

## **Dynamic Competition in Broadband Markets: A 2024 Update**

*Eric Fruits, Geoffrey A. Manne, Ben Sperry, & Kristian Stout*

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## I. Introduction

In mid-2021, the International Center for Law & Economics (ICLE) published a white paper on the state of broadband competition in the United States,<sup>1</sup> which concluded that:

- The U.S. broadband market was generally healthy and competitive, with 95.6% of the population having access to high-speed broadband;
- Concentration metrics are poor predictors of competitiveness—broadband markets can be dynamic and competitive even with only a few providers. Indeed, in some cases, increased concentration can result from efficiency gains and innovation, benefiting consumers through better services; and
- Municipal broadband often requires significant taxpayer subsidies or cross-subsidies from other municipal enterprises, and is thus an example of “predatory entry,” rather than market competition.<sup>2</sup>

Rather than repeat the analysis conducted in the 2021 report, in this report, we investigate the extent to which broadband competition has evolved over the past three years. We find that it has been a rapid evolution:

- More households are connected to the internet;
- Broadband speeds have increased, while prices have fallen;
- More households are served by multiple providers; and
- New technologies like satellite and 5G have expanded internet access and intermodal competition among providers.

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<sup>1</sup> Geoffrey A. Manne, Kristian Stout, & Ben Sperry, *A Dynamic Analysis of Broadband Competition: What Concentration Numbers Fail to Capture*, INT’L CTR. FOR L. & ECON. (Jun. 2021), available at <https://laweconcenter.org/wp-content/uploads/2021/06/A-Dynamic-Analysis-of-Broadband-Competition.pdf>.

<sup>2</sup> See *id.* at 2-3; 35-37.

When the 2021 ICLE white paper was published, the worst of the COVID-19 pandemic appeared to be over, but the virus' Delta variant was surging.<sup>3</sup> With pandemic precautions keeping people at home to work, go to school, visit health-care providers, or be entertained, broadband access and use was seen by many as a necessity, rather than a luxury. At the time, Congress considered whether to devote significant federal resources toward promoting broadband access in underserved communities. Toward this end, in November 2021, Congress passed the Infrastructure Investment and Jobs Act (IIJA), which includes three key provisions to foster greater broadband access:<sup>4</sup>

1. The COVID-era Emergency Broadband Benefit's temporary subsidy was extended indefinitely and renamed the Affordable Connectivity Program (ACP). The IIJA allocated an additional \$14 billion to provide subsidies of \$30 a month to eligible households;
2. The IIJA also created and funded the Broadband Equity, Access, and Deployment Program (BEAD), which provides \$42 billion to expand high-speed internet access to "underserved" and "underserved" locations; and
3. The law required the Federal Communications Commission (FCC) to adopt final rules to prevent "digital discrimination" in broadband access based on income level, race, ethnicity, color, religion, or national origin, while also instructing the commission to consider issues of technical and economic feasibility.

These three policies were intended to intertwine in order to foster greater broadband competition. ACP subsidies are intended to boost consumer demand for broadband and generate revenue to support providers' profitable deployment of broadband investments.<sup>5</sup> BEAD investments are intended to reduce the costs of broadband deployment.<sup>6</sup> The law's digital-discrimination provisions were intended to prevent discrimination by broadband providers that serves to deny or limit consumers' access to broadband internet.<sup>7</sup>

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<sup>3</sup> CDC Museum COVID-19 Timeline, CTR. FOR DISEASE CONTROL AND PREVENTION (Mar. 15, 2023), <https://www.cdc.gov/museum/timeline/covid19.html>.

<sup>4</sup> H.R. 3684, 117th Cong. (2021).

<sup>5</sup> Eric Fruits & Kristian Stout, *Finding Marginal Improvements for the 'Good Enough' Affordable Connectivity Program*, INT'L CTR. FOR L. & ECON. (Sep. 15, 2023), available at <https://laweconcenter.org/wp-content/uploads/2023/09/ACP-Subsidies-Paper.pdf>.

<sup>6</sup> Eric Fruits & Geoffrey A. Manne, *Quack Attack: De Facto Rate Regulation in Telecommunications*, INT'L CTR. FOR L. & ECON. (Mar. 30, 2023), available at <https://laweconcenter.org/wp-content/uploads/2023/03/De-Facto-Rate-Reg-Final-1.pdf>.

<sup>7</sup> Eric Fruits & Kristian Stout, *The Income Conundrum: Intent and Effects Analysis of Digital Discrimination*, INT'L CTR. FOR L. & ECON. (Nov. 14, 2022), available at <https://laweconcenter.org/wp-content/uploads/2022/11/The-Income-Conundrum-Intent-and-Effects-Analysis-of-Digital-Discrimination.pdf>.

Alas, today, we find that each of these provisions faces headwinds. With Congress failing to extend appropriations beyond a May 31 deadline, the ACP has run out of funding.<sup>8</sup> States attempting to implement the BEAD program have complained of tight timelines, restrictive rules, limited coordination, and administrative burdens that may undermine effectiveness.<sup>9</sup> Providers and local jurisdictions report that BEAD's Buy America rules are particularly onerous.<sup>10</sup> Smaller internet service providers say BEAD's financial requirements exclude them from projects they would otherwise be able to complete successfully.<sup>11</sup> Complying with Buy America rules regarding attaching equipment to utility poles and railroad crossings also threatens deployment timelines.<sup>12</sup> And, in November 2023, the FCC approved rules to apply a disparate-impact approach toward the IIJA's digital-discrimination mandate, which could raise constitutional issues over the major questions doctrine.<sup>13</sup>

In addition to these programs, the FCC appears dead set to regulate more stringently much of the broadband-internet industry. First, the agency's sweeping digital-discrimination rules cover nearly every aspect of the deployment and delivery of internet services and nearly every entity associated—even tangentially—with deployment and delivery.<sup>14</sup> Next, the agency approved Title

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<sup>8</sup> Wireline Competition Bureau Announces the Final Month of the Affordable Connectivity Program, WC Docket No. 21-450 (Mar. 4, 2024), available at <https://docs.fcc.gov/public/attachments/DA-24-195A1.pdf>; see also Brian Fung, FCC Ends Affordable Internet Program Due to Lack of Funds, CNN (May 31, 2024), <https://www.cnn.com/2024/05/31/tech/fcc-affordable-connectivity-program-acp-close/index.html>.

<sup>9</sup> Anthony Hennen, *More Money, More Problems for National Broadband Expansion*, THE CENTER SQUARE (Aug. 15, 2023), [https://www.thecentersquare.com/pennsylvania/article\\_3124e98c-3bb3-11ee-ad87-7361f3872110.html](https://www.thecentersquare.com/pennsylvania/article_3124e98c-3bb3-11ee-ad87-7361f3872110.html).

<sup>10</sup> Lindsay McKenzie, *BEAD Waiver Information Coming This Summer, NTIA Says*, STATESCOOP (Aug. 17, 2023), <https://statescoop.com/bead-broadband-waiver-summer-2023-ntia>.

<sup>11</sup> *BEAD Letter of Credit Concerns, \$4.3M in ACP Outreach Grants, FCC Waives Rules for Hawaii Wildfires*, BROADBAND BREAKFAST (Aug. 21, 2023), <https://broadbandbreakfast.com/2023/08/bead-letter-of-credit-concerns-4-3m-in-acp-outreach-grants-fcc-waives-rules-for-hawaii-wildfires>.

<sup>12</sup> Eric Fruits, *Red Tape and Headaches Plague BEAD Rollout*, TRUTH ON THE MARKET (Aug. 17, 2023), <https://truthonthemarket.com/2023/08/17/red-tape-and-headaches-plague-bead-rollout>.

<sup>13</sup> Fruits & Stout, *supra* note 7; see also Eric Fruits, Kristian Stout, & Ben Sperry, *ICLE Reply Comments on Prevention and Elimination of Digital Discrimination, Notice of Proposed Rulemaking, In the Matter of Implementing the Infrastructure, Investment, and Jobs Act: Prevention and Elimination of Digital Discrimination*, No. 22-69, at Part III, INT'L CTR. FOR L. & ECON. (Apr. 20, 2023), <https://laweconcenter.org/resources/icle-reply-comments-on-prevention-and-elimination-of-digital-discrimination>.

<sup>14</sup> FCC, *Report and Order and Further Notice of Proposed Rulemaking on Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*, GN Docket No. 18-238, FCC 19-44 (Nov. 20, 2023), available at <https://docs.fcc.gov/public/attachments/FCC-23-100A1.pdf> [hereinafter "Digital Discrimination Order"]. See also Eric Fruits, *Everyone Discriminates Under the FCC's Proposed New Rules*, TRUTH ON THE MARKET (Oct. 30, 2023), <https://truthonthemarket.com/2023/10/30/everyone-discriminates-under-the-fccs-proposed-new-rules> (reporting that, under the rules, "broadband service" includes every element of a consumer's broadband-internet experience, including speeds, data caps, pricing, and discounts, and that the rules broadly apply to broadband providers as well as to "entities outside the communications industry" that "provide services that facilitate and affect consumer access to broadband," which may include municipalities and property owners).

II common-carrier regulation with its recently adopted Safeguarding and Securing the Open Internet Order.<sup>15,16</sup>

The current state of broadband competition policy appears to be one of confusion. Some policies foster competition, while others hinder it. Programs such as the ACP and BEAD could do much to encourage competition by simultaneously generating demand for broadband and helping to build out supply. At the same time, these programs—especially BEAD—attempt to micromanage competition with stifling conditions and *de facto* rate regulation. Similarly, the FCC’s digital-discrimination rules explicitly subject broadband pricing to *ex post* scrutiny and enforcement. The FCC’s reclassification of broadband internet-access services under Title II of the Communications Act raises the specter of common-carrier rate regulation that will hang over the industry unless either vacated by the courts, or a future administration once again reverses course.

Put simply, broadband competition in the United States is currently robust, innovative, and successful. But this state of vibrant competition is at risk from recent and forthcoming regulations. Without a course correction, we are likely to see slowing or shrinking broadband investment, reduced innovation, and the exit of small and rural providers.

## II. The Broadband Market Is Competitive and Dynamic

By all relevant measures, U.S. broadband competition is vibrant and has increased dramatically since the COVID-19 pandemic. Since 2021, more households are connected to the internet, broadband speeds have increased, prices have fallen, more households are served by more than a single provider, and new technologies like satellite and 5G have expanded internet access and intermodal competition among providers.

### A. Access and Adoption

By any reasonable measure today’s U.S. broadband market is an incredible success. Nearly the entire country has access to at-home internet, a vast majority has access to high-speed internet, and much of the country has access to these speeds from three or more providers. Nevertheless, criticisms of the current state of broadband deployment claim that too few Americans have affordable access to adequate broadband speed and capacity and that this, in turn, is the result

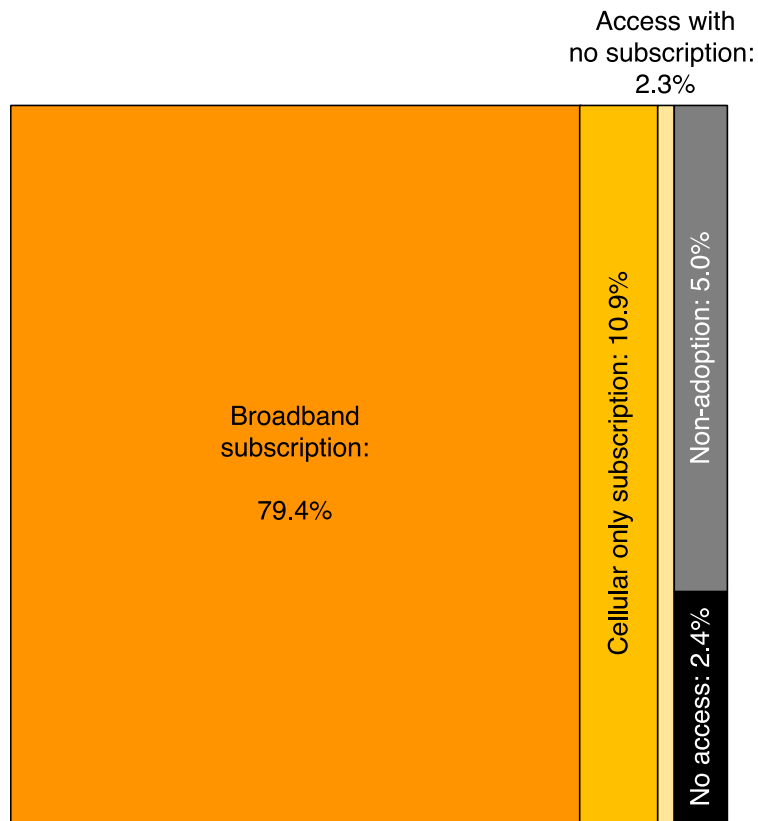
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<sup>15</sup> Notice of Proposed Rulemaking, *Safeguarding and Securing the Open Internet*, WC Docket No. 23-320 (Sep. 28, 2023). [hereinafter “Title II NPRM”]

<sup>16</sup> Declaratory Ruling, Order, Report and Order, and Order on Reconsideration, *Safeguarding and Securing the Open Internet*, WC Docket No. 23-320, WC Docket No. 17-108 (adopted Apr. 25, 2024), available at <https://docs.fcc.gov/public/attachments/DOC401676A1.pdf> [hereinafter “SSOIO” or “2024 Order”].

of insufficient competition among broadband providers.<sup>17</sup> For example, in her speech announcing the FCC’s most recent process to regulate internet services under Title II, Chair Rosenworcel claimed that 80% of the country faces a monopoly or duopoly for download speeds of 100 Mbps or greater.<sup>18</sup> These claims are belied by widespread broadband adoption and competitive markets.

**FIGURE I: US At-Home Internet Access and Adoption, 2021**



**SOURCE:** U.S. Census Bureau, American Community Survey

<sup>17</sup> See, e.g., Karl Bode, *Colorado Eyes Killing State Law Prohibiting Community Broadband Networks*, TECHDIRT (Mar. 30, 2023), <https://www.techdirt.com/2023/03/30/colorado-eyes-killing-state-law-prohibiting-community-broadband-networks> (local broadband monopolies are a “widespread market failure that’s left Americans paying an arm and a leg for what’s often spotty, substandard broadband access.”).

<sup>18</sup> FCC Chair Rosenworcel on Reinstating Net Neutrality Rules, C-SPAN (Sep. 25, 2023), <https://www.c-span.org/video/?530731-1/fcc-chair-rosenworcel-reinstating-net-neutrality-rules> (“Only one-fifth of the country has more than two choices at [100 Mbps download] speed. So, if your broadband provider mucks up your traffic, messes around with your ability to go where you want and do what you want online, you can’t just pick up and take your business to another provider. That provider may be the only game in town.”).

