



Managing Volatility of State and Local Oil and Gas Revenues

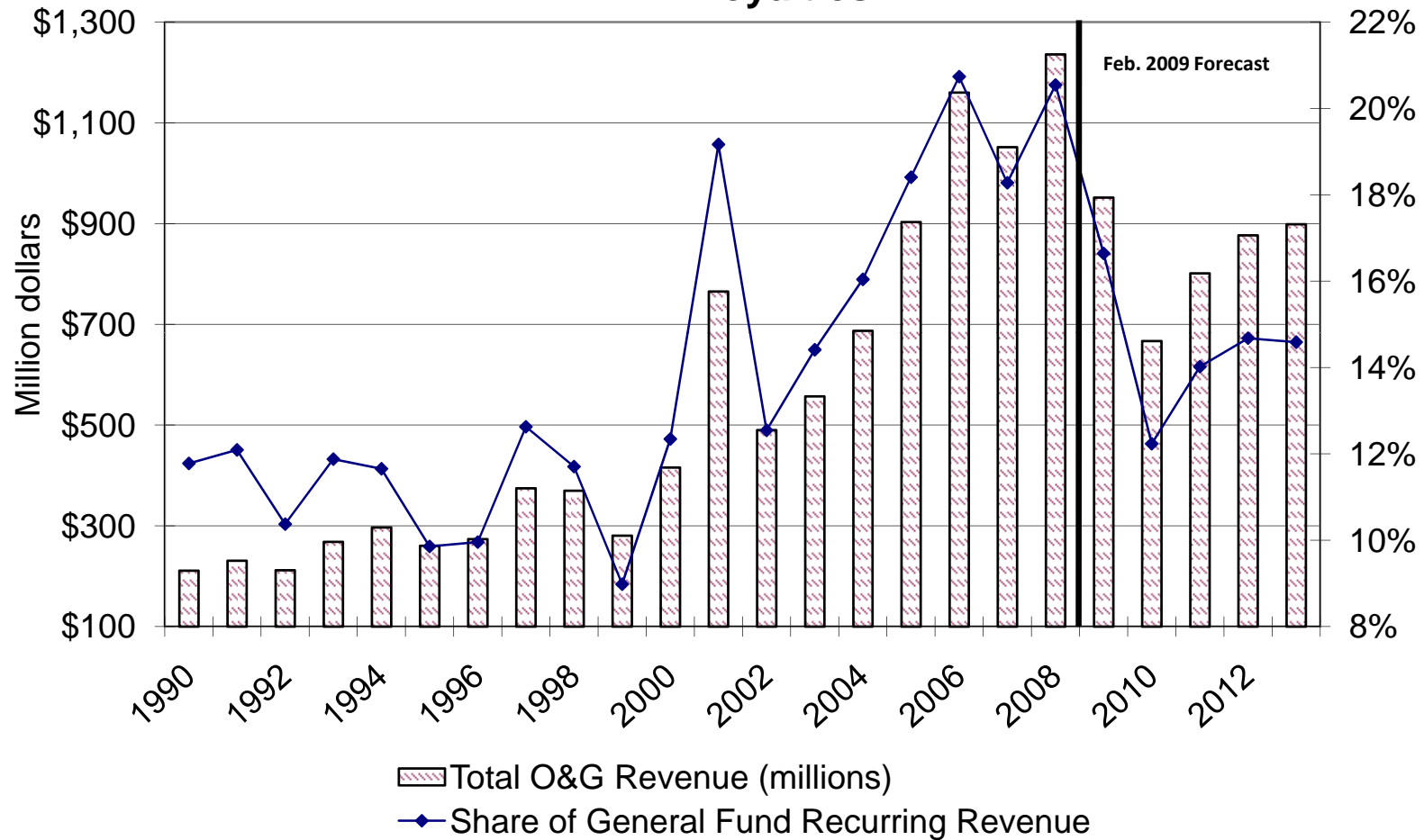
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Overview

- Revenue from crude oil and natural gas production makes an enormous contribution to financing state and local government in New Mexico.
- State and local revenues – including income and Gross Receipts taxes as well as severance taxes -- are a major channel of industry influence on the state's economy.
- The State has not developed policies to mitigate the impacts of extreme volatility of O&G revenues.
 - Large income tax cuts were financed by increased O&G revenues – are they sustainable?

General Fund Revenue from Oil and Gas Taxes, Rents and Royalties



*Permanent Fund distributions added another 11% of General Fund
Permanent Fund balances approximately \$10 billion.*

Direct State & Local Revenues from Oil and Gas Production

(Million dollars)

	Actual <u>FY08</u>	Estimate <u>FY09</u>	Estimate <u>FY10</u>
State General Fund:			
Oil & Gas School Tax	557	359	287
O&G Conservation Tax	26	17	14
<u>Natural Gas Processors Tax</u>	34	35	33
Subtotal Taxes	617	412	334
Federal Minerals Leasing*	564	449	323
<u>State Land Office*</u>	46	38	30
<u>Subtotal Other Revenue</u>	610	487	353
Total General Fund O&G Revenue	1,227	899	687
Severance Tax Bonding Fund	543	362	287
<u>State Land Office Royalties</u>	492	329	254
Total State Revenues	2,261	1,590	1,228
<u>Local Ad Valorem Taxes</u>	179	127	99
Grand Total State & Local Revenues	2,441	1,717	1,327

*Include small amounts from other minerals.

