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Reader Response

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reader response

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Reader Response
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Albuquerque, New Mexico 87131

In the October 1981 issue of the *Natural Resources Journal*¹ I asserted that Professor McDonald's April 1981² examination of the crude oil windfall profit tax was incorrect. He viewed the tax as a leftward shift of the domestic supply curve, thereby reducing domestic production and increasing imports of crude oil. I pointed out that the static framework was inappropriate: oil is an exhaustible resource and should be analyzed in an intertemporal framework. My dynamic analysis demonstrated that the windfall profit tax could either decrease or increase domestic production, and that an appropriately chosen tax rate would not distort domestic production at all.

Professor McDonald replied³ that my analysis was irrelevant to the domestic oil industry, due to the existing regulatory system which constrains producers from responding to the tax in a profit maximizing manner.

I agree that the prorationing and MER (maximum efficient rate) restrictions do constrain the production decisions of domestic oil producers. But this consideration does not invalidate my general conclusions and certainly does not support McDonald's analysis. There are several reasons for this:

(1) The regulatory policies do not remove all flexibility from domestic oil producers. Some wells are exempt from the regulations and production from regulated wells depends upon well depth, among other factors. Since producers have some control over well depth, they also can exercise some control, albeit constrained, over the regulated production rates.

1. 21 *Natural Resources Journal* 683 (1981).

2. *Natural Resources Journal* 332 (1981).

3. *Natural Resources Journal* 690 (1981).

(2) Even if output from each well is totally constrained, total domestic production can be varied through either the abandonment decision or through new well development. This flexibility means that the time path of aggregate extraction can be altered, even if individual well production cannot.

(3) If (1) and (2) were not true, then McDonald's assertion that "In the absence of unitization the individual operator has no choice but to produce at capacity . . . or at the regulated rate, regardless of the profit that might be gained by altering the time-distribution of extraction," would be correct. But, this would make my analysis as well as McDonald's irrelevant. For, if individual producers cannot alter production, then the tax must have a neutral allocative effect.

In conclusion, the regulatory constraints cited by Professor McDonald only serve to constrain the response of domestic producers to the windfall profit tax. The constraints may alter the size but will not alter the direction of the response, e.g., if the net present value of profits would be increased by increased current extraction in the absence of regulation, then these constraints will not lead to decreased extraction. My conclusion that an appropriately chosen tax rate will *not* alter extraction stands in spite of the regulatory constraints. And, these constraints in no way make McDonald's static analysis more appropriate than my dynamic analysis.

Dale E. Lehman
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In my earlier reply to Professor Lehman's original comment I concentrated on the practical inability of regulated oil operators to change, in the short run, the time-distribution of extraction from existing reservoirs in response to a windfall profits tax. This seemed to be the quickest way to dispose of an analysis which assumes such an ability. Professor Lehman now recognizes regulatory constraints on oil operators' responses to profit opportunities, but argues that the constraints are not very restrictive in the long run in which abandonment and new development are variables. He further argues that the constraints may change the degree of response but not the direction. He believes his method of analysis is accordingly upheld.

Professor Lehman's present appeal to the long run points up the major—and, I think, fatal—weakness of his approach for present purposes. His model represents a firm with a single deposit of a fixed quantity of oil, all of which will be ultimately recovered. He contemplates two production periods corresponding to the “present” and the “future” and he asks the question, How would the allocation of extraction between these two periods be affected by the imposition of a windfall profits tax? The change in the rate of extraction that interests him is that which occurs in the present. (There is always an equal and opposite change in future, due to the fixed recoverable stock.) Most importantly, there is no long run in the sense that the stock being allocated can be increased or decreased through exploration or abandonment. There is no long-run marginal cost function to be affected by the tax in question.

Professor Lehman cannot have it both ways: a long run for purposes of allocative flexibility, but none for exploration to alter the fixed stock assumption. I believe that he over-estimates even long-run allocative flexibility, but more importantly I believe that the long-run response of domestic exploration to the windfall profits tax is crucial to the question of incidence and effects. Professor Lehman must admit that even within his framework the tax reduces the prospective profitability of potential oil land. It therefore must shift the long-run (domestic) supply curve to the left, increasing imports and decreasing rents, given an OPEC-determined world price. There is no way that Professor Lehman's model can capture this effect. His approach is ill-suited to the problem at hand.

What of feed-back effects from the long run to the short run? If the United States were self-sufficient in oil, reduced exploration would raise expected future prices and induce a shift in production from present to future. But the country is not self-sufficient, and imports are freely available at the world price, determined independently of the volume of exploration in the United States. Reduced exploration does not indirectly shift production from present to future, but imports gradually increase to substitute for domestic production.

I conclude that my approach is more appropriate to the problem at hand and that it correctly identifies the incidence and effects of the windfall profits tax.

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