Market-based Policies for Broadband in Florida

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Digital information is growing in importance. E-commerce made up 10 percent of US retail sales in 2018, up nearly 70 percent over five years earlier. (Statista 2019) Business-to-business e-commerce in the US totaled more than $1 trillion in 2018 (Digital Commerce 360 2019) and PWC Global reports that 80 percent of US CEOs expect that artificial intelligence will significantly change the way they do business by 2024. (PWC 2019)

Participation in the emerging digital economy requires the use of broadband communications networks. This seems to naturally lead policy makers and sector regulators to look for ways that government officials can promote broadband growth. President Trump is championing the US

becoming a world leader in the newest mobile communications technology, called 5G. (Mihalcik 2019) Federal Communications Commission (FCC) Chairman Ajit Pai recently announced his intention to improve how the agency determines where broadband is available. (Robuck 2019) The city of Tallahassee, Florida recently launched a study of internet access within its boundaries. (Etters 2019)

For Florida, this attention to broadband begs two questions. Is there a deficiency of broadband in Florida, i.e., a broadband gap? If there is, what steps if any should Florida take to fill the gap?

This article analyzes broadband availability in Florida and what is needed to assess whether the current level of deployment of broadband networks is appropriate, and concludes with strategies that Florida could use to address the gap, if there is one, and makes suggestions for what might be the most appropriate course of action.

I. The State of Broadband in Florida

Broadband gaps are generally measured in terms of access and subscription. Access means that networks are physically available, and subscription means that individuals actually purchase network services. Both measures are expressed as percent of households or percent of population. For brevity, let's focus on access.

There are two basic technologies used for people to access broadband networks: Fixed technologies, such as coaxial cable and fiber optics, and mobile technologies, such as 4G LTE (fourth generation long term evolution), which is what most mobile networks in the US use. Traditionally, policy makers focused on fixed access in the belief that it was superior to mobile access.

According to FCC data, Florida benchmarks competitively against the contiguous states of Alabama, Georgia, and South Carolina. Table 1 shows the percent of people in each state without access to fixed broadband for the years 2014, 2016, and 2017. Florida had greater access than nearby states each year, with only 3.8 percent of the population not having access to fixed broadband in 2018. The same pattern holds

Figure 1. Percent Total Population without Acess to Fixed Broadband by State, 2014-2017

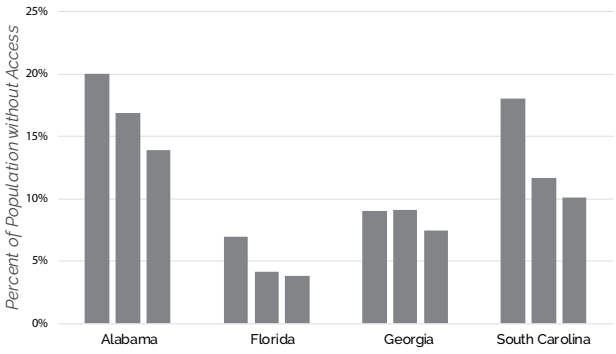
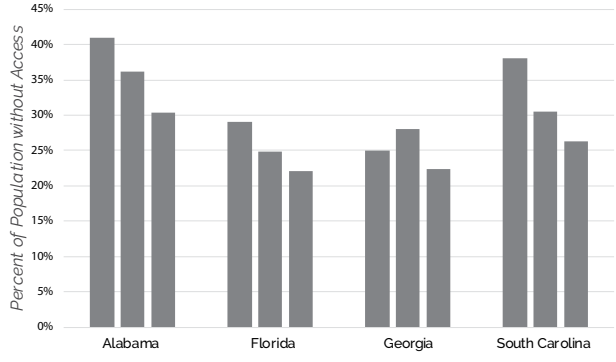


Figure 2. Percent Rural Population without Access to Fixed Broadband by State, 2014-2017



Source: FCC (2016, 2018, 2019)