Estimated Direct Impacts on Other State & Local Revenues

Impacts of purchases, payroll and net earnings distributions

		Million dollars		
		<u>2008</u>	<u>2009</u>	<u>2010</u>
Gross industry revenue		17,415	11,672	9,588
Gross Receipts Tax:				
TGR O&G services	10.00%	1,742	1,167	959
TGR Utilities		585	458	458
Total TGR		<u>2,327</u>	<u>1,625</u>	<u>1,417</u>
Subtotal--GRT-- General Fund	3.70%	86	60	52
Subtotal--GRT-- Local Governments	3.30%	77	54	47
Subtotal--GRT-- Total		163	114	99
Individual Income Tax:				
Wages & Salaries	7.50%	1,306	875	719
Royalty owners	2.00%	348	233	192
Interest owners	6.25%	1,088	730	599
Total income		<u>2,743</u>	<u>1,838</u>	<u>1,510</u>
Subtotal--Income Tax	4.50%	123	83	68
Corporate Income Tax:				
Total CIT		<u>400</u>	<u>350</u>	<u>350</u>
Subtotal--Corp. Income Tax	<u>1.10%</u>	<u>192</u>	<u>128</u>	<u>105</u>
Total State & Local Revenue		478	325	273
Total General Fund		401	271	226
Total Local Governments		77	54	47

*Impacts on other revenues added about 7% of total General Fund revenue
And about 6% of total State & Local tax revenue in FY 2008.*

Estimated Indirect Impacts on Other Revenues

Taxes resulting from spending by recipients of direct payments:

		<u>2008</u>	<u>2009</u>	<u>2010</u>
Recipient source:				
Wages & salaries		1,306	875	719
Purchases		1,742	1,167	959
Royalty & Interest		1,437	963	791
<u>State & local taxes & royalties</u>	<u>10.0%</u>	<u>1,742</u>	<u>1,167</u>	<u>959</u>
Total income change		6,226	4,173	3,428
State General Fund impacts	5.7%	355	238	195
Less gasoline price GRT impacts		(158)	(99)	(106)
Net State General Fund impacts		197	139	90
Other State Fund impacts	1.1%	68	46	38
<u>Local impacts</u>	<u>4.5%</u>	<u>280</u>	<u>188</u>	<u>154</u>
Net indirect impacts--State & Local Revenue		545	372	282

*Counting each income source at its own value is equivalent to assuming:

(1) A multiplier of 2.0 on the original industry revenue. First round effects are counted under "Direct impacts"

(2) In-state spending coefficients of 0.6 on average

(3) No first round impacts are assumed for S&L taxes; S&L figures exclude portion going to Permanent Funds.

