No. 22
July 2008

MERCATUS ON POLICY

UNIVERSAL SERVICE REFORM: START WITH ACCOUNTABILITY

By Jerry Ellig

MERCATUS CENTER
GEORGE MASON UNIVERSITY

EARLIER THIS YEAR, the Federal Communications Commission (FCC) sought public comment on several proposals from the Federal-State Joint Board on Universal Service to reform the high-cost universal service program that subsidizes phone service in rural areas. The proposed reforms raise many significant policy questions. Should the size of the subsidies be capped? Should the FCC stop subsidizing competing phone companies in locations where there are not sufficient customers to support one? Should the commission use "reverse auctions" to award subsidies to the party that offers to serve an area at the lowest subsidy? Should mobile phone and broadband service become part of the universal service bundle supported by federal subsidies?

Oddly enough, no one is asking a more basic question: How will we know whether the proposed reforms will accomplish the fund's congressionally mandated goals: providing access to reasonably comparable services at reasonable rates?

The 1996 Telecommunications Act articulates the primary outcomes the federal high-cost universal service programs are supposed to accomplish: "access to telecommunications and information services . . . that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."[1] The two key concepts, therefore, are access—the service is available—and "reasonably comparable" rates. The reforms will advance these outcomes if they will increase availability of these services in

high-cost areas at rates "reasonably comparable" to those charged in urban areas.

It's not enough to say that we know the program will accomplish these goals because money will be dished out and service will be provided. Many of the most contentious universal service debates revolve around whether proposed funding levels are sufficient to accomplish what Congress intended. To resolve these debates, decision makers must know *how much* of a change in service availability and affordability the current programs cause in rural areas, and how the proposed reforms might alter those outcomes.

Without some outcome-based assessment methodology, decision makers will be unable to estimate the effects of reforms before they are adopted or assess the effects of reforms after they are adopted.

For example, the comprehensive reform proposal the FCC is considering presumes, but does not provide analysis to prove, that the proposed new subsidies for mobility and broadband will increase availability at reasonably comparable rates. Two commissioners question this presumption, suggesting that the amount of subsidy proposed is not nearly enough to fully accomplish the desired outcomes.[2] Since the proposals include no analysis demonstrating how the amount of subsidy under either the current or reformed systems affects or would affect availability or rates, there is no factual basis in the Joint Board's recommendations or the FCC's Notices of Proposed Rulemaking for determining who is right.

Without some outcome-based assessment methodology, decision makers will be unable to estimate the effects of reforms before they are adopted or assess the effects of reforms after they are adopted.

STEPS TOWARD OUTCOME-BASED ASSESSMENT

1. DEFINE AND MEASURE THE OUTCOME

To know whether universal service programs have or are likely to provide access to reasonably comparable services at reasonable rates, decision makers must first define and measure what counts as availability of service and "reasonably comparable" rates.

An availability measure, such as number and percent of homes where the service is available, documents the extent to which a service is physically there for people to subscribe if they choose. The FCC already measures availability to some extent for both broadband and wireless. For the existing wireline subsidies, the FCC apparently measures subscribership but not availability.

For wireline, wireless, or broadband, one measure of "reasonably comparable" prices would be the ratio of rural prices to urban prices. Rural prices might be reasonably comparable if they are not more than *x* percent higher than urban prices.