The U.S. Census Bureau's American Community Survey reports that 97.6% of households have access to at-home internet and 92.6% use the internet at home (Figure 1).<sup>19</sup> While a large majority with at-home internet get it through a broadband subscription, a substantial minority access the internet from their mobile wireless providers. A small number (2.3%) claim they can access the internet at home without paying for a subscription. This likely includes multi-family units, as well as student and senior housing in which broadband access is included in the rent. Among the 7.4% who do not use an at-home internet connection, two-thirds indicate that internet access is available, but they have chosen not to adopt it.<sup>20</sup>

In 2021, approximately 97 percent of 3- to 18-year-olds had home internet access, according to the National Center for Education Statistics. This represents a five-percentage-point increase since 2016.<sup>21</sup>

Until March 2024, the FCC defined high-speed broadband as internet service that offered speeds of at least 25/3 Mbps.<sup>22</sup> The IJA defines a location as “unserved” if it has no internet connection available or only has a connection offering speeds of less than 25/3 Mbps.<sup>23</sup> A location is considered “underserved” if the only options available offer speeds of less than 100/20 Mbps.<sup>24</sup>

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<sup>19</sup> U.S. Census Bureau, 2021 American Community Survey 1-Year Estimates, Table Id. S2801 (2021); U.S. Census Bureau, ACS 1-Year Estimates Public Use Microdata Sample 2021, Access to the Internet (ACCESSINET) (2021).

<sup>20</sup> In contrast, a 2021 NTIA survey reports that 14.4% of households do not use the internet at home, with three-quarters of these households indicating they have “no need/interest” and one quarter indicating it is “too expensive.” See, Michelle Cao & Rafi Goldberg, *Switched Off: Why Are One in Five U.S. Households Not Online?*, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (2022), <https://ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online>.

<sup>21</sup> National Center for Education Statistics, *Children's Internet Access at Home*, CONDITION OF EDUCATION, (U.S. Department of Education, Institute of Education Sciences, Aug. 2023), <https://nces.ed.gov/programs/coe/indicator/cch>.

<sup>22</sup> See FCC, *2015 Broadband Progress Report* (2015), <https://www.fcc.gov/reports-research/reports/broadband-progressreports/2015-broadband-progress-report> (upgrading the standard speed from 4/1 Mbps to 25/3 Mbps). In March 2024, the FCC approved a report increasing the fixed-speed benchmark to 100/20 Mbps and setting an “aspirational goal” of 1 Gbps/500 Mbps. See, FCC, *In the Matter of Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, GN Docket No. 22-270 (Mar. 14, 2024), available at <https://docs.fcc.gov/public/attachments/DOC-400675A1.pdf>. In November 2023, FCC Chair Jessica Rosenworcel proposed reaching a 1 Gbps/500 Mbps benchmark by the year 2030. See Eric Fruits, *Gotta Go Fast: Sonic the Hedgehog Meets the FCC*, TRUTH ON THE MARKET (Nov. 3, 2023), <https://truthonthemarket.com/2023/11/03/gotta-go-fast-sonic-the-hedgehog-meets-the-fcc>.

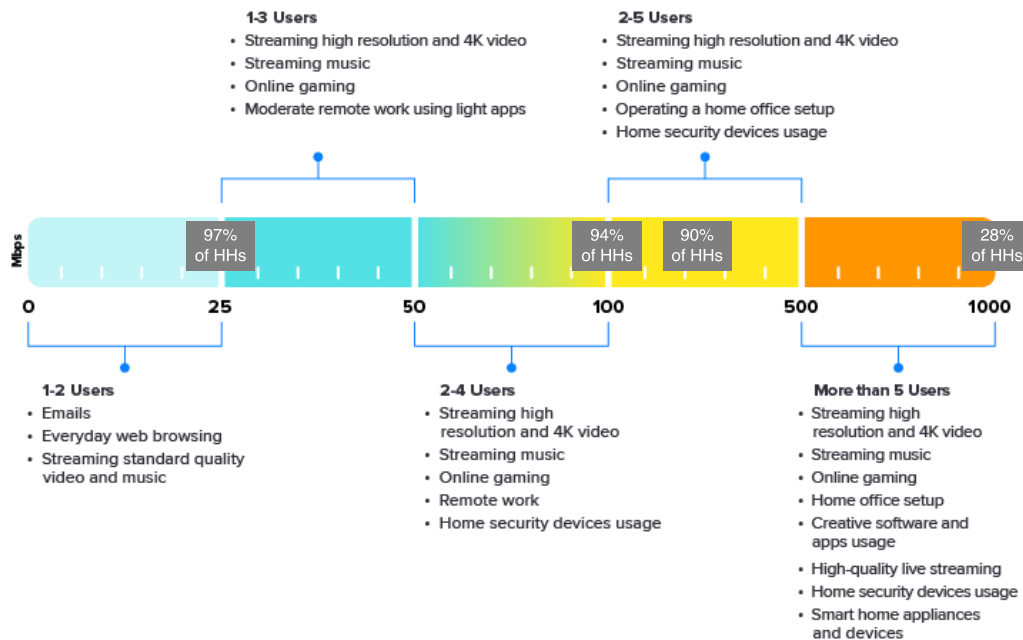
<sup>23</sup> Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, § 60102 (a)(1)(A)(ii), 135 Stat. 429 (Nov. 15, 2021), available at <https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf>; Jake Varn, *What Makes a Community “Unserved” or “Underserved” by Broadband?*, PEW CHARITABLE TRUSTS (May 3, 2023), available at <https://www.pewtrusts.org/-/media/assets/2023/06/un-and-underserved-definitions-ta-memo-pdf.pdf>.

<sup>24</sup> *Id.*, IJA.

As shown in Figure 2, smaller households with relatively simple needs can generally access the internet productively with download speeds of less than 100 Mbps, or even 25 Mbps. The third iteration of the National Broadband Map, released in November 2023, indicated:<sup>25</sup>

- 93.8% of locations have access to connections of 25/3 Mbps or greater;
- 88.5% of locations have access to speeds of 200/25 Mbps or greater;
- 44.5% of locations have access to 1000/100 Mbps speeds; and
- Only 6.2% of locations are unserved, and 2.6% are “underserved” with connections of less than 100/20 Mbps, as those terms are defined in the IIJA.

**FIGURE 2: FCC Recommended Internet Speeds and US Household Access, 2021**

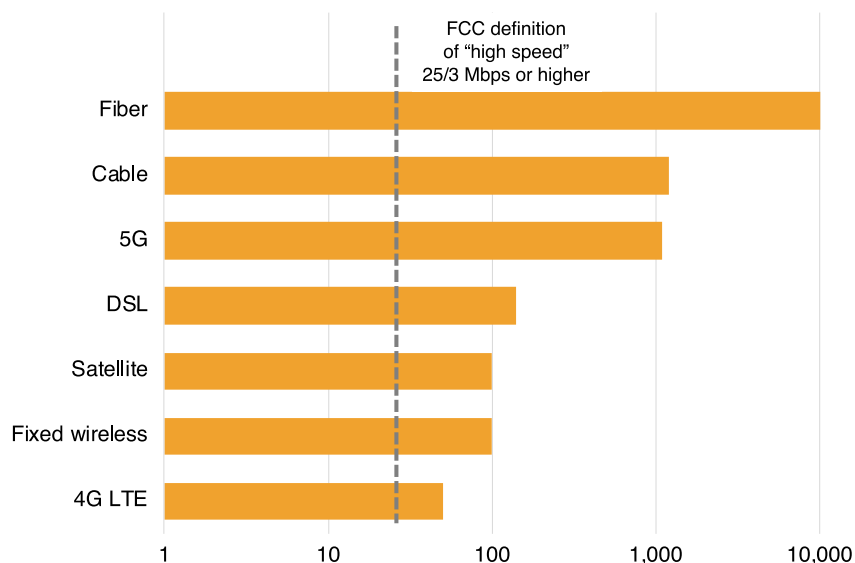


**SOURCE:** Allconnect, ‘Everything You Need to Know,’ FCC, ‘Fixed Broadband Deployment’

<sup>25</sup> Mike Conlow, *New FCC Broadband Map, Version 3*, MIKE’S NEWSLETTER (Nov. 20, 2023), <https://mikeconlow.substack.com/p/new-fcc-broadband-map-version-3>.



**FIGURE 3: Typical Maximum Download Speed by Connection Type, 2021 (Mbps)**



**SOURCE:** HighSpeedInternet.com, 'What Type of Internet Do You Have?'

The FCC reports that more than 90% of U.S. households have access to speeds of 100 Mbps or greater, and nearly 90% have access to 1 Gbps or greater (Table 1).<sup>26</sup> Fewer than 4% of U.S. households lack access to at least 30 Mbps download speeds via fixed broadband.

**TABLE 1: US Household Internet Access by Download Speed, 2021**

FIXED BROADBAND	
• 30 Mbps or higher	96.3%
• 100 Mbps or higher	93.4%
• 1 Gbps or higher	86.7%
MOBILE	
• 4G LTE	99.6%
• 5G	99.3%

**SOURCE:** FCC, 'International Broadband Data Report'<sup>27</sup>

<sup>26</sup> FCC, *Communications Marketplace Report*, GN Docket No 22-203, FCC 22-103, Appendix G (Dec. 20, 2022), <https://www.fcc.gov/document/2022-communications-marketplace-report>.

<sup>27</sup> Pursuant to the IIJA, the FCC and providers are working to provide new broadband-coverage maps. These numbers will change over time, but FCC Chair Jessica Rosenworcel noted: "Looking ahead, we expect that any changes in the number of locations will overwhelmingly reflect on-the-ground changes such as the construction of new housing." See Brad Randall, *FCC's Updated Broadband Map Shows Increasing National Connectivity*, BROADBAND COMMUNITIES (Nov. 27, 2023), <https://bbcmag.com/fccs-new-broadband-map-shows-increasing-national-connectivity>.

Some note that, while high-speed connections are available across nearly the entire country, in many cases, only a single provider offers such speeds. This, such critics assert, suggests insufficient competition among providers of high-speed internet. For example, regarding 100 Mbps service, FCC Chair Rosenworcel claimed that “only half of us can get it from more than a single provider. Only one-fifth of the country has more than two choices at this speed.”<sup>28</sup>

This provides a misleading sense of the rate of high-speed broadband deployment and the scope of availability. The most recent information from the FCC on broadband deployment across the United States suggests that 90% of the population in 2021 was served by one or more providers offering 250/25 Mbps or higher speeds (Table 2).<sup>29</sup> That is more than double the population share five years earlier, when only 44% of the population had access to such speeds.<sup>30</sup> In 2019, the FCC did not report the share of population with access to 1,000/100 Mbps speeds or greater. By 2021, 28% of the population had access to gigabit download speeds.<sup>31</sup>

Moreover, Table 2 shows that, in 2021, more than 85% of the population was covered by *two or more* fixed-broadband providers offering 25/3 Mbps or greater speeds, and more than 60% of the country was covered by *three or more* providers providing such speeds. Moreover, if satellite and 5G providers are included, close to 100% of the country is served by two or more high-speed providers.

**TABLE 2: US Population Fixed-Broadband Access by Number of Providers, 2021**

DOWNLOAD/UPLOAD SPEED	NONE	1 OR MORE	2 OR MORE	3 OR MORE
10/1 Mbps	1.4%	98.7%	91.8%	68.8%
25/3 Mbps	2.4%	97.4%	86.8%	60.7%
100/10 Mbps	6.0%	94.0%	61.9%	18.4%
250/25 Mbps	9.8%	90.2%	42.3%	6.4%
1,000/100 Mbps	71.6%	28.3%	2.5%	0.1%

**SOURCE:** FCC, ‘Fixed Broadband Deployment’

<sup>28</sup> FCC Chair Rosenworcel on Reinstating Net Neutrality Rules, C-SPAN (Sep. 26, 2023), <https://www.c-span.org/video/?530731-1/fcc-chair-rosenworcel-reinstating-net-neutrality-rules>.

<sup>29</sup> FCC, Fixed Broadband Deployment (Jun. 2021), [https://broadband477map.fcc.gov/#/area-summary?version=jun2021&type=nation&geoid=0&tech=acfw&speed=25\\_3&vlat=27.480205324799257&vlon=-41.52925368904516&vzoom=5.127403622197149](https://broadband477map.fcc.gov/#/area-summary?version=jun2021&type=nation&geoid=0&tech=acfw&speed=25_3&vlat=27.480205324799257&vlon=-41.52925368904516&vzoom=5.127403622197149).

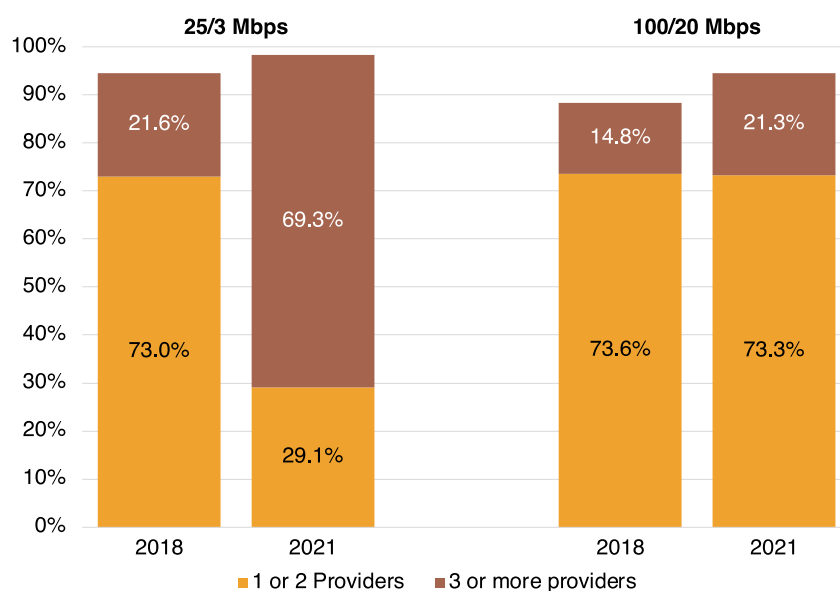
<sup>30</sup> FCC, 2019 Broadband Deployment Report, GN Docket No. 18-238, FCC 19-44 at Fig. 4 (May 29, 2019), available at <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>.

<sup>31</sup> The FCC does not explain the differences between the information summarized in Table 1 and Table 2. The differences likely reflect different methodologies. For example, Table 1 may be at the household level and Table 2 at the population level.

At the same time, the evidence indicates that broadband competition has increased over time, as measured by the number of competing high-speed providers (Figure 4).<sup>32</sup>

- In 2018, 73.0% of households had access to 25/3 Mbps speeds from only one or two fixed-broadband providers, and only 21.6% had access from three or more providers. In 2021, only 29.1% of households had access from one or two providers while 69.3% were served by three or more providers. Thus, the number of households served by three or more providers increased by 47.7 percentage points from 2018 through 2021.
- In 2018, 11.6% of households had no access to 100/20 Mbps speeds and 14.8% had access from three or more fixed broadband providers. In 2021, 5.4% of households had no access, while 21.3% were served by three or more providers. Thus, the number households served by three or more providers increased by 6.5 percentage points from 2018 through 2021.

**FIGURE 4: Percentage of US Households Living in Census Blocks with Multiple Provider Options for Fixed-Terrestrial Services (2018 vs 2021)**



**SOURCE:** FCC, '2022 Communications Marketplace Report'

Additionally, intermodal competition among providers is only improving. Starlink satellite service has been made available to all locations in the United States.<sup>33</sup> Starlink's reported speeds

<sup>32</sup> 2022 Communications Marketplace Report, GN Docket No. 22-203 (Dec. 30, 2022) at Fig. II.A.28, available at <https://docs.fcc.gov/public/attachments/FCC-22-103A1.pdf>.