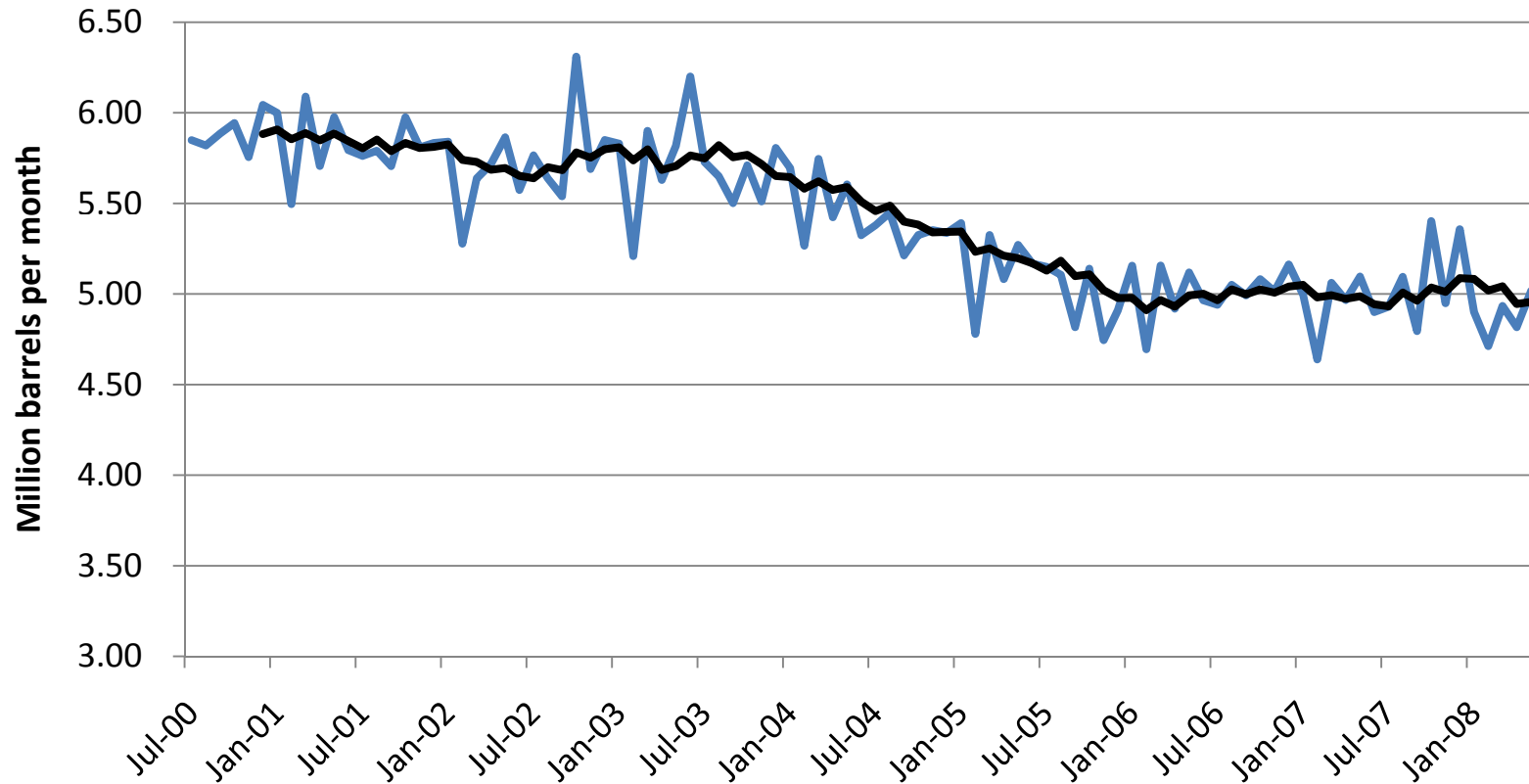
Indirect impacts added 3% to General Fund, 7% to State & Local revenue in FY 2008.

Summary:

FY 2008 State & Local Revenue from Oil and Gas Operations

- | | | |
|----------|---------------------------------------|-----------------------------|
| • | State General Fund: | |
| | – Production Taxes | \$617 million |
| | – Royalties, bonuses | \$610 million |
| | – Taxes on direct activities | \$401 million |
| | – <u>Taxes on indirect activities</u> | <u>\$197 million</u> |
| | – Total | \$1,825 million |
| | – Percent of General Fund | 30% |
| • | Other State Funds: | |
| | – Severance Tax Bonding Fund | \$543 million |
| | – Land Grant Permanent Fund | \$492 million |
| | – Other State Funds | \$68 million |
| • | <u>Local Governments</u> | <u>\$536 million</u> |
| • | Total | \$3,464 million |
- Does not include refining, transportation and retail distribution operations.
 - Does not include permanent fund distributions (\$600+ million).
 - Total = **5% of Total Personal Income, 30% of all “Own-Source” S&L revenue.**

