Comments in the Matter of Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination

GN Docket No. 22-69

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I. Introduction

On behalf of the International Center for Law & Economics (ICLE), we thank the Commission for the opportunity to comment on this Notice of Inquiry in the *Matter of Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination* ("NOI"). The NOI states that "one of the Commission's foremost goals is to ensure that every person in the United States has equal access to high-quality, affordable broadband internet access service… Every person across our Nation deserves—and must have—equal access to this crucial technology in the increasingly digital world; a person's zip code should not determine their destiny."[1]

Despite this high-minded rhetoric, the NOI does not focus on extending broadband deployment to those who are actually unserved—i.e., to those who lack any broadband Internet options at all.[2] In fact, the word "unserved" does not appear in the NOI at all. The notice instead focuses on eliminating "digital discrimination of access based on income level, race, color, religion, or national origin."[3] This group is deemed to be the "underserved," a designation the NOI defines not by reference to their relative inability to access broadband Internet service, but by their membership in categories that "have been historically underserved, marginalized, or adversely affected by persistent poverty or inequality."[4] Thus, the NOI includes in the ranks of the "underserved" individuals who *do* have the ability to access broadband service, although potentially at slower speeds than some of their neighbors.

Getting faster Internet to those who live where broadband service already exists—or assisting them in paying for access to that service which already exists—is a fundamentally different problem than that faced by Americans who lack Internet access because they live in geographic areas without broadband infrastructure. We thus caution the Commission that this rulemaking may distract from the pressing need, demonstrated by the FCC's own broadband-deployment data, to build out broadband networks in those hardest-to-reach areas.

The Commission asks whether broadband-deployment decisions are being made based on impermissible "income discrimination." But as we explain in greater detail below, differences in the levels of broadband service available to the richest and poorest census blocks are insignificant relative to the differences in availability between lowest population-density census blocks and even the next-lowest population-density census blocks.[5] Indeed, the issues raised in NOI largely do not speak to the need to alleviate the significant deficit of broadband infrastructure in the most rural areas of this

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[1] Notice of Inquiry, In the Matter of Implementing the Infrastructure Investment and Jobs Act: Prevention and Elimination of Digital Discrimination, GN Docket No. 22-69 (Feb. 23, 2022), at para. 1 [hereinafter "NOI"].

[2] Currently defined by the FCC as 25/3 Mbps for terrestrial fixed broadband and 10/1 for mobile broadband. *See* Fourteenth Broadband Deployment Report, In the Matter of Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, GN Docket No. 20-269 (Jan. 19, 2021), at para. 12 (defining terrestrial fixed broadband), para. 15 (defining mobile broadband) [hereinafter "Fourteenth Broadband Deployment Report"].

[3] NOI, *supra* note 1, at para. 2 (*quoting* 47 U.S.C. § 1754(b)(1).

[4] *Id.* at para. 3, n.5; para. 40 (both quoting Executive Order 13985).

[5] *See* Part II.B below.

country. While the NOI presumes that discrimination is to blame for differences in the availability of higher-speed tiers of broadband service, the data and the underlying economics tell a different tale.

Underpinning the stark differences in broadband availability between urban and rural areas is the underlying cost of deployment. Population density serves as a supply-side constraint on buildout decisions because it is cost-prohibitive to build a network to serve only a very few potential subscribers. Similarly, those differences that can be observed in the deployment of the highest-speed tiers in urban centers—which are far less pronounced, in comparison to the urban-rural divide—are similarly the result of providers' judgment about the likelihood to recoup their investments, *not* willful decisions to discriminate on the basis of income or protected racial or religious characteristics.

It is undoubtedly important to examine patterns of deployment to discover how best to connect underserved communities. But if we are to overcome those obstacles that have impeded reaching every potential broadband consumer, it is essential that the FCC carefully consider how and why investment decisions are made in broadband markets. ICLE has researched these questions extensively and we offer, in addition to these comments, that commissioners and FCC staff may wish to read the more fulsome analysis offered in our 2021 paper, "A Dynamic Analysis of Broadband Competition: What Concentration Numbers Fail to Capture."[6]

In short, we question the NOI's framing of broadband-connectivity issues as a matter of "discrimination." We would assert that the project to eliminate "digital discrimination of access based on income level"[7] does not usefully forward efforts to connect the underserved. While there remains much work to be done to connect the underserved, the FCC is already well aware of the technical, economic, regulatory, and geographical issues that can impede deployment and has for years been doing important work on these issues. The Commission should continue this important work and should avoid the unhelpful framing of "discrimination."

In Part II, we detail some of the important factors that guide broadband providers' investment decisions and that drive competition in specific markets. There is no reasonable model (nor data) that would suggest broadband companies have engaged in discrimination against racial, ethnic, or religious minorities—or even against lower-income consumers—as that would imply that they have systematically sacrificed profits due to animus.