<sup>33</sup> Dan Heming, *Starlink No Longer Has a Waitlist for Standard Service, and 10 MPH Speed Enforcement Update*, MOBILE INTERNET RESOURCE CENTER (Oct. 3, 2023), <https://www.rvmobileinternet.com/starlink-no-longer-has-a-waitlist-for->

are between 25/5 Mbps and 220/25 Mbps.<sup>34</sup> And Project Kuiper has successfully launched its first test satellites,<sup>35</sup> with commercial service expected to begin in the second half of 2024.<sup>36</sup>

## **B. Broadband Prices Continued to Fall, Even as Speeds Increased and Demand Grew During the Pandemic**

After accounting for speed and data usage, the United States has some of the lowest broadband prices in the world. Even so, critics of the current state of U.S. broadband competition claim that U.S. prices are among the highest in the developed world because, they claim, the U.S. market is not as competitive as other jurisdictions. For example, the Community Tech Network asks rhetorically, “[s]o why does the internet cost so much more in the U.S. than in other countries? One possible answer is the lack of competition.”<sup>37</sup> Their article included a graphic in which U.S. internet service is described as “expensive and slow” while Australia is categorized as “fast and cheap.” Yet none of these claims hold up under scrutiny, such as adjusting for consumption and download speeds.

It’s true the United States has the third-highest average monthly broadband costs among OECD countries, according to Cable.co.uk (Figure 5). Australia, however, has the seventh-highest.<sup>38</sup> On a cost-per-megabit basis, Australia has the second-highest costs in the OECD, while the United States is in the bottom third of the distribution (Figure 6).<sup>39</sup> Speedtest’s Global Index of median speeds reports that the United States has the second-fastest median speed, and Australia the third-slowest median speed, among OECD countries (Figure 7).<sup>40</sup>

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[standard-service-and-10-mph-speed-enforcement-update/#:~:text=In%20the%20latest%20update%2C%20the,order%20anywhere%20in%20the%20USA.](#)

<sup>34</sup> Starlink Specifications, STARLINK, <https://www.starlink.com/legal/documents/DOC-1400-28829-70>.

<sup>35</sup> Amazon Shares an Update on How Project Kuiper’s Test Satellites Are Performing, AMAZON (Oct. 16, 2023), <https://www.aboutamazon.com/news/innovation-at-amazon/amazon-project-kuiper-test-satellites-space-launch-october-2023-update>.

<sup>36</sup> Kuiper Service to Start by End of 2024: Amazon, COMMUNICATIONS DAILY (Oct. 12, 2023), <https://communicationsdaily.com/news/2023/10/12/Kuiper-Service-to-Start-by-End-of-2024-Amazon-2310110007>.

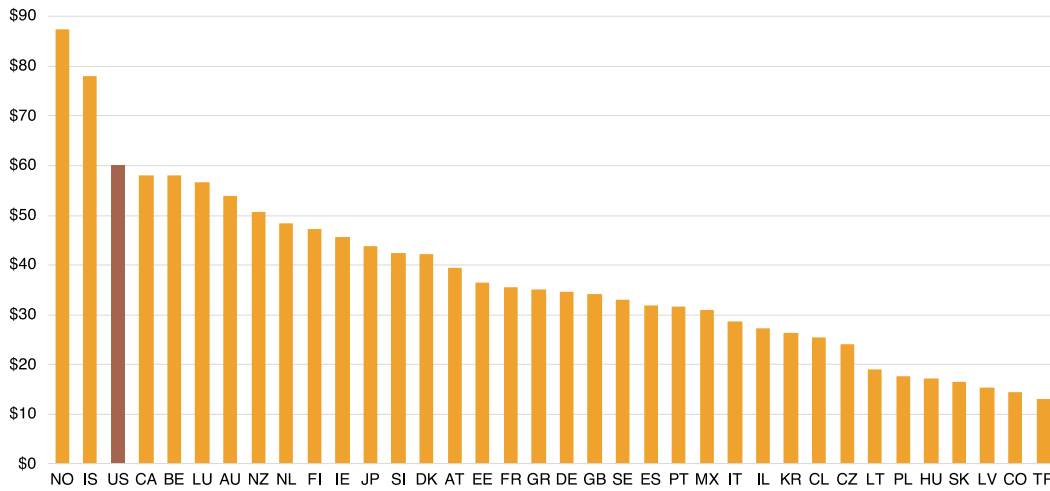
<sup>37</sup> Why Is the Internet More Expensive in the USA than in Other Countries?, COMMUNITY TECH NETWORK (Feb. 2, 2023), <https://communitytechnetwork.org/blog/why-is-the-internet-more-expensive-in-the-usa-than-in-other-countries>.

<sup>38</sup> Dan Howdle, *Global Broadband Pricing League Table 2023*, CABLE.CO.UK (2023), <https://www.cable.co.uk/broadband/pricing/worldwide-comparison>, data available at [https://www.cable.co.uk/broadband/worldwide-pricing/2023/broadband\\_price\\_comparison\\_data.xlsx](https://www.cable.co.uk/broadband/worldwide-pricing/2023/broadband_price_comparison_data.xlsx).

<sup>39</sup> This is qualitatively consistent with the FCC’s finding that United States has the seventh-lowest prices per gigabit of data consumption, and that Australia has the 12th-lowest among OECD countries. FCC, *2022 Communications Marketplace Report*, Docket No. 22-103, Appendix G (Dec. 30, 2022), available at <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>.

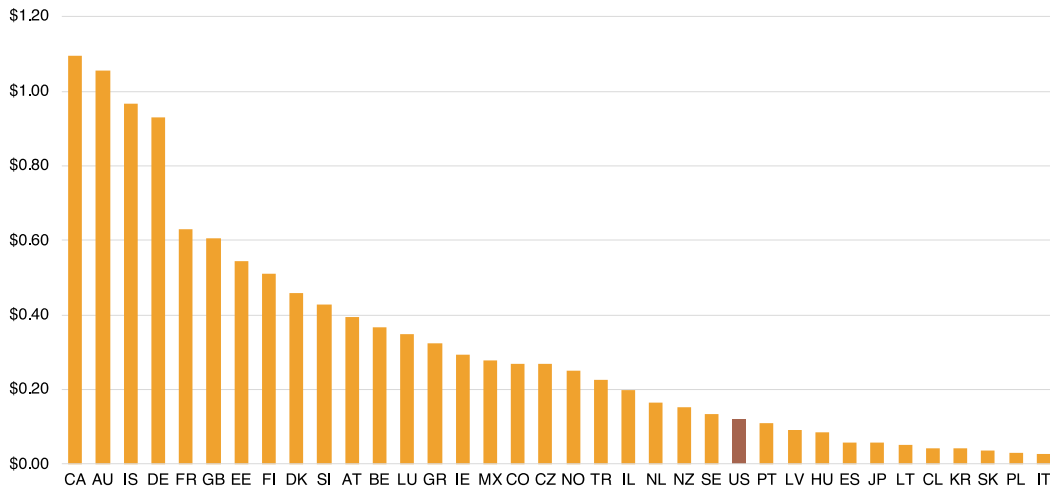
<sup>40</sup> Median Country Speeds, SPEEDTEST GLOBAL INDEX (Oct. 2023), <https://www.speedtest.net/global-index> (last visited Dec. 7, 2023).

**FIGURE 5: Average Monthly Cost of Broadband (OECD, in \$US)**

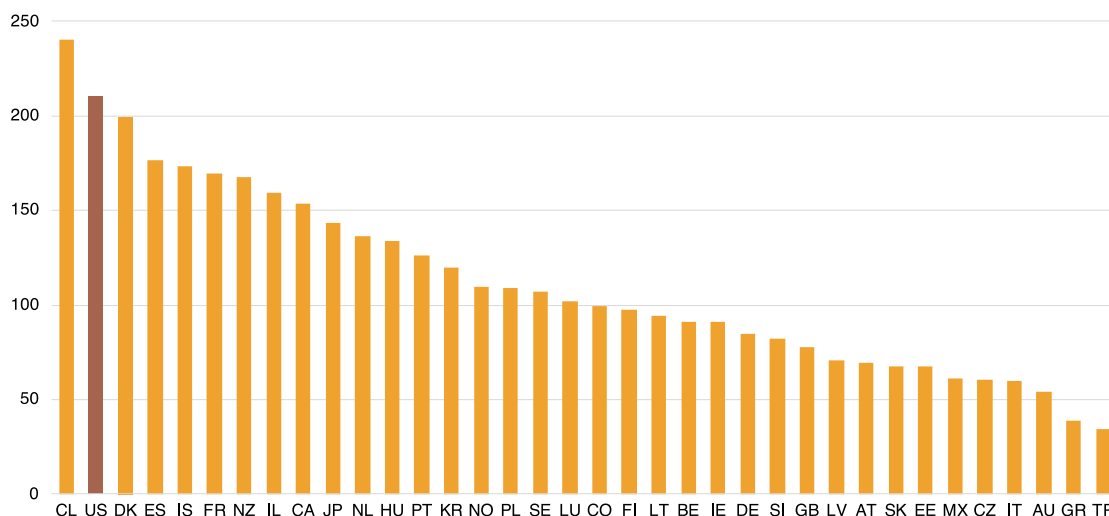


SOURCE: Cable.co.uk, 'Global Broadband Pricing League Table 2023'

**FIGURE 6: Average Monthly Cost of Broadband (OECD, Per Megabit \$US)**



SOURCE: Cable.co.uk, 'Global Broadband Pricing League Table 2023'

**FIGURE 7: Median Download Speed (OECD, Mbps)**

**SOURCE:** Speedtest, Global Index

Cross-country comparisons of broadband pricing are especially fraught, due to country-by-country variations in factors that drive the costs of delivering broadband and the prices paid by consumers.<sup>41</sup> Deployment costs are driven largely by population density and terrain, as well as each country's unique regulatory and tax policies.<sup>42</sup> Consumer choices often drive the prices paid by subscribers. These include choices regarding the mix of fixed broadband and mobile, speed preferences, and data consumption.<sup>43</sup>

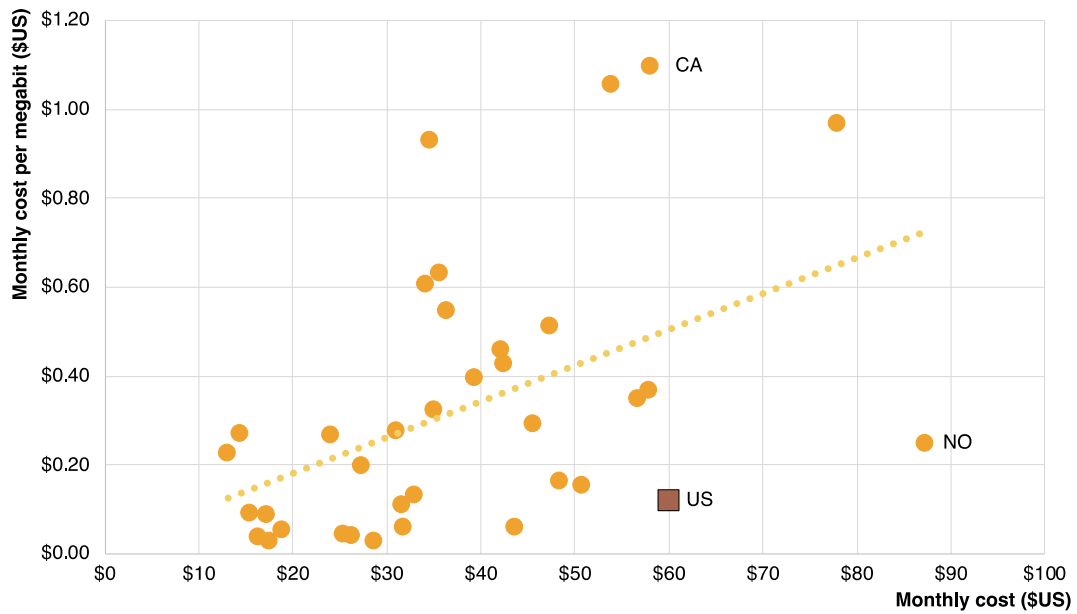
For example, Figure 8 demonstrates a clear relationship between the average monthly cost for broadband and the monthly cost per megabit; a higher monthly cost tends to be associated with a higher cost per megabit. But there are outliers. The United States is well below the trendline, but Canada is well above it. While the average monthly cost in the two countries is similar, the information provided by Cable.co.uk suggests that U.S. consumers use 9-10 times more megabits per month than Canadian consumers. In addition, as shown in Figure 7, the median U.S. download speed is about 35% faster than the median in Canada.

<sup>41</sup> See Christian Dippon, et al., *Adding a Warning Label to Rewheel's International Price Comparison and Competitiveness Rankings* (Nov. 30, 2020), available at [https://laweconcenter.org/wp-content/uploads/2020/11/Rewheel\\_Review\\_Final.pdf](https://laweconcenter.org/wp-content/uploads/2020/11/Rewheel_Review_Final.pdf).

<sup>42</sup> Fruits & Stout, *supra* note 7; see also Giuseppe Colangelo, *Regulatory Myopia and the Fair Share of Network Costs: Learning from Net Neutrality's Mistakes*, INT'L CTR. FOR L. & ECON. (Comments to European Commission Exploratory Consultation, The Future of the Electronic Communications Sector and Its Infrastructure, May 18, 2023), <https://laweconcenter.org/resources/regulatory-myopia-and-the-fair-share-of-network-costs-learning-from-net-neutralities-mistakes>.

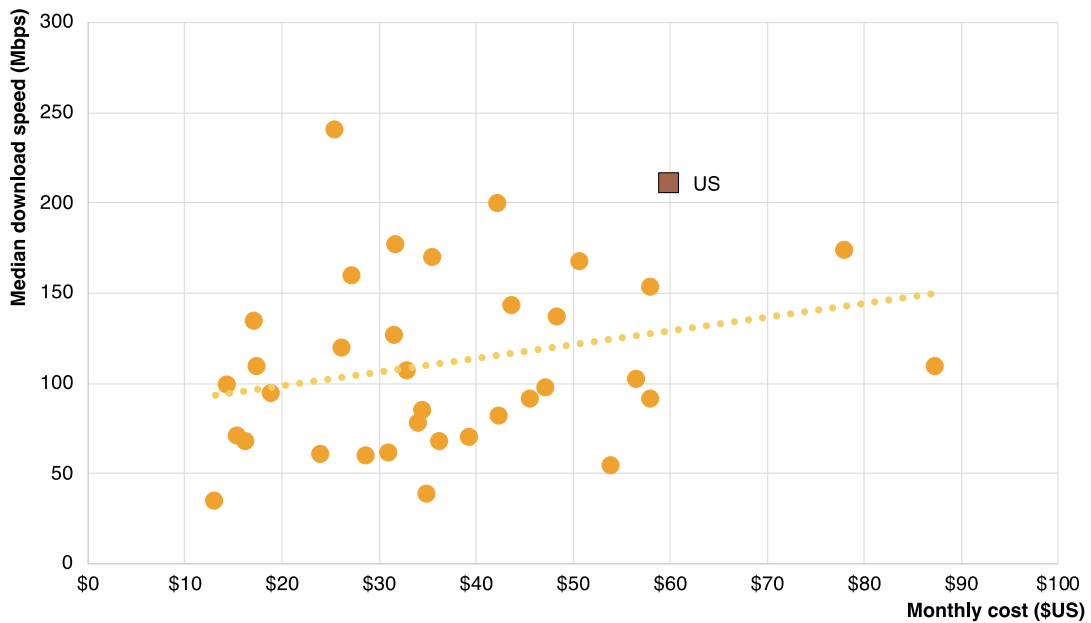
<sup>43</sup> *Id.* at 14.

