Reflections: Now Is the Time to Close the Digital Divide

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[1] The views expressed here are my own and not necessarily those of the Federal Reserve System or my colleagues on the Federal Open Market Committee.

Access to broadband has become a necessity of modern life

Two weeks ago I lost my internet connectivity for a couple of hours. It was very frustrating, and it got me thinking about how dependent I am on being able to access the internet, for both work and play. My productivity declined a lot during the outage. I depend on the internet to keep up with economic research and statistics, to gather economic reconnaissance throughout the region, to get news, and to connect to others. Thankfully, internet outages are quite rare for me.

But for other households in our region, reliable broadband access is less available, putting these households at a distinct disadvantage when it comes to engaging in the economy. This was certainly true during the pandemic when schools and workplaces went remote and relied on students and workers to connect via the internet. Some parents told me that they needed to drive their children to a public hotspot so that their kids could do their homework. Hybrid work and education are likely here to stay and such arrangements could be beneficial to many – provided they can engage.

Even before the pandemic, digitalization was occurring at a rapid pace. Access to high-speed internet has become necessary for accomplishing many tasks of life, including accessing education, getting healthcare, searching for housing, applying for a job or searching for a new one, doing banking, buying goods, and renewing a driver's license.

Access to broadband has expanded but gaps remain

Access to high-speed broadband has increased substantially over time. According to the Federal Communications Commission, the number of Americans without access to high-speed broadband service declined 20 percent, from 18.1 million at the end of 2018 to fewer than 14.5 million Americans at the end of 2019. And the number of Americans living in rural areas without access has fallen by more than 46

percent since 2016.[2] Yet gaps remain between different racial, ethnic, and income groups, and by location. And these disparities adversely affect economic inclusion. Broadband usage at home has increased over time for all groups, but it is still comparatively higher for whites, those with higher incomes, and those in non-rural areas.[3] U.S. Census Bureau data from 2021 indicate that Blacks and Hispanics are somewhat less likely than whites to have a computer with broadband service at home.[4]

The disparity in connectivity put non-white, lower-income, and rural families at a particular disadvantage over the last year when a mix of remote and hybrid in-home learning and work became the norm. According to Pew researchers, 93 percent of parents with children in grades K-12 at home report that their children have had some type of online education since the pandemic began and of these, 30 percent said it had been very or somewhat difficult to use technology and the internet for education.[5] Lower-income families and those located in rural areas faced comparatively larger challenges.[6] Almost half of lower-income families said their children had to either use a cell phone to do schoolwork, were unable to complete work because of a lack of computer access at home, or had to use a public wi-fi service to complete their schoolwork because at-home internet connectivity was not reliable.[7]

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[2] See Federal Communications Commission (FCC) (2021). The FCC defines broadband internet as internet with at least 25 Mbps (megabits per second) download and 3 Mbps upload speeds.

[3] According to the latest survey data available from the Pew Research Center, as of February 2021, broadband usage at home was 80 percent for whites, 71 percent for Blacks, 65 percent for Hispanics, 92 percent for those earning $75,000 or more per year, 57 percent for those earning less than $30,000 per year, 79 percent for those in suburban areas, 77 percent for those in urban areas, and 72 percent for those in rural communities. See Pew Research Center (April 7, 2021).

[4] Estimates for 2021 from the U.S. Census Bureau indicate that 96.1 percent of Asian households, 92.8 percent of white households, 91.9 percent of Hispanic households, and 89.4 percent of Black households have a computer with a broadband subscription at home. These data also indicate that 1.2 percent of Asian households, 3.2 percent of white households, 2.5 percent of Hispanic households, and 4.2 percent of Black households do not have a computer at home. See U.S. Census Bureau (2021c). (Note: These estimates on broadband are higher than those from Pew, which pertain to usage.)

[5] McClain, et al. (2022) based on April 2021 survey data from the Pew Research Center.

[6] Thirty-six percent of lower-income parents and 29 percent of middle-income parents reported it was very or somewhat difficult, compared to 18 percent of upper-income parents. See McClain, et al. (2022).

