



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Finding: Natural Resources & Environment

August 04, 2014

PRINT

PDF

EMAIL

Natural Gas Extraction and Local Economies—No Evidence of a “Natural Resource Curse”

by Jeremy G. Weber



[Amber Waves Home](#)

[All Articles](#)

[About Amber Waves](#)

Share or Save This Article



Shutterstock

In the 2000s, natural gas production from shale formations increased tenfold in the United States, and growth in production has continued through 2013. This growth stems from innovations in two complementary technologies—hydraulic fracturing and horizontal drilling. Opponents of hydraulic fracturing cite environmental concerns such as groundwater contamination and air pollution. Proponents often highlight the benefit of natural gas extraction to local and State economies, but several studies have found that natural

resource extraction is associated with lower long-term economic growth. Some studies suggest that a “natural resource curse” exists when activities by natural extractive industries cause other industries with more growth potential to shrink, perhaps by creating a local labor market less attractive to employers seeking a higher skilled workforce.

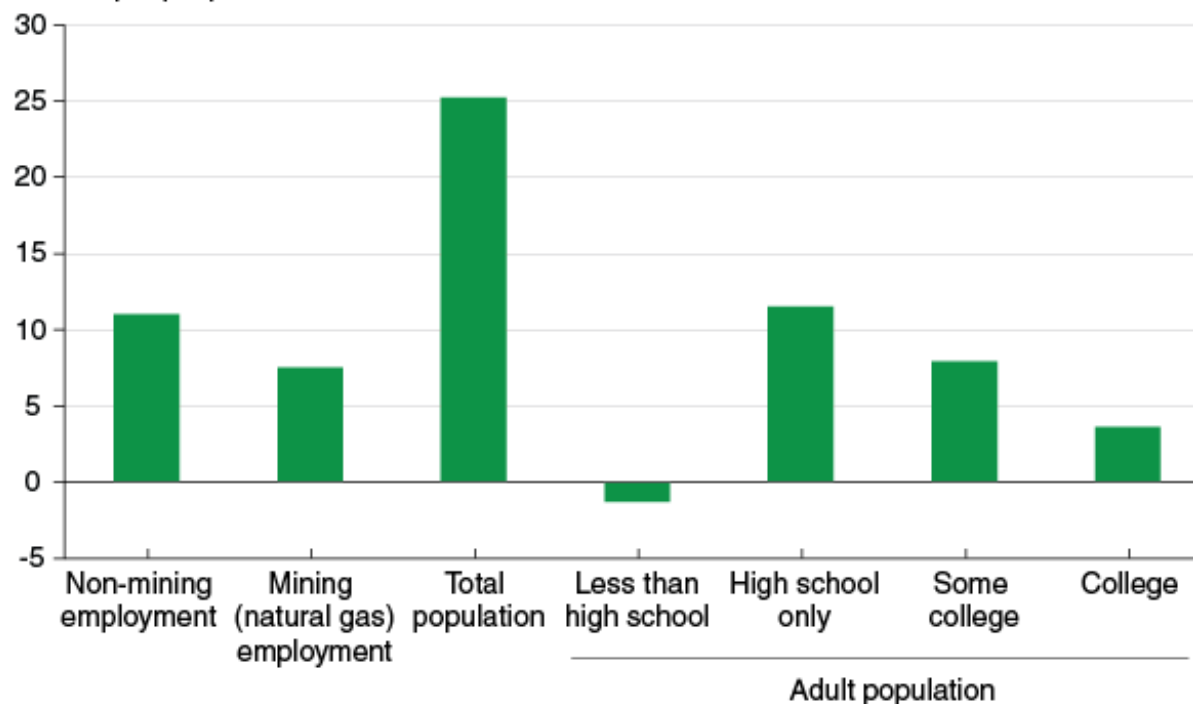
The four-State region of Texas, Louisiana, Arkansas, and Oklahoma includes many counties that experienced an increase in natural gas drilling in the 2000s. Combined, they accounted for two-thirds of the increase in U.S. natural gas production over the decade. Many other counties in this region did not experience this drilling boom because of their location outside of shale formations. The variation in growth in natural gas production across counties allowed ERS researchers to analyze the relationship between the change in natural gas production and changes in local economic indicators, such as employment and population changes among the various levels of educational attainment.

Researchers found that each billion cubic feet in natural gas production was associated with 18.5 additional local jobs, of which 7.5 were in the mining sector. Put differently, the number of non-mining jobs created was 1.4 times the number of mining jobs – a number commonly referred to as the employment multiplier. While some of the non-mining jobs are indirectly dependent on natural gas production, this multiplier effect prevents the local employment base from becoming highly concentrated in extractive industries.

Each billion cubic feet of natural gas production was also associated with about 25 additional people in the local population. On average, increases in gas production were associated with small decreases in the number of adults with less than a high school education, while the proportion of the population with a high school education increased, and the proportion with at least some college education stayed about the same. Combined, these statistics imply that natural gas extraction was associated with higher average educational attainment among the local adult population, with high school graduates replacing high school non-graduates. This could reflect the industry’s demand for semi-skilled labor. Higher housing rental rates due to population growth associated with increased drilling activity may have also caused lower income residents, who typically have less formal education, to move elsewhere.

Greater natural gas production leads to increases in local population and non-mining employment, 2000-2010

Jobs or people per each billion cubic feet



Note: The relationship between jobs or people and each billion cubic feet of natural gas extracted is estimated using a statistical model looking at the 10-year change from 2000 to 2010 in nonmetropolitan counties in Arkansas, Louisiana, Oklahoma, and Texas.

Source: USDA, Economic Research Service analysis using data from the Bureau of Economic Analysis and the U.S. Census Bureau.

This article is drawn from...

“A decade of natural gas development: The makings of a resource curse?”, in Resource and Energy Economics, pp. 168-183, August 2014



Amber Waves on Your Tablet

On the go? Stay connected with our *Amber Waves* app for tablets. Subscribe to the monthly magazine on **iTunes** or **Google Play**.

[ERS Home](#) | [USDA.gov](#) | [Careers](#) | [Site Map](#) | [What's New](#) | [E-Mail Updates](#) | [RSS](#) | [Text Only](#) | [Report Fraud](#)
[FOIA](#) | [Accessibility](#) | [Information Quality](#) | [Privacy Policy & Nondiscrimination Statement](#) | [USA.gov](#) | [White House](#)