**FIGURE 8: Relationship Between Average Monthly Cost of Broadband and Cost Per-Megabit Per-Month (OECD, in \$US)**



SOURCE: Cable.co.uk, 'Global Broadband Pricing League Table 2023'

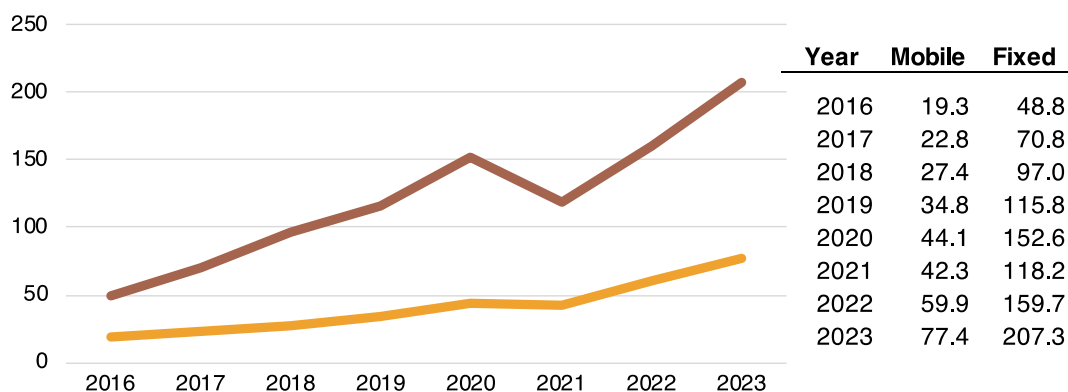
**FIGURE 9: Relationship Between Average Monthly Cost of Broadband and Median Download Speed**



SOURCE: Cable.co.uk, 'Global Broadband Pricing League Table 2023'; Speedtest, Global Index

A broadband-pricing index published annually by USTelecom reports that inflation-adjusted broadband prices for the most popular speed tiers fell by 54.7% from 2015 to 2023, or 5.6% annually.<sup>44</sup> Prices for the highest speed tiers fell by 55.8% over the same period. The Producer Price Index for residential internet-access services fell by 11.2% from 2015 through July 2023.<sup>45</sup> The median fixed-broadband connection in the United States delivers more than 207 Mbps download service, an 80% increase over pre-pandemic median speeds (Figure 10).<sup>46</sup>

**FIGURE 10: Median Download Speed in the US (Mbps)**



**SOURCE:** Speedtest, Global Index (July of each year)

Evidence from large surveys suggests that price is not a dominant factor driving adoption for the currently unconnected. For example, among the 7% of households who do not use the internet at home, more than half of Current Population Survey respondents indicated that they “don’t need it or [are] not interested.”<sup>47</sup> About one-third of respondents indicated that price is a factor, with responses such as “can’t afford it” or “not worth the cost.”<sup>48</sup>

<sup>44</sup> Arthur Menko Business Planning Inc., *2023 Broadband Pricing Index*, USTELECOM (Oct. 2023), available at <https://ustelecom.org/wp-content/uploads/2023/10/USTelecom-2023-BPI-Report-final.pdf>.

<sup>45</sup> U.S. Bureau of Labor Statistics, *Producer Price Index by Commodity: Telecommunication, Cable, and Internet User Services: Residential Internet Access Services [WPU374102]*, retrieved from FRED, Federal Reserve Bank of St. Louis (Aug. 29, 2023), <https://fred.stlouisfed.org/series/WPU374102>.

<sup>46</sup> *United States Median Country Speeds July 2023*, SPEEDTEST GLOBAL INDEX (2023), <https://www.speedtest.net/global-index/united-states>. Prior years retrieved from INTERNET ARCHIVE. See also Camryn Smith, *The Average Internet Speed in the U.S. Has Increased by Over 100 Mbps since 2017*, ALLCONNECT (Aug. 4, 2023), <https://www.allconnect.com/blog/internet-speeds-over-time> (average download speed in the United States was 30.7 Mbps in 2017 and 138.9 Mbps in the first half of 2023).

<sup>47</sup> George S. Ford, *Confusing Relevance and Price: Interpreting and Improving Surveys on Internet Non-adoption*, 45 TELECOMM. POL’Y 102084 (2021).

<sup>48</sup> Smaller surveys and focus groups that allow more opportunities for follow-up questions, however, suggest that price may be more important than is suggested by Census Bureau surveys. For example, one study in Detroit, Michigan,



Of course, cost and interest are not mutually exclusive factors.<sup>49</sup> A common response to CPS surveys among those who do not subscribe to internet service is that it is “not worth the cost.” This is an unhelpful response to guide policymakers because it doesn’t answer whether the cost is “too high,” the value is “too low,” or a combination of both. Another common response is “not interested.” This, too, is unhelpful, as it does not identify the price at which a potential consumer might become interested, if such a price exists. For example, surveys suggest that some nonadopters may become interested in subscribing to internet services or find it worth the cost at a price of zero.

- A National Telecommunications and Information Administration (NTIA) survey of internet use reported the average monthly price that offline households wanted to pay for internet access was approximately \$10 per month; roughly 75% of households gave \$0 or “none” as their answer.<sup>50</sup>
- Another NTIA publication reports that households with “no need/interest” in home internet are willing to pay about \$6 a month, while those who indicate it is “too expensive” are willing to pay approximately \$16 a month.<sup>51</sup>

In addition, as shown in Figure 1, about a quarter of households without a broadband or smartphone subscription claim that they can access the internet at home without paying for a subscription.

Jamie Greig & Hannah Nelson note that low-income households are more likely to use smartphones than computers for internet access.<sup>52</sup> According to Pew Research, 19% of adults who do not have at-home broadband report that their smartphone does everything they need to do online.<sup>53</sup> Colin Rhinesmith *et al.* summarize the response of a Detroit focus group

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used surveys and focus groups to examine internet adoption and use in three low-income urban neighborhoods. Participants who reported lacking at-home internet mentioned lack of interest and high costs at roughly equal rates. See, Colin Rhinesmith, Bianca Reisdorf, & Madison Bishop, *The Ability to Pay For Broadband*, 5 COMM. RES. PRACT. 121 (2019).

<sup>49</sup> Ford, *supra* note 47.

<sup>50</sup> Michelle Cao & Rafi Goldberg, *New Analysis Shows Offline Households Are Willing to Pay \$10-a-Month on Average for Home Internet Service, Though Three in Four Say Any Cost Is Too Much*, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (Oct. 6, 2022), <https://ntia.gov/blog/2022/new-analysis-shows-offline-households-are-willing-pay-10-month-average-home-internet>.

<sup>51</sup> Michelle Cao & Rafi Goldberg, *Switched Off: Why Are One in Five U.S. Households Not Online?*, NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION (2022), <https://ntia.gov/blog/2022/switched-why-are-one-five-us-households-not-online>.

<sup>52</sup> Jamie Greig & Hannah Nelson, *Federal Funding Challenges Inhibit a Twenty-First Century “New Deal” for Rural Broadband*, 37 CHOICES 1 (2022).

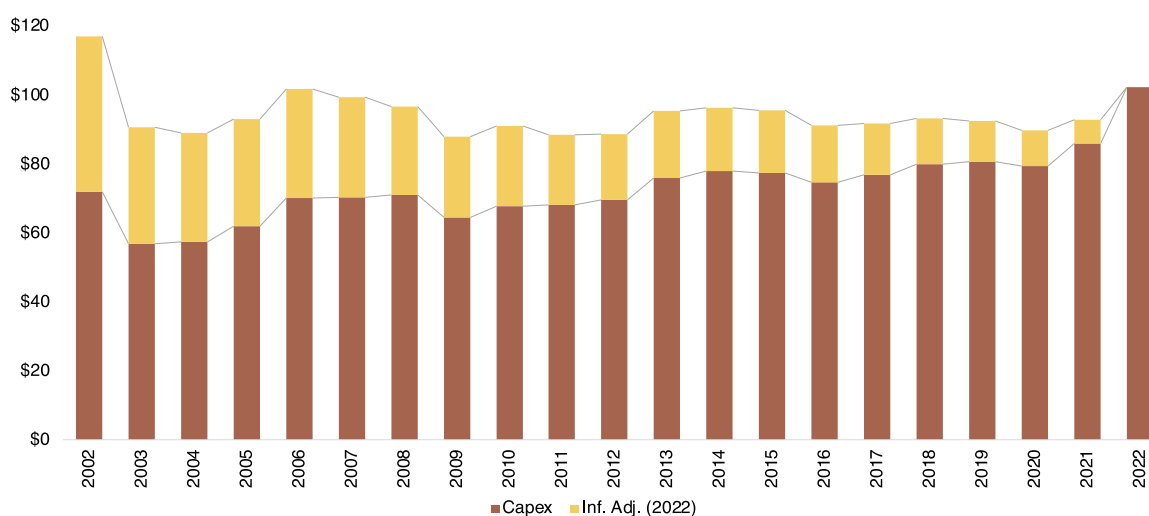
<sup>53</sup> Andrew Perrin, *Mobile Technology and Home Broadband 2021*, PEW RESEARCH CENTER (Jun. 3, 2021), <https://www.pewresearch.org/internet/2021/06/03/mobile-technology-and-home-broadband-2021>.

participant: “[I]f he had to choose between home access and mobile access, the latter is more desirable as it allows him to be reachable and flexible for job interviews and the like”<sup>54</sup>

### C. Investment by Broadband Providers Has Remained High

When the FCC issued the Open Internet Order (OIO) in 2015 to reclassify broadband internet-access service under Title II, opponents claimed the policy would diminish broadband investment. Similarly, when the FCC repealed the reclassification in 2018, opponents claimed the repeal would diminish broadband investment. While U.S. broadband capital expenditures have been relatively stable for the past two decades, there was a noticeable drop in the wake of the 2015 OIO (Figure 11).<sup>55</sup>

**FIGURE 11: US Broadband Provider Capital Expenditures (\$B)**



**SOURCE:** USTelecom

Recent peer-reviewed econometric research from economist Wolfgang Briglauer and his coauthors—indicates that net-neutrality rules do, in fact, slow broadband investment, as measured by the number of fiber connections deployed.<sup>56</sup> The study analyzed 2000-2021 data across OECD countries. Thus, it includes both 2015’s imposition of Title II regulations in the United States and the 2017 repeal. It found that introducing net-neutrality rules was associated with a 22-25% decrease in fiber investments.

<sup>54</sup> Rhinesmith, et al., *supra* note 10.

<sup>55</sup> 2022 *Broadband Capex Report*, USTELECOM (Sep. 8, 2023), available at <https://ustelecom.org/wp-content/uploads/2023/09/2022-Broadband-Capex-Report-final.pdf>.

<sup>56</sup> Wolfgang Briglauer, Carlo Cambini, Klaus Gugler, & Volker Stocker, *Net Neutrality and High-Speed Broadband Networks: Evidence from OECD Countries*, 55 EUR. J. L. & ECON. 533 (2023).

Briglauer's study isolated the effects of net neutrality from other factors that might have affected investment, such as general economic conditions. It focused on new fiber connections as representing growth in network capacity, rather than short-term fluctuations in spending. Even controlling for other variables, net neutrality had an independent negative relationship with fiber deployments.

ICLE's 2021 white paper argued that broadband markets are dynamic and characterized by ongoing innovation in technologies and business models. Investment and innovation do not solely come from new entrants, as incumbents often are important sources of innovation while they try to stay competitive and avoid disruption. In this way, providers compete through new product introductions and disruption, not just on price. Because of these dynamics, mergers and increased concentration can sometimes be associated with *increased* investment, in that they may allow firms to achieve greater economies of scale and scope.<sup>57</sup> In addition, firms make long-term investments to upgrade networks and deploy new technologies even amid just a few competitors.<sup>58</sup>

Since ICLE's white paper, Kenneth Flamm & Pablo Varas published research examining the relationship between the change in a territory's number of providers and changes in service-plan quality (e.g., upload and download speeds).<sup>59</sup> They examine Census blocks that were served by only two "legacy" broadband providers in 2014, which they define as cable and digital subscriber line (DSL) providers. Their study tracked entry and exit of providers in these blocks through 2018, and evaluated the change in maximum download speeds available in those blocks over time. They find that blocks with no entry or exit (what they call "unchanged duopoly") experienced an increase of 750 Mbps in maximum download speeds (Figure 12). Blocks that transitioned from duopoly to monopoly experienced a relatively modest 430 Mbps increase, while blocks that transitioned from two to three providers experienced an 810 Mbps increase. Blocks that transitioned from three to four providers experienced an 854 Mbps increase.

They also noted that internet providers may be highly motivated to introduce new, higher-quality speed tiers as technology improves. These results comport with research summarized in the 2021 ICLE white paper, which found the most significant incremental benefits in broadband quality came from adding a second service provider (relative to monopoly), with some

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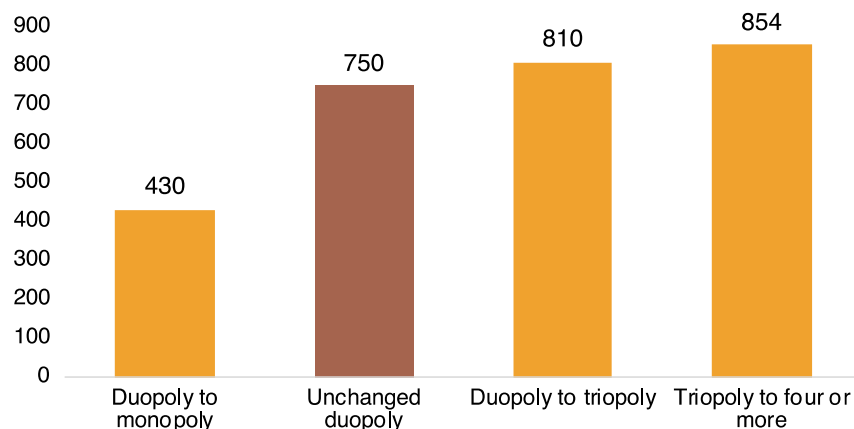
<sup>57</sup> Eric Fruits, Justin (Gus) Hurwitz, Geoffrey A. Manne, Julian Morris, & Alec Stapp, *Static and Dynamic Effects of Mergers: A Review of the Empirical Evidence in the Wireless Telecommunications Industry*, (OECD Directorate for Financial and Enterprise Affairs Competition Committee, Global Forum on Competition, DAF/COMP/GF(2019)13, Dec. 6, 2019), available at [https://one.oecd.org/document/DAF/COMP/GF\(2019\)13/en/pdf](https://one.oecd.org/document/DAF/COMP/GF(2019)13/en/pdf).

<sup>58</sup> Manne, Stout, & Sperry, *supra* note 1.

<sup>59</sup> Kenneth Flamm & Pablo Varas, *Effects of Market Structure on Broadband Quality in Local U.S. Residential Service Markets*, 12 J. INFO. POL'Y 234 (2022).

marginal benefit from adding a third provider, and a much smaller benefit from adding a fourth.

**FIGURE 12: Increase in Maximum Download Speed Associated with Cable or Digital Subscriber Line Provider Entry or Exit, 2014-2018 (Mbps)**



**SOURCE:** Flamm & Varas (2022)

Another recent study is Andrew Kearns' analysis of the Seattle market.<sup>60</sup> In contrast to Flamm & Varas, Kearns concluded that competition among broadband providers might weaken the incentive to increase quality, which he measured as a provider upgrading a Census block to fiber. He argued that improvements in quality often require significant investment, and the returns on this investment may be uncertain in a competitive market. Thus, in a competitive market, providers may prioritize attracting customers with lower prices and a wider range of product options, rather than investing in improvements to the quality of their service. Even so, Kearns concluded that increased competition offers substantial benefits to consumers related to increased product choice and lower prices.