In Part III, we offer an approach to implement Section 60506 of the Infrastructure Investment and Jobs Act that applies insights from the law & economics of broadband buildout. It is not accurate to categorize the process firms undertake to evaluate the likelihood of recoupment as "discrimination" on the basis of "income level, race, ethnicity, color, religion, or national origin."[8]

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[6] Geoffrey A. Manne, Kristian Stout, & Ben Sperry, *A Dynamic Analysis of Broadband Competition: What Concentration Numbers Fail to Capture* (ICLE White Paper, Jun. 2021), *available at* https://laweconcenter.org/wp-content/uploads/2021/06/A-Dynamic-Analysis-of-Broadband-Competition.pdf [hereinafter "ICLE Broadband Competition Paper"].

[7] NOI, *supra* note 1, at para. 2

[8] 47 U.S.C. § 1754.

Thus, rules to proscribe "digital discrimination" ought to focus on cases where explicit and demonstrable discriminatory intent played a role in broadband providers' investment decisions.

In Part IV, we counsel the FCC that it is economically infeasible to require equivalent broadband infrastructure across all territories irrespective of the likelihood that providers will be able to recoup their investment. Mandates that providers make unprofitable deployment decisions in some areas would necessarily require either that they raise prices in other areas or that they be subsidized directly by the government. The former (i.e., cross-subsidization) is generally infeasible, as higher-income territories tend to have more competitive markets. Thus, we recommend that the FCC and the federal government consider user subsidies (e.g., connectivity vouchers) to encourage more options for lower-income consumers.

II. Background on Investment and Competition

In broadband markets, as in other markets, investment decisions are bound by the constraints of profit and loss. In order to deploy broadband, private providers must be able to profitably recover their investments. But this process is constrained insofar as competition—both potential and actual—limits the prices that providers can charge and drives a robust cycle of technological upgrades.

Despite persistent claims that broadband markets suffer from insufficient competition, providers continue to invest tens of billions of dollars toward improving their networks and deploying high-speed broadband. For instance, between 2011 and 2020, more than $172 billion was invested in infrastructure and networks by cable-broadband providers alone.[9] In 2019, mobile-broadband companies made $29 billion in capital expenditures.[10]

These investments have powered deployment of high-speed networks across the country. As reflected in the FCC's Fourteenth Broadband Deployment Report, the share of Americans lacking access to at least 25/3 Mbps connections continues to fall dramatically each year. As of year-end 2019, 94% of Americans had access to both 25/3 Mbps fixed-broadband service and mobile-broadband of at least 10/3 Mbps (the current benchmarks for high-speed broadband).[11] At the same time, inflation-adjusted prices for broadband have fallen consistently for years.[12]

A. The US Broadband Market is Dynamic and Competitive

The broadband market is best understood as one subject to dynamic competition.[13] It is prone to disruption due to rapid shifts in technology or in the modes of service delivery (e.g., from DSL to cable or, looking forward, from cable to 5G wireless). Moreover, the infrastructure needed to deliver

[9] *Broadband Data: Infrastructure*, NCTA (Aug. 12, 2021), https://www.ncta.com/whats-new/broadband-data-infrastructure.

[10] Fourteenth Broadband Deployment Report, *supra* note 2, at para. 3.

[11] *See id.*

[12] *See, e.g.*, USTELECOM, 2021 BROADBAND PRICING INDEX REPORT (May 26, 2021), *available at* https://www.ustelecom.org/research/2021-broadband-pricing-index-report/ (USTelecom report based on FCC data found that inflation-adjusted prices for broadband decreased by between 25% and 40% between 2015 and 2021).

[13] Much of this section is adapted from ICLE Broadband Competition Paper, *supra* note 6, at Part II.

broadband requires long-term planning and investment. Firms in broadband markets must therefore take account not only of their existing competitors and potential new market entrants in the near term, but also of the need to plan for future shifts in technology and consumption preferences. Thus, firms operate with an eye toward future competitive pressures, not just toward winning market share in the present.

Contrary to common perception, U.S. broadband markets are characterized by a significant degree of entry and exit:

> The striking conclusion is that there is a tremendous amount of dynamic activity in the US broadband market. In the national market, the entry rate averages 14-19% annually, which is greater than the entry rates the economic literature has found for many other industries. The exit rate for broadband is also higher than for other industries, but not as high as the entry rate, so that net entry averages 3.1% annually. With narrower geographic or service type market definitions, the entry rates average from 24% to an astounding 49% per annum.[14]

Thus, broadband providers must balance the need to respond to immediate competitive pressures by offering consumers attractive pricing with the simultaneous need to make risky and costly investments in service upgrades in order to compete with advanced technologies that may not be implemented for a decade or more.

When adjusted for both quality and inflation, broadband prices have been falling consistently for years. While nominal prices may have risen in some markets, it is particularly important to keep in context the role that improvements in service quality play in dynamic markets like broadband. Service providers typically make higher-speed tiers available at higher prices. For the highest-usage consumers, that tradeoff can prove attractive. Providers then use the revenues generated from those high-usage consumers to fund further buildout and adoption, which over the longer term also benefits more price-sensitive customers (e.g., those in slower tiers). It is for this reason that static comparisons of nominal prices over the short term fail to give the full picture of competition in broadband markets. To capture the dynamic nature of such markets, such analysis also must account for capital expenditures and long-term investments in technological and business-process innovation, as well as the hedonic benefits realized by consumers as a result of improved service.

