

Atchison, Gentry and Worth Counties Executive Summary



Gauging precisely how broadband impacts the economy — in terms of jobs, gross domestic product and other economic measures — is difficult because broadband technology’s benefits intertwine with benefits that stem from computing advances and improved digital literacy. Other gains made possible by broadband, such as quality-of-life improvements, are easy to recognize but harder to quantify. Finally, broadband installation and adoption occur over a long period, so the economic benefits take time to unfold.

Despite these measurement challenges, recent research provides a practical approach to understanding how broadband expansion benefits local economies. Economic gains tied to broadband expansion include the following:

- **Broadband investment:** Installing broadband infrastructure to previously unserved households will generate construction-related economic activity for several years.
- **Telemedicine:** Virtual health care saves households money by reducing visits to the emergency room and doctor’s office. It also reduces lost income associated with travel and missed work.
- **Education productivity:** Access to online resources increases teacher productivity.
- **Income:** Broadband technology enables more effective job matching, online training, and access to goods and services that can increase incomes. It also improves productivity that can raise household and farm incomes.
- **Employment:** Community job growth, especially in knowledge-intensive service industries, leads to entrepreneurial, investment and productivity gains.

Although necessary, broadband access is not sufficient to stimulate economic growth. To realize broadband’s economic benefits, community residents and businesses must increasingly adopt broadband service and gain skills in using broadband-related technologies. **Increased broadband adoption and use drives long-term economic gains.**

About this study

This study estimated the 10-year economic benefits that would result from expanding fixed broadband adoption in three Missouri counties that vary in their existing adoption levels and population size: Atchison, Gentry and Worth. Fixed broadband includes fiberoptic, cable or DSL (digital subscriber line) technologies considered more reliable than other broadband connections. The study considered minimum and maximum broadband adoption growth scenarios to capture the range of potential economic outcomes in a 10-year period. The minimum scenario assumes a 10 percentage point increase in household fixed broadband adoption for the three counties. In the maximum scenario, household fixed broadband adoption increases by 20 percentage points.

Key study findings

The following discussion describes how jobs, labor income and gross domestic product would change assuming the minimum and maximum broadband adoption gains.

Job and labor income growth are the most tangible economic benefits expected from expanded broadband adoption:

- In both scenarios, all counties see substantial employment growth in the 10-year period. Exhibit 1 shows these county's job gains by year 10 when assuming the minimum adoption scenario: Atchison (35), Gentry (89) and Worth (22). Job gains double in the maximum scenario.
- For context, Exhibit 1 shows annual average number of new jobs per year as a percent of 2019 employment and compares these rates to county job growth trends from 2014 to 2019. The minimum scenario shows annual job growth between 1.6% and 2.4% of 2019 employment for the three counties. Under the maximum scenario, the growth increases to roughly 3% or more per year. These gains substantially benefit all three counties, which experienced annual job declines from 2014 to 2019.
- Labor income would also increase as broadband use expands; see Exhibit 1. From \$4 million in total labor gains for Worth County in the minimum scenario to \$38 million for Gentry County in the maximum scenario, these income gains would increase spending in local communities and benefit businesses and residents alike.

Gross domestic product (GDP)

communicates the value of all final goods and services produced in a county. It represents the most comprehensive measure of economic benefits from broadband expansion.

- The study projected that GDP would increase significantly under both minimum and maximum scenarios; see Exhibit 1. For example, Worth County gains \$6 million in total GDP over 10 years in the minimum scenario and \$9.7 million in the maximum scenario. The more populated Atchison and

How Significant is GDP Growth?

Gross domestic product (GDP) measures the final value of goods and services sold in a county that results in new income and profits circulating within the community.

For the three counties, the minimum growth scenario shows annual, inflation-adjusted GDP would increase by less than 2%.

Those gains, which may seem modest, are significant because they would allow the three counties to grow their economies more than they have in recent years.

For example, Atchison County had a 0.3% annual GDP growth rate from 2014 to 2019. The minimum scenario provides an annual boost of 1.4% in new GDP over 10 years. For context, Missouri's annual GDP growth rate from 2014 to 2019 averaged 1%.

Adding 1.4% to Atchison County's annual GDP over ten years, all else equal, would make the county's economy

12% larger than in 2019.

ECONOMIC BENEFITS OF EXPANDING BROADBAND IN MISSOURI

Gentry counties have greater GDP increases ranging from \$23 million to \$54 million, depending on the scenario.

- With modest 10 percentage point broadband adoption gains, all counties would increase their annual GDP by 1.3% to 1.6% relative to their 2019 GDP levels.
- Annual GDP growth would total between 2.1% and 2.6% assuming 20 percentage point broadband adoption gains in these counties.

Exhibit 1 shows how the three counties benefit from fixed broadband expansion in terms of county employment, labor income and GDP growth under the two scenarios.

Exhibit 1. Employment, Labor Income and GDP Benefits of Fixed Broadband Adoption, Minimum and Maximum Adoption Scenarios

	Atchison	Gentry	Worth
Minimum Scenario - 10 Percentage Point Increase in Household Fixed Broadband Adoption			
10-Year Total Economic Benefits of Broadband Expansion			
Employment Gain in Year 10	35	89	22
Total Labor Income (<i>in Millions</i>)	\$15.1	\$21.8	\$4.1
Total Gross Domestic Product (<i>in Millions</i>)	\$23.2	\$31.0	\$6.0
Average Annual Gains of Broadband Expansion Compared to 2019 Figures and Prior 5-Year Trends			
Annual Avg. Employment as % of 2019 Emp.	2.2%	1.6%	2.4%
<i>For Reference: Annual Employment % Change, 2014-19*</i>	-0.7%	-0.4%	-1.9%
Annual Avg. GDP as % of 2019 GDP	1.4%	1.3%	1.6%
<i>For Reference: Annual GDP % Change, 2014-19*</i>	0.3%	-3.2%	-3.8%
Maximum Scenario - 20 Percentage Point Increase in Household Fixed Broadband Adoption			
10-Year Total Economic Benefits of Broadband Expansion			
Employment Gain in Year 10	72	178	43
Total Labor Income (<i>in Millions</i>)	\$23.4	\$37.7	\$6.7
Total Gross Domestic Product (<i>in Millions</i>)	\$36.1	\$54.1	\$9.7
Average Annual Gains of Broadband Expansion Compared to 2019 Figures and Prior 5-Year Trends			
Annual Avg. Employment as % of 2019 Emp.	3.0%	2.9%	3.6%
<i>For Reference: Annual Employment % Change, 2014-19*</i>	-0.7%	-0.4%	-1.9%
Annual Avg. GDP as % of 2019 GDP	2.1%	2.3%	2.6%
<i>For Reference: Annual GDP % Change, 2014-19*</i>	0.3%	-3.2%	-3.8%

Notes: Reference source is U.S. Bureau of Economic Analysis, 2014-19. Average annual employment and GDP are divided by 2019 county figures to show the percentage of that figure to compare against 2014-2019 growth trends. 2014-2019 annual GDP % change is the compound annual growth rate in real dollars. 2020 data excluded to avoid COVID-19 economic influences. Income and GDP figures reported in 2022 dollars.

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