[7] Even before the pandemic hit, the Pew data indicate that 25 percent of Black teens and 24 percent of lower-income teens often or sometimes were unable to complete homework because they lacked a reliable computer or internet

The Cleveland Fed's semiannual Community Issues Survey also revealed that the digital divide is adversely affecting low- and moderate-income individuals and communities in our Federal Reserve District, particularly in rural areas. This digital disparity not only limits school participation but it also increases the isolation of the elderly, making it more difficult to age in place.[8] Service providers are working to fill the gaps but indicate that more sustainable investment is needed in underserved communities.

Although the research cannot say whether having broadband *causes* better outcomes, it does indicate that there are strong correlations between having access to broadband internet at home and successful labor market outcomes. Philadelphia Fed research shows that within the 25 largest metro areas, the labor-force participation of prime-age people (i.e., those ages 25-54) is strongly positively correlated with having a broadband-enabled computer at home. The researchers found that in most of the 25 metro areas studied, over 20 percent of prime-age residents without a broadband-enabled computer do not participate in the labor force.[9] To better understand the role connectivity plays in economic outcomes, the Cleveland Fed's Community Development staff looked at three rural counties in our District: Owsley County, Kentucky; Adams County, Ohio; and Greene County, Pennsylvania. In all three counties, broadband has contributed to job creation and was found to be necessary to support local industries, including agriculture and energy.[10]

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connection, compared to 13 percent of white teens and 9 percent of high-income teens. See Schaeffer (October 1, 2021).

[8] The Federal Reserve Bank of Cleveland's Community Issues Survey collects information semiannually from direct service providers to monitor economic conditions and identify issues impacting low- and moderate-income individuals and communities in the Fourth District. See Goran (2021), pp. 6-7.

[9] See Sánchez and Scavette (2021), p. 9.

[10] See Klesta and Blankenship (2019).

Increased funding is available to close the digital divide

An important barrier to closing the digital divide is cost: cost to households for high-speed broadband service and cost to communities of building the infrastructure.[11] Pew found that about a third of lower-income households – those with annual incomes under $30,000 – that used broadband at home during the pandemic had trouble paying for it.[12] According to BroadbandNow, in 2019, 45 percent of Americans lacked access to a low-priced broadband internet service plan.[13] Families in rural areas and in states with lower median incomes are particularly disadvantaged, paying the most, on average, for broadband service. According to estimates released by the FCC in 2017, it will cost up to $80 billion to provide universal high-speed broadband coverage.[14] Outfitting households with computers with the capability to access the internet is also an issue. According to the U.S. Census Bureau data, in 2021, almost 10 million people lived in households without a computer.[15] According to Cleveland Fed researchers, based on Census data from the five-year period ending in 2020, about 700,000 households in our Federal Reserve District did not have a computer.[16]

Although efforts have been underway for some time to expand broadband access, the pandemic increased attention to this issue. More funding has now become available. The federal government's 2021 Infrastructure Investment and Jobs Act included $65 billion for broadband deployment and affordability. This includes $42.45 billion in grants to the states for broadband expansion. States may apply for funding aimed at promoting digital equity and inclusion by ensuring that historically under-serviced communities have affordable broadband access, devices to connect to the internet, and access to education on digital

[11] See Marré (2020).

[12] See McClain (June 3, 2021).

[13] BroadbandNow defines low-priced plans as "plans with prices less than or equal to the 20th percentile of all qualifying broadband prices within a given technology (such as fiber, DSL, or cable)." Its definition of broadband service is the same as that of the FCC: at least 25 Mbps download and 3 Mbps upload speeds. See Torng (2019).

[14] See de Sa (2017).

[15] See U.S. Census Bureau (2021b)

[16] See U.S. Census Bureau (2021b) and Graber and Piazza (2022).

technology and tech support.[17] Before applying for this funding, states must complete a digital equity plan that includes identifying barriers to digital equity, developing programs to eliminate those barriers, and establishing measures to track outcomes. There is $60 million available for grants to support states in developing their plans. The Federal Reserve has partnered with the National Telecommunications and Information Administration and the National Digital Inclusion Alliance on a series of workshops to help ensure that those states receiving planning grants have the capacity to successfully develop their digital equity plans.[18] The Cleveland Fed held a two-day workshop in Louisville, Kentucky in early November.

