



Study Group 1.3 Gas Rent and Mineral Property Rights

Fiscal benefits for the production of oil and gas in the USA

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Case study

Year	Bonus, permit and bond (MUS\$)	Geology and geophysics (MUS\$)	Exploratory and delimitation wells (MUS\$)	Production wells (MUS\$)	Submarine items (MUS\$)	FPSO (MUS\$)	Project manangement (MUS\$)	Capex (MUS\$)	Opex (MUS\$)	Decommissioning (MUS\$)	Production (Mbbbl)	Revenues (MUS\$)	EBITDA (MUS\$)
1	100	20						120					-120
2		50						50					-50
3			200					200					-200
4			200					200					-200
5				50	100	100	100	350					-350
6				200	400	300	100	1.000					-1.000
7				370	400	300	100	1.170					-1.170
8				370	400	300	100	1.170	200		32	3.200	1.830
9				370				370	200		44	4.400	3.830
10				370				370	200		55	5.500	4.930
11				370				370	200		66	6.600	6.030
12				370				370	200		75	7.500	6.930
13				130				130	200		73	7.300	6.970
14								0	200		65	6.500	6.300
15								0	200		59	5.900	5.700
16								0	200		53	5.300	5.100
17								0	200		48	4.800	4.600
18								0	190		43	4.300	4.110
19								0	181		39	3.900	3.719
20								0	171		35	3.500	3.329
21								0	163		31	3.100	2.937
22								0	155		28	2.800	2.645
23								0	147		25	2.500	2.353
24								0	140		23	2.300	2.160
25								0	133		21	2.100	1.967
26								0	126		18	1.800	1.674
27								0	120	500	17	1.700	1.080
Totals	100	70	400	2.600	1.300	1.000	400	5.870	3.526	500	850	85.000	75.104

Depletion allowance

❖ Cost depletion

- Mandatory to integrated energy companies
- Net leasehold costs rated according to the yearly production

❖ Percentage (statutory) depletion

- Available to independent producers only
- Depletion rate set at 15%
- Joint Committee on Taxation (JCT) has estimated it at US\$ 5.7 billion in five years

Tax deduction

Intangible drilling costs (IDC)

- Items that offer no salvage value
 - ✓ Labour costs, drilling fluids, completion chemicals, etc
 - ✓ About 75% of the cost for unconventional gas wells
 - ✓ Independents can deduct them in the year they are incurred
 - ✓ Integrated energy companies may deduct only 70%, the balance must be capitalized over several years
 - ✓ Joint Committee on Taxation (JCT) has estimated US\$ 6.2 billion in five years

Tax deduction

❖ Tangible drilling costs (TDC)

- Items that offer salvage value
 - ✓ Drilling and completion equipment
 - ✓ Modified accelerated cost recovery system (MACRS)

Year	Rate
1	14.29%
2	24.49%
3	17.49%
4	12.49%
5	8.93%
6	8.92%
7	8.93%
8	4.46%
Total	100.00%

Income tax credit

- ❖ Set by the former Section 29 of the Internal Revenue Code (today Section 45K)
- ❖ Approximately US\$ 0,50/MBtu
- ❖ No longer available, but important for the development of the industry, as it represented a significant incentive for the drilling of unconventional wells

