Insight

Would A Federal Broadband Program Help Rural Areas?

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Executive Summary

- Senator Elizabeth Warren has proposed a federal grant program to expand rural access to broadband Internet, but this kind of proposal ignores the economics of broadband and rural communities.
- Most people in rural areas already live in population centers with strong access to broadband internet, and past government efforts at broadband expansion were far from obviously successful.
- Rural areas need far more than just broadband access to strengthen their economies—better educated labor forces and access to financing are essential, too—and it is possible that expanding broadband access could accelerate the shift in talent from rural to urban areas.

Introduction: The Proposal

Senator Elizabeth Warren recently rolled out a plan to reinvigorate rural America, which featured a new $85 billion federal grant program to expand broadband access across the country. Expanding broadband access will strengthen these communities, economically and otherwise, the thinking goes. As Warren explained, "One of the best tools for unlocking economic opportunity and advances in health care, like telemedicine, is access to reliable, high-speed Internet." But her plan isn't rooted in the realities of rural economics. Unlocking opportunity in rural regions will require much more than a simple high-speed broadband connection. Moreover, if her plan is successful, the rural brain drain and reorientation toward metro regions will likely speed up.

Population Distributions and Agglomeration Effects

To understand why this plan is likely to be deficient, it is helpful to understand a bit about spatial economics. Economists use the term agglomeration economies to describe the range of benefits that accrue when people are in close proximity. A business being located in a city or industrial cluster lowers costs of production and transportation, gives better access to workers, and gives workers the ability to move between companies. Additionally, both firms and workers benefit from knowledge spillovers.

Rural regions might be less dense than urban regions, but they are still ruled by these spatial economics. By definition, rural America is simply everything that isn't located within a metro region, but that doesn't mean rural America isn't clustered into population centers. One commonly used classification scheme is the Rural-Urban Continuum Codes (RUCC) developed by the United States Department of Agriculture, which provides researchers with detailed residential classifications to analyze the degree of rurality and metro proximity. The latest population estimates using the rural RUCCs are detailed below.

Rural-Urban Continuum Code	Total Population (2013)	Description
4	13,633,186	Urban population of 20,000 or more, adjacent to a metro area
5	4,953,810	Urban population of 20,000 or more, not adjacent to a metro area
6	14,837,258	Urban population of 2,500 to 19,999, adjacent to a metro area
7	8,257,975	Urban population of 2,500 to 19,999, not adjacent to a metro area
8	2,157,448	Completely rural or less than 2,500 urban population, adjacent to a metro area
9	2,611,994	Completely rural or less than 2,500 urban population, not adjacent to a metro area

As is evident, completely rural counties not adjacent to a metro area are a small part of the rural population, making up just over 5 percent. Instead, the vast majority of rural America is either near a major metro area or is concentrated in a population cluster of its own. Since jobs are also clustered, it makes sense why most rural Americans live near metro areas.

Research consistently finds that being near a large population cluster helps to drive economic development. Poverty rates increase as the distance increases to larger metropolitan areas. Moreover, the most economically successful rural areas have tended to

be near larger markets. A federal program to build out broadband cannot, by itself, counteract these fundamental spatial tendencies.

Expanding Access to Broadband

It is an open question whether broadband subsidies would indeed expand access in truly rural areas. There is a strong spatial component to broadband deployment, which AAF's previous research confirms. Micropolitan cores, which are rural population cores with between 10,000 and 50,000 people, already have broad access to broadband similar to metropolitan cores. But the surrounding areas tend to show marked differences in broadband availability. Access drops quickly the further you get from a population center. In other words, many rural towns tend to have good Internet access already, and it is in those population centers where the jobs are located.

Research on the Department of Agriculture's Broadband Loan Program initially found "no evidence that loans received…have had a measurable positive impact on recipient communities." But in a followup study, those same researchers found that the loan program increased farm sales, expenditures, and profits—but only for areas adjacent to metropolitan counties. Otherwise, there was no impact. Studies have also found that the American Recovery and Reinvestment Act's $7 billion investment in broadband development had only mixed success. While some communities saw a marginal increase in broadband adoption as part of the Community Connect program, researchers found no change in the economic and quality-of-life measurements touted by the Obama Administration. Paradoxically, broadband adoption also increased in one community where a federal grant was ultimately terminated.

Broadband as Economic Stimulus

The relationship between broadband expansion and economic growth within a region is complex, a reality which Warren seems to overlook. While there is a correlation between broadband expansion and employment growth, average wages and employment rates seem to be unaffected by broadband expansion. And the most comprehensive and up-to-date metastudy on the topic of rural broadband summarizes the economic literature as being simply inconclusive on broadband's entrepreneurial impact.

Knowledge-intensive firms often locate their business based on broadband availability, leading to a clustering of these businesses in regions with widespread access. But these businesses need more than just broadband to be successful. Economists looking at rural areas in the 2000s found that an area having early access to broadband had a positive effect on new firms locating there. The effect was the most pronounced, however, for "rural areas and those adjacent to a metropolitan area, suggesting that this effect increases with

agglomeration economies." Similarly, the National Telecommunications and Information Administration (NTIA) found that proximity to central cities may be more strongly associated with the availability of the highest speed levels of broadband service than population density. In other words, businesses might be attracted to broadband, but they are more likely attracted to areas with strong labor forces—areas, in fact, that are likely to have strong broadband access already.

Reshaping Rural Regions

Still, if broadband policies are truly successful, then they will reshape the rural region towards a metro cluster. As economists Douglas Cumming and Sofia Atiqah Johan found, government-provided Internet technologies tend to increase entrepreneurship among larger rural communities, especially those near metro regions, but at the expense of smaller regions. As they explained, "the key finding is that virtual entrepreneurial clusters are not independent of real entrepreneurial clusters." Similarly, researchers Kelsey Lynn Conley and Brian Whitacre noted, "high levels of broadband adoption may in fact serve to *reduce* the numbers of entrepreneurs and creative class employees in rural America."

The logic is understandable. Having access to super-fast broadband means that rural startups can choose to source their talent and capital elsewhere. Unfortunately, rural America faces challenges in education and in finance. Given what is known about broadband, subsidizing this technology doesn't mean rural regions will see a renaissance. Instead, businesses will likely flock to the nearest region with more resources. While knowledge-intensive firms tend to cluster near areas with Internet access, subsidizing broadband won't necessarily create new opportunities.