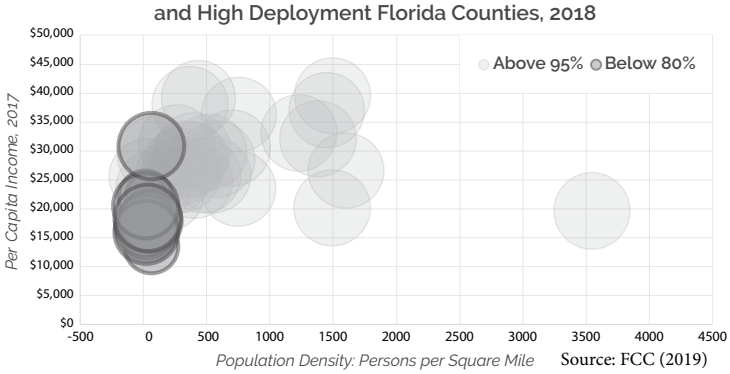
for broadband in rural areas, where a little more than 22 percent of Florida's rural population did not have access to fixed broadband. But as Figure 2 shows, rural broadband deployment in Georgia is nearly on par with that in Florida.

Even though Floridians fare well on average compared to their counterparts in neighboring states, there are wide discrepancies in broadband access across Florida. According to the FCC's best estimates, all Floridians in 13 counties had access to fixed broadband 2018. In contrast, 0.8 percent of the residents of Dixie County had access, and less than 50 percent of Floridians in six additional counties had access. (FCC 2019)

Why do Florida counties differ so widely in broadband penetration? Per capita income and population density can explain some of the differences, but not all. Figure 3 shows fixed broadband density for Florida counties in 2018. The lighter circles represent the counties that have greater than 95 percent deployment, and the darker circles represent counties with less than 85 percent deployment. The sizes of the circles show the relative deployment densities. The vertical axis shows per capita income and the horizontal axis shows population density. In general, high-deployment counties have greater population density and higher per capita income than do lower-deployment counties. However, the pattern isn't universal. Per capita income in Walton County – a low-deployment county –is comparable to that in high-deployment counties. Indeed, population density appears to have greater influence over broadband deployment than does per capita income in Figure 3.

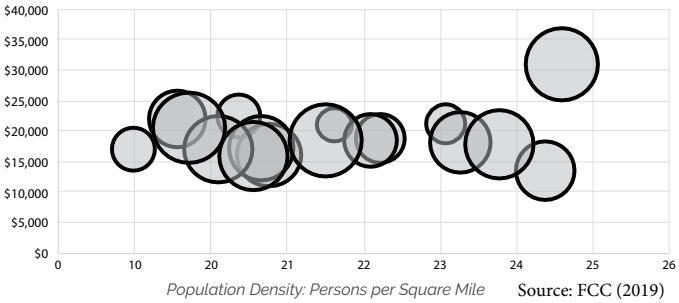
This relationship breaks down in Figure 4, which focuses just on low-deployment counties. Income seems to matter little as counties tend to cluster around the $20,000 per capita level without having an apparent effect on deployment. The counties with greater deployment (represented by larger circles) are located at both the high end and the low end of the population density scale. So are counties with less deployment (represented by smaller

Figure 3. Fixed Broadband Density for Low Deployment and High Deployment Florida Counties, 2018



Source: FCC (2019)

Figure 4. Fixed Broadband Density for Low Deployment Florida Counties, 2018



Source: FCC (2019)

circles). So, while rural counties have less broadband deployment per person than do urban counties, population density does not explain differences between low-deployment counties.

While Figures 1-4 may give the appearance of broadband gaps, they do not tell the whole story: That 20 percent of rural Floridians do not have broadband access does not mean that this is a gap that should be filled. Two other analyses are needed for such a conclusion: What is the nature of the gap? Does government action pass a cost-benefit test? Neither analysis appears to have been conducted in the US, even though government has been subsidizing telecommunications deployment for over 40 years.

II. The Economics of Broadband Gaps

International best practice for identifying and assessing broadband gaps is to: (1) provide subsidies only where unsubsidized broadband is not commercially viable and (2) distinguish between areas that need help with startup costs and areas that need help with ongoing expenses. (ITU 2010) Best practice begins with identifying smart subsidy and true access gap zones. The smart subsidy zone is those rural or high-cost areas and low-income population groups for whom service is not commercially viable absent a one-time subsidy for initial investment. The true access gap consists of similar areas but with the added requirement that service isn't commercially viable without an ongoing subsidy for operating expenses and maintenance.