The latest published research supports ICLE's earlier observation that whether adding or removing a competitor is associated with more or less investment depends greatly on various factors, including the market's initial conditions.<sup>61</sup> Thus, a case can be made that competition (as judged by counting the number of competitors in a market) may be, in and of itself, of only lesser importance relative to other factors that guide investment decisions, such as population density, terrain, and demand, as well as the local regulatory and tax environment.<sup>62</sup>

<sup>60</sup> Andrew Kearns, *Does Competition From Cable Providers Spur the Deployment of Fiber?* (Jul. 27, 2023), <https://ssrn.com/abstract=4523529> or <http://dx.doi.org/10.2139/ssrn.4523529>.

<sup>61</sup> Manne, Stout, & Sperry, *supra* note 1.

<sup>62</sup> Fruits, *et al.*, *supra* note 57.

### III. Current and Anticipated Policies Affecting Broadband Competition

Broadband internet has become a service that many Americans—and U.S. policymakers—consider essential. But new and forthcoming regulations imposed in an effort to promote equal access to broadband may actually risk dampening innovation and investment in this critical sector. In this section, we discuss the Affordable Connectivity Program and Broadband Equity, Access, and Deployment subsidy programs, which could foster broadband competition by stimulating both demand and supply. Even so, administration of both of these programs have erected significant hurdles that may damage their effectiveness if not remedied by Congress or the regulatory agencies.

We also discuss other programs that are likely to reduce broadband competition by diminishing the incentives to invest and innovate. Though motivated by a desire to prevent discriminatory access, rigid rules to correct “disparate impact” in broadband-deployment decisions fail to account for the dynamic efficiencies of differentiated service models calibrated to consumer demand. At the same time, attempts to impose common-carrier obligations on broadband providers ignore the truly competitive nature of modern broadband markets, which are thriving under light-touch regulation.

Going forward, policymakers should resist the temptation to micromanage a sector as dynamic as U.S. broadband internet. Instead, they should focus their attention on interventions to address genuinely unfair or anticompetitive conduct, while trusting that innovation and investment will be maximized when companies retain the flexibility to respond to consumer demand, while constrained by economic and technical realities.

#### A. ACP More Effective at Reducing Broadband Costs Than Connecting the Unconnected

The ACP is a federal subsidy program that provides eligible low-income households with monthly broadband-service discounts of up to \$30, or up to \$75 for households on tribal lands.<sup>63</sup> It also provides a one-time \$100 discount for the purchase of a computer or tablet. ICLE has argued that well-designed subsidies targeted to underserved consumers can be an effective way to increase broadband deployment and adoption.<sup>64</sup> Subsidies help make

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<sup>63</sup> FCC, *Affordable Connectivity Program* (Oct. 2, 2023), <https://www.fcc.gov/acp>.

<sup>64</sup> Eric Fruits & Kristian Stout, *Finding Marginal Improvements for the ‘Good Enough’ Affordable Connectivity Program* (Int’l. Ctr. for L. & Econ. Issue Brief, Sep. 15, 2023), available at <https://laweconcenter.org/wp-content/uploads/2023/09/ACP-Subsidies-Paper.pdf>.

providing service in high-cost, low-density areas more financially viable for providers. They also make broadband more affordable for lower-income consumers, stimulating demand.<sup>65</sup>

Proponents of the ACP identify two main goals for the program:

1. to increase at-home internet adoption by unconnected households; and
2. to maintain internet connections for low-income households at risk of “unadoption” due to unaffordability.<sup>66</sup>

Through the ACP, the federal government absorbs part of the cost of providing broadband service to these households, making them more financially attractive customers for broadband providers. The program also creates an incentive for providers to expand their networks to reach eligible households, as they can now potentially recover more revenue from serving those users.<sup>67</sup> For example, if ACP subsidies stimulate consumer demand, providers may find it profitable to deploy broadband to areas that would not otherwise generate a sufficient return on investment to justify deployment. In some cases, a new provider might be able to offer services to a market currently served by a single incumbent firm.

To date, however, the ACP and its predecessors do not appear to have been as successful in increasing at-home internet adoption by unconnected households as was hoped when such programs were created. Due to what appears to be inelastic demand, ACP has faced difficulties in stimulating sufficient interest among the 5% of unconnected households who could access the internet, but fail to take up service.<sup>68</sup> These households may not be aware of the program or may lack digital literacy; may be able to access the internet without a subscription; or may have no interest in subscribing to an internet service at any price.

On the other hand, the ACP’s subsidies appear to have successfully enabled already-subscribed households to maintain at-home internet service through the COVID-19 pandemic, thereby proving effective in enabling economically vulnerable inframarginal consumers to remain connected. More than 23 million U.S. households (about 17%) were enrolled in the ACP before the program lapsed at the end of May 2024.<sup>69</sup> It is currently unknown how many of these

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<sup>65</sup> See Paul Winfree, *Bidenomics Goes Online: Increasing the Costs of High-Speed Internet*, ECON. POL’Y INNOVATION CTR (Jan. 8, 2024), available at [https://epicforamerica.org/wp-content/uploads/2024/01/Bidenomics-Goes-Online\\_01.08.24-1.pdf](https://epicforamerica.org/wp-content/uploads/2024/01/Bidenomics-Goes-Online_01.08.24-1.pdf) (Finding ACP subsidies are associated with higher prices for all broadband plans, especially lower-speed plans, but these costs are more than offset by the subsidies for those who receive them. Thus, the ACP provides lower prices net of subsidy to ACP beneficiaries, but higher prices for those who are not.).

<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> Fruits & Stout, *supra* note 5.

<sup>69</sup> Universal Service Administrative Co., *ACP Enrollment and Claims Tracker* (Feb. 8, 2024),

households will unsubscribe now that ACP subsidies are unavailable. In turn, it's also unknown how providers will respond should large number of households unsubscribe from their internet services.

In March 2024, the FCC announced that April 2024 would be the program's last fully funded month, with partial subsidies through May 2024.<sup>70</sup> Without ACP subsidies, one expects some households will unsubscribe from internet service, and the decreased demand may even lead to consolidation in some markets through exits or mergers. Moreover, Congress' failure to renew the ACP risks other long-term policy responses that could waste already-invested funds.

In the face of another economic downturn, the inframarginal households that unadopt internet service will likely spur future rounds of congressional appropriations to bring these households back online. This turmoil, meanwhile, stands to erode providers' investment incentives, due to lack of demand. This threatens to create a vicious cycle that requires periodic reinvestment from Congress just to stand these programs back up. Over the long term, it would almost certainly be more efficient to extend and focus the ACP program to ensure that truly needy households receive the subsidy (including those that would otherwise unadopt), rather than construing the program as strictly focused on convincing the last 5% of households with inelastic demand to adopt.

### **B. Red Tape and Regulation May Stymie BEAD's Efforts to Expand Broadband Access**

In 2023, the NTIA awarded more than \$42 billion in grants to state governments under the Broadband Equity, Access, and Deployment (BEAD) program,<sup>71</sup> whose primary purpose is to expand high-speed internet access in areas that currently lack it.<sup>72</sup> Congress focused the BEAD program on connecting "unserved" and "underserved" territories. The law requires that those areas lacking connections with speeds of at least 100/20 Mbps must be helped first before addressing other priorities, such as upgrades, adoption programs, and middle-mile

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<https://www.usac.org/about/affordable-connectivity-program/acp-enrollment-and-claims-tracker>. Beginning Feb. 8, 2024, the ACP ceased enrollment.

<sup>70</sup> *Wireline Competition Bureau Announces the Final Month of the Affordable Connectivity Program*, WC Docket No. 21-450 (Mar. 4, 2024), available at <https://docs.fcc.gov/public/attachments/DA-24-195A1.pdf>.

<sup>71</sup> *Biden-Harris Administration Announces State Allocations for \$42.45 Billion High-Speed Internet Grant Program as Part of Investing in America Agenda*, NAT'L TELECOMMS AND INFO. ADMIN. (Jun. 26, 2023), <https://www.ntia.gov/press-release/2023/biden-harris-administration-announces-state-allocations-4245-billion-high-speed>.

<sup>72</sup> *Id.*

infrastructure.<sup>73</sup> Funding is distributed directly to states, which are required to develop plans tailored to connect their unserved and underserved locations.<sup>74</sup>

But much of that congressional intent got muddled in the NTIA's implementation of BEAD funding. The NTIA's notice of funding opportunity ("NOFO") introduced conflicting priorities beyond connecting the unserved. These additional priorities include "middle-class affordability" requirements, the provision of "low cost" plans, and a ban on data caps.<sup>75</sup> The NOFO also gave clear preference to fiber networks over wireless and satellite providers, and to governmental and municipal providers over private companies.<sup>76</sup>

The NTIA's NOFO prompted each participating U.S. state or territory to include a "middle-class affordability plan to ensure that *all* consumers have access to *affordable* high-speed internet" (emphasis in original).<sup>77</sup> The notice provided several examples of how this could be achieved, including:

1. Requiring providers to offer low-cost, high-speed plans to all middle-class households using the BEAD-funded network; and
2. Providing consumer subsidies to defray subscription costs for households ineligible for the Affordable Connectivity Benefit or other federal subsidies.

Despite the IJA's explicit prohibition of price regulation, the NTIA's approval process appears to envision exactly this. The first example provided above is clear rate regulation. It specifies a price ("low-cost"); a quantity ("all middle-class households"); and imposes a quality mandate ("high-speed"). Toward these ends, the notice provides an example of a "low-cost" plan that would be acceptable to NTIA:

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<sup>73</sup> U.S. Dep't of Com., *Internet For All Frequently Asked Questions and Answers Draft Answers Version 2.0 Broadband, Equity, Access, and Deployment (BEAD) Program*, NAT'L TELECOMMS AND INFO. ADMIN. (Sep. 2022), available at <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-09/BEAD-Frequently-Asked-Questions-%28FAQs%29-Version-2.0.pdf>.

<sup>74</sup> *Infrastructure Investment and Jobs Act Overview*, BROADBANDUSA, <https://broadbandusa.ntia.doc.gov/resources/grant-programs> (last visited Dec. 7, 2023).

<sup>75</sup> U.S. Dep't of Com., *Notice of Funding Opportunity, Broadband Equity, Access, and Deployment Program*, NTIA-BEAD-2022, NAT'L TELECOMMS AND INFO. ADMIN. (May 2022), available at <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf>. [hereinafter "BEAD NOFO"]

<sup>76</sup> *Id.* See also, Ted Cruz, *Red Light Report, Stop Waste, Fraud, and Abuse in Federal Broadband Funding*, U.S. S. COMM. ON COM., SCIENCE, AND TRANSP. (Sep. 2023), <https://www.commerce.senate.gov/services/files/0B6D8C56-7DFD-440F-8BCC-F448579964A3>.

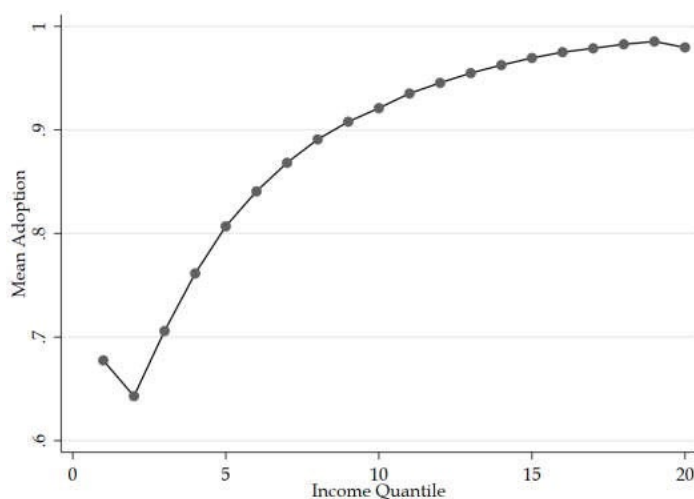
<sup>77</sup> U.S. Dep't of Com., *Notice of Funding Opportunity, Broadband Equity, Access, and Deployment Program*, NTIA-BEAD-2022, NTIA (May 2022), available at <https://broadbandusa.ntia.doc.gov/sites/default/files/2022-05/BEAD%20NOFO.pdf> (note that the IJA itself did not include this requirement, as it was an addition by NTIA as part of the NOFO process; thus, it is unclear the extent to which this represents a valid requirement by NTIA under the BEAD program).



- Costs \$30 per month or less, inclusive of all taxes, fees, and charges, with no additional non-recurring costs or fees to the consumer;
- Allows the end user to apply the Affordable Connectivity Benefit subsidy to the service price;
- Provides download speeds of at least 100 Mbps and upload speeds of at least 20 Mbps, or the fastest speeds the infrastructure is capable of if less than 100 Mbps/20 Mbps;
- Provides typical latency measurements of no more than 100 milliseconds; and
- Is not subject to data caps, surcharges, or usage-based throttling.<sup>78</sup>

A policy bulletin published by the Phoenix Center for Advanced Legal & Economic Public Policy Studies notes that the NTIA did *not* conclude that broadband was unaffordable for middle-class households.<sup>79</sup> George Ford, the bulletin's author, collected data on broadband adoption by income level. The data indicate that, in general, internet-adoption rates increase with higher income levels (Figure 12). Higher-income households have higher adoption rates (97.3%) than middle-income households (92.9%), which in turn have higher adoption rates than lower-income households (78.1%).

**FIGURE 13: Internet Adoption and Income**



**SOURCE:** Adapted from Ford (2022), Table 2 and Figure 2.

For each of the 50 states and the District of Columbia, the Phoenix bulletin finds that middle-income internet-adoption rates are, to a statistically significant degree, higher than lower-

<sup>78</sup> *Id.* at 67.

<sup>79</sup> George S. Ford, *Middle-Class Affordability of Broadband: An Empirical Look at the Threshold Question*, PHOENIX CTR. FOR ADV. LEG. & ECON. PUB. POL'Y STUD., POL'Y BULL. NO. 61 (Oct. 2022), available at <https://phoenix-center.org/PolicyBulletin/PCPB61Final.pdf>.

income adoption. Thus, the Phoenix bulletin concludes that broadband currently is “affordable” to middle-class households and that “no direct intervention is required” to ensure affordability to the middle class.<sup>80</sup>

John Mayo, Greg Rosston, & Scott Wallsten point out that BEAD’s key purpose of providing high-speed internet access to locations that lack it (presumably because it’s too expensive to deploy to these areas without investment subsidies) conflicts with NTIA’s focus on affordability:

A substantial portion of the unserved and underserved areas of the country that are the likely targets of the BEAD program, however, are rural, low-population density areas where deployment costs will be high. These high deployment costs may seem to indicate that even “cost-based” rates—normally seen as an attractive competitive benchmark—may be high, violating the IJJA’s “affordability” standard.<sup>81</sup>

The only effective way to simultaneously reduce broadband prices, increase access, and improve quality is to increase supply. But the NTIA’s attempts at rate regulation work at cross-purposes with BEAD’s objective to increase supply. Therefore, attempts to use BEAD funding to impose price controls may act to reduce broadband competition, rather than preserve or increase it.