The Infrastructure Act also revised and made permanent the Affordable Connectivity Program (formerly called the Emergency Broadband Benefit Program, which was established during the pandemic).[19] This program provides a discount for internet service provided by participating internet service providers of up to $30 per month for eligible low-income households and up to $75 per month for households on qualifying Tribal lands. Cleveland Fed researchers have found that this program has been underutilized by eligible households both in the nation and in our District.[20] The researchers posited that one barrier to participation might be that internet service providers are not mandated to participate in the program and point out that additional federal funding for broadband projects is now available to states that mandate the participation of internet service providers.

Along with infrastructure expansion, efforts are underway to ensure that lower-income households have access to computers and can build digital literacy skills so that they can successfully use broadband to its

[17] For a summary of the legislation, see Government Finance Officers Association (2021) and Benton Institute for Broadband and Society (2021).

[18] See Federal Reserve Bank of New York (2022).

[19] See the Federal Communications Commission Affordable Connectivity Program web page.

[20] The statistics include those who were enrolled in the Emergency Broadband Benefit Program, as well as those enrolled in the Affordable Connectivity Program. The researchers find that while 24 percent of households in the District are eligible, only 12 percent have participated. See Graber and Piazza (2022).

fullest potential. The federal Affordable Connectivity Program offers a one-time discount to eligible households to purchase a computer or tablet. Among communities with a population of 100,000 or more, the city of Cleveland still has among the lowest home broadband access in the nation.[21] DigitalC, a nonprofit internet service provider in Cleveland, recently received a $20 million grant from the Jack, Joseph, and Morton Mandel Supporting Foundation and the David and Inez Myers Foundation to support its work in expanding broadband access to underserved areas and households in their service area, which includes the Hough, Fairfax, Central, Buckeye-Woodhill, Glenville, and Clark-Fulton neighborhoods. DigitalC is helping people get computers and find educational services.[22] In Pittsburgh, the Level Up 412 initiative, a cross-sector partnership between Verizon, Pittsburgh public schools, and Pittsburgh-area community groups, is offering classes on computer skills to both children and adults for those interested in careers in the tech industry.[23] It should be noted, however, that one study of Comcast's Internet Essentials program found that it was the subsidies for broadband service fees rather than digital literacy training or subsidies for purchasing computers that led to increased adoption of broadband.[24]

The city of Cleveland has allocated $25 million of its American Rescue Plan Act (ARPA) funding for efforts aimed at closing the digital divide; $20 million of this funding has been committed.[25] In addition, the Greater Cleveland Partnership, the Cleveland Foundation, Cuyahoga County, and others have formed a coalition of more than 70 organizations to work on closing the region's digital divide. Such initiatives

[21] The data for 2021 are available in U.S. Census Bureau (2021a). The city of Cleveland ranks 9th lowest of 229 cities, with 83 percent of households having a broadband internet subscription. Still, this is higher than in 2019, when 69 percent of households in Cleveland had broadband. The 2021 numbers are 90.1 percent for the U.S., 92.5 percent for Columbus, 89.3 for Cincinnati, and 89.6 for Pittsburgh.

[22] See Fields (2021).

[23] See the Level Up 412 web pages.

[24] See Rosston and Wallsten (2020). This study of Comcast's Internet Essentials program between 2011 and 2015 found that two-thirds of program participants would not have subscribed to the broadband service without the subsidy but that literacy training and subsidies for computers or computer components did not have an effect on adoption.

[25] See City of Cleveland (November 30, 2022).

can make a difference, although research by BroadbandNow indicates that 17 states still have some form of legislated restrictions on municipalities offering community broadband internet.[26]

Summary

Eliminating economic disparities that have lasted over generations is no easy task. Right now, lower-income households have less access to high-quality education and job-skills programs, which means they have less access to higher-paying jobs and job security. That leads to less access to high-quality housing and so lower access to credit, which means less access to education, and around it goes. Breaking the cycle will take concrete actions. One of these actions is ensuring that households in both rural and urban areas have access to reliable high-speed broadband service, which is rapidly becoming a necessity of modern life. With new federal funding available, now is the time to close the digital divide. It will take continued efforts on the part of private-sector companies, philanthropic organizations, community development groups, and all levels of government to ensure that this funding is deployed effectively. But those efforts will pay off in creating a more inclusive economy from which everyone can benefit.

[26] Pennsylvania is the only state in the Fourth Federal Reserve District on that list. (The Fourth District comprises Ohio and parts of Pennsylvania, Kentucky, and West Virginia). See Cooper (October 23, 2022).

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