Gaps such as those identified in Figures 1-4 consist of smart subsidy zones, true access gaps, and market efficiency gaps. The latter appears misnamed as it does not result from a failure in markets, but rather represents a service reach that could be achieved in a fully liberalized and efficient market that lacks government barriers to competition. Such barriers might include barriers to rights of way, franchise fees, and required government permissions for service and/or facilities. This gap can be bridged through private markets if non-economic barriers are removed. (ITU 2010)

Once the smart subsidy zones and true access gaps are clearly identified, then it is important to assess the costs and benefits of attempting to fill them. For example, the FCC spent over $42 billion from 2012 through 2016 on its programs for rural telecommunications, low income telecommunications, schools and libraries subsidies, and rural health care programs. This $42 billion benefited the service providers and some customers, but it came at a cost. If, for example, the households that funded the $42 billion had spent that money themselves, they might have spent an additional $16 billion on housing, $4 billion on health care, and $672 million on education among other important items (assuming their additional spending was in proportion to how they spent their household incomes in 2015), according to data from the Bureau of Labor Statistics. An economically sound decision on whether government should divert citizens' incomes to fill broadband gaps should be based on an assessment that these personal expenditures are less valuable than broadband that appears to lack commercial viability.

III. The Economics of Filling Some Broadband Gaps

If government action to fill a broadband gap passes a rigorous cost-benefit analysis, the most effective means for filling the gap is to have private operators compete for subsidies through a reverse auction. A reverse auction in this case is an auction in which the bidding starts at the maximum subsidy the government is willing to provide and then private operators bid down the subsidy amount. Competition for subsidies ensures (as much as is possible) that tax dollars are not wasted. Competition within a market tends to give the best results for customers, but this competition isn't feasible in smart subsidy and true access gap zones. Consequently, the next best solution is competition for the market, an approach pioneered by Chile and Peru more than 20 years ago. In this process, the regulatory authority auctions the subsidy to the lowest bidder, similar to the process the FCC created for its Connect America Fund Phase II in 2014. Also, to ensure that tax dollars are not wasted, no subsidy is provided until services are actually delivered.

Fortunately, the FCC is conducting extensive work in line with the approaches described above. If Florida policy makers conduct their own gap and cost-benefit assessments and believe that Florida taxpayers should subsidize broadband over and above what subsidies the FCC is providing, it would be important to design a Florida system that complements the federal system.

The centerpiece of any Florida-specific program should be the FCC's system of auctions and subsidy caps with specific federal rollout commitments. If Florida wants faster rollouts or greater broadband speeds in some areas than what the FCC targets, Florida would have two options. One option would be to add funds to the FCC's system prior to an auction so that a single auction could be performed using the state's more aggressive broadband targets, and the FCC and Florida would split the subsidy commitment.

If the federal auction has already occurred, or if the area was simply under a subsidy cap, Florida could work with the FCC to either run a second auction or add a subsidy supplement for additional broadband. This would be difficult because the winner of the FCC auction would have an advantage over rivals, and because estimating subsidy needs absent an auction is difficult. Florida and the FCC would need to work carefully in establishing the subsidy the state would pay.

Florida policy makers might be tempted to choose a third path, namely the status quo of simply sending money to incumbent telecommunications providers. If policy makers choose this path, the FCC should have a one-subsidy policy: If any state or federal agency provides a subsidy that in any way duplicates the FCC subsidy, then the FCC would deduct that subsidy amount from its commitment to the recipient broadband providers.

IV. Conclusion

Providing a market-based approach for addressing broadband gaps in Florida is inherently complex. If Florida is to pursue filling broadband gaps, it should begin by carefully identifying to what extent any observed broadband gaps result from market participants simply needing time to deploy networks or uneconomic barriers to investment. Such gaps can be addressed by removing whatever barriers governmental entities might have created. If true access gaps or smart subsidy gaps exist, then any gap policies that pass a cost-benefit test should center on complementing the work the FCC is doing to use competitive processes.

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