Economic Impact of Bakken Energy Production

Rob Grunewald

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Working on the railroad
PHIL DAVIES | Senior Writer

Ninth District railroads have invested heavily to increase capacity. But matching rail supply to demand remains a work in progress.

Opening Remarks
NARAYANA KOCHERLAKOTA | President
A Town Hall Forum at Winona State University
Video of remarks and Q&A

Federal Reserve Bank of Minneapolis

The Federal Reserve System is the central bank of the United States. Congress created the Federal Reserve through a law passed in 1913, charging it with a responsibility to foster a sound banking system and a healthy economy. This broad mission remains today for the Federal Reserve Bank of Minneapolis and the 11 other Federal Reserve Banks, each serving a specific region of the country.

The Minneapolis Fed, with one branch in Helena, Montana, serves the six states of the Ninth Federal Reserve District: Minnesota, Montana, North and South Dakota, 26 counties in northwestern Wisconsin and the Upper Peninsula of Michigan.

LIHTC priorities capture state affordable housing needs
JACOB WASCALUS | Community Development Project Manager

Special Features
The Bakken Oil Boom
Community Banking Research
Current and Historical Market Based Probabilities
Consumer Credit Conditions
Early Childhood Development

Latest from the Minneapolis Fed
COMMUNITY DIVIDEND
April 21, 2016
Oil production
Millions of barrels per month

Source: U.S. Energy Information Administration, North Dakota Department of Mineral Resources, and Montana Board of Oil and Gas Conservation
Global oil production shares by source

2014

World 90%

U.S. 10%

Rest of U.S. 88%

Bakken: 12%

Source: Energy Information Agency, NDIC, Department of Mineral Resources and Montana Board of Oil and Gas Conservation
Core oil economic activity
Bakken oil-producing area
Rough extent of the Bakken Formation, a layer of oil-bearing shale more than a mile below the surface
Oil-producing area outside the Bakken Formation
Nonfarm employment by county
Percent change from 2003 Q1 to 2014 Q2

Percent change 
- Less than -10  
-10 to 0  
0 to 10  
10 to 20  
20 to 50  
50 to 100  
More than 100
Average weekly wages by county
2014 Q2

Average weekly wage
- Less than $600
- $600 to $650
- $650 to $700
- $700 to $800
- $800 to $1,000
- Greater than $1,000
Average weekly wages
4-quarter moving average in 2014 dollars

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages
City of Williston
Number of building permits for new construction

Source: City of Williston
24,000 crew camp beds provided housing to over 30,000 oilfield workers

Crew camps near Williston, N.D.

Source: Federal Reserve Bank of Minneapolis
Many examples of improvised housing

Alexandria, N.D.

Source: Federal Reserve Bank of Minneapolis
Bakken activity: How wide is the ripple effect?
Source: Minneapolis Fed calculations based on QCEW data, Bureau of Labor Statistics
Natural resources and mining employment as a percent of total employment

Source: Minneapolis Fed calculations based on QCEW data, Bureau of Labor Statistics
Unemployment rate by distance from the Bakken
12-month moving average

Source: Minneapolis Fed calculations based on LAUS data, Bureau of Labor Statistics
Active oil drilling rigs and oil prices
Weekly averages

Source: Energy Information Administration and Baker Hughes Investor Relations
Bakken Region
Oil production
thousand barrels/day

October to November projections

Oil -23
thousand barrels/day
month over month

Source: U.S. Energy Information Administration
Bakken Region Natural gas production

Gas -4
million cubic feet/day
month over month

Source: U.S. Energy Information Administration
WILLISTON

North Dakota

Source: Baker Hughes Interactive Rig Count, Oct. 27, 2015
Average Annual Percent Change in Employment
Q1 2009 to Q1 2014

[Map showing employment changes in Montana and North Dakota]
Annual Percent Change in Employment
Q1 2014 to Q1 2015

- Sheridan: -1.2%
- Roosevelt: -4.0%
- Richland: -1.5%
- Divide: 6.5%
- Williams: 4.3%
- Mountrail: 4.4%
- McKenzie: 18.5%
- Dunn: 6.0%
- Golden Valley: -16.1%
- Billings: -2.5%
- Stark: 5.2%
- Burke: -13.5%
Average Annual Percent Change in Ave Real Weekly Wages
Q1 2009 to Q1 2014

- Sheridan: 6.6%
- Roosevelt: 2.2%
- Richland: 7.9%
- Divide: 11.8%
- Williams: 8.2%
- Mountrail: 11.6%
- McKenzie: 10.8%
- Dunn: 10.4%
- Billings: -5.1%
- Golden Valley: 7.9%
- Stark: 10.7%
Average Annual Percent Change in Ave Real Weekly Wages
Q1 2014 to Q1 2015

Montana:
- Sheridan: -0.6%
- Roosevelt: -3.8%
- Richland: -5.5%
- Golden Valley: -3.4%

North Dakota:
- Divide: 15.9%
- Burke: -2.0%
- Williams: 1.2%
- Mountrail: 4.8%
- Dunn: 7.2%
- Stark: 3.4%
Unemployment Rate
July 2014

Montana
- Sheridan: 2.2%
- Roosevelt: 5.3%
- Richland: 2.3%
- Golden Valley: 2.0%

North Dakota
- Divide: 1.2%
- Williams: 1.1%
- McKenzie: 1.4%
- Dunn: 1.2%
- Stark: 1.5%
- Burke: 2.5%
Unemployment Rate
July 2015

Montana
- Sheridan: 2.2%
- Roosevelt: 5.2%
- Richland: 2.7%
- Golden Valley: 2.1%

North Dakota
- Divide: 1.4%
- Williams: 1.8%
- McKenzie: 2.0%
- Billings: 2.1%
- Dunn: 1.8%
- Stark: 2.1%
- Mountrail: 1.6%
- Burke: 3.1%
North Dakota online job postings

- Bakken Counties
- Rest of North Dakota

Source: Job Service North Dakota