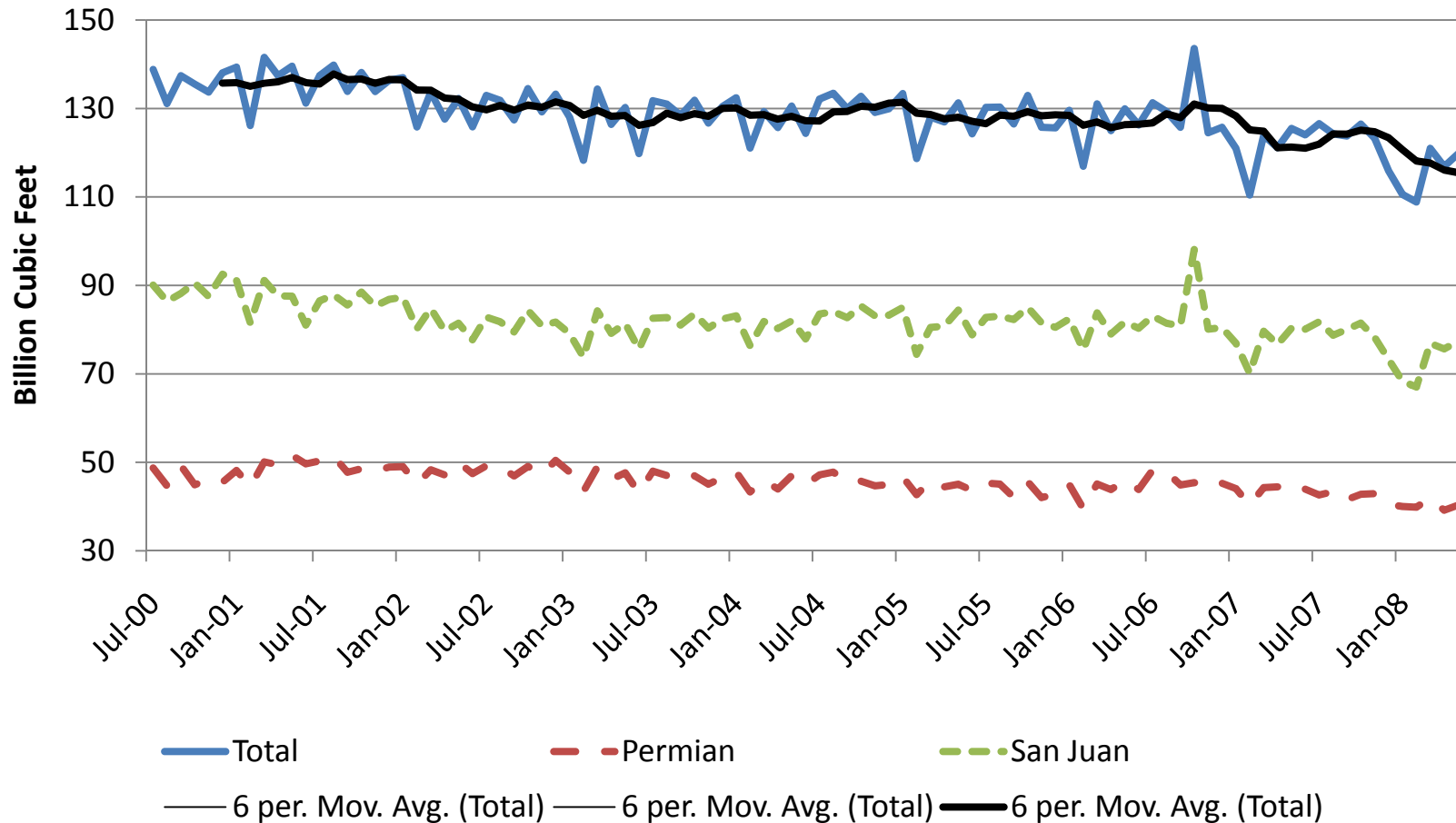
Historical Crude Oil Production Levels



*Crude oil volume has stabilized around 60 million barrels per year.
Drilling in response to high prices has offset the rapid natural decline rate of
production.*

Data from NM TRD ONGARD system.

Monthly Taxable Natural Gas Volume



*Total natural gas volume is falling by 1% to 2% per year.
Permian production appears to be falling a little more quickly than San Juan.
Annual statewide production is currently around 1.4 Trillion cubic feet per year.*

Data from NM Taxation and Revenue Department ONGARD system.

About 80% of oil and gas is produced on public lands

Royalties from public lands are an important source of revenue to the General Fund (federal lands) and to the Permanent Funds (State lands)

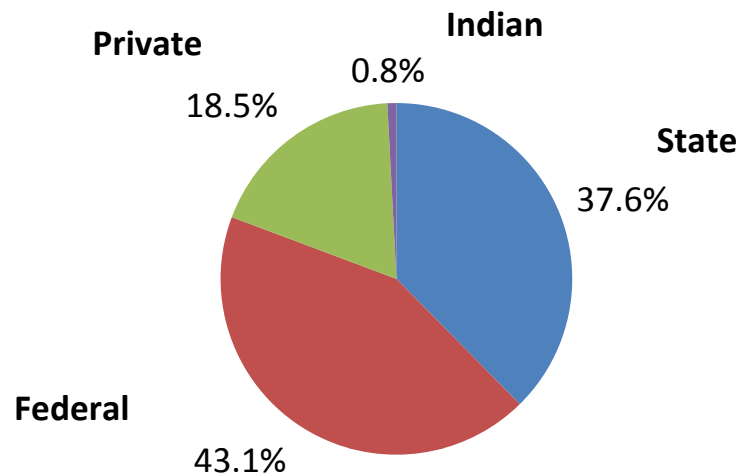
Total royalties FY 2008:

- Federal * \$1.1 billion
- State \$517 million
- Indian \$67 million
- Private# \$370 million
- Total \$2.1 billion