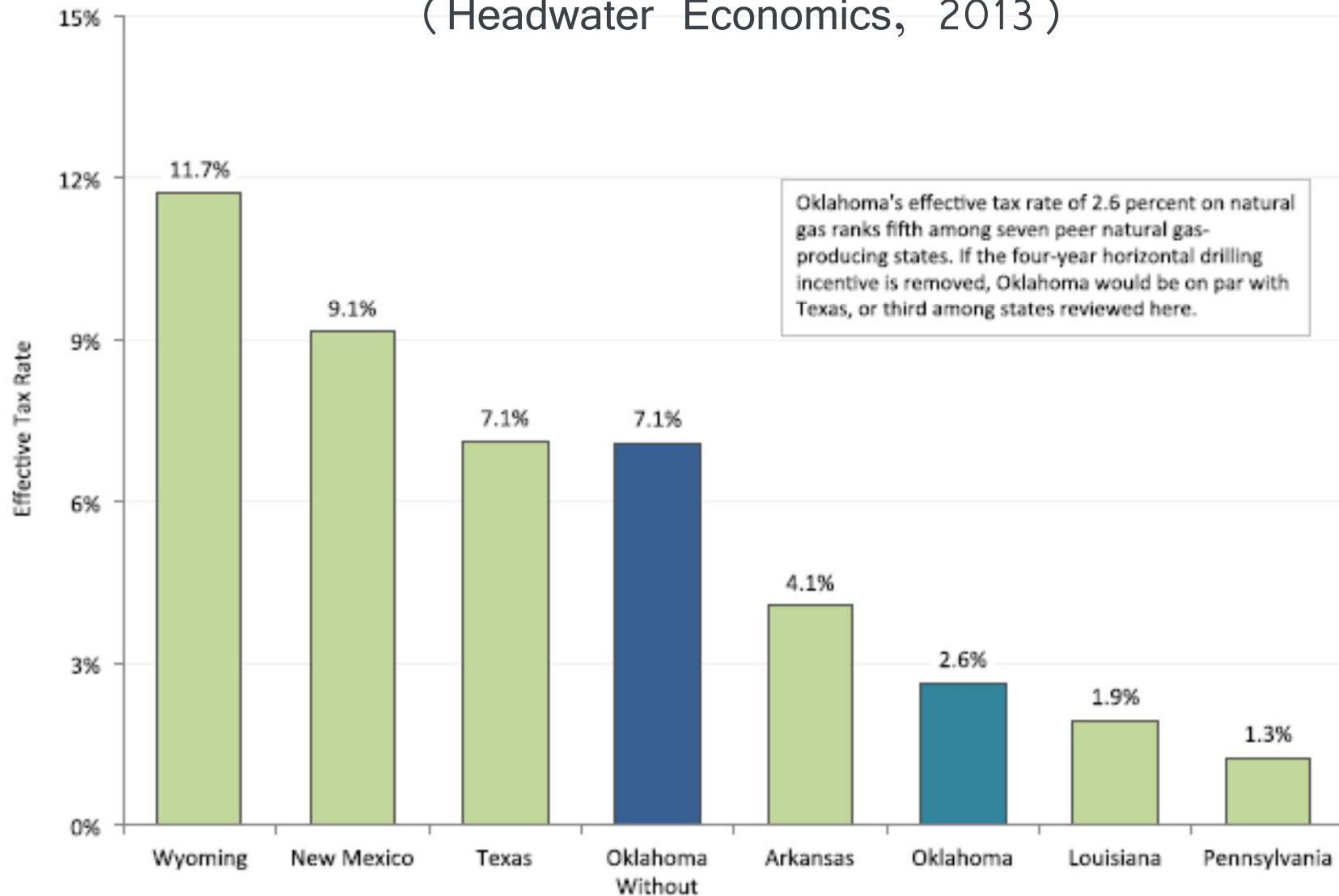
Natural Gas Policy Act

- ❖ Granted tight gas with the highest ceiling prices of all regulated categories
- ❖ Natural Gas Well-head Decontrol Act of 1989 introduced deregulated prices, but the NGPA was very important for the development of unconventional

State tax benefits

Large variations from State to State

(Headwater Economics, 2013)



State tax benefits

❖ Oklahoma (example):

- Deep wells – refund of six out of seven percent for production from wells deeper than 15,000 ft
- Formerly inactive wells – refund of 6% for wells that have not produced for 2 years
- Production enhancement – wells worked over are eligible for a 6% refund
- Horizontal wells – refund of 6% out of the production tax
- Economically at risk wells – refund of 6% for oil wells that lost money on a working interest basis, and for gas wells with a 15 to 1 gas to oil ratio
- 3-D seismic wells – severance tax refund for 18 months
- New discoveries – production tax refunds for wells drilled as a new discovery

Case study results

Bonus depreciation (MUS\$)	Exploration depreciation (MUS\$)	Development depreciation (MUS\$)	Decommissioning depreciation (MUS\$)	Total depreciation (MUS\$)	Royalties (MUS\$)	Net earnings before income tax (MUS\$)	Income tax (MUS\$)	Rent from taxes (MUS\$)	Net cash flow (MUS\$)	Present value of rent from taxes (MUS\$)	Present value of net cash flow (MUS\$)
									-120		-120
									-50		-45
									-200		-165
									-200		-150
									-350		-239
									-1.000		-621
									-1.170		-660
4	70	154		228	300	2.472	865	1.165	665	598	341
5		232		237	825	3.138	1.098	1.923	1.907	897	889
6		316		322	1.031	3.946	1.381	2.413	2.517	1.023	1.068
8		413		421	1.238	4.742	1.660	2.897	3.133	1.117	1.208
9		512		521	1.406	5.373	1.881	3.287	3.643	1.152	1.277
9		515		523	1.369	5.208	1.823	3.192	3.778	1.017	1.204
8		458		466	1.219	4.615	1.615	2.834	3.466	821	1.004
7		416		423	1.106	4.171	1.460	2.566	3.134	676	825
6		374		380	994	3.726	1.304	2.298	2.802	550	671
6		338		344	900	3.356	1.175	2.075	2.525	451	550
5		303		308	806	2.996	1.048	1.855	2.255	367	446
5		275		279	731	2.708	948	1.679	2.040	302	367
4		247		251	656	2.422	848	1.504	1.825	246	298
4		218		222	581	2.134	747	1.328	1.609	197	239
3		197		201	525	1.919	672	1.197	1.448	162	196
3		176		179	469	1.705	597	1.066	1.287	131	158
3		162		165	431	1.564	547	979	1.181	109	132
2		148		150	394	1.423	498	892	1.075	91	109
2		127		129	338	1.208	423	760	914	70	84
2		120	500	622	319	639	224	543	537	46	45
100	70	5.700	500	6.370	15.638	59.467	20.813	36.451	38.653	10.023	9.110

Case study results

- Government take was the lowest among all case studies performed:

Country	Government take
Angola	86%
Norway	75%
UK	62%
USA	52%

- In spite of that, a significant effort to further reduce taxes is still under discussion (to stimulate production and reduce imports)
- Benefits target the independent producers in lieu of the production of unconventional

Impact of benefits

- ❖ Drilling activity could decrease by 30% if current tax treatment of IDCs, percentage depletion and passive loss exception were ended (Inhofe *et al.*, 2013).
- ❖ Reduction of 3.8 million bpd in 10 years if tax treatment of IDCs was ended (WoodMackenzie *apud* Inhofe *et al.*, 2013)

Conclusions

- Development of unconventional gas mostly the consequence of a strong political will to reduce foreign energy dependency
- Fiscal instruments were key to independent producers, which were ultimately responsible for the revolution of unconventional gas

Thank you!