



**INTERNATIONAL OIL AND GAS TAXATION.
FOCUS ON ... WYOMING (??)**

by

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With a daily oil production of around 150 KBD in 2001, Wyoming ranks seventh in importance amongst US oil producing states (after Texas, Alaska, California, Louisiana, Oklahoma and New Mexico). Wyoming's output is therefore enough to satisfy three quarters of one per cent of the huge US oil demand and is equivalent to a modest two-tenths of one per cent of global supply. On this basis, it would appear reasonable to think, therefore, that nothing much of what goes on in the Wyoming oil and gas sector should be of any interest to the international oil industry at large. Such a conclusion would be quite wrong, however. In recent times, a momentous reassessment of the nature and ends of oil and gas taxation has been taking place in Wyoming, and the tangible results of this exercise (discussed at length in what follows) go to show that in oil as in so many other walks of life, there are none so big who cannot learn and profit from the example and guidance of smaller folk who have – either happily or unhappily – negotiated a route that others might be thinking of following.

As is the case of other oil-patch states, the Wyoming political establishment developed a very close relationship with oil companies of all sizes over the years, of the sort that led Robert Engler to coin the phrase “Brotherhood of Oil” some forty years ago. Both in Wyoming and elsewhere, the cosiness of this relationship has manifested itself, from the moment when the international oil market transformed itself from a sellers' into a buyers' market (1982–3) onwards, in the form of tax incentives allegedly aimed at stimulating production (thereby reducing American dependence on imported oil), tax collections and job creation. In Wyoming's particular case, such incentives took the form of a battery of tax breaks for tertiary production (i.e. enhanced oil recovery), new well, well workover and well recompletion incentives, and incentives for renewed oil production (i.e. bringing shut-in wells back into production).

The tax incentive game in the USA took on a whole new aspect in the wake of the 1998 price collapse. All of a sudden, oil and gas producers whose balance sheets were ravaged by this event began to decry these traditional tax sops as pitifully inadequate to ensure that they would continue to produce “American oil from American soil”, and politicians in the oil patch jumped accordingly. Thus, in 1999, the Wyoming legislature decided to enact a two-year tax break that would lower the severance rate on oil and gas by 33 per

cent – i.e. from 6 to 4 per cent in normal wells from 4 to 3 per cent on stripper wells – unless statewide average prices were to reach a level of 20 USD/B or more (in which case the rate could be increased again). In addition, in 1998, the legislature extended until March 31, 2003 a tax break first enacted in 1995, which lowered the severance tax from 6 per cent to 2 per cent on production of up to 60 BD for oil or 360 MCFD for gas for the first two years of a new well's life, or until such time as the price received by the producer equalled a generous 22 USD/B or 2.75 USD/MCF, respectively, for six continuous months.

Mineral taxes account for approximately 40 per cent state and local tax collection in Wyoming, a percentage that puts this state second only to Alaska in the fiscal dependence league (by way of contrast, oil and gas taxes account for around 25 per cent of Louisiana's government revenues, and less than 5 per cent of Texas'). The budgetary implications of these tax breaks were therefore very significant (and would become even more so as oil and gas prices began to rise from mid-1999 onwards). Because of this, a group of legislators who were sceptical about the benefits of the tax breaks (led by State Senator Cale Case,) succeeded in amending the severance tax break bill to include funding for an econometric study that would ask whether past tax incentive schemes had indeed delivered as advertised. Although Case is a Republican (and hence, one would think, an instinctive friend of the energy industries in a place like Wyoming) his motivations in taking this particular stand are not hard to fathom: in common with many other US states (and oil exporting countries, one might add) Wyoming has been staring down the barrel of a worsening fiscal crisis for some time now: the state's annual budget shortfall for the foreseeable future will be approximately USD 125 million. This is a consequence of the way in which a combination of smaller Federal contributions and Wyoming politicians' allergy to increasing personal and corporate income taxation, on one side, and the requirement set forth in the state constitution that the government has to run a balanced budget, on the other, have squeezed the inflows to the state's coffers.