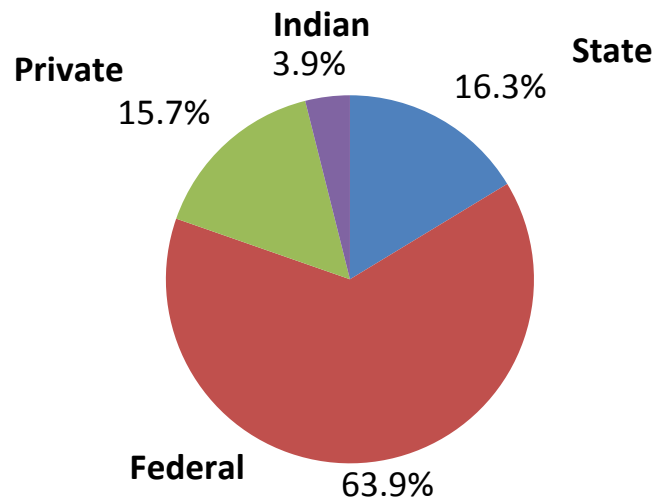
*1/2 distributed to State

Estimate using 1/8 rate

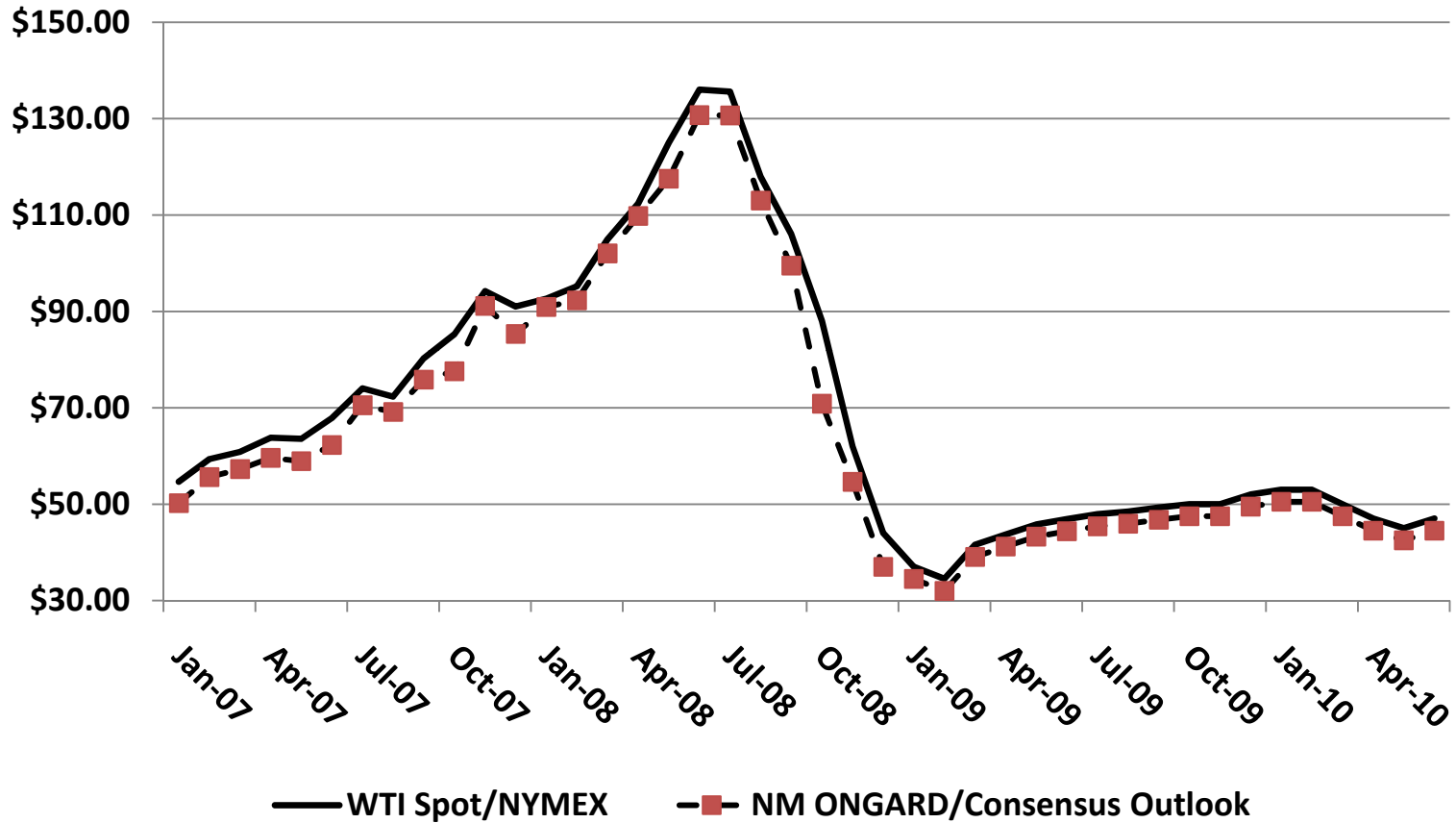
FY 2008 Oil Production by Land Type



FY 2008 Gas Production by Land Type

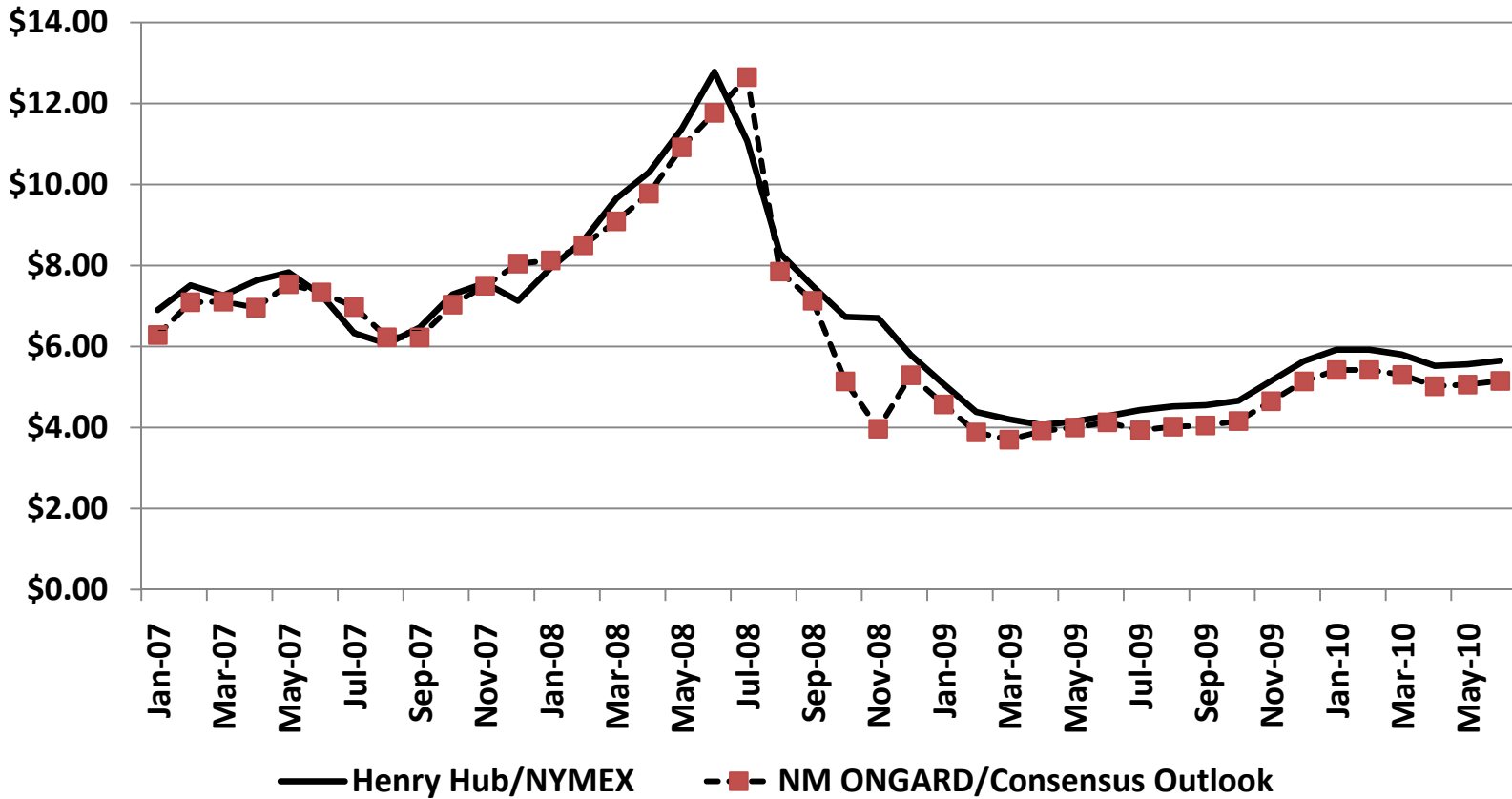


Crude Oil Price Outlook



*State revenue estimates track the NYMEX outlook closely.
 NM producers receive a few dollars less per barrel than the WTI Spot price*

Natural Gas Price Outlook



*State forecasters are relying on the NYMEX and a narrow differential.
 NM Spot prices have fallen well below Henry Hub in recent months*

Summary: Speculation vs. Fundamentals: 2004 - 2008

- Fundamental factors caused rising prices in 2004 – 2008.
- Speculation added to steep price increases in 2008.
- Diminishing speculative activity and slowing worldwide economic growth will push prices down in the next year or two.
- Fundamentals will keep prices above their averages during the 1990's.
- Volatility will also be higher than during the 1990's.

**State and Local Revenue Sensitivity to Oil and Gas Prices
Using Projected FY 2009 Volume and Deduction Values**