Nor can a broadband market's competitiveness be ascertained simply by tallying the profits earned by its participants. Given the need providers face to assume significant and risky investments in new technology under conditions of uncertainty, even a very large and profitable Internet service provider (ISP) may make capital investments that fail to yield positive returns. Various common metrics of profitability account for such expenditures either imperfectly—over time, through the impact of depreciation, in the case of net income—or not at all, in the case of earnings before interest, taxes, depreciation, and amortization (EBITDA). Competition in broadband markets reflects shifting

[14] Michelle Connolly & James E. Prieger, *A Basic Analysis of Entry and Exit in the US Broadband Market, 2005-2008*, at 4 (Pepperdine University School of Public Policy Working Paper No. 42, 2013), *available* at https://digitalcommons.pepperdine.edu/sppworkingpapers/42/ (*published as* Michelle Connolly & James E. Prieger, *A Basic Analysis of Entry and Exit in the US Broadband Market, 2005-2008*, 12 REV. NETWORK ECON. 229 (2013)).

trends in historical and ongoing infrastructure investment, the evolving nature of content and content-delivery technology, new regulations, and shifting usage patterns. Facilities-based competition (e.g., among fiber, cable, mobile, and satellite) has ebbed and flowed depending on these various characteristics. Such competition has, nonetheless, consistently produced ever-faster and higher-quality connectivity at lower quality-adjusted prices.[15] A full assessment of the competitiveness of broadband markets must take account of all these characteristics.

Moreover, while market entry and exit are certainly relevant factors to assess competition, it isn't solely new entrants to the market that give rise to process and product innovation. Incumbent firms frequently are also important sources of innovation, as well as increased market competitiveness.[16] A dynamic analysis of broadband takes both new entry as well as potential entry to be constraints on the market power of incumbent firms. An incumbent's dominant position can quickly erode due to competition from imperfect in-market substitutes, as well as from out-of-market firms that may decide to enter in the future. Thus, for example, an incumbent broadband provider that offers a 100 Mbps tier must consider the potential capabilities of an existing competitor that only offers 10 Mbps service; it must incorporate potential threats from that competitor in its decision matrix when evaluating whether it should, to retain its customer base, upgrade its network to 1 Gbps.

There are also idiosyncratic features of broadband markets that feed directly into innovation and investment strategies for providers, and that must be taken seriously in a dynamic competition analysis.

Obviously, costs factor into supply-side decisions. Holding demand constant, one would expect fewer firms in territories where the costs of production are higher. For broadband, as with power transmission and telephone service before it, population density is an important factor on the supply side. It is more costly per-subscriber to create a broadband network over a larger geographic area than it is over a smaller one.[17] Holding all else constant, one would expect less quantity supplied at any given price point of broadband in a rural area than in a more populated city center or suburb. Thus, consistent with economic theory, there is an urban-rural divide in broadband. Cities also tend to have faster available speeds and more firms willing to provide broadband than rural areas. As explained in greater depth in Part B of this section, the FCC's latest Broadband Deployment Report shows that, in 2019, high-speed Internet was available to about 95.6 percent of the U.S. population through fixed terrestrial technologies like cable, though only to about 82.7 percent of the rural population.[18]

Topography is another important factor determining the cost to provide broadband. It is harder to wire a network over a mountain than over a plain. Receiving a signal from a tower for wireless access is more difficult when there is a hill in the way. In total, the degree of fixed costs associated with

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[15] *See* USTELECOM, 2021 BROADBAND PRICING INDEX REPORT, *supra* note 12.

[16] *See generally* NICOLAJ J. FOSS & PETER G. KLEIN, ORGANIZING ENTREPRENEURIAL JUDGMENT (2012).

[17] *See, e.g.*, Steve G. Parsons & James Stegeman, *Rural Broadband Economics: A Review of Rural Subsidies* (CostQuest Associates Research Paper, Jul. 13, 2018), *available at* https://www.ustelecom.org/wp-content/uploads/2018/11/Rural-Broadband-Economics-A-Review-of-Rural-Subsidies-final-paper-1.pdf.

[18] *See* Fourteenth Broadband Deployment Report, *supra* note 2, at Fig. 4.

building out a given broadband network will help to predict how many firms will be interested in entering given market. Low population density and geographical limitations make it more costly to enter a market. Conversely, high population density and favorable terrain make it cheaper to enter. Regardless of policy choices, these limitations will continue to apply.

There are also policy reasons that entry is limited in some areas. Many local governments require new entrants to provide various "public interest" benefits, which amount to costly burdens that reduce entry.[19] In other cases, the cost of gaining access to rights-of-way and permits for pole attachments attenuate the full scope of potential deployment.[20]

On the demand side, the biggest differentiating factors concern consumers' willingness and ability to pay.[21] Higher-income individuals tend to be more able to afford broadband access than those with lower incomes. Younger individuals who value Internet use highly tend to be more willing to pay than the elderly, who see less advantage. Some subgroups (e.g., the Amish) who don't use modern technology obviously would not register as demand for high-speed Internet access. Some groups of consumers (e.g., young people who prefer to connect via mobile) may tend to prefer a high-speed wireless connection to a fixed connection. Comparisons of local markets must take these demand-side factors into consideration.

