High Cost, Little Benefit

An Analysis of Universal Service High-Cost Support

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July 31, 2012

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Executive Summary

As the FCC develops its support mechanisms to encourage the deployment and use of broadband services, it is useful to examine what has gone wrong with the current Universal Service Fund (USF) system's high-cost support. This study identifies the major problems with the current (legacy) high-cost fund, and offers the following major findings:

- The USF high-cost fund is not distributed based on consumer need; it subsidizes telephone companies.
- The biggest recipients of USF are small telephone companies, who (collectively) are the most profitable in the industry.
- If the USF high-cost fund were entirely eliminated, small rural telephone companies would (collectively) still be more profitable than their large and mid-sized counterparts.
- Contrary to common beliefs, small telephone companies are not most affected by high capital costs; these companies are most burdened by administrative expenses.
- This means that USF subsidizes smallness, and works to discourage efficiency and attainment of optimal scale.

This study finds that local telephone services in so-called *high-cost areas* are sometimes offered at prices that are lower than those offered in so-called *low-cost areas*. This means that low rural prices impede rural investment, innovation and competitive entry, harming both rural and urban telephone consumers alike. Aligning consumer prices with cost is part of the

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solution, with the limited use of rural subsidies as a backstop for exorbitant pricing and not as an enabler of predatory pricing.

As policymakers develop a universal service program for broadband services, it should not replicate the problems of the legacy USF mechanism. The focus of USF should be on benefiting consumers. This can be done by reforming the programs so that they target only truly needy consumers living in high-cost areas. This would prevent subsidies from going to the most profitable telephone companies; and it would encourage competition for rural consumers, streamline spending and attract investments into rural markets. As the legacy high-cost support system is transitioned to supporting advanced services, this should be the focus of the new Connect America Fund.

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Introduction

Consumers pay a fee on their telephone bill, referred to as a *federal universal service charge*. Telephone companies collect these fees and use them to finance a federal subsidy program called *the Universal Service Fund* (USF). While only a few dollars a month per household, those fees added up to $8.1 billion per year. USF dollars fund a series of federal programs predominantly designed, among other things, to provide all consumers with ubiquitous access to telephone services at reasonable prices. Totaling $4.0 billion, high-cost support programs represent the largest portion of the USF. These programs serve the stated purpose of making telephone services available and affordable to consumers living in costly-to-serve communities, typically in rural America. Recently, the FCC ordered the USF's high-cost support of telephone services to be phased out and transitioned to the Connect America Fund (CAF), which will support broadband services.[1] This study focuses on USF's high-cost support programs, since these legacy funds are the starting point for the new CAF, especially for rate-of-return carriers.

Historically, many telephone regulators and policymakers have been ardent supporters of USF, stating that this federal program provides huge benefits to consumers. One common claim is that without USF support, many American consumers would not have telephone service or that the service would be considerably more expensive. This belief – and the notion that USF benefits all consumers – is expressed by the USF programs' administrators, the Universal Service Administrative Company (USAC):

> *"The USAC Board of Directors and staff are proud to play a part in providing everyone in the United States with access to the modern tools of communication at reasonable rates, regardless of geographic location or economic status. As the administrator of the federal universal service support mechanisms, our mission is to help connect Americans*

[1] FCC Order and FNPRM, FCC 11-1161.

to each other and to the world through the use of the Internet and telecommunications services that now span the globe."[2]

There are clearly some anecdotal examples of how universal service funds have benefited some consumers, such as consumers in tribal and very remote areas of the country, but the costs for consumers equals $4 billion.

The stated emphasis of the USF programs are so often tied to helping consumers that consumer groups believe that there is a link between high-cost USF funding and lower telephone prices, though no link has ever been established. One public policymaker defended universal service saying that "without Universal Service, rural businesses and consumers would be completely shut out of the communications revolution."[3]

While the public is constantly reminded of the virtues of universal service, government organizations, journalists and economists have been openly critical of the programs for many years. They cite a lack of accountability,[4] the directing of money to prosperous rural telephone companies,[5] a broken system of subsidies,[6] a bailout for billionaires,[7] a source for mob funding,[8] and simply a waste of consumer money.[9] As one example, Eisenach found that USF dollars were subsidizing telephone providers that were in competition with cable telephony providers.[10] In addition, another study found that only 41% of USF subsidies go toward