	<u>Crude Oil</u>	<u>Natural Gas</u>	<u>Total</u>
Change in Price	\$1.00	\$0.10	
Annual Production Volume*	60.0	1,415.0	
Deductions as percent of gross value	10.0%	20.0%	
Taxable Value (million dollars)	\$54	\$113	
State General Fund:	<i>(Million dollars)</i>		
O&G School Tax	1.7	4.5	6.2
O&G Conservation Tax	0.1	0.2	0.3
<u>Natural Gas Processors Tax</u>	<u>-</u>	<u>0.3</u>	<u>0.3</u>
Subtotal: General Fund Taxes	1.8	5.1	6.9
Federal mineral leasing royalties	1.4	4.9	6.4
State land office bonuses and rents	0.3	0.3	0.7
Subtotal: rents and royalties	1.7	5.3	7.0
Total General Fund Revenue	3.5	10.4	13.9
Other State Funds:			
O&G Severance Tax	2.0	4.2	6.3
<u>State Land Royalties</u>	<u>2.7</u>	<u>2.8</u>	<u>5.5</u>
Subtotal: Other State Funds	4.7	7.1	11.8
Total State Revenue	8.3	17.4	25.7
Local Government Revenues:			
Ad Valorem Production Tax	0.6	1.2	1.8
<u>Production Equipment tax</u>	<u>0.1</u>	<u>0.2</u>	<u>0.3</u>
Total: Local Government revenue	0.7	1.4	2.1
Grand Total State & Local Revenues	8.9	18.8	27.8

*Million barrels of oil and billion cubic feet of gas.