The potential harm to competition is worsened by NTIA’s preference for government or municipal providers over private providers, which we discuss in more detail in Section III.G. The NTIA’s funding notice required states to ensure the participation of “non-traditional broadband providers,” such as municipalities and cooperatives. Municipal broadband networks might make sense in some rare cases where private providers are unable to deploy, but such systems have generally mired taxpayers in expensive projects that failed to deliver on promises.

In addition to these challenges, BEAD applications must come with a letter of credit issued by a qualified bank for 25% of the grant amount.<sup>82</sup> This is a guarantee to the grant administrator (e.g., a state broadband office) that there is liquid cash in an account that it can claw back should the applicant not deliver on their grant requirements. To receive a letter of credit, applicants will be required by the issuing bank to provide collateral—which could be cash or cash equivalents equal to the full value of the letter of credit. The letter-of-credit requirement is

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<sup>80</sup> *Id.*

<sup>81</sup> John W. Mayo, Gregory L. Rosston & Scott J. Wallsten, *From a Silk Purse to a Sow’s Ear? Implementing the Broadband, Equity, Access and Deployment Act*, GEO. U. MCDONOUGH SCH. OF BUS. CTR. FOR BUS. & PUB. POL’Y (Aug. 2022), [https://georgetown.app.box.com/s/yonks8t7eclccb0fybxdp3eqmw112da?mc\\_cid=95d011c7c1&mc\\_eid=dc30181b39](https://georgetown.app.box.com/s/yonks8t7eclccb0fybxdp3eqmw112da?mc_cid=95d011c7c1&mc_eid=dc30181b39).

<sup>82</sup> *BEAD Letter of Credit Concerns, \$4.3M in ACP Outreach Grants, FCC Waives Rules for Hawaii Wildfires*, BROADBAND BREAKFAST (Aug. 21, 2023), <https://broadbandbreakfast.com/2023/08/bead-letter-of-credit-concerns-4-3m-in-ACP-outreach-grants-fcc-waives-rules-for-hawaii-wildfires>.

separate and in addition to BEAD's match requirement, which demands that applicants contribute a minimum 25% of the total build cost. The letter-of-credit and matching requirements may hinder competition by favoring large and well-capitalized providers over smaller internet-service providers (ISPs) that may be better positioned to serve rural areas.

In November 2023, NTIA released a waiver for the letter-of-credit requirement because of industry concerns about how the rule may prevent smaller ISPs from participating in the BEAD program.<sup>83</sup> The "programmatically waiver" describes several alternatives to the letter of credit. For example, subgrantees can obtain the letter of credit from a credit union instead of a bank. The expectation is that credit unions would offer lower interest rates for loans and lower fees. Alternatively, applicants can provide a performance bond "equal to 100% of the BEAD subaward amount." In addition, the NTIA is allowing states and territories to reduce the percentage requirement of the performance bond or letter of credit over time, as service providers meet certain project milestones.

Congress set an ambitious goal with BEAD: To expand high-speed internet access in areas that currently lack it. The \$42 billion appropriated for the program could have been used to deploy broadband to underserved areas and to foster broadband implementation. However, NTIA's implementation of the program appears designed to dampen private investment and stifle competition among broadband, wireless, and satellite providers.

### C. Digital-Discrimination Rules

One of the most problematic new regulations to hit the broadband sector is the FCC's digital-discrimination rules. While well-intentioned, these rules are virtually certain to curtail broadband investment and adoption. In late 2023, the FCC adopted final rules facilitating equal access to broadband internet under Section 60506 of the IIJA.<sup>84</sup> The statutory text directs the FCC to prevent discrimination in broadband access based on income level, race, ethnicity, color, religion, or national origin, while also directing the commission to consider issues of technical and economic feasibility.

The rules prohibit digital discrimination of access, which is defined as policies or practices that differentially affect or are intended to differentially affect consumers' access to broadband internet-access service based on their income level, race, ethnicity, color, religion or national

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<sup>83</sup> NTIA, *Ensuring Robust Participation in the BEAD Program* (Nov. 1, 2023), <https://www.internetforall.gov/blog/ensuring-robust-participation-bead-program>.

<sup>84</sup> FCC, *Report and Order and Further Notice of Proposed Rulemaking*, GN Docket No. 22-69, FCC 23-100 (Nov. 20, 2023), available at <https://docs.fcc.gov/public/attachments/FCC-23-100A1.pdf>

origin, unless justified by genuine issues of technical or economic feasibility.<sup>85</sup> There are two key provisions that will disrupt broadband competition, namely:

1. Adopting a disparate-impact standard to define “digital discrimination of access;” and
2. Subjecting a “broad range” of service characteristics to digital-discrimination rules, including pricing, promotional conditions, terms of service, and quality of service.

The rules apply to entities that provide, facilitate, and/or affect consumer access to broadband internet-access service. This includes typical broadband providers, as well as entities that “affect consumer access to broadband internet access service.”<sup>86</sup> Under this broad definition, local governments, nonprofits, and even apartment-building owners all may be subject to the FCC’s digital-discrimination rules.

The rules also revise the commission’s informal consumer-complaint process to accept complaints of digital discrimination of access, and to authorize the commission to initiate investigations and impose penalties and remedies for violations of the rules.<sup>87</sup>

The FCC also proposed additional rules that would require providers to submit annual reports on their major deployment, upgrade, and maintenance projects, and to establish and maintain internal compliance programs to assess whether their policies and practices advance or impede equal access to broadband internet-access service within their service areas.<sup>88</sup> In essence, these proposed rules would require providers to prepare their own disparate-impact analysis every year.

Because of the expansive definition of covered entities and services subject to the digital-discrimination rules, providers will face legal uncertainty and litigation risks.<sup>89</sup> The most obvious of these involve the likelihood of complaints or investigations based on allegations of disparate impact, which may be difficult to disprove. Comments to the FCC from the U.S. Chamber of Commerce highlight these concerns:<sup>90</sup>

These policies would render it impossible for businesses and the marketplace to make rational investment decisions. The scope of the services that the Draft covers is so broad that it does not provide meaningful guidance for how to comply. And

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<sup>85</sup> *Id.* at 3.

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> Fruits, *supra* note 14.

<sup>90</sup> U.S. Chamber of Commerce, *In the Matter of Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*, GN Docket No. 22-69 (Nov. 6, 2023), <https://www.fcc.gov/ecfs/document/110620347626/2> (citations omitted).

because the Draft fails to grant sufficient guidance, it does not give fair notice of how to avoid liability. Consequently, investment in broadband innovation would disappear and consumers would have to pay higher costs for less efficient services.

The digital-discrimination rules also may discourage innovation and differentiation in broadband service offerings, as providers could avoid service offerings that may be perceived as discriminatory or having a differential impact on certain consumers or communities. Providers could also be reluctant to invest in new technologies or platforms that, while improving broadband service quality or availability, might also create disparities in service characteristics among consumers or areas. As FCC Commissioner Brendan Carr has noted:<sup>91</sup>

Another telling last minute addition is a new advisory opinion process. This is the very definition of swapping out permissionless innovation for a mother-may-I pre-approval process. What's more? The FCC undermines whatever value that type of process could provide because, to the extent the FCC does—at some point in the future—authorize your conduct, the Order says that the agency reserves the right to rescind an advisory opinion at any time and on a moment's notice. At that time, the covered provider “must promptly discontinue” the practice or policy. That does not provide the confidence necessary to invest and innovate.

Private, public, and nonprofit entities may even face allegations of intentional discrimination for policies and practices designed to increase internet adoption and use by protected groups. In particular, programs intended to increase broadband adoption among low-income and price-sensitive consumers could run afoul of the digital-discrimination rules. George Ford provides an example of such a program:<sup>92</sup>

For example, Cox Communications offers 100 Mbps broadband service for \$49.99 per month, but ACP eligible households can get the same service for \$30 per month. Higher-income households may not avail themselves of the discounted price.

In Tennessee, Hamilton County Schools' EdConnect program offers free high-speed internet access to eligible students, where eligibility is based on income level—*i.e.*, students who receive free or reduced-cost lunch, attend any school where every student receives free or reduced-cost lunch, or whose family participates in the Supplemental Nutrition Assistance Program (SNAP) or other economic-assistance programs.<sup>93</sup> Both the school district and the nonprofit that runs

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<sup>91</sup> FCC, *Dissenting Statement of Commissioner Brendan Carr Regarding the Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*, GN Docket No. 22-69, Report and Order and Further Notice of Proposed Rulemaking, FCC 23-100 (2023), available at <https://docs.fcc.gov/public/attachments/FCC-23-100A3.pdf>.

<sup>92</sup> George S. Ford, *Will Digital Discrimination Policies End Discount Plans for Low-Income Consumers?* (Phoenix Ctr. for Advanced Legal & Econ. Pub. Pol'y Stud., Nov. 1, 2023), <https://www.fcc.gov/ecfs/document/1103079827403/5>.

<sup>93</sup> HCS EdConnect, *Welcome to HCS EdConnect* (2023), <https://www.edconnect.org>.

the program would also be covered entities. The fact that the price (free) is available only to those of a certain income level is explicit, intentional discrimination.

The FCC's digital-discrimination rules will almost surely increase the regulatory burden and compliance costs for providers. Small and rural providers may be disproportionately burdened, as these providers tend to have more limited resources and face technical and economic challenges in deploying and maintaining broadband networks in unserved and underserved areas. The FCC's proposal that broadband providers submit an annual report on their substantial broadband projects could likewise give larger providers an advantage, as they are more likely to have the resources to comply with this requirement. For example, the Wireless Internet Service Providers Association commented to the FCC:<sup>94</sup>

Annual reporting and record retention rules and the requirement to adopt and certify to the existence and compliance with an internal digital discrimination compliance plan would impose significant burdens on broadband providers, especially smaller providers that may not track investment data and lack the resources to develop a compliance program with ongoing obligations. The burdens are overly egregious given that smaller providers do not have any record of engaging in digital discrimination.

Further complicating the evaluation of digital-discrimination claims based on income is that, not only is income a key factor influencing whether a given consumer will adopt broadband, but it is also highly correlated with race, ethnicity, national origin, age, education level, and home-computer ownership and usage. The FCC's digital-discrimination rules fail to recognize this "income conundrum" and will invite costly and time-consuming litigation based on allegations of digital discrimination either where it does not exist or where it is excused by economic-feasibility considerations. Moreover, by specifying pricing as an area subject to digital-discrimination scrutiny, the FCC's rules allow for *ex-post* regulation of rates, prompting Commissioner Carr to characterize the agency's digital-discrimination rules and Title II rules as "fraternal twins."<sup>95</sup>

#### **D. Title II and Net Neutrality**

In 2015, the FCC issued the Open Internet Order (OIO), which reclassified broadband internet-access service as a telecommunications service subject to Title II of the Communications Act. Proponents of the OIO contend that the Title II classification was necessary to ensure net

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<sup>94</sup> WISPA, *In the Matter of Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination*, GN Docket No. 22-69 (Nov. 8, 2023), <https://www.fcc.gov/ecfs/document/1108944918538/1>.

<sup>95</sup> Testimony of Brendan Carr, Commissioner, Federal Communications Commission, Before the Subcommittee on Communications and Technology of the United States House of Representatives Committee on Energy and Commerce, "Oversight of President Biden's Broadband Takeover" (Nov. 30, 2023), available at [https://d1dth6e84htgma.cloudfront.net/11\\_30\\_23\\_Carr\\_Testimony\\_3163ea4363.pdf](https://d1dth6e84htgma.cloudfront.net/11_30_23_Carr_Testimony_3163ea4363.pdf).

neutrality—that is, that internet service providers (ISP) would treat all internet traffic equally. In 2018, the Title II classification was repealed by the FCC’s Restoring Internet Freedom Order (RIFO).

One month after ICLE’s white paper was published in 2021, President Joe Biden issued an executive order that “encouraged” the FCC to “[r]estore Net Neutrality rules undone by the prior administration.” Last year, Anna Gomez was confirmed as an FCC commissioner, providing the commission a 3-2 Democratic majority. One day after her confirmation, FCC Chair Rosenworcel announced the agency’s proposal to reimpose Title II regulation on internet services. Soon thereafter, the FCC issued its “Notice of Proposed Rulemaking for the Safeguarding and Securing the Open Internet Order,” which would again reclassify broadband under Title II.<sup>96</sup> On April 25, 2024, the commission approved the order on a 3-2 party-line vote.<sup>97</sup>

While the FCC provides several reasons for reclassifying broadband, most of the justifications are built on the same underlying premise: That broadband is an essential public utility and should be regulated as such. Of course, many other essentials—shelter, food, clothing—are provided by various suppliers in competitive markets. Utilities are considered distinct because they tend to have significant economies of scale such that:

1. a single monopoly provider can provide the goods or services at a lower cost than multiple competing firms; and/or
2. market demand is insufficient to support more than a single supplier.<sup>98</sup>

Under this definition, water, sewer, electricity, and natural gas constitute examples typically cited as “natural” monopolies.<sup>99</sup> In some cases, not only are these industries treated as regulated monopolies, but their monopoly status is solidified by laws forbidding competition.

At one time, local and long-distance telephone services were similarly treated as natural monopolies, as was cable television.<sup>100</sup> Various innovations eroded the “natural” monopolies in

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<sup>96</sup> Title II NPRM, *supra* note 15.

<sup>97</sup> SSOIO, *supra* note 16.

<sup>98</sup> See, PAUL KRUGMAN & ROBIN WELLS, *ECONOMICS* (4th ed. 2015) at 389 (“So the natural monopolist has increasing returns to scale over the entire range of output for which any firm would want to remain in the industry—the range of output at which the firm would at least break even in the long run. The source of this condition is large fixed costs: when large fixed costs are required to operate, a given quantity of output is produced at lower average total cost by one large firm than by two or more smaller firms.”)

<sup>99</sup> *Id.* (“The most visible natural monopolies in the modern economy are local utilities—water, gas, and sometimes electricity. As we’ll see, natural monopolies pose a special challenge to public policy.”)

<sup>100</sup> RICHARD H. K. VIETOR, *CONTRIVED COMPETITION* (1994) at 167 (“[I]n the early part of the twentieth century, American Telephone and Telegraph (AT&T) set itself the goal of providing universal telephone services through an end-to-end national monopoly. ... By [the 1960s], however, the distortions of regulatory cross-subsidy had diverged too

telephone and cable service over time.<sup>101</sup> As of the year 2000, 94% of U.S. households had a landline telephone, while only 42% had a mobile phone.<sup>102</sup> By 2018, those numbers flipped. In 2015, 73% of households subscribed to cable or satellite television service.<sup>103</sup> Today, fewer than half of U.S. households subscribe.<sup>104</sup> Much of that transition has been due to the enormous improvements in broadband speed, reliability, and affordability discussed in Section II. Similarly, innovations in 5G, fixed wireless, and satellite are eroding the already-tenuous claims that broadband internet service is akin to a utility.

