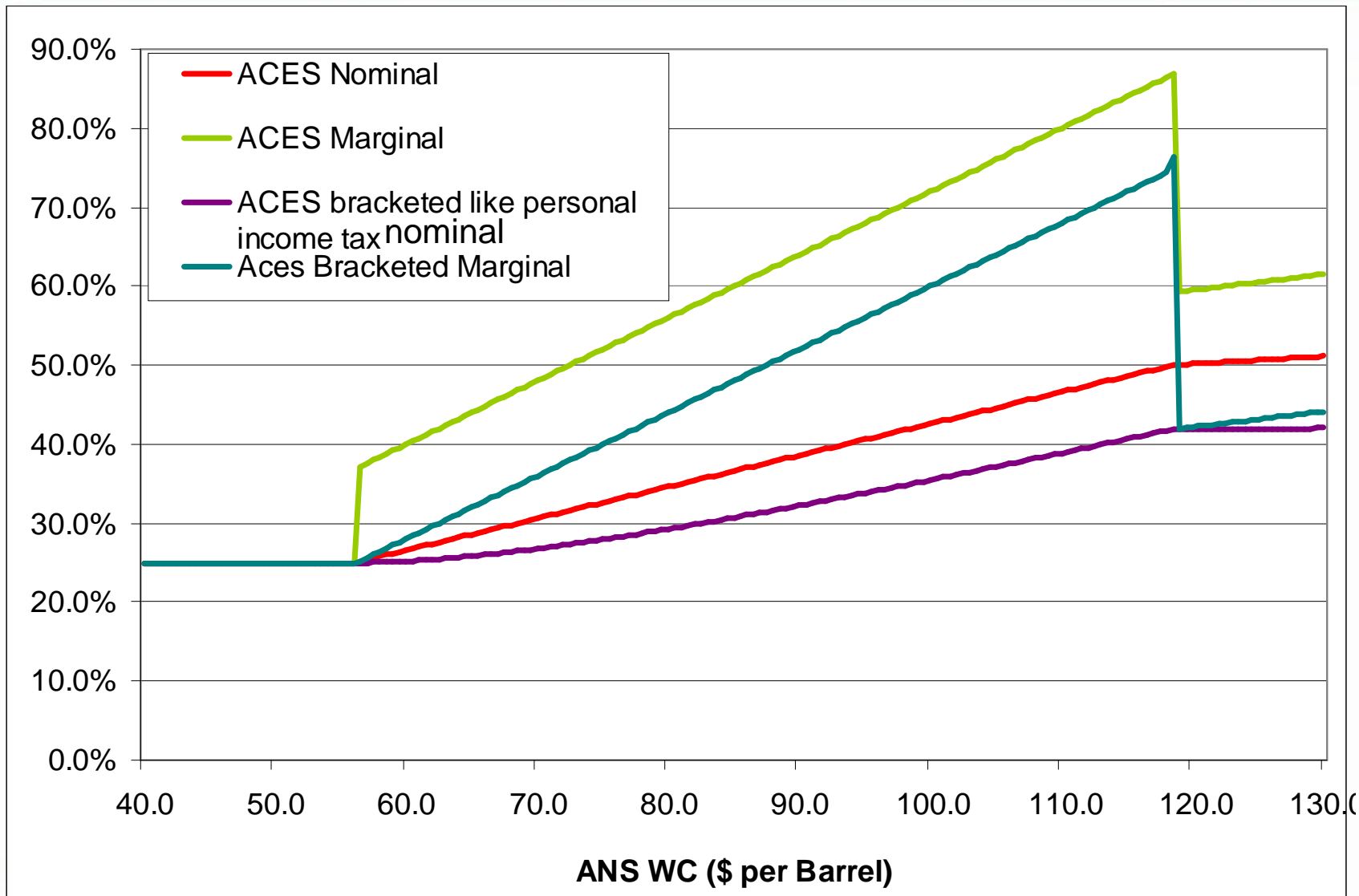
# Progressivity in AS 43.55.011(g) vs. Personal Income Tax

- Under AS 43.55.011(g) the progressivity rate generated at high net values (PTVs)/bbl is applied to all the net value.
- $((PTV/bbl-30) * .004) + 25% * PTV = Tax$
- Under federal personal income tax rules:

Schedule X—If your filing status is Single

If your taxable income is:		The tax is:	
Over—	But not over—		of the amount over—
\$0	\$9,350	..... 10%	\$0
9,350	33,950	\$835.00 + 15%	8,350
33,950	82,250	4,675.00 + 25%	33,950
82,250	171,550	16,750.00 + 28%	82,250
171,550	372,950	41,754.00 + 33%	171,550
372,950	.....	108,216.00 + 35%	372,950