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[2] "1999 Annual Report to Congress and the FCC: Reaching and Connecting Americans," Universal Service Administrative Company (USAC), March 31, 2000, p. 1-2.
[3] The Testimony of U.S. Senator Conrad Burns, US Senate Committee on Commerce, Science and Transportation, Hearing on Universal Service Contributions, Feb. 28, 2006.
[4] Maurice McTigue and Jerry Ellig "Performance Measures for FCC Universal Service Programs," Mercatus Center, Oct. 17, 2005.
[5] Paul Davidson, "Fees Paid By All Phone Customers Help Rural Phone Firms Prosper," *USA Today*, Nov. 17, 2004.
[6] See Vince Vasquez, "Digital Welfare: The Failure of the Universal Service System," Pacific Research Institute, Feb. 2006; Robert W. Crandall and Leonard Waverman, *Who Pays for Universal Service*, Brookings Institution Press, Washington, DC, 2000; and Stephen B. Pociask " Universal Telephone Service: Are We There Yet?" TeleNomic Research, Herndon, VA, Commissioned by the Center for the New West, September 22, 2004.
[7] Johna Till Johnson, "Universal Service Fraud: Bailouts for Billionaires," *Network Work*, March 7, 2005.
[8] "Two More Plead Guilty in CassTel Case," *Kansas City Business Journal*, Feb. 23, 2005.
[9] Tad Dehaven, "A Universal Waste of Money," *The National Review*, Guest Comment, Jan. 7, 2005.
[10] Jeffrey A. Eisenach, "Universal Service Subsidies to Areas Served by Cable Telephony," Empiris LLC, Nov. 2009. Eisenach and Caves also found that broadband subsidies provided by the Rural Utilities Service was not cost-

telephone service provisions, with the majority of other high-cost support going to "general and administrative expenses."[11] There is no reason that universal service, how well-intentioned its goals may be, should be exempt from critical review.

While it is reasonable to support truly needy rural consumers, the current high-cost programs have never been justified based on a quantitative cost-benefit analysis – meaning that there is no comprehensive evidence that these programs leave consumers or society better off. In fact, there may be some evidence to the contrary.[12] There is also no evidence that universal service funds significantly increase telephone penetration, as it works to increase the costs for some, while decreasing the costs of others. Though the rates levied to collect USF funds have increased several-fold since the time federal USF programs were first explicitly funded, the U.S. telephone penetration rate has not increased at all. Moreover, because the demand for local telephone services is so price inelastic, it is without argument that most consumers would buy telephone services without any telephone subsidy mechanisms. Until there is an assessment of costs and benefits for these high-cost funding programs, policymakers cannot know if these programs actually work, help the right consumers, or whether the funding is appropriately sized.

With that said, this study will assume that high-cost support mechanisms are necessary, and there is a real need to help some consumers in high-cost areas. Given that assumption, this study will begin by identifying the extent to which funding actually helps consumers.

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effective (see Jeffrey A. Eisenach and Kevin W. Caves, "Evaluating the Cost-Effectiveness of RUS Broadband Subsidies: Three Case Studies," Navigant Economics, April 13, 2011.

[11] Scott Wallsten, "The Universal Service Fund: What Do High-Cost Subsidies Subsidize?" Technology Policy Institute, February 2011.

[12] In fact, Crandall and Waverman found consumers to be worse off due to irrational pricing. See Robert W. Crandall and Leonard Waverman, *Who Pays for Universal Service*, Brookings Institution Press, Washington, DC, 2000. For potential benefits see pp. 23–27, and for the costs of irrational pricing see pp. 114–128.

Is High-Cost Support Really About Helping Consumers?

There is a common belief that the cost of providing telephone service increases exponentially as population density decreases.[13] As costs increase, consumers in rural areas tend to face higher prices. It is for this reason that high-cost USF programs are designed to offset these higher rural operating costs, thereby making services available to consumers at lower prices.