The FCC's latest reclassification of broadband under Title II prohibits blocking, throttling, or engaging in paid or affiliated prioritization arrangements.<sup>105</sup> In addition, it imposes "a general conduct standard that would prohibit unreasonable interference or unreasonable disadvantage to consumers or edge providers." Under the OIO, the FCC invoked the general conduct standard to scrutinize providers' "zero rating" programs.<sup>106</sup> Although Title II regulation explicitly allows for rate regulation of covered entities, the 2024 order forebears rate regulation.<sup>107</sup>

Critics of Title II regulation have argued that some of the conduct prohibited under the FCC's proposal may be pro-competitive practices that benefit consumers. For example, Hyun Ji Lee & Brian Whitacre found that low-income consumers were willing to pay for an extra GB of data each month, but were not willing to pay extra for a higher speed.<sup>108</sup> This data-speed tradeoff suggests those consumers would benefit from a plan that offered a larger data

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far from the economics of technological change." Thomas W. Hazlett, *Cable TV Franchises as Barriers to Video Competition*, 2 VA. J.L. & TECH. 1 (2007) ("Traditionally, municipal cable TV franchises were advanced as consumer protection to counter "natural monopoly" video providers. ... Now, marketplace changes render even this weak traditional case moot. ... [V]ideo rivalry has proven viable, with inter-modal competition from satellite TV and local exchange carriers (LECs) offering "triple play" services.")

<sup>101</sup> *Id.*

<sup>102</sup> *Share of United States Households Using Specific Technologies*, OUR WORLD IN DATA (n.d.), <https://ourworldindata.org/grapher/technology-adoption-by-households-in-the-united-states>.

<sup>103</sup> Edward Carlson, *Cutting the Cord: NTIA Data Show Shift to Streaming Video as Consumers Drop Pay-TV*, NTIA (2019), <https://www.ntia.gov/blog/2019/cutting-cord-ntia-data-show-shift-streaming-video-consumers-drop-pay-tv>.

<sup>104</sup> Karl Bode, *A New Low: Just 46% Of U.S. Households Subscribe to Traditional Cable TV*, TECHDIRT (Sep. 18, 2023), <https://www.techdirt.com/2023/09/18/a-new-low-just-46-of-u-s-households-subscribe-to-traditional-cable-tv>. See also, Shira Ovide, *Cable TV Is the New Landline*, NEW YORK TIMES (Jan. 6, 2022), <https://www.nytimes.com/2022/01/06/technology/cable-tv.html>.

<sup>105</sup> SSOIO, *supra*, note 16.

<sup>106</sup> FCC, *Wireless Telecommunications Bureau Report: Policy Review of Mobile Broadband Operators' Sponsored Data Offerings for Zero-Rated Content and Services* (Jan. 2017), available at [https://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2017/db0111/DOC-342987A1.pdf](https://transition.fcc.gov/Daily_Releases/Daily_Business/2017/db0111/DOC-342987A1.pdf).

<sup>107</sup> SSOIO, *supra*, note 16.

<sup>108</sup> Hyun Ji Lee & Brian Whitacre, *Estimating Willingness-to-Pay for Broadband Attributes among Low-Income Consumers: Results from Two FCC Lifeline Pilot Projects*, 41 TELECOMM. POL'Y. 769 (Oct. 2017).



allowance, but throttled speeds if the allowance is exceeded. In 2014 comments to the FCC, ICLE and TechFreedom described a pro-competitive benefit of paid prioritization:<sup>109</sup>

Prioritization at least requires content providers to respond to incentives—to take congestion into account instead of using up a common resource without regard to cost. It also allows the gaming company to buy better service, which isn't an option at all with neutrality, under which it just has to suffer congestion. The truth is that, if the game developer can't afford to pay for clear access, then it may have a bad business model if it is built on an expectation that it will have unfettered, free access to a scarce, contestable resource.

Aside from the likely pro-competitive effects of the conduct the FCC seeks to prohibit, in the face of robust competition, consumers can readily switch away from providers who charge anticompetitive prices or impose harmful terms and conditions. In its 2019 *Mozilla* decision, the U.S. Circuit Court of Appeals for the D.C. Circuit concluded:<sup>110</sup>

[M]any customers can access edge provider's content from multiple sources (i.e., fixed and mobile). In this way, there is no terminating monopoly. Additionally, the Commission argued that even if a terminating monopoly exists for some edge providers the commenters did not offer sufficient evidence in the record to demonstrate that the resulting prices will be inefficient. Given these reasons, we reject Petitioners' claim that the Commission's conclusion on terminating monopolies is without explanation.

In addition, the court noted:<sup>111</sup>

More importantly, the Commission contends that low churn rates do not per se indicate market power. Instead, they could be a function of competitive actions taken by broadband providers to attract and retain customers. And such action to convince customers to switch providers, the Commission argues, is indicia of material competition for new customers.

Regardless of the FCC's intent in imposing Title II regulation, the effect will be a stifling of innovation in the delivery and pricing of broadband-internet service. In tandem with the agency's digital-discrimination rules, the proposed "net neutrality" rules attempt to transition broadband to a commodity service with little differentiation between providers. In so doing, the FCC is eliminating, piece-by-piece, the dimensions among which broadband providers compete, resulting in both higher prices for consumers and lower returns for providers. Rather than a "virtuous cycle" of growth and innovation, the U.S. broadband market may instead

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<sup>109</sup> Geoffrey A. Manne, Ben Sperry, Berin Szóka, & Tom Struble, *ICLE & TechFreedom Policy Comments* (Jul. 14, 2014), available at [https://laweconcenter.org/images/articles/icle-tf\\_nn\\_policy\\_comments.pdf](https://laweconcenter.org/images/articles/icle-tf_nn_policy_comments.pdf).

<sup>110</sup> *Mozilla Corp. v. Fed. Comm'n's Comm'n*, 940 F.3d 1 (D.C. Cir. 2019) (citations omitted).

<sup>111</sup> *Id.*

experience a “doom loop” of stagnant internet adoption, depressed investment in deployment, and diminished broadband competition.

### E. *De-Facto* Rate Regulation

Rate regulation—any mechanism whereby government intervenes in the pricing process—has long been a contentious issue in the realm of broadband services.<sup>112</sup> Historically, the FCC has been deeply involved in rate regulation, tasked with ensuring fair rates, reliable service, and universal access to telecommunications since 1934.<sup>113</sup> As the telecommunications landscape has evolved, however, so too has the FCC’s approach, increasingly moving toward deregulatory approaches. That is, until recently.<sup>114</sup> Unfortunately, there are multiple ways that rates can be regulated, and—despite public disavowals—policymakers already appear to be implementing some forms of rate regulation on broadband providers.

Explicit rate regulation manifests primarily in two forms: price ceilings and floors.<sup>115</sup> Price ceilings limit the maximum price that can be charged, a common example being rent control. Price floors, on the other hand, set a minimum price, akin to minimum wage laws. Each of these forms impacts the broadband sector differently, potentially altering market dynamics and influencing consumer access and provider revenues.<sup>116</sup>

Policymakers can also resort to less-obvious means of regulating prices—*de-facto* rate regulation—such as rent stabilization or inflation-linked wage increases, which control the rate of price changes rather than the prices themselves.<sup>117</sup> Moreover, as discussed further *infra*, price controls

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<sup>112</sup> In 2015, when the FCC voted to enact the 2015 Open Internet Order, Chair Tom Wheeler promised to forebear from applying such rate regulation, stating flatly that “we are not trying to regulate rates.” *FCC Reauthorization: Oversight of the Commission*, Hearing Before the Subcommittee on Communications and Technology, Committee on Energy and Commerce, House of Representatives, 114 Cong. 27 (Mar. 19, 2015) (Statement of Tom Wheeler). Standing as a nominee to the FCC, Gigi Sohn was asked during a 2021 confirmation hearing before the U.S. Senate Commerce Committee if she would support the agency’s regulation of broadband rates. She responded: “No. That was an easy one.” David Shepardson, *FCC Nominee Does Not Support U.S. Internet Rate Regulation*, REUTERS (Dec. 1, 2021), <https://www.reuters.com/world/us/fcc-nominee-does-not-support-us-internet-rate-regulation-2021-12-01>. In September 2023, in a speech announcing the FCC’s proposal to regulate broadband internet under Title II of the Communications Act, Chair Jessica Rosenworcel was emphatic: “They say this is a stalking horse for rate regulation. Nope. No how, no way.” *FCC Chair Rosenworcel on Reinstating Net Neutrality Rules*, C-SPAN (Sep. 26, 2023), <https://www.c-span.org/video/?530731-1/fcc-chair-rosenworcel-reinstating-net-neutrality-rules>.

<sup>113</sup> Vietor, *supra* note 100.

<sup>114</sup> *Id.* See also, Illinois Economic and Fiscal Commission, *Telecommunications Deregulation Issues and Impacts: A Special Report* (Apr. 2001), available at [https://www.ilga.gov/commission/cgfa/archives/telecom\\_dereg.PDF](https://www.ilga.gov/commission/cgfa/archives/telecom_dereg.PDF) and Kevin J. Martin, *Balancing Deregulation and Consumer Protection*, 17 *COMMLAW CONSPECTUS* (2008), available at <https://transition.fcc.gov/commissioners/previous/martin/MartinSpeech011609.pdf>.

<sup>115</sup> Fruits & Manne, *supra* note 6, at 1.

<sup>116</sup> *Id.*

<sup>117</sup> *Id.* at 7.

are sometimes introduced laterally as requirements to participate in various federal programs, with the effect remaining that government agents assume broad control over prices. Still other regulations may not explicitly regulate rates, but act in much the same way as direct rate regulation, as explained by Jonathan Nuechterlein and Howard Shelanski:<sup>118</sup>

Finally, but no less important, the line between “price” and “non-price” regulation is thin, and regulatory obligations can amount to rate regulation even when regulators do not perceive themselves as setting rates at either the retail or wholesale level.

The FCC's 2015 OIO, while explicitly eschewing rate regulation, indirectly influenced pricing strategies in the broadband market.<sup>119</sup> By imposing common-carriage obligations, the OIO impacted how ISPs invested and priced their services. In this respect, the FCC's 2024 rules are identical to the 2015 rules. But this time, Title II regulation will work hand-in-hand with the agency's digital-discrimination rules. While the proposed common-carrier rules explicitly eschew *ex-ante* rate regulation through forbearance, the digital-discrimination rules explicitly subject pricing policies and practices to *ex-post* discrimination scrutiny.

In some ways, the FCC may be imposing among the worst of possible rate-regulation regimes. Under an *ex-ante* approach to rate regulation, providers have—at a minimum—a framework to form their expectations about whether and how rates will be regulated. As discussed in Section III.C, however, under the *ex-post* approach that the FCC has adopted in its digital-discrimination rules, providers and any other “covered entity” lack any meaningful framework regarding how the agency may regulate rates or how to avoid liability.

Specifically, the FCC's Digital Discrimination Order states:

The Commission need not prescribe prices for broadband internet access service, as some commenters have cautioned against, in order to determine whether prices are “comparable” within the meaning of the equal access definition. The record reflects support for the Commission ***ensuring pricing consistency*** as between different groups of consumers. We also find that the Commission is well situated to analyze comparability in pricing, as we must already do so in other contexts.<sup>120</sup>

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<sup>118</sup> Jonathan E. Nuechterlein & Howard Shelanski, *Building on What Works: An Analysis of U.S. Broadband Policy*, 73 FED. COMM. L.J. 219 (2021)

<sup>119</sup> Fruits & Manne, *supra* note 6, at 13.

<sup>120</sup> Digital Discrimination Order, *supra* note 14 [emphasis added].

While assessing the comparability of prices is not *explicit* rate regulation, a policy that holds entities liable for those disparities, such that an ISP must adjust its prices until it matches the FCC definitions of “comparable” and “consistency,” is tantamount to setting that rate.<sup>121</sup>

In addition to the FCC digital-discrimination and Title II rules, recent developments in broadband policy have introduced other forms of *de-facto* rate regulation. The BEAD program itself mandates a “low-cost” option be made available to recipients of the Affordable Connectivity Program by providers that receive a BEAD grant.<sup>122</sup> The NTIA’s NOFO for the BEAD program further mandates that participating states include an affordability plan that ensures access to affordable high-speed internet for all middle-class consumers.<sup>123</sup> This initiative might require providers to offer low-cost plans or to provide consumer subsidies. Similarly, the U.S. Department of Agriculture’s (USDA) ReConnect Loan and Grant Program awards funding preferences to applicants that adhere to net-neutrality rules and offer “affordable” options.<sup>124</sup> New York’s Affordable Broadband Act is another example of broadband rules that mandate ISPs provide low-cost internet-access plans to qualifying low-income households.<sup>125</sup>

Rate regulation, *de facto* or otherwise, has a major effect on providers’ ability to enter new markets and to improve service in those markets in which they already operate. Rate regulations lead to market distortions. By capping prices below the market rate, such regulations can increase demand without a corresponding increase in supply, potentially leading to shortages and discouraging providers from making output-improving investments.<sup>126</sup> For broadband

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<sup>121</sup> Brief of the International Center for Law & Economics and the Information Technology & Innovation Foundation as Amici Curiae in Support of Petitioners and Setting Aside the Commission’s Order, *Minnesota Telecom Alliance v. FCC*, No. 24-1179 (8<sup>th</sup> Cir. Apr. 29, 2024) available at <https://laweconcenter.org/wp-content/uploads/2024/04/2024-04-29-ICLE-ITIF-Amicus-Brief.pdf>.

<sup>122</sup> IJA 60102 (h)(4)(B).

<sup>123</sup> U.S. Dep’t of Com., *supra* note 75, at 66. States have begun to follow this lead by prescribing obligations to local providers for quality and price on deployments that have speeds and capabilities far above what BEAD and the FCC consider as the baseline for a “served” household. See, e.g., ConnectLA, BEAD Initial Proposal, vol. 2 (Aug. 2023), available at <https://connect.la.gov/media/3gylvrgc/bead-vol-2-final.pdf> (prescribing a complex system for preferencing providers that deploy “affordable” fiber and other high-speed service to middle-class homes).

<sup>124</sup> RUS Vol. 87, No. 149, *Notice of Availability of the Draft Programmatic Environmental Assessment for the Partnerships for Climate-Smart Commodities Funding Opportunity*, Docket No. NRCS-2022-0009 (U.S.D.A., Aug. 4, 2022), <https://www.federalregister.gov/documents/2022/08/04/2022-16694/rural-econnectivity-program> and RD, *Preparing for ReConnect Round 4*, (USDA) available at <https://www.rd.usda.gov/sites/default/files/Preparing-for-ReConnect-Round4.pdf>.

<sup>125</sup> *New York State Telecommunications Association, Inc. v. James*, No. 21-1075 (2<sup>nd</sup> Cir. Apr. 26, 2024), available at <https://www.courthousenews.com/wp-content/uploads/2024/04/ny-broadband-law-opinion-second-circuit.pdf>. See also, Randolph J. May & Seth L. Cooper, *Second Circuit Hears Preemption Challenge to New York’s Broadband Rate Regulation Law*, FEDSOC BLOG (Feb. 7, 2023), <https://fedsoc.org/commentary/fedsoc-blog/second-circuit-hears-preemption-challenge-to-new-york-s-broadband-rate-regulation-law>.

<sup>126</sup> Fruits & Manne, *supra* note 6, at 16.

providers, this can translate into reduced investment in network expansion and quality improvement, particularly in less profitable or more challenging areas. Moreover, binding rate regulations can lower the returns on investment, thereby discouraging deployments and slowing overall broadband expansion. Quality and service also may suffer under rate regulation. A regulated provider, constrained by price ceilings, cannot fully reap the benefits of service-quality improvements, leading to a reduced incentive to enhance that service quality.<sup>127</sup>

## F. Pole Attachments

The importance of pole attachments cannot be overstated in the context of expanding broadband connectivity, even if utility-pole issues often fly under the radar. This is particularly true due to their implications for competition in the relevant local broadband markets. Access to physical infrastructure is critical, and where providers cannot readily access this physical infrastructure, it can delay deployment or make it more costly.