# Production Tax: Progressivity + 25%





## Proposals for Further Reform

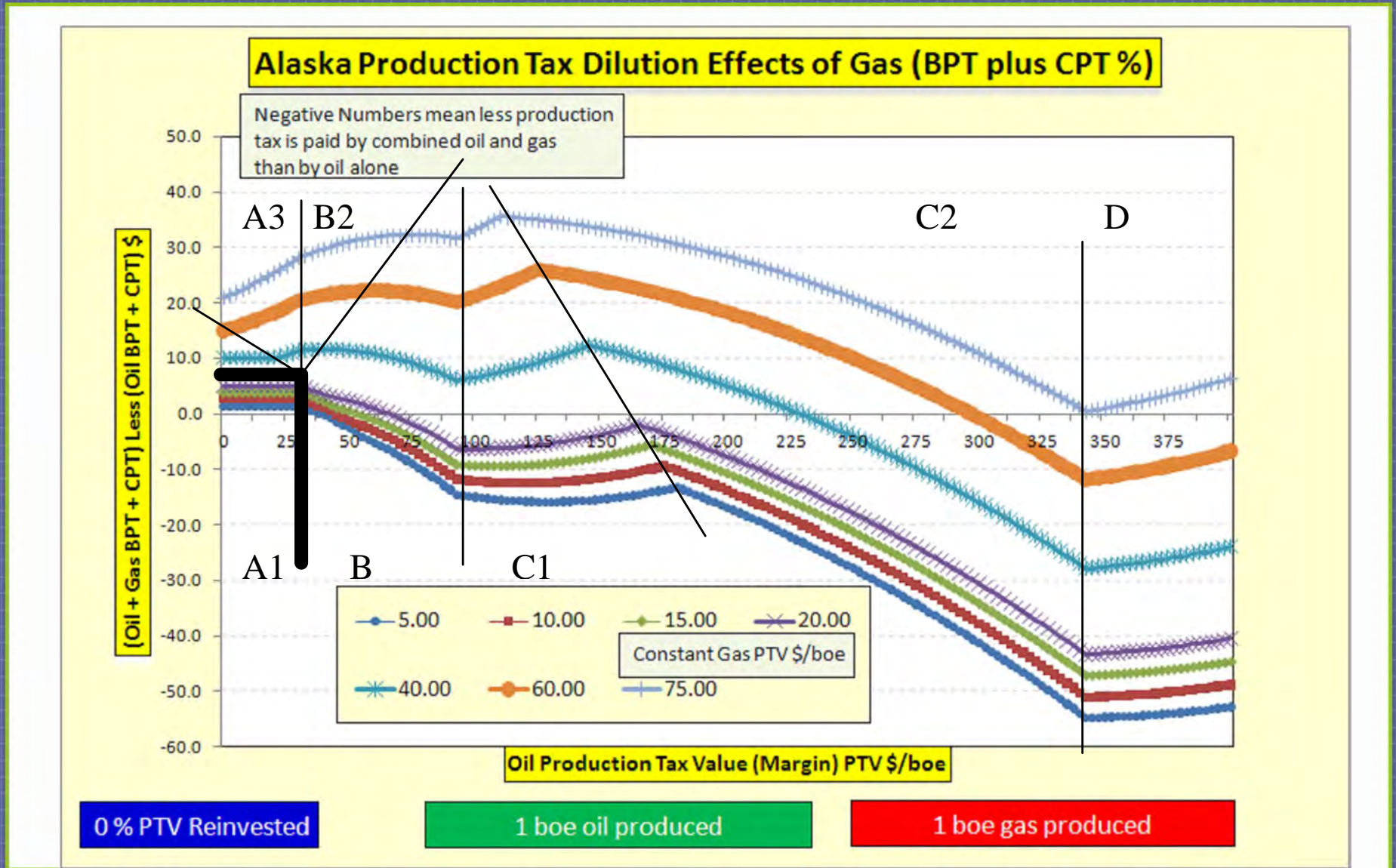
- 2006:
- (1) Incentivize investment by shifting the tax burden towards those who expatriate rather than reinvest profits: “Tax expatriated profits”
- (2) On a regressivity progressivity scale, shift the tax burden toward the progressivity end. “Higher prices, higher profits should mean higher taxes.” “More Progressive”
- 2007:
- “Remove the shadow” Palin proposal – moderate progressivity. Legislative enactment: increase progressive
- 2010:
- Cook Inlet Revitalization Act & Administrative issues



## Proposals for Further Reform

- What Does “Fix Aces” mean?
- Lower Take, Lower Marginal Rate at high profitability
  - Progressivity Formula, brackets, bend over points, caps
  - Do we want to try to capture less in 2008-like years? Do we offset that with more in ‘normal’ years?
- Lower take at lower profitability?
  - i.e transition to a “Christmas” model, state revenues come in mostly in “2008”-like years
- Credits for favored activity –
  - Not much forward looking “room” in context of 4 fold tax increase looking back.
  - Is goldplating a problem? Or a “desired distortion.”
- Complexity and Change
  - Does the DOR have the resources to implement complex schemes?

# Dr. Wood's Illustration Divided into Zones



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## Proposals for Further Reform

- Tax by Design – the Mirrlees Review
- 20.1 ***A Good Tax System***
- “First consider the system as a whole. A good system should be structured to meet overall spending needs... Not all taxes need to address all objectives”
- “Second, seek neutrality....Defining and policing boundaries between differently taxed activity is fraught with difficulty: it increases administrative and compliance costs.”
- “Third, achieve progressivity as efficiently as possible... This means having a rate schedule that reflects the knowledge of ... responsiveness of people to taxes and benefits at different income levels.”

Source <http://www.ifs.org.uk/mirrleesreview/pampjlet.pdf> pgs 1-3

# Thank You

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