

## The Local Economic Impacts of Hydraulic Fracturing and Determinants of Dutch Disease

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MUCH research has been conducted on the “resource curse, the idea that development of natural resources can reduce economic growth. There are a variety of reasons why an abundance of natural resources might reduce economic growth, including a phenomenon referred to as “Dutch Disease where a boom in local resource production leads to increased costs for other sectors. A sudden end to the resource boom or when other sectors have a higher growth rate than the extractive sector are factors that can lead to lower economic growth.

In this analysis, the authors quantify the local economic impacts of the development of unconventional shale oil and gas reserves. These unconventional reserves have been made available through the controversial extraction process known as hydraulic fracturing (or “fracking”). The authors assess the local economic impacts of the recent shale boom,

and whether the boom could induce Dutch Disease for resource rich counties.

The authors develop a statistical model using local economic data matched to highly detailed national oil and natural gas data. The model is able to estimate the effect that new “fracking installations have on local job growth and average earnings while controlling for a variety of external factors. Importantly, the model can also measure the impact of fracking on related industries, like transportation and construction, and on “unrelated industries, like retail and hospitality.

The authors estimate the increase in shale oil and gas development from 2000 to 2010 created 239,596 local net jobs in non-urban counties. While this development provides a significant boost to local employment, these estimates fall well short of projected job growth estimates. Additionally, there is evidence that

shale development led to an increase in wages. Counties with shale development had 6% higher wages and “boom counties saw wages increase by 10%. These gains in wages were not limited to the Mining, Oil, and Gas Extraction industry, which saw wages increase approximately 30%. The authors find smaller wage increases in retail trade (6%) and the hotel sector (17%).

Overall, the authors find the employment effects are substantial, although smaller than some previous studies. Shale development increases wages in manufacturing in counties with relatively tight labor markets and little prior oil and gas industry presence. Increased wages in the manufacturing sector suggests the possibility of a loss of competitiveness in some counties with shale oil and gas resources, raising concerns of a future resource curse.