



The Digital Economy in the Western U.S.

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The Internet has become widely used by businesses, households, and governments. As more activities, including education, medical, and commercial, have shifted to the Internet its use has become so prevalent that the Internet has become viewed by many as a need rather than a luxury.

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Education programs and offerings have become richer. Some medical services may lend themselves readily to the Internet environment, with potential cost savings for rural residents and medical clinics that offer in-situ services not otherwise readily available in rural settings. Rural businesses are adopting more e-commerce and Internet practices, enhancing economic vitality and expanding market reach. Telework is becoming a more practical option for workers and businesses. Individuals are using the Internet to get involved with their communities.

The Internet, however, has not become universally available to all households. Rural and poor regions have had less access, especially high-speed access, to the Internet. As one consequence federal and state policies have been implemented to increase Internet access across the country.

Increasing Rural Internet Use

Rural Internet use has increased considerably over the last ten years and while it may at times seem like everyone is online, this is not the case (Figure 1). The number of households newly gaining Internet access, though, has

slowed down considerably over the last few years. With the increasing sophistication of websites and online products and services, accessing the Internet through broadband technologies has become increasingly necessary, as well as the technology of choice for households (where broadband service is available) in order to fully utilize what the Web has to offer.

Who has Internet Access?

Sixty percent of American urban households now have access to the Internet in the home while only 49 percent of rural households have access. Rural households in the West², however, are, on average, more likely to go online than other rural households; 55 percent of western rural households while only 48 percent of other rural households had Internet access at home (Figure 2). Although high-speed access has increasingly become necessary to use the Internet, not all households have broadband. Once a household has Internet access, however, they are most likely to have high-speed access; 93 percent of online households in urban areas, though this falls to 88 percent in rural areas (Figures 1 and 3).

Figure 1: Internet Access in Rural Households, 2000-2009

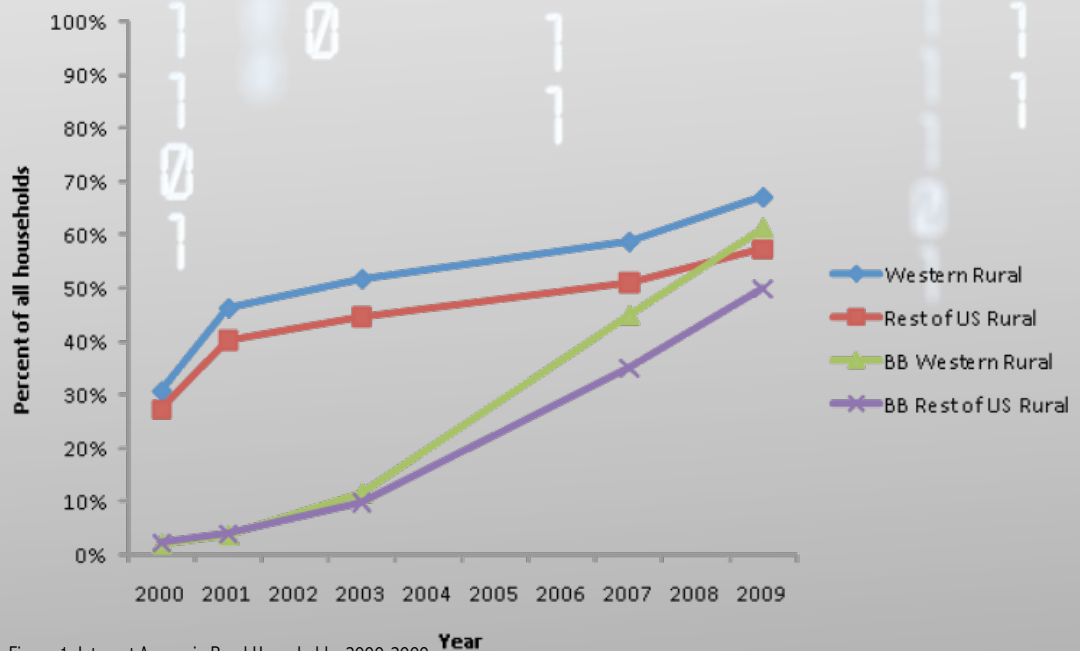


Figure 1. Internet Access in Rural Households, 2000-2009.
 Note: BB means households with broadband Internet Access.
 Sources: ERS using Census Bureau survey data.

Western rural households, however, have less access than their western urban counterparts. Rural broadband access has also been of a lower quality than in urban areas with rural households relying more often on satellite and wireless connections than households in urban areas.

Why doesn't everybody have broadband Internet access?