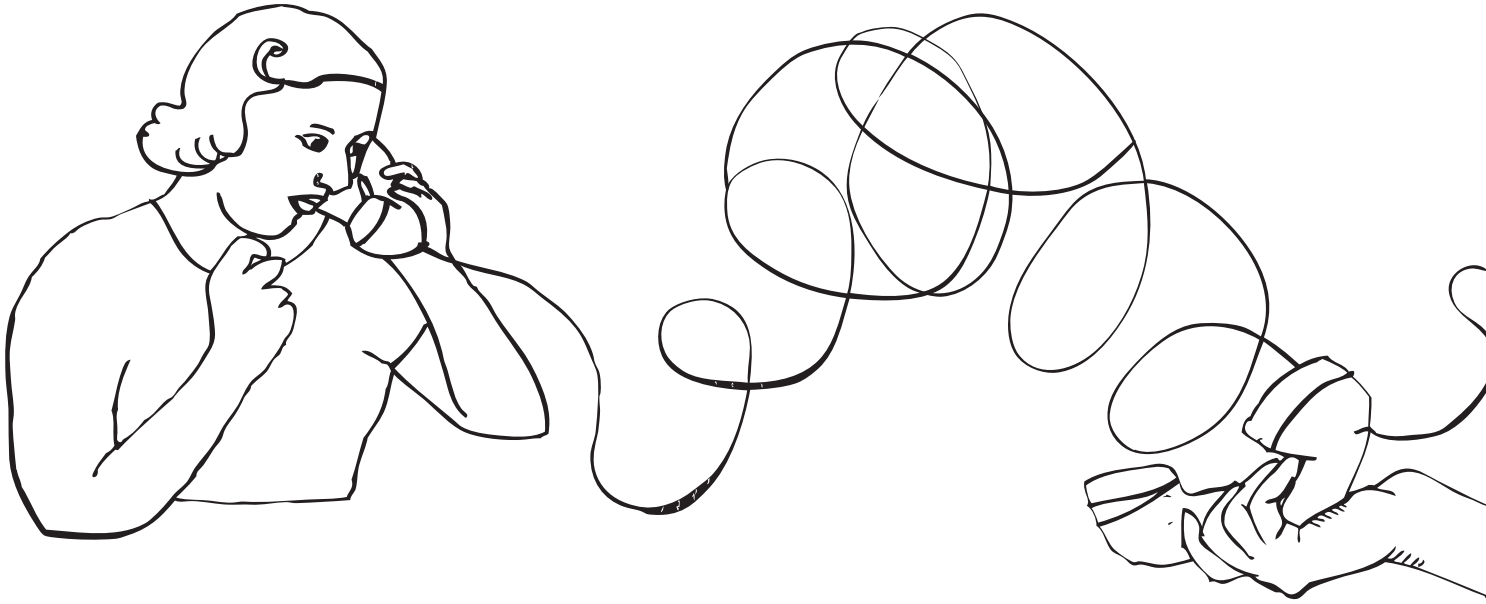
Urban and rural incomes, however, can differ substantially, and so a more accurate measure would be the rural price/income ratio divided by the urban price/income ratio. Dividing prices by income measures the relative burden, or percent of the household budget, spent on communications services. Comparing these percentages for rural vs. urban households tells us whether the cost of these services represents a "comparable" burden for different types of households. Whether this additional refinement is worth the additional complication is an open question.

Measuring price or price/income ratios does not necessarily imply that the goal of the high-cost programs is to ensure that rural households spend the same percentage of their income on communications services as urban households. The desired rural/urban price ratio may be higher or lower than one. What ratio constitutes "reasonably comparable" is ultimately a policy judgment.

2. ASSESS CAUSALITY

Once outcome measures are identified, it is necessary to determine how, and to what extent, the subsidy programs cause changes in the outcomes. It is not enough to identify positive trends. Ex ante, the analysis needs to identify whether the subsidy program is likely to cause any change in the outcomes. Ex post, the analysis needs to identify whether the subsidies actually caused any change in the outcomes.

A substantial body of scholarly research on universal service programs demonstrates that this kind of analysis is indeed feasible. The elasticity of demand—a measure of consumer responsiveness to price changes—has frequently been used to estimate the effects of universal service programs on subscribership. Subscribership can sometimes be a misleading outcome measure, but these studies provide a useful template for assessing the effects of universal service subsidies on outcomes.



High-cost subsidies help reduce telephone rates for rural customers. As a result, they bring more rural households onto the phone network. However, most studies find that subscription levels for local telephone service change very, very little in response to changes in price.[3] Many recent studies find elasticities of demand between -0.01 and -0.026; that is, a 1 percent change in price leads to 0.1 percent or 0.2 percent change in subscriptions.[4] Empirical studies commonly presume that low-income households are more sensitive to the price of local phone service than high-income households.[5] The highest elasticity of demand for local phone service estimated since 1980 appears to be about -0.05.[6]

Because demand for local wireline phone service is not very price-sensitive, it takes a lot of subsidization to produce a small increase in subscribership. The most recent study on this topic estimates that the cost of adding one subscriber through loop support was at least $11,000 in 2000, up from $3,350 in 1990. The cost of adding one subscriber through local switching support was $5,155, up from approximately $2,000 in 1990.[7] This cost is substantially higher than the $666 estimated by another study for 1985–93.[8]

3. SET OUTCOME GOALS AND REPORT ON OUTCOME MEASURES

Going forward, decision makers should set goals for the improvement in universal service outcomes they expect to achieve with the funding devoted to each service. Goals and measures should be set in reference to a meaningful ideal. At what point could the problem be considered solved, so that the high-cost universal service program in its current form is no longer necessary? Answering this question will help decision makers focus on setting ambitious and meaningful goals to help ensure that the program makes a genuine effort to achieve significant results. Data on actual availability and price outcomes should be reported at least annually to facilitate accountability and permit retrospective analysis of the programs.

Genuine accountability means ensuring not just that the money is spent for the intended purpose, but that the expenditures actually produce the intended outcomes.