Consequences of Revenue Volatility

- If actual revenue is more than forecast:
 - Recurring revenue is underestimated
 - Recurring appropriations may be less and non-recurring appropriations more than otherwise.
- If actual revenue is less than forecast:
 - Recurring appropriations may have to be reduced, or
 - Taxes may have to be increased, or
 - General Fund reserves will end the year below the forecast level.

Tools for Managing Revenue Volatility

- Hedging
- Reducing revenue forecast
- Increasing reserves
- Recurring/Non-recurring revenue distinction

Hedging

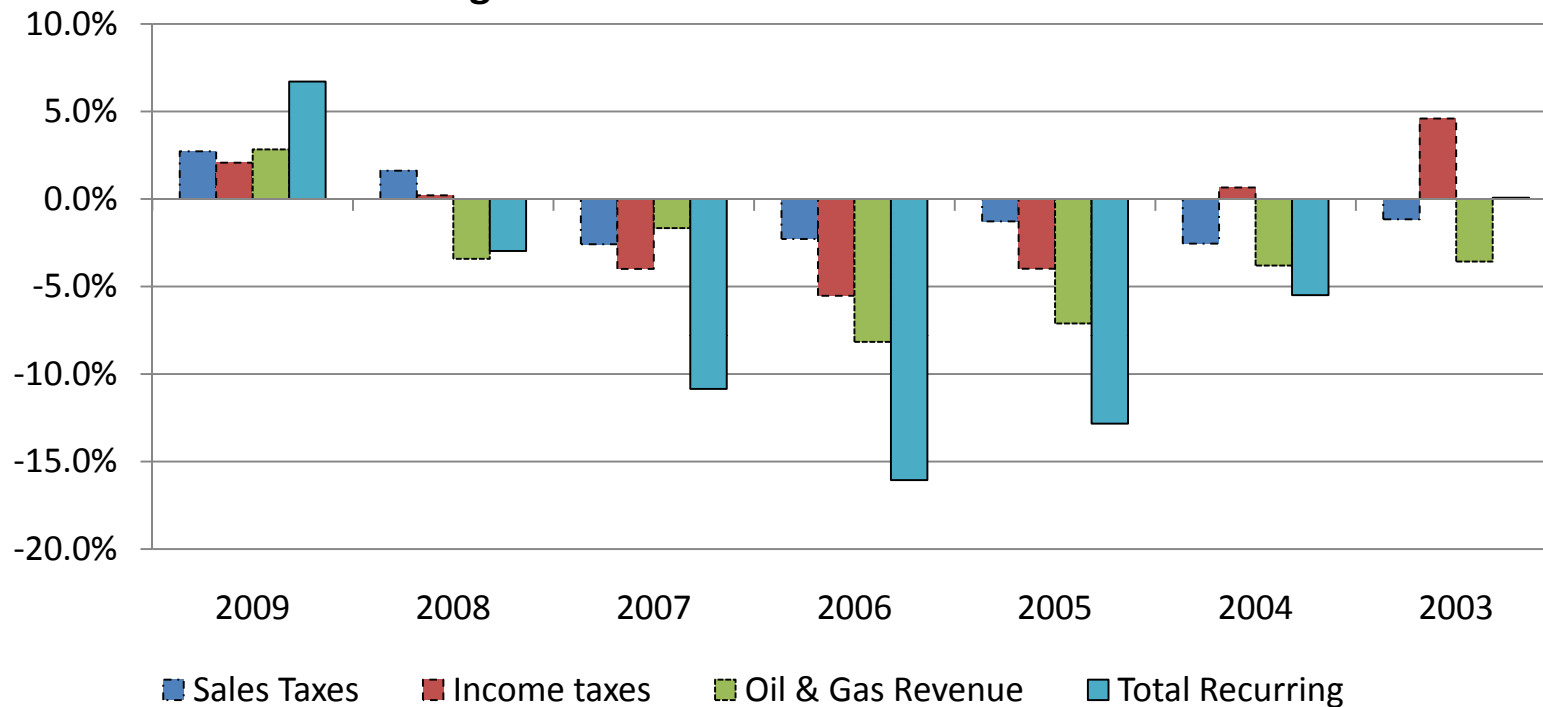
- State could lock in a future revenue stream for a limited period and reduce uncertainty.
- Cost: Foregone revenue if prices exceed hedged level.
- Benefits: Higher revenues if prices fall below the hedged level.
- Revenues would still be subject to volatility after contract expires.
- Transactions costs could be significant.