And it is important to remember that the market process itself is not static.[22] When factors change—whether a change in demographics or population density, or exogenous shocks like technological innovation that changes the cost of deployment—there will be corresponding changes in available profit opportunities.

B. High-Speed Broadband is Broadly Available in All Areas Where There is a Business Case for Deployment

As explained in Part A of this section, dynamically competitive broadband markets have led to significant investment and buildout. In fact, the FCC's own data offers reasons to be optimistic about the availability of broadband even to lower-income communities.[23]

For instance, as Figure 7 describes below, even among those census blocks with the highest household-poverty rates, 94.4% have access to both fixed terrestrial service of at least 25/3 Mbps and mobile access of at least 5/3 Mbps. In comparison, among census blocks with the lowest

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[19] *See* Berin Szoka, Jon Henke, & Matthew Starr, *Don't Blame Big Cable. It's Local Governments That Choke Broadband Competition*, WIRED (Jul. 16, 2013), https://www.wired.com/2013/07/we-need-to-stop-focusing-on-just-cable-companies-and-blame-local-government-for-dismal-broadband-competition/.

[20] *See, e.g.*, Kristian Stout & Ian Adams, *Comments in the Matter of Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, ICLE (Sept. 2, 2020), *available at* https://laweconcenter.org/resource/comments-in-the-matter-of-accelerating-wireline-broadband-deployment-by-removing-barriers-to-infrastructure-investment/.

[21] *See, e.g.,* Octavian Carare, Chris McGovern, Raquel Noriega, & Jay Schwarz, *The Willingness to Pay for Broadband of Non- adopters in the U.S.: Estimates from a Multi-state Survey*, 30 INFORMATION ECON. & POL'Y 19 (2015).

[22] *See, e.g.*, *See* J. Gregory Sidak & David J. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 602 (2009); ISRAEL M. KIRZNER, COMPETITION AND ENTREPRENEURSHIP (1978); JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY, Chs. VII and VIII (1942) (analyzing "creative destruction").

[23] *See* Fourteenth Broadband Deployment Report, *supra* note 2.

household-poverty rate, the figure is 97.3%. Using median income, the difference is 93.5% for the lowest median-income census blocks versus 98.5% for the highest median-income census blocks. As discussed earlier, population density is a much more salient explanation of disparate access than income (where only 83.2% of the lowest population-density census blocks have similar access).

Fig. 7
Average Percentage of Population with Fixed Terrestrial 25/3 Mbps and Mobile 4G LTE with a Minimum Advertised Speed of 5/1 Mbps by Census Block Group Level Demographic Variables (December 31, 2019)[157]

	Fixed Terrestrial 25/3 Mbps	Mobile 4G LTE 5/3 Mbps	Both Fixed and Mobile 4G LTE
Median Household Income ($2018)			
First Quartile (Lowest Median Household Income)	93.7%	99.7%	93.5%
Second Quartile	93.1%	99.8%	93.0%
Third Quartile	95.5%	99.9%	95.5%
Fourth Quartile (Highest Median Household Income)	98.5%	100.0%	98.5%
Population Density			
First Quartile (Lowest Pop. Density)	83.5%	99.3%	83.2%
Second Quartile	98.2%	100.0%	98.2%
Third Quartile	99.2%	100.0%	99.2%
Fourth Quartile (Highest Pop. Density)	99.3%	100.0%	99.3%
Household Poverty Rate			
First Quartile (Lowest Household Poverty Rate)	97.4%	99.9%	97.3%
Second Quartile	95.3%	99.9%	95.2%
Third Quartile	93.5%	99.8%	93.4%
Fourth Quartile (Highest Household Poverty Rate)	94.6%	99.7%	94.4%

As Figure 8 demonstrates, 83.6% of those census blocks with the lowest median household income have access to the very fast 250/25 Mbps service; 90% have access to 100/10 Mbps; 92.1% have access to 50/5 Mbps; and 93.7% have access to 25/3 Mbps. In comparison, the numbers for the census blocks with the highest median household income are 94.6% (250/25 Mbps); 96.8% (100/10 Mbps); 97.7% (50/5 Mbps); and 98.5% (25/5 Mbps), respectively. The differences between the lowest-poverty household rate census blocks and the highest are even smaller. In other words, there is very little difference in broadband deployment based on differences in income. Next, we contrast those income figures with population density, where the differences between the lowest population-density census blocks and even the second quartile are stark.