While the rural West has done better than some other rural parts of the country in getting broadband access to the Internet, many challenges remain for the region to obtain and maintain broadband Internet access. Rural areas by their very nature of low population do not have the economies-to-scale that urban areas have, thus making broadband Internet access less affordable for businesses and consumers. In addition, some of the West's mountainous terrain and harsh weather present additional challenges. Not having broadband in the home, however, is sometimes by choice (Figure 4). It has been many years since the start of the Internet age; the largest plurality of those who do not have home broadband Internet access are those who do not want it. In the West, however, this

is less likely to be the case than in any other part of the country.

Service cost still remains the other major reason for not having broadband Internet access. Nevertheless, rural areas have had many gains in broadband access over the last few years. The decrease in the cost of broadband technologies has had a significant impact on increasing Internet use, as have the federal broadband programs. Nevertheless, as can be seen in Figure 5, household income plays a significant role in household broadband Internet access. Rural household Internet access, at any given income level, generally falls below the correspondent urban household Internet access rate, this is one indication that broadband service has not been as readily available in rural areas as in urban areas.

Government Policy has led to higher levels of broadband Internet access

Bringing broadband service to rural areas is expensive, but private service providers have been rolling out the service in many areas. Federal and state government policy has been a noteworthy factor in increasing its availability in the rural West and the rest of the country, mostly by leveraging funds.

Figure 4: Reasons Households Gave for Having No In-home Broadband Access, 2009

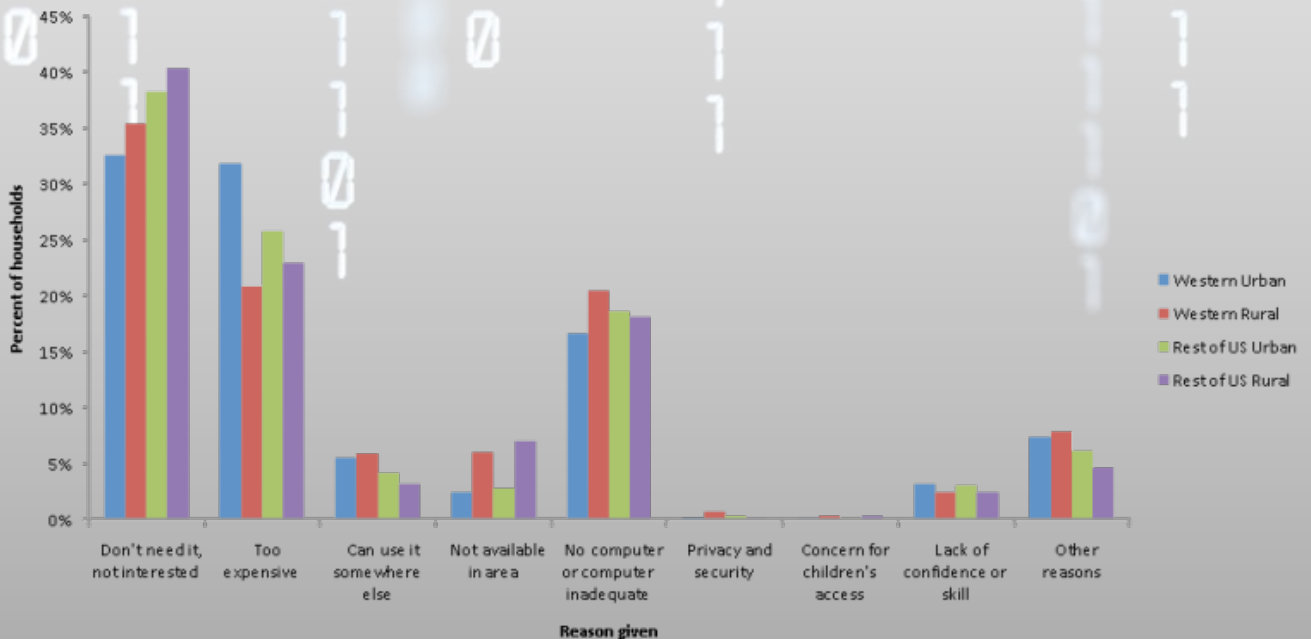


Figure 4. Reasons Households Gave for Having No In-home Broadband Access, 2009. Source: ERS using Census Bureau survey data.

The Rural Utility Service of the U.S. Department of Agriculture (USDA) has been the lead agency for rural areas through four programs, the: (1) traditional rural telecommunication infrastructure program requiring all facilities to be broadband capable; (2) farm act broadband program (authorized by the five-year farm acts, the Food, Conservation, and Energy Act of 2008 is the latest of these); (3) Community Connect Broadband Grant Program; and (4) joint U.S. Department of Commerce (USDoC) and USDA administered broadband programs resulting from the American Recovery and Reinvestment Act of 2009.