Revenue Forecast

- Consensus estimates can be adjusted to reduce the likelihood of a revenue shortfall:
 - Criticism: “Estimates are too conservative”
 - Without guidance from the Legislature and Executive, estimators have no explicit authority to make these adjustments.
 - Current estimates appear to contain more risk than in the past.
- “Portfolio effect” is not helping to reduce the State’s exposure:
 - O&G revenue a high share of total General Fund
 - Other revenues move in the same direction
- Range estimates could be used to highlight the uncertainty in the forecast.
- The State could invite an expert panel to help assess the risk associated with the consensus forecast.

Revenue Forecast (continued)

**Components of General Fund Forecast Error:
Negative values indicate underestimates**



2004 to 2007 forecasts underestimated revenue by as much as 15% of General Fund.

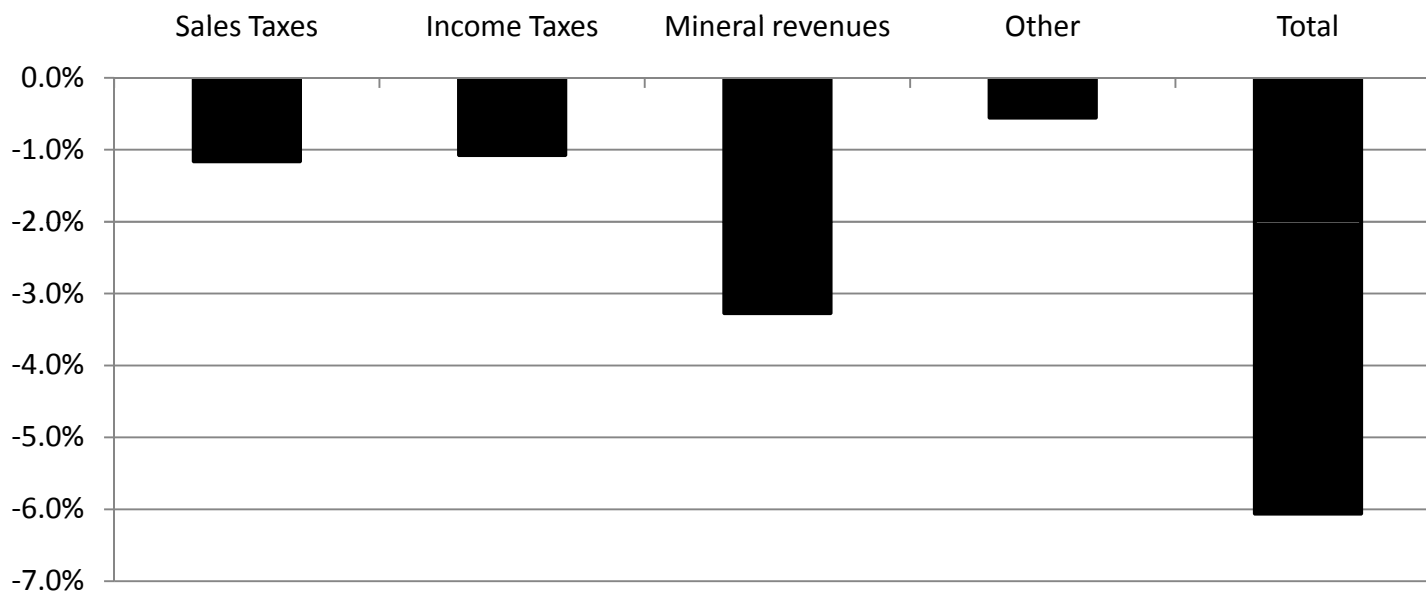
Oil and gas was the largest component with average error of 6% of General Fund.

Other revenue forecasts tend to miss in the same direction as oil and gas.

FY 2009 forecast has been revised down by 10%.

Reserves as a Risk Management Tool

**Average Annual Forecast Error as Percent of Total Recurring Revenue:
2002 - 2008**



Appropriate reserve level depends on whether the revenue forecast includes any "risk insurance" against price volatility.

*O&G revenue volatility means 5% is too low, **10% may be a prudent minimum level** if the state hopes to avoid mid-year budget curtailment.*

Dividing O&G Revenue Into Recurring/Non-recurring

- Currently no effort is made to distinguish recurring oil and gas revenue from non-recurring in the forecast:
 - Any distinction is bound to appear arbitrary to some extent.
 - Distinction would be hard to maintain as revenue is tracked through the year.
- Classifying some oil and gas revenue as non-recurring – in the event that prices fall below forecast -- would avoid the potential need to cut payroll in the future, while making funds available for non-recurring appropriation immediately:
 - ***Although recurring spending would be lower in the current year, it would be the same in the out years,*** the difference would be that there would not be a reduction in the budget (or lower growth) from one year to the next.

Conclusions

- The oil and gas producing industry contributed over \$3 billion in taxes, royalties and other payments to state and local governments in FY 2008.
- General Fund payments of almost \$2 billion comprise 30% of all General Fund revenue.
- Oil and gas revenue volatility has increased in the last 4 years.
- Several tools are available for the State to improve its management of oil and gas revenue volatility.