The FCC has recognized the crucial role of pole attachments in a pending proceeding that seeks to address inefficiencies in access to pole attachments that lead to cost overruns and delays in deployment.<sup>128</sup> In December 2023, in an effort to expedite broadband deployment, the commission adopted several important pole-attachment reform measures.<sup>129</sup> These included introducing a streamlined process to resolve utility-pole attachment disputes, which could be pivotal to hasten broadband rollouts, especially in underserved areas.<sup>130</sup> The FCC also mandated that utilities provide comprehensive pole-inspection information to broadband attachers, which is expected to facilitate more informed planning and to reduce delays.<sup>131</sup> The commission has also refined its procedural rules to foster quicker resolutions through mediation and expedited adjudication via the Accelerated Docket.<sup>132</sup>

The FCC is on the right track: ensuring timely access to pole infrastructure is crucial to ensure that broadband markets remain competitive, and that the substantial investments in broadband infrastructure directed by programs like BEAD yield the intended benefits.

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<sup>127</sup> *Id.* at 1.

<sup>128</sup> FCC, *Fourth Report and Order, Declaratory Ruling, and Third Further Notice of Proposed Rulemaking Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84 (Dec. 15, 2023), available at <https://docs.fcc.gov/public/attachments/FCC-23-109A1.pdf> [hereinafter “Poles Order”].

<sup>129</sup> *Id.*

<sup>130</sup> *Id.* at ¶ 7.

<sup>131</sup> *Id.*

<sup>132</sup> *Id.*

The goal of pole-attachment rules should be to equitably assess costs in ways that avoid inefficient rent extraction and ensure the smooth deployment of broadband infrastructure.<sup>133</sup> The FCC's current rules, however, can impose on a requesting attacher the entire cost of pole replacement, which is economically suboptimal.<sup>134</sup> There is therefore a need to revisit the current formula to ensure that the incremental costs and benefits are appropriately allocated to each relevant party. In its recent order, the FCC expanded the definition of what constitutes as a "red tagged" pole in need of replacement.<sup>135</sup> The extent to which this works in practice will, however, depend on how the FCC processes applications under its new "red tag" policy.

One critical concern is the emergence of hold-up and hold-out problems.<sup>136</sup> Section 224 of the Communications Act authorizes the FCC to ensure that the costs of pole attachments are just and reasonable.<sup>137</sup> This provision, however, also allows pole owners to deny access when there is insufficient capacity, creating a potential imbalance in bargaining power.<sup>138</sup> This imbalance is exacerbated by the pole owners' superior knowledge of their cost structures and their ability to impose "take it or leave it" offers on prospective attachers.<sup>139</sup> Consequently, attachers might be, at the margin, discouraged from deploying in areas with capacity-constrained poles. Further, the "last attacher pays" model can inadvertently create a disincentive for pole owners to replace or upgrade poles until a new attacher is obligated to bear the full cost. This scenario may lead to delays in broadband deployment, especially in areas where the cost of deployment is already high. The recent FCC order aims to address these concerns by clarifying cost-causation principles and ensuring more equitable cost sharing for pole replacements and modifications.<sup>140</sup> But there again remains interpretive room within the framework the commission has established. Thus, it remains to be seen how effectively the new rules will mitigate the problem.

Any reconsideration of pole-attachment rules also must account for the fact that the pole market is highly regulated.<sup>141</sup> The actual cost for pole replacements in a free market, without regulatory intervention, would likely be some middle ground between the total replacement cost

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<sup>133</sup> Kristian Stout & Eric Fruits, *Reply Comments of the International Center for Law & Economics, In the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84 at 4 (submitted Aug. 26, 2022), available at <https://laweconcenter.org/wp-content/uploads/2022/08/Pole-Attachments-Reply-Comments-2022-08-27-v2.pdf>.

<sup>134</sup> *Id.*

<sup>135</sup> See *Poles Order* at ¶ 42.

<sup>136</sup> *Id.*

<sup>137</sup> *Id.* at 8.

<sup>138</sup> *Id.* at 9.

<sup>139</sup> *Id.*

<sup>140</sup> See *Poles Order* at ¶ 42.

<sup>141</sup> *Id.*

and the new rental price charged to attachers. The FCC must judiciously leverage its ability to set reasonable rental rates to approach the ideal price that would otherwise be discovered through market mechanisms.

Toward this end, the upfront “make-ready” charges for pole replacement should be limited to a pole owner’s incremental cost.<sup>142</sup> This approach acknowledges that early replacements simply shift the timing of the expense, rather than adding additional costs. The formula could incorporate the depreciated value of the pole being replaced and allocate the costs associated with increased capacity across all beneficiaries, including new attachers as well as the pole owner, who may realize additional revenue from the increased capacity.

Beyond disputes over privately owned poles, a lacuna in the FCC’s authority over poles owned by certain public entities threatens to erect large roadblocks to deployment. This is particularly the case for poles owned by the Tennessee Valley Authority (TVA).<sup>143</sup> Such common TVA practices as refusing reasonable and nondiscriminatory pole-attachment agreements risk significantly slowing the deployment of broadband, especially in the rural areas the TVA services.<sup>144</sup>

The source of this problem is a provision of Section 224 of the Communications Act that exempts municipal and electric-cooperative (coop) pole owners from FCC oversight.<sup>145</sup> This exemption allows the TVA to set its own rates for pole attachments, which are notably higher than FCC rates, and often sidestep access requirements typically mandated by states and the FCC.<sup>146</sup>

Municipally owned electricity distributors constitute what economists call state-owned enterprises. As such, they face significantly different restraints than privately owned enterprises.<sup>147</sup> Private businesses must pass the profit-and-loss test on the market, while state-owned enterprises are not similarly constrained. Municipally owned electricity distributors are usually monopolies, either because private competitors are not allowed to compete, or because they receive government benefits not available to potential private competitors. As a result, they may pursue other goals in the “public interest,” such as providing their products and services at below-market prices.<sup>148</sup> This includes the ability to leverage their electricity monopolies to

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<sup>142</sup> *Id.* at 10.

<sup>143</sup> Ben Sperry, Geoffrey A. Manne, & Kristian Stout, *The Role of Antitrust and Pole-Attachment Oversight in TVA Broadband Deployment* (Int’l Ctr. for L. & Econ. Issue Brief 2023-09-04, 2023), available at <https://laweconcenter.org/wp-content/uploads/2023/08/TVA-Pole-Attachments-Issue-Brief.pdf>.

<sup>144</sup> *Id.* at 2.

<sup>145</sup> *Id.* at 3.

<sup>146</sup> *Id.*

<sup>147</sup> *Id.* at 4.

<sup>148</sup> *Id.*

enter into broadband provision. The problem is that these municipally owned electricity distributors also have strong incentives to refuse to deal with private competitors in the broadband market who need access to the electric poles they own.<sup>149</sup>

Rural electric cooperatives (RECs), particularly those distributing electricity from the TVA, also hold a privileged position that allows them to act in potentially anticompetitive ways toward broadband providers seeking pole attachments. Unlike municipally owned electricity distributors, RECs need to earn sufficient revenues to remain operational. They are also, however, much more like state-owned enterprises in the governmental benefits they receive, including the immense difficulty of normal oversight from the market for corporate control.<sup>150</sup> This similarly incentivizes them to act anticompetitively, particularly as many enter or plan to enter the broadband market.<sup>151</sup>

These circumstances often lead RECs to refuse to deal with private broadband providers, thereby stifling competition and deployment in rural areas.<sup>152</sup> Furthermore, RECs often face little oversight from rate regulators regarding pole attachments, leading to significantly higher costs for broadband companies seeking to attach to poles owned by co-ops and municipalities outside FCC jurisdiction.<sup>153</sup>

This regulatory loophole not only leads to higher costs for broadband providers, but also raises concerns about the application of antitrust laws to these entities. Sen. Mike Lee (R-Utah) has argued that the U.S. Justice Department (DOJ) should examine the antitrust implications of these practices, emphasizing that these government-owned entities should be subject to antitrust laws when acting as market participants.<sup>154</sup> And FCC Commissioner Brendan Carr has noted ongoing concerns about delays and costs associated with attaching to poles owned by municipal and cooperative utilities.<sup>155</sup> Addressing this loophole is crucial to bridge the digital divide and ensure that the IJJA's goals are met effectively.

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<sup>149</sup> *Id.*

<sup>150</sup> *Id.* at 6-9.

<sup>151</sup> *Id.* at 10.

<sup>152</sup> *Id.*

<sup>153</sup> *Id.* at 11.

<sup>154</sup> Sen. Michael S. Lee, *Letter to DOJ Re: Tennessee Valley Authority (TVA) – Supporting Broadband Deployment* (June 22, 2023), in Ben Sperry, Geoffrey A. Manne, & Kristian Stout, *The Role of Antitrust and Pole-Attachment Oversight in TVA Broadband Deployment* (Int'l. Ctr. for L. & Econ. Issue Brief, Sep. 4, 2023) available at <https://laweconcenter.org/wp-content/uploads/2023/08/TVA-Pole-Attachments-Issue-Brief.pdf>.

<sup>155</sup> Sperry, Manne, & Stout, *supra* note 143, at 16.



## G. Municipal/Co-Op Broadband

As previously noted, despite persistent interest in some quarters to promote municipal broadband,<sup>156</sup> there are many challenges that contribute to such projects' poor record. In particular, the financial prospects of municipal networks are typically dim, as many such projects generate negative cash flow and are unsustainable without substantial improvements in operations.<sup>157</sup> Only a small subset of municipalities—usually those with existing municipal-power utilities—might be well-positioned to venture into municipal broadband, due to potential cross-subsidization opportunities.<sup>158</sup> Even among those municipal-broadband projects that have been deemed successful, however, the repayment of project costs is daunting, often requiring substantial subsidies and cross-subsidization.<sup>159</sup> The prospects for municipal broadband have not improved since ICLE's 2021 white paper.

In a study by Christopher Yoo *et al.*, the authors examine the financial performance of every municipal fiber project operating in the United States from 2010 through 2019 that provided annual financial reports for its fiber operations.<sup>160</sup> Each of the 15 projects was located in an urban area, as defined by the U.S. Census Bureau. In addition, each project was built in areas already served by one or more private broadband providers—none were designed to serve previously unserved areas. In every case, the municipality issued revenue bonds to fund construction and initially expected the projects to repay their construction and operating costs from project revenues, rather than from taxes or interfund transfers. In some cases, the cities anticipated the projects would generate surpluses that would, in turn, allow the cities to lower taxes.

In contrast to these expectations, every project either needed infusions of cash from outside sources or debt relief through refinancing. Three projects defaulted on their debt, two of which were liquidated at significant losses.

Yoo *et al.* employed two measures of financial performance:

1. *adjusted net cash flow* (ANCF), which measures the actual cash collected and spent by a fiber project; and
2. *net present value of cash flow from operations* (NPV), which discounts cash flow using the project's weighted average cost of capital.

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<sup>156</sup> See, e.g., BEAD NOFO, *supra* note 75.

<sup>157</sup> Manne, Stout, & Sperry, *supra* note 1.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.*

<sup>160</sup> Christopher S. Yoo, Jesse Lambert & Timothy P. Pfenninger, *Municipal Fiber in the United States: A Financial Assessment*, 46 TELECOMM. POL. 102292 (Jun. 2022).

Based on ANCF, only two of the 15 projects have broken even or are expected to break even by the time their initial debt matures. Based on NPV, more than half of the projects were not on track to break even—even assuming a theoretical best-case performance in terms of capital expenditures and debt service.

Municipalities that are unable to cover their broadband projects' costs of debt and operations must make up the shortfall from general tax revenues or default on their debt. Making up a shortfall from tax revenues means the city must enact some combination of tax increases or service cuts. A default will result in a downgrade in the municipality's bond rating, which will increase the costs of financing all of the city's operations, not just the broadband project. These additional costs must ultimately be paid the municipality's taxpayers.

In a separate analysis, George Ford notes that many municipal-broadband projects are located in cities that operate their own electric utilities.<sup>161</sup> Such an arrangement allows the broadband network's debt and other expenses to be placed on the electric utility's books, thereby improving the apparent financial condition of the broadband network. As electricity rates are based on cost of service, Ford argues that a shift of broadband costs to the electric utility would be expected to increase electricity rates.

To evaluate this hypothesis, he compares municipal electricity rates among four Tennessee cities that own and operate municipal broadband. Two cities financed the projects with general-obligation bonds funded by tax revenues and other sources of the municipality's income. The other two cities used electric-utility profits to cover the broadband project's financial losses. One of these cities is Chattanooga, which received \$111 million in subsidies and in which the city's electric utility assumed \$162 million of debt to construct the broadband network and made \$50 million of loans to the broadband division.

Ford's statistical analysis calculates broadband projects are associated with a 5.4% increase in electricity rates in cities with utility-funded projects, relative to cities that issued general-obligation bonds. It should be emphasized that the higher rates are imposed on all electricity ratepayers, not just those who subscribe to the city's broadband. These higher electricity rates are used to cross-subsidize municipal-broadband subscribers. For example, Ford reports that, in Chattanooga, the average monthly revenue per broadband subscriber was \$147 in 2015. In addition, the average subscriber was associated with a monthly subsidy of \$30. Thus, cross-subsidies from electricity ratepayers account for about 17% of the average monthly broadband-subscriber cost.

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<sup>161</sup> George S. Ford, *Electricity Rates and the Funding of Municipal Broadband Networks: An Empirical Analysis*, 102 ENERGY ECON. 105475 (2021).

The conclusions from ICLE’s 2021 white paper remain valid today. Proposals to offer municipal broadband as a means to increase broadband adoption—either by attempting to increase supply, or to suppress prices—put the cart before the horse. That’s because private supply and demand conditions are usually sufficient to guarantee creation of adequate broadband networks throughout most of the country.

Some uneconomic locations (*i.e.*, the unserved areas) may require interventions to ensure broadband access. In some cases, municipal broadband may be an effective option to subsidize hard-to-reach consumers. Municipal broadband should not, however, be considered the best or only option. Indeed, the evidence demonstrates that municipal broadband might best be considered a solution of last resort, used only when no private provider finds it economically viable to serve a particular area.

#### **IV. Conclusion**

By most measures, U.S. broadband competition is vibrant and has increased dramatically since the COVID-19 pandemic. Since 2021, more households are connected to the internet; broadband speeds have increased, while prices have declined; more households are served by more than a single provider, and new technologies like satellite and 5G have expanded internet access and intermodal competition among providers.

Broadband competition policy currently appears to be in a state of confusion: Some policies foster competition, while others hinder it. Programs such as the ACP and BEAD could do much to encourage competition by simultaneously increasing the demand for broadband and facilitating the buildout of supply. At the same time, some facets of these programs’ implementation act to stifle competition with onerous rules, reporting requirements, and—in some cases—*de-facto* rate regulation.

In addition, the FCC’s digital-discrimination rules explicitly subject broadband pricing and other dimensions of competition to *ex-post* scrutiny and enforcement. In reclassifying broadband internet-access services under Title II of the Communications Act, the FCC has rendered nearly every aspect of broadband deployment and delivery subject to its regulation or scrutiny.

Put simply, today, U.S. broadband competition is robust, innovative, and successful. At the same time, new and forthcoming regulations threaten broadband competition by eliminating or proscribing the policies and practices by which providers compete. As a result, the United States is at risk of slowing or shrinking broadband investment—thereby reducing innovation and harming the very consumers that policymakers claim they seek to help.