Over the last ten years the traditional infrastructure program has lent out over \$5 billion to rural telecommunication service providers for improving and maintaining rural telecommunication infrastructure and requires the facilities receiving the loans to be broadband capable. The farm bill broadband loan program has lent out over \$1 billion to rural providers to build broadband capable facilities over the last decade. The Community Connect Broadband Connect Grant Program services rural communities least likely to receive broadband service and has provided over \$86 million in grants during the last ten years.

The American Recovery and Reinvestment

Act of 2009 provided more than \$7.2 billion over two years. The USDoC administered \$4.7 billion in grants for all parts of the country. The USDA administered the remaining \$2.5 billion to provide \$2.3 billion in grants and \$1.2 billion in loans to rural service providers.

In summary

More activities are shifting to the Internet. Some of these activities have great potential value for the rural economy and rural communities are invested in the digital economy, though equal access across the rural-urban landscape remains questionable. Rural households are almost as likely as urban households to use the Internet, but are less likely to use broadband. Rural businesses are less likely than urban businesses to use the Internet. Broadband access is less prevalent in rural areas than in more densely populated areas. Nevertheless, government policy and on-going technological changes have been improving its availability. •

¹The views expressed are those of the authors and do not necessarily reflect the views of the Economic Research Service or the U.S. Department of Agriculture.

²The West is defined as the 13 states constituting the region covered by the Western Rural Development Center: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, Washington, and Wyoming.

Figure 5: Rural and urban household at-home Internet access using any technology, by income 2009

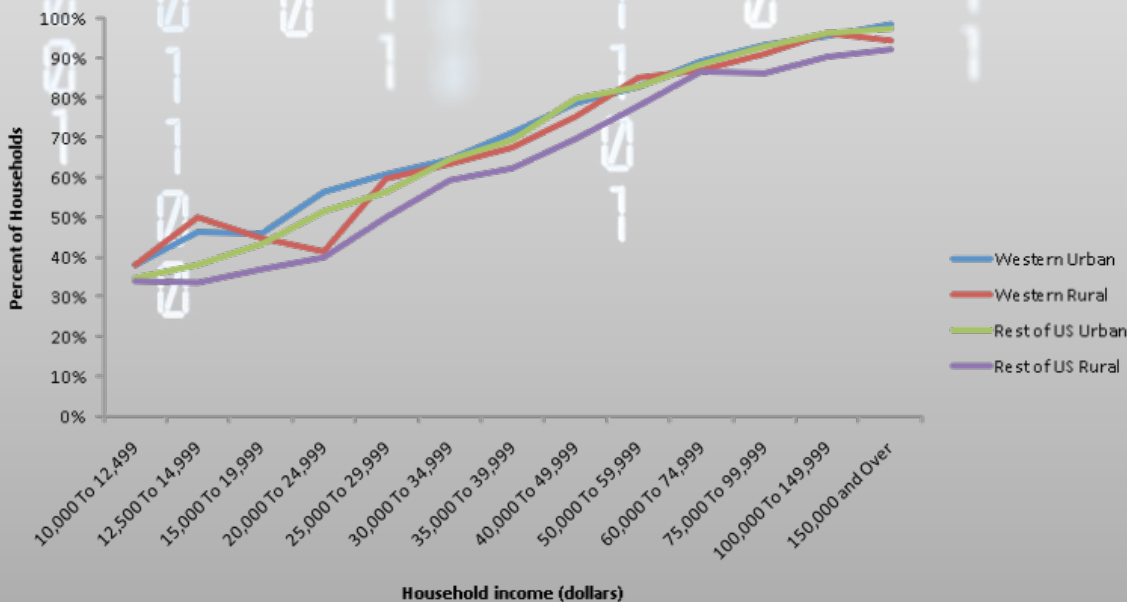


Figure 5. Rural and Urban Household at-home Internet Access Using any Technology, by income, 2009. Source: ERS using Census Bureau survey data.

RECOMMENDED READING

Stenberg, P., et al. 2009. "Broadband Internet and the Vitality of Rural America." *Amber Waves*, Vol. 7, Issue 3, Economic Research Service, U.S. Department of Agriculture, September, pp.22-26. ers.usda.gov/AmberWaves/September09/PDF/Broadband.pdf

Stenberg, P., et al. 2009. *Broadband Internet's Value for Rural America*, ERR No.78, Economic Research Service, U.S. Department of Agriculture. ers.usda.gov/publications/err78

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