The study commissioned by the legislature materialised in December 2000 as *Mineral Tax Incentives, Mineral Production and the Wyoming Economy* (available for download at <http://eadiv.state.wy.us/mtim/StateReport.pdf>). It consists of six chapters, plus an introduction, executive summary and four statistical and methodological appendices. The first chapter presents background information on the major types of taxes and royalties levied on oil and gas activities by the Federal, state and local governments in the USA, in order to provide a sense of perspective regarding the incidence of changes in the rates of various types of tax, on the one hand, and the degree of dependence that different states have towards fiscal oil income, on the other. The next two chapters are dedicated to explaining the model that constitutes the core of the report, and to simulating the effects of changes in tax policy (both in Wyoming and other producing areas). Next comes a chapter that shows how E&P activities in Wyoming have been altered due to differences in the stringency of application of environmental and land use policies in private or state lands, on the one hand, and in Federal lands, on the other. There follow two chapters dedicated to the Wyoming coal industry and its sensitivity to changes in taxes and environmental regulations. In the final chapter, the authors discuss the use of a 172–

sector model for the Wyoming economy (prepared by a specialised consultancy firm called Regional Economic Models Inc.) to estimate the statewide effects of tax incentives for oil, gas and coal.

After the publication of *Mineral Tax Incentives* (henceforth MTI), the Wyoming legislature entrusted the Division of Economic Analysis of the state government with the administration of the model that constitutes its core, for the purpose of providing tax break simulations in response to requests put forward by the Wyoming Executive Branch, Legislators, organisations and citizens of Wyoming, and even individuals, agencies or firms from other US states that also produce oil and gas (simulations run for persons or entities not connected with the state government attract a modest fee). This arrangement presumably was intended to curb the munificence of legislators, by showing them in black and white (not to mention red) the tangible and rather asymmetrical results of their pet tax-cutting projects. For instance, one simulation found that a once-and-for-all drop of 2 per cent in the severance tax rate was found to increase total oil recovery by less than one per cent (50 MMBOE) and employment by around 300 persons, while causing a 17 per cent reduction in the present value of severance tax collections. In another run, a two percentage point reduction in the severance tax on coal was found to increase the population of the state by 70 people over sixty years and, due to the market power of the railroads that transport Wyoming coal to market, would show little economic benefit in exchange for a drop of 27 per cent in discounted severance tax revenue over the same period.

As things have turned out, the existence and public availability of the MTI model has, at the margin, translated into a slightly greater reluctance on the part of legislators to grant tax breaks to the energy industries. On a couple of occasions since 2000, the unpalatable results of tax incentive simulations have prompted the sponsors of such incentives to either go back to the drawing board or forget about them altogether. For this reason alone, MTI can be said to have given Wyoming's taxpayers good value for their money. In a tangible sense, MTI has raised the political stakes for state legislators who want to partake of the tax incentive game, chiefly through the dissemination of "hard" numbers pointing out the fiscal costs of past (ineffective) incentive programmes, both to the general public and to non-energy industry lobbying organisations alike. One such organisation, the Equality State Policy Center (ESPC, at [http:// www.equalitystate.org](http://www.equalitystate.org)), has used the findings of the study to argue very persuasively (albeit, so far, fruitlessly) for the coal severance tax to be restored to its former level of 10.5 per cent, with the proceeds of this increase being earmarked to a Permanent Mineral Trust Fund. Admittedly, the post-MTI debate within Wyoming has centred for the most part on tax breaks involving coal. However, the fact that new oil and gas incentives policies have not come under the scrutiny of the MTI model does not mean that the simulations that have been run have been devoid of economic significance: Wyoming, after all, is by far the largest coal producing state in the USA. In any case, given the lofty heights in which oil and gas prices have found themselves in the period of time that the model has been in use, it is not altogether surprising that oil and gas tax incentives have not come under discussion. Even an industry with the formidable lobbying record of oil would be hard pressed to

explain why further tax breaks are needed at a moment when domestic producers are enjoying record revenues.

