Conclusion

The Internet, and more specifically broadband Internet, has become an integral part of the broader economy. Since the digital or information economy incorporates computer processes, telephony, information storage and use, hardware, and software, however, it is challenging to separate out the Internet's contribution to economic growth and well-being. In fact, the Internet's economic contribution has more than occasionally been estimated using the residual in economic growth not otherwise explained.

Rural communities are invested in the digital economy, though equal access across the rural-urban landscape is questionable. Rural and farm 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, and analysis of CPS data suggests that lower broadband use in rural areas may be involuntary.

Broadband provision follows a geographical pattern strongly tied to population size and the urban-rural hierarchy. Lack of broadband is most strongly associated with low population size in the area. Low broadband provision also exhibits very strong regional patterns that reflect differences in urban concentration and topography.

Broadband users use the Internet more intensively than dial-up users and now outnumber dial-up users. The high adoption rate of broadband technologies by urban Internet users indicates that people value what the Internet has to offer. Rural Internet users have less in-home broadband access, and this is likely due to its higher cost and limited availability in rural settings. Government policies to encourage deployment of broadband services in rural areas have increased availability and in some cases encouraged competitive pricing. Unfortunately, there are little national data that link Internet access choice with the cost of service. As a result, it is difficult to distinguish between financial and other motives when examining broadband adoption. Nonetheless, by using the Internet more intensively, on more activities, using newer (and presumably better) technologies, and bringing the Internet into their homes, schools, and workplaces, society has clearly indicated that it values Internet access.

More activities are shifting to the Internet. Some of these activities have great potential value for the rural economy. Education programs and offerings—primary, secondary, higher education, and continuing education—have become richer on the Internet. Telework is becoming a more practical option for workers and businesses. 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. Individuals are using the Internet to get involved with their communities.

Analysis of farm businesses indicates that household characteristics such as age, education, presence of children, and household income are significant factors in adopting broadband Internet use. Distance from urban centers was not a factor in Internet access. Larger farm businesses are more apt to use broadband in managing their operation; the more multifaceted the farm business, the more the farm uses the Internet.

Analysis suggests that rural economies benefit generally from broadband Internet availability. In comparing counties that had broadband access relatively early (by 2000) with similarly situated counties that had little or no broadband access as of 2000, employment growth was higher and nonfarm private earnings greater in counties with a longer history of broadband availability.

Government policies that encourage deployment of broadband services have broadened their availability in rural America. The 2008 Farm Act (Food, Conservation, and Energy Act of 2008) reauthorized USDA's telemedicine, distance learning, and rural broadband access grant and loan programs. The American Recovery and Reinvestment Act of 2009 provided $2.5 billion to USDA for loans and grants to increase broadband provision in rural areas. As much as these funds address the needs of unserved and underserved communities, rural broadband availability will increase.

More research is needed in many areas to better understand broadband and rural economies. Better information on broadband availability, use, cost, and technical characteristics is needed to gain a better understanding of broadband Internet's potential effect on rural economies. Broadband availability data are only now being collected below the ZIP Code area; the more geographically granular the data the better our understanding will become on unserved and underserved areas. Price data are largely unavailable, hindering economic analysis of supply and demand of the regional broadband market.

Detailed broadband Internet use data also have not been collected since 2003. Our understanding of broadband users' online behavior is limited. For example, we know certain Internet-based education activities are taking place, but the extent to which Internet practices are taking place in rural education systems (in either the school or at home) is still unclear.