Fig. 8
Average Percentage of Population with Fixed Terrestrial Services by Census Block Group Level Demographic Variables (December 31, 2019)[158]

	10/ 1 Mbps	25/ 3 Mbps	50/ 5 Mbps	100/ 10 Mbps	250/ 25 Mbps
Median Household Income ($2018)					
First Quartile (Lowest Median Household Income)	97.1%	93.7%	92.1%	90.0%	83.6%
Second Quartile	97.0%	93.1%	90.3%	87.3%	81.0%
Third Quartile	98.0%	95.5%	92.9%	90.2%	85.6%
Fourth Quartile (Highest Median Household Income)	99.1%	98.5%	97.7%	96.8%	94.6%
Population Density					
First Quartile (Lowest Pop. Density)	92.9%	83.5%	76.5%	69.3%	58.2%
Second Quartile	98.9%	98.2%	97.7%	96.6%	91.3%
Third Quartile	99.4%	99.2%	99.0%	98.7%	96.3%
Fourth Quartile (Highest Pop. Density)	99.5%	99.3%	99.3%	99.1%	98.4%
Household Poverty Rate					
First Quartile (Lowest Household Poverty Rate)	98.6%	97.4%	95.9%	94.3%	91.1%
Second Quartile	97.9%	95.3%	92.9%	90.4%	85.6%
Third Quartile	97.2%	93.5%	90.9%	88.2%	82.4%
Fourth Quartile (Highest Household Poverty Rate)	97.4%	94.6%	93.2%	91.3%	85.6%

In sum, the aggregate data offer no evidence to support allegations of widespread discrimination in broadband deployment based on income. Moreover, the numbers suggest a completely different problem than "digital discrimination." Rather, it is the economics of population density that make it difficult for providers to deploy to all consumers. In fact, even if one accepts the unsupported notion that disparate access implies "discrimination," there is more evidence of discrimination against rural (largely white and not necessarily poor) households than against the poor or racial minorities.

III. What is Digital Discrimination?

Section 60506(a) of the Infrastructure Act directs the Commission to ensure that all Americans have "equal access" to broadband service, defined as "the equal opportunity to subscribe to an offered service that provides comparable speeds, capacities, latency, and other quality of service metrics in a given area, for comparable terms and conditions."[24] Toward this end, the FCC is directed to "adopt final rules to facilitate equal access to broadband internet access service, taking into account the

[24] 47 U.S.C. § 1754(a)(2).

issues of technical and economic feasibility presented by that objective, including—(1) preventing digital discrimination of access based on income level, race, ethnicity, color, religion, or national origin; and (2) identifying necessary steps for the Commissions to take to eliminate discrimination described in paragraph (1)."[25]

There is an important subtlety in the Commission's mandate in this regard. "Equal access" is defined as an "equal opportunity to subscribe" to "comparable" broadband service on "comparable" terms.[26] By these terms, the Commission's mandate and this proceeding concern deployment and availability, *not* adoption. This has important implications, particularly when looking at the economics that dictate broadband deployment.

For example, the Commission must consider how consumer demand plays into deployment decisions. The NOI notes that "affordability" is not a listed factor to determine whether there is "equal access," but it seeks commentary on whether the FCC is required or permitted to take it into account.[27] In short, there is no basis in the statute to consider "affordability" of service when determining whether there is "equal access." As noted, the statute is focused on comparably available service. A service that earns certain returns in area A and costs roughly the same to deploy to area B would be "comparably" available if priced identically. The fact that residents of area B have less income to spend on broadband service doesn't alter the cost structure for the provider.

The NOI also seeks commentary on the meaning of "digital discrimination."[28] This is a natural question, as neither the policy statement in Section 60506, nor the relevant rulemaking authority, contain a definition for the term. This has led the Commission to ask whether it should use tests such as disparate-impact or discriminatory-effects analysis to establish whether there is discrimination in broadband deployment.[29]

The difficulty with applying such analysis in the context of broadband access is that neither economic theory nor evidence provide support for a claim that disparate broadband deployment is the result of animus toward any protected class. Assuming broadband companies are profit-maximizing firms (which they all are), they would not forego opportunities to sell their products and services to any consumers willing to pay for them. As the great economist Thomas Sowell has put it: "Capitalism knows only one color: that color is green; all else is necessarily subservient to it, hence, race, gender and ethnicity cannot be considered within it."[30]

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[25] 47 U.S.C. § 1754(b).

[26] *See* 47 U.S.C. § 1754(a)(2).

[27] *See* Fourteenth Broadband Deployment Report, *supra* note 2, at para. 15 ("Subsection 60506 does not list affordability as a factor for assessing a provider's equal access obligation. Nevertheless, we seek comment on whether the Commission is required or permitted to take into account the affordability of terms and conditions. For example, while a service provider's terms and conditions may be identical across an area, rates might nevertheless be prohibitively expensive for some in that area.").

[28] *See id.* at para. 21.

[29] *See id.* at para. 22

[30] THOMAS SOWELL, CIVIL RIGHTS: RHETORIC OR REALITY? (1984).

But more to the point, there are very good reasons—not motivated by animus toward protected groups—for broadband to be deployed unevenly. These reasons, moreover, point to concrete solutions to resolve problems of disparate adoption, which we discuss in Part IV. Most important, in this regard, are the differences in the potential to recoup investment that providers can expect in different territories.