Mineral Tax Incentives has produced a number of shorter papers: *Effects of Environmental and Land Use Regulation in the Oil and Gas Industry* (available for download at <http://legisweb.state.wy.us/2001/interim/app/reports/checker11-20-01.pdf>, and published as an article in volume 92 of the *American Economic Review*), *Environmental and Land Use Regulation in Nonrenewable Resource Industries* (available for download at <http://www.bus.ucf.edu/wp/content/archives/Checker11-20-01.pdf>, and forthcoming in February 2004 in *Land Economics*), and *State Taxation, Exploration, and Production in the U.S. Oil Industry* (available for download at <http://www.bus.ucf.edu/wp/content/archives/OilTaxPaper%201-22-20021.pdf> and shortly to be published in the *Journal of Regional Science*). Of these papers, the last one is the most significant in terms of its international implications. Its stated aim was to examine the question of how firms in nonrenewable resource industries respond to changes in state taxes, in light of the fact that such firms cannot change location because they are tied to a geographically immobile reserve base that makes up a key component of their capital stock. The MTI model is particularly suitable to address this question because it was defined in a way that took full account of all potential offsets and tax base interactions. Because of this, Gerking *et al.*'s research produced very different results to those of previous efforts at modelling the effects of changes in severance tax rates. For instance, in the concrete case of California, Gerking *et al.* found that a study conducted by Deacon, DeCanio, Frech and Johnson (*Taxing Energy. Oil Severance Taxation and the Economy*, published by The Independent Institute in Oakland in 1990) on the likely results of the imposition of a 6 per cent severance tax in this state had overstated the potential effects on exploration and production by a factor of 1.9, in comparison to the full tax interaction solution produced by the MTI model. Such discrepancies, according to Gerking *et al.*, illustrate the well-known hazards of analysing effects of severance taxes individually outside the context of the entire tax structure applied by all levels of government. In Deacon *et al.*'s discharge, one should point out that the task of accounting for full tax interactions between all levels of government involves a huge amount of work. Of course, this also means that Gerking *et al.* deserve a great deal of additional credit not only for daring to undertake such work but also for carrying it to a fruitful conclusion.

The central conclusion of *State Taxation* is one that, for all its apparent obviousness, is nonetheless well worth restating: oil production is quite inelastic with respect to changes in state severance taxes and other gross income levies like royalties. In the case of Wyoming, for instance a doubling of the state severance tax was found to reduce production by about 6 per cent over a forty year period and to increase tax revenue in present value terms, by over ninety per cent. The effects for every other state examined were broadly similar, a finding that elicited the following question from authors: if production is relatively inelastic with respect to tax changes, why haven't Wyoming and other major energy producers raised severance tax rates? This particular question is pregnant with colossal implications, and not so much for Wyoming as for the international oil industry as a whole. After all, it fatally undermines the liberal oil agenda

that international oil companies, governments of major consuming countries and supranational organisations (IEA, IMF, World Bank, WTO) have succeeded in foisting upon a growing number of oil-producing countries (Nigeria, Algeria, Venezuela, FSU countries) in recent years, and which argues that governments should rise above pressing short-term financial considerations and put in place flexible fiscal mechanisms structured around net income levies, because only thus will the long-term interests (and revenue-generating power) of their respective oil industries be properly safeguarded.

As if the posing of this question were not inflammatory enough, Gerking and his colleagues also underlined in their conclusions that because the state taxes on oil tend to be backward shifted and the vast majority of the stockholders of energy firms and royalty holders reside out-of-state, the majority of the severance taxes are exported. In consequence, residents of the energy producing states pay cents on the dollar for public services financed by these taxes. The full tax interaction feature of the MTI model, in a word, highlighted the fact that oil producers do not absorb the totality of lower severance taxes and that, instead, a reduction in such taxes has the unintended effect of shifting public funds from a comparatively poor entity (the Wyoming state government) to one that is very well off indeed (the US Federal government). And lest anybody forget it, it was entirely similar insights that galvanised OPEC member countries into action throughout the 1960s and early 1970s, and the degree of coherence that they gave to their collective endeavours ultimately culminated in the largest non-violent transfer of wealth ever recorded in human history, no less.