The Joint Board proposes that the new broadband and mobility subsidies should take the form of grants to the states—in part because states are in a better position to assess availability of these services.[9] Genuine accountability means ensuring not just that the money is spent for the intended purpose, but that the expenditures actually produce the intended outcomes. For this reason, states should be required to report data on availability and prices of any services for which they receive grants from the federal universal service fund.

4. ARRANGE FOR INDEPENDENT PROGRAM EVALUATION

Congress or the FCC should arrange for independent researchers to conduct retrospective analysis to identify whether the

high-cost universal service programs achieve their intended outcomes and estimate the size of the effects. The analysis should control for other factors that affect the outcomes so it can identify how much of the effect was caused by the universal service programs. The research should be performed by independent scholars or by a government entity independent of the FCC, such as the Government Accountability Office.

CONCLUSION

As expressed in the 1996 Telecommunications Act, Congress wants residents of rural areas to have access to services reasonably comparable to those in urban areas, at reasonably comparable rates. Yet, the FCC has never measured how many more people have service because of the universal service subsidies, nor has it measured the effect of the subsidies on rates. The proposed reforms contain no analysis assessing how much they will expand service at reasonably comparable rates.

As a result, decisions about universal service get made on the basis of faith, not evidence.

ENDNOTES

1. *Telecommunications Act of 1996*, Public Law 104-104, *U.S. Statutes at Large* 110 (1996):56 § 254(b)(3).

2. "I must express a degree of reservation over the amount of support allocated to the Broadband Fund, among other limitations on support. Maintaining our commitment to connectivity, particularly in the broadband age, is more important than ever, and the Commission must start to provide realistic assessments of what will be required. To that end, I am also concerned about the impact of reverse auctions and whether such mechanisms can provide adequate incentives for build out in Rural America." (Statement of Commissioner Jonathan S. Adelstein on the Identical Support NPRM.) "I must express disappointment, however, that once the initial decision to include broadband was made, councils of caution found their way to the fore. Instead of bold recommendations to implement our historic decision, the Joint Board only suggests that $300 million of federal dollars be dedicated to this challenge. And none of this would be new money, but rather a mere reshuffling of dollars among different pots." (Statement of Commissioner Michael J. Copps, Joint Board Recommended Decision).

3. A.H. Barnett & David L. Kaserman, "The Simple Welfare Economics of Network Externalities and the Uneasy Case for Subscribership Subsidies," *Journal of Regulatory Economics* 13, (1998): 245, 253-53; David L. Kaserman, John W. Mayo & Joseph E. Flynn, "Cross-Subsidization in Telecommunications: Beyond the Universal Service Fairy Tale," *Journal of Regulatory Economics* 2 (1990): 231; Robert Crandall and Leonard Waverman, *Who Pays for Universal Service? When Telecommunications Subsidies Become Transparent* (Washington, DC: Brookings Institution Press, 2000), 91.

4. Crandall & Waverman, *Who Pays?*,,91.

5. Ibid., 110 (assuming that the elasticity of demand declines in absolute value from -0.0475 for the lowest-income households to -0.001 for high-income households).

6. Ibid., 90 (citing Perl's 1983 study implying a demand elasticity of -0.055); Ibid.. 91 (citing several other studies estimating a demand elasticity of -0.04); Ibid., 110 (assuming that the lowest-income households have a demand elasticity of -0.0475). See also Christopher Garbacz & Herbert G. Thompson, "Estimating Demand with State Decennial Census Data from 1970-1990," *Journal of Regulatory Economics* 21 (2002): 317, 326 (showing elasticities between -0.028 and -0.047 when using pooled 1970-90 data).

7. Daniel J. Ryan, "Universal Telephone Service and Rural America," manuscript, April 30, 2004, 18-19.

8. R.C. Eriksson, D.L. Kaserman, and J.W. Mayo, "Targeted and Untargeted Subsidy Schemes: Evidence from Post-Divestiture Efforts to Promote Universal Service," *Journal of Law and Economics* 41 (1998): 477-502. This study uses data only for the Bell telephone companies, which receive a small portion of total high-cost support and may not be typical.

9. Joint Board Recommended Decision, par. 46.

The Mercatus Center at George Mason University is a research, education, and outreach organization that works with scholars, policy experts, and government officials to connect academic learning and real world practice.

The mission of Mercatus is to promote sound interdisciplinary research and application in the humane sciences that integrates theory and practice to produce solutions that advance in a sustainable way a free, prosperous, and civil society.

Jerry Ellig is a senior research fellow at the Mercatus Center at George Mason University. Between August 2001 and August 2003, Dr. Ellig served as deputy director and acting director of the Office of Policy Planning at the Federal Trade Commission. He has also worked as a senior economist for the Joint Economic Committee of the U.S. Congress and as an assistant professor of economics at George Mason University.