Indeed, the Commission understands this reality when it asks:

> [D]oes taking action to prevent discrimination based on income level require us to consider additional or unique economic factors? If so, what type of analysis is appropriate for discrimination based on income level? For example, should we consider a service provider's potential return on investment in its decisions to offer service in certain areas or allocate resources to making timely repairs? And how should we respond if we are presented with an argument that a given area's income level makes it economically infeasible for a provider to offer equal access to broadband in that area?[31]

Discrimination based on "income level" is categorically different than discrimination based on the usual protected classes that constitutional law and the Civil Rights Act of 1964 recognizes, such as race, sex, religion, and national origin. If a provider refused to connect a household because of racial or religious animus toward its occupants, it would be not only offensive and unfair, but fundamentally irrational. A firm that looks to sell its products and services in the marketplace should be reasonably expected to take all comers, regardless of irrelevant immutable characteristics.

But "income level" is different: a consumer who earns below the median income will be able to demand fewer goods and services in the economy, due simply to the nature of supply and demand. If a firm cannot expect to recoup its costly upfront investments to deploy or upgrade a network in a given territory, because the residents of that territory are unlikely to demand service at prices that would make the deployment economically feasible, the firm should not be penalized for avoiding money-losing ventures.

None of the available evidence suggests that broadband providers make their investment decisions based on problematic categories of discrimination like race. The Information Technology & Innovation Foundation recently used Census Bureau data from the American Community Survey to perform a multivariate regression analysis of six major metropolitan markets. Their analysis found "no statistically significant relationship between race and percentage of broadband connectivity in four of the six cities. However, [they] found a statistically significant, positive relationship between income and percentage of broadband connectivity in all of the cities but one."[32] While ITIF's study is based on small sample sizes and limited variables, it partially confirms the supposition of economic

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[31] *See* Fourteenth Broadband Deployment Report, *supra* note 2, at para. 24.

[32] *See* Joe Kane & Jessica Dine, *Broadband Myths: Do ISPs Engage in "Digital Redlining?"*, ITIF (Apr. 13, 2022), https://itif.org/publications/2022/04/13/broadband-myths-do-isps-engage-digital-redlining. And note, for the other two cities, it found only "very weak, positive relationships between the percentage of white, non-Hispanic residents and the percentage of residents with a broadband connection."

theory that animus toward protected classes does not drive broadband providers' investment decisions.

The ITIF report's finding of a statistically significant and positive relationship between income and adoption is not surprising. Lower-income households may prefer to spend scarce resources on things other than high-speed Internet connections. Even members of those cohorts that can afford faster Internet may opt for cheaper (though comparatively slower) Internet-access options, such as mobile, if having the highest-speed tiers is not a priority. Studies of Internet adoption patterns generally find that the primary reason households eschew Internet access is not cost, but a lack of perceived need.[33]

But that certain groups of consumers may not adopt broadband does not mean that broadband is unavailable. As discussed in Part II, FCC data show that broadband is largely available in urban areas, regardless of income level. Profit-maximizing firms look to build broadband to suit the needs of potential consumers, and they will avoid making investments in areas where doing so would cause them to lose money. Any differences in broadband's availability in urban environments is due, not to discrimination and certainly not to racial animus, but to differences in the likelihood to recoup investment.

In conclusion, there is no easy way to define "digital discrimination," and the term itself offers little to the deployment conversation. To find discrimination "based on" income or the listed racial or religious characteristics in the statute, there should be some requirement to show demonstrable discriminatory intent in deployment decisions. That is the best way to make sense of a statute that is clearly focused on discrimination in deployment. Applying a disparate-impact or discriminatory-effects test to broadband-deployment patterns could threaten to derail efforts to build out connectivity to territories that remain actually unserved or underserved by rechanneling the revenues broadband firms would otherwise use to invest in future network expansions. It also would be inconsistent with the statement of policy and rulemaking authority of the statute, which requires that economic feasibility be taken into account.

Moreover, as we note in Part IV, there are better ways to encourage deployment in underserved areas that work in tandem with private investment.

IV. How to Encourage Investment in Low-Income Areas

Section 60506 requires the FCC to "ident[ify] necessary steps … to take to eliminate discrimination."[34] While differences in deployment are likely due to economic incentives and not to impermissible discrimination against a protected class, it is nonetheless an important aim of both Congress and the Commission to encourage investment in lower-income areas.

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[33] *See, e.g.*, George S. Ford, *'Relevance' and 'Price' as Determinants of Internet Non-Adoption: A Review of the Evidence* (Phoenix Center for Advanced Legal & Economic Public Policy Studies, Apr. 1, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3608430 ("A thorough analysis of survey data reveals that non-price factors dominate price as the determining factor for not using the Internet at home.").

[34] 47 U.S.C. § 1754(b)(2).

Broadly speaking, there are two approaches that policy could take to achieve this end: impose mandates on how broadband is provided or stimulate consumer-side demand as a means to attract more private investment to underserved markets.

The first strategy—mandating that broadband providers invest more in areas where they may not be able to recoup investment—is unlikely to be successful. For this strategy to succeed, broadband providers would effectively have to cross-subsidize service in uneconomic territories by diverting revenues from more profitable territories. The hitch in this plan is the dynamic nature of broadband markets, which are always subject to potential technological disruption. Those markets that are most profitable will also be most likely to attract new entrants and will tend to be easiest in which to deploy.[35] Thus, the threat of immediate entry necessarily constrains providers' ability to cross-subsidize less-profitable markets while maintaining the same level of quality and service.