Gerking *et al.* explain that the prevalence of arguments in favour of low state severance taxes within US oil producing states appears largely due to the existence of a well-organised industry lobby that has managed to attain tax concessions when energy prices are low. *Mutatis mutandis*, the same holds true for a number of major oil exporting countries, whose governments (either weakened by the scale of their developmental failure in the wake of two oil windfalls or from their emergence out of the ruins of the Soviet Union), succumbed to a well-designed strategy aimed not only at pressuring them to open their hitherto closed upstream sectors to private investment, but also at persuading them to forswear gross income levies like royalties and severance taxes. The receptivity of such governments to this message has been quite astonishing, not only because their dependence on their fiscal oil fix is much higher than even Wyoming's but also because their sovereign status (however shaky it might be *de facto*) effectively puts them above the many forms of leverage that the US political system can bring to bear on oil producing states within the federation to ensure that their oil, gas and coal fiscal regimes do not become a nuisance for consuming states. In this context, it is instructive to recall the way in which the US Supreme Court struck down Louisiana's attempt to impose a "first use" tax on OCS gas landed in the state and then shipped to out-of-state customers (*Maryland v. Louisiana*, 1981), or the (unsuccessful) attempt on the part of New England states to use the courts to force Montana to repeal its own coal severance tax. Having said that, the docility that some Western oil producing states have displayed in this regard is not something that looks as if it can forever be taken for granted, especially if their finances continue to deteriorate because of the higher costs that energy

producers have to face in order to comply with the stricter environmental regulations prevailing in Federal lands (according to *Environmental and Land Use Regulation*, for instance, the foregone tax and royalty discounted revenue that is ascribable to higher drilling costs on Federal property within Wyoming comes to a daunting USD 1.1 billion).

The authors of *State Taxation* readily concede that many analysts believe that, to quote the words of Michael Boskin and Marc Robinson (well respected members of the fraternity of “optimal” natural resource taxation), “the simplistic case for relying heavily on energy taxation to collect revenue, on the presumption that rents are thereby being captured and virtually no distortions in production and consumption are occurring, has clearly been overstated”. However, to this reader at least, the findings of *State Taxation* point in an opposite direction: it is the case for the abolition of severance taxes and other “regressive” levies (like royalties) that appears to have been overstated, especially as pertains those governments for whom – as Shell’s Silvan Robinson once quipped – the real costs of oil production include the costs of running their respective countries (a description that largely applies to Wyoming, of course). That is why one hears so much in oil policy making circles about *ex ante* variables like optimal rates of taxation or resource extraction, optimal allocation of risk, perfect foresight in the calculation of excess profits and expected fiscal revenues (*vide* the copious works of Alexander Kemp, for instance), and why there are so few *ex post* (or even counterfactual) analyses of outcomes, either in terms of the amounts that in reality reach a given government’s coffers or the tangible consequences of fiscal shortfalls. In Wyoming’s specific case, for instance, energy tax breaks reduced fiscal revenue for the 1999-2000 biennium to the tune USD 190.4 million, equivalent to nearly 20 per cent of the state’s discretionary General Fund income. Reasoning along the same lines albeit on an hypothetical plane, one can point out that had the rate of upstream taxation on the Mexican oil industry in 2000 been comparable to the average upstream tax rate paid by Shell in its global operations outside the USA, gross upstream revenues would have had to be USD 21 billion higher than they actually were for the Mexican government’s fiscal income to remain at the level actually observed for that year.

Gerking *et al.* have taken a very positive step in the direction of broadening the scope of the hydrocarbons taxation debate worldwide. Put another way, the significance of their contribution rests in the fact that it lays practical (and theoretical) foundations that might make it possible for a reasonable exchange of views to occur in the first place (at the moment, what passes for debate actually amounts to one of the parties to the controversy giving scripture–thumping sermons on the evils of gross income levies, while the other side politely takes dictation and unquestioningly tries to put these recommendations in practice). And even though Gerking *et al.*’s model is applicable to US oil producing states only, the general conclusions of these studies constitute a salutary reminder of the crippling price that many oil exporting countries may end up paying for the privilege of having fiscal regimes that satisfy the investment neutrality requirements set out in the textbooks on optimal natural resource taxation. For the moment, alas, it is probably too much to expect that the governments of such countries might be dissuaded from succumbing to the entreaties of the “neutral taxation” brigade by dwelling on the example

of a producing state with an unimpeachable oil and gas pedigree that has looked long and hard at the use of tax breaks as a way of maximising ultimate recovery, only to decide that the game is not worth the candle. But if such a thing ever were to happen, those people who might otherwise have become the victims of more flexible and neutral oil fiscal regimes would owe the Wyoming legislature a huge debt of gratitude for setting in motion a process that ultimately allowed their governments to realise where their real economic interests lay.

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