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Effects of environmental and land use regulation in the oil and gas industry using the Wyoming Checkerboard as an experimental design (Retracted Article. See vol 97, pg 1032, 2007)

Shelby Gerking
University of Central Florida

William E. Morgan

Effects of Environmental and Land Use Regulation in the Oil and Gas Industry Using the Wyoming Checkerboard as a Natural Experiment: Retraction

By Shelby Gerking and William E. Morgan*

The purpose of this note is to call attention to, and to take responsibility for, errors in a previously published paper (Mitch Kunce, Shelby Gerking, and William Morgan 2002).[1] The main finding reported in that paper is that oil and natural gas wells are significantly more costly to drill on federal property than on private property. This note explains why the paper's results are being retracted from the literature.

Findings presented in the original paper cannot be substantiated because the data furnished by IHS Energy Group cannot be used to identify differences between drilling costs on lands under different ownership. The drilling cost data are obtained from a survey of operators (for details, see American Petroleum Institute, various years). The survey elicits actual drilling costs for some wells but the survey response rate is considerably less than 100 percent (it was about 40 percent in 1996, for example). Consequently, when actual costs are unavailable, predicted drilling costs are assigned to wells based on a regression model estimated using the valid survey responses. Predicted drilling costs are reported in dollars per foot of well depth, averaged over all wells of a given type (oil, gas, dry) within a region for each of 11 depth intervals, but with no differentiation by land type (federal, private). IHS then merges these data with other descriptors for each well drilled in each region. Although IHS classifies wells by land type, wells of a given type in a given region in a given year will have the same reported cost per foot regardless of whether they were drilled on federal or private property. Thus there is no independent variation in much of the drilling cost data independent of the variables used in the regression model.

While the data provided by IHS do not show a difference in drilling cost by land type conditional on the variables in the regression model, errors in our handling of the data made it appear that drilling costs are higher on federal property than on private property. For instance, in our dataset over the 1987–1998 period, drilling cost values were erroneously lowered for 77 wells on private land and drilling cost values were erroneously raised for 33 wells on federal land. These alterations in the data, together with other errors, explain why drilling costs on federal property were found to be significantly greater than drilling costs on private property. In any case, the IHS data cannot be used to determine whether there is a difference in drilling costs on private versus federal property, and our mishandling of the data is responsible for the results presented in the original paper.

* Gerking: Department of Economics, University of Central Florida, Orlando, FL 32816 (e-mail: sgerking@bus.ucf.edu); Morgan: Department of Economics and Finance (emeritus), University of Wyoming, Laramie, WY 82071 (e-mail: wemorg@aol.com).

[1] The errors were first called to our attention by an anonymous referee who reviewed an extension of this paper submitted to the *American Journal of Agricultural Economics.*

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