Should broadband providers face an unfunded obligation to offer the same highest-speed tiers everywhere, it may be a profit-maximizing strategy to offer relatively lower speeds and make less costly investments than they otherwise would in the most-profitable territories, or to increase prices further in those markets, rather than to invest more in less-profitable territories. In other words, such an approach could backfire and lead to lower-quality and higher-priced Internet access for all.[36]

Of course, it's not likely that there would be a sudden monotonic shift in this regard. Directionally, however, this stylized example is correct. In practice, providers would try to find ways to continue to satisfy all of their customers. But a mandate to provide equivalent service necessarily will put pressure on providers that will result in slower, more costly buildouts, and less network improvements overall.

A better approach would be to subsidize deployment in lower-incomes areas. While the FCC could do so by subsidizing buildout directly, like it does with buildout to rural broadband,[37] a more promising approach to address affordability and increase demand in lower-income areas would be through user subsidies like connectivity vouchers.

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[35] *See* John Cochrane, *How Cross Subsidies Hinder Economics Reforms*, CHICAGO BOOTH REV. (Jul. 31, 2018), https://www.chicagobooth.edu/review/how-cross-subsidies-hinder-economic-reforms ("Cross subsidies are an underappreciated original sin of economic stagnation. To transfer money from A to B, the government could simply raise taxes on A and provide vouchers or otherwise pay competitive suppliers on behalf of B. But our political system doesn't like to admit the size of government-induced transfers, so instead we force businesses to undercharge B. Since businesses have to cover their costs, they must then overcharge A. The intervention starts as the same thing as a tax on A to subsidize B. ***But a cross subsidy cannot withstand competition***. Someone else can give a better price to A. So our government protects the businesses that overcharge A from that competition. That protection ruins the underlying markets, and the next thing you know, everyone is paying more for less.") (emphasis added).

[36] *See id.* ("This was the story of airlines and telephones: the government wanted to subsidize airline service to small cities, and it wanted to subsidize residential landlines, especially to rural areas. It forced companies to provide those things at a loss, and to cross subsidize those losses from other customers. But then the government had to stop competitors from undercutting the overpriced services. And as deregulation in those industries eventually showed, the result was inefficiency and high prices for everyone, even the people the government was trying to subsidize.").

[37] *See, e.g.*, FCC, *FCC Announces Over $640 Million for Rural Broadband in 26 States* (Mar. 10, 2022), https://www.fcc.gov/document/fcc-announces-over-640-million-rural-broadband-26-states (noting that "to date, over $4.7 billion in broadband funding announced for nearly 300 carriers in 47 states serving over 2.6 million locations.").

Under this approach, Congress could provide qualifying households with vouchers to purchase broadband service, similar to programs that extended temporary vouchers during the COVID-19 pandemic.[38] With such an approach, consumers would be able to both get and stay connected and to exercise judgment about what type of connectivity best suits their needs. This approach would help with both adoption and deployment, because it would increase demand for high-speed Internet in those areas.

Recent work in extending broadband deployment is illustrative of how government can work in tandem with the private sector to achieve superior results. Using CARES Act funding, Delaware instituted a voucher program to connect low-income students.[39] The state allowed private providers to bid to provide service that met a minimum set of criteria to certain low-income areas.[40] Once in the program, a provider could then receive vouchers from eligible students for access to the subsidized service.[41] All told, the program was able to connect an additional 25,789 students to the Internet through the end of 2021.[42] The approximate monthly per-pupil cost was $65, which includes both the cost to administer the program and to provision service.[43] Alabama was similarly able to extend access to approximately 200,000 students through 2021 using a voucher program.[44]

Building on the pandemic-era Emergency Broadband Connectivity Fund ("EBB"),[45] a modernized Lifeline program, for example, could be reimagined as a general stipend to purchase Internet services. Lifeline currently imposes numerous regulatory hurdles that make it costly to administer. Remodeling the program to be more like the U.S. Department of Agriculture's Supplemental Nutrition Assistance Program would better empower consumers, as well as stimulate the demand needed to induce ISPs to invest in new buildout and upgrades in lower-income areas.

The FCC's Affordable Connectivity Program is a great example of this approach.[46] President Joe Biden has announced that his administration is working with major ISPs to lock in rates, so that the

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[38] *See* Mignon Clyburn & Robert McDowell, *Congress Can Help America Stay Connected During the COVID Crisis*, MORNING CONSULT (May 15, 2020), https://morningconsult.com/opinions/congress-can-help-america-stay-connected-during- the-covid-crisis/.

[39] *See* State of Delaware, *Better Than School Parking Lot WiFi: Connect Delaware Broadband Service Expansion* (Dec. 2020), https://www.nascio.org/wp-content/uploads/2021/08/Connect-Delaware-NASCIO-2021-State-Award-Nom_.pdf.

[40] *See id.* at 3. The criteria included items like providing a minimum 25/3 Mbps service, low latency, and a 25 GB monthly cap.

[41] *See id.* at 4.

[42] *See id.* at 5.

[43] $20M was allocated to the program for a period of 12 months, in which 25,789 students were enrolled. *See id.* at 2, 5.

[44] *See Governor Kay Ivey extends Alabama Broadband Connectivity for Students Program*, Alabama NEWSCENTER (Dec. 29, 2020), https://alabamanewscenter.com/2020/12/29/gov-kay-ivey-extends-alabama-broadband-connectivity-for-students-program/.

[45] *See* FCC, *Emergency Broadband Benefit Program* (Apr. 23, 2021), https://www.fcc.gov/emergency-broadband-benefit-program.

[46] *See Affordable Connectivity Program*, FCC (last accessed May 10, 2022), https://www.fcc.gov/acp.

voucher program would cover the cost for households who incomes that are less than 200% of the poverty line or that meet other various criteria.[47]

Federal efforts to stimulate private entry into underserved markets has borne fruit. Comcast, for example, widely advertises its "Internet Essentials" program.[48] Internet Essentials is offered through the Affordable Connectivity Program ("ACP"), the permanent successor to the EBB. Through the Internet Essentials program, qualifying individuals can receive a subsidized computer.[49] In the 10 years that Comcast has been operating the program, it has connected more than 10 million individuals to the Internet.[50] And in addition to the federal subsidies, it has independently committed a further investment of $1 billion to expand its Internet Essentials program in order to reach a total of 50 million low-income individuals.[51] Every major provider participates in ACP and offers similar programs, including Charter,[52] Verizon,[53] AT&T,[54] Optimum,[55] Cox,[56] and T-Mobile.[57]

The Commission would do well to continue to build on these successes. Connecting lower-income consumers is about overcoming the economic barriers to deployment, including both high costs (in low population-density areas) and low demand (due, in part, to lack of affordability). The Commission is well-situated to help facilitate the solution to those problems.

V. Conclusion

We urge the Commission not to read our comments as suggesting that there is not an issue in connecting the underserved populations in the United States. Indeed, Section 60506 explicitly acknowledges that the commission is to "tak[e] into account the issues of technical and economic

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[47] *See Remarks by President Biden on the Affordable Connectivity Program*, THE WHITE HOUSE (May 9, 2022), https://www.whitehouse.gov/briefing-room/speeches-remarks/2022/05/09/remarks-by-president-biden-on-the-affordable-connectivity-program%EF%BF%BC/ (according to President Biden, nearly 40% of households would qualify).

[48] *See internet essentials from Comcast*, XFINITY (last accessed May 10, 2022), https://www.internetessentials.com/.

[49] *See Low-Cost Dell Computer*, XFINITY (last accessed May 10, 2022), https://www.internetessentials.com/low-cost-computer.

[50] *See Our Mission: Low-Cost, High-Speed Internet for Low-Income Households,* XFINITY (last accessed May 10, 2022), https://www.internetessentials.com/our-mission.

[51] *See* COMCAST, 10 YEARS: INTERNET ESSENTIALS 2 (2022), *available at* https://update.comcast.com/wp-content/uploads/sites/33/dlm_uploads/2021/03/Internet-Essentials-ProgressReport_FINAL.pdf.

[52] *See Affordable Connectivity Program*, SPECTRUM (last accessed May 10, 2022), https://www.spectrum.com/cp/broadband-get-qualified.

[53] *See Everyone deserves ultra-fast internet.*, VERIZON (last access May 10, 2022), https://www.verizon.com/home/promo/affordable-connectivity-program/.

[54] *See Affordable Connectivity Program: Bridging the digital divide in our country*, AT&T (last accessed May 10, 2022), https://www.att.com/help/affordable-connectivity-program/.

[55] *See You may be eligible to get FREE internet*, OPTIMUM (last accessed May 10, 2022), https://www.optimum.com/affordable-connectivity-program.

[56] *See Affordable Connectivity Program: Financial support when you need it most*, COX (last accessed May 10, 2022), https://www.cox.com/residential/internet/affordable-connectivity-program.html.

[57] *See T-Mobile Brings the Federal Affordable Connectivity Program to More Customers with FREE Wireless Service at Metro by T-Mobile*, T-MOBILE (Jan. 26, 2022), https://www.t-mobile.com/news/offers/t-mobile-brings-the-federal-affordable-connectivity-program-to-more-customers-with-free-wireless-service-at-metro-by-t-mobile.

feasibility"[58] when conducting this analysis. There are many good reasons that deployment may be uneven, which stem from the economic and technical limitations inherent to deploying costly and technologically complex networks.

Nevertheless, there is urgent work that needs to be done to ensure that both geographically dispersed and low-income consumers can connect to the Internet so that they may participate in modern society and the modern economy. But the means and process used to achieve that goal matters. The framing of "digital discrimination" will tend to obfuscate the necessary analysis and prioritizing that framing could impede progress on what are consensus outcomes. The FCC should instead continue to build on the good work it has done in the past to ensure that all Americans are connected.

[58] 47 U.S.C. § 1754(b).