How is this done? Over the years, the FCC created several federal high-cost support programs with different formulas that distribute funds. In general, however, USF high-cost support redistributes revenue from urban low-cost areas (where rates are naturally lower) to rural high-cost areas (where rates are naturally higher). In effect, USF represents a subsidy from urban areas to rural areas for the purpose of achieving more equitably telephone rates. The redistribution is quite broad, indirectly requiring urban consumers, including low-income urban consumers, to subsidize rural consumers, including wealthy rural consumers.

By subsidizing rural local telephone companies, the intent of USF support is to keep rural telephone prices lower. The Universal Service Administrative Company (USAC) manages the high-cost programs by collecting a percentage of interstate telecommunications revenue from telecommunications service providers. These telecommunications service providers, on their own volition, pass these charges onto their consumers in the form of a surcharge on local telephone bills. In other words, consumers pay fees on their telephone bills, which are used by local telephone companies to offset telephone company payments to USF. Depending on the specific high-cost fund and its methodology, USAC determines which local telephone companies qualify for support and it disperses the appropriate funding. It is then the expectation (and a regulatory requirement) that telephone companies use these funds to offset costs, thereby passing along the savings to consumers in the form of lower local telephone prices. However, since money is fungible, there really is no way to prove that this support ever

[13] Evidence of this relationship between costs and density is available in Stephen B. Pociask "Universal Telephone Service: Are We There Yet?" TeleNomic Research, Herndon, VA, Commissioned by the Center for the New West, September 22, 2004.

reaches needy consumers. To reiterate, the process is, on the surface, an indirect redistribution of money from all consumers to a select group of consumers, with telecommunications service companies being the conduit for collecting and dispersing USF dollars, all in the *name* of consumer interest.

If the purpose of legacy high-cost funding is to help consumers, and universal service regulations should make sure that funding is dispersed according to consumer need. However, since USF is dispersed using formulas that target different telecommunications services companies differently, it is not clear whether funding is equitably distributed to where high-cost consumers actually live. For example, the High-Cost Loop Support Fund (referred to in this study as *Loop Support*) gives so-called *rural telephone companies* over $1.3 billion in aid, while the High-Cost Model Support (referred to in this study as *Model Support*) funds so-called *non-rural local telephone companies* about one-fifth of that amount.[14] When considering all of the high-cost funds, rural telephone companies come out way ahead, collecting $3.2 billion, while non-rural telephone companies received just $0.8 billion.[15] Yet, according to estimates by Strategic Policy Research, rural telephone companies serve as little as 20% of rural telephone lines, whereas the other 80% of rural telephone lines are served by other telephone companies.[16]

Given 120 million households in the U.S., and assuming that 95% have some form of telephone service, and that about 25% of the population is rural, there are about 28.5 million rural households with telephone service.[17] Because 80% of these are served by non-rural carriers, rural and non-rural carriers serve about 5.7 million and 22.8 million rural households, respectively. Since rural phone companies received $3.2 billion in high-cost support during

[14] Non-rural telephone companies are typically larger companies that serve a mix of urban and rural customers. Rural telephone companies tend to be smaller telephone companies that typically serve predominantly rural customers. These two funds compensate for non-traffic sensitive costs (primarily telephone line investments) and represent the bulk of the high-cost funds.
[15] Annual Report, Universal Service Administrative Company, 2011.
[16] Margaret L. Rettle, Non-Rural Telephone Companies Serve Over 70% of Rural Subscribers," Strategic Policy Associates, Bethesda, MD, January 8, 1999. The calculations to follow use a similar approach to Rettle's work.
[17] That is 95% (penetration) of 25% (rural households, according to the US Census) of 120 million households.

2011, the benefits equate to $46.78 per rural household per month. As for non-rural carriers, each month they received just $2.92 per rural household. Last year's *Connect America Fund Order*, adopted reforms that were designed to begin addressing this rural disparity.[18]

Clearly, there is an imbalance in high-cost funding not reflective of consumer needs, but due to different formulas used to allocate high-cost funds to companies. The differences in the allocation in funds explains why non-rural telephone companies do not receive support for consumers living in rural parts of Idaho, North Carolina, Oklahoma and elsewhere, whereas rural telephone companies do receive support in these states.

As this section has shown, the pre-2012 method of allocating USF funds resulted in poor targeting of rural consumers. Said differently, funding was not distributed in proportion to consumer need, but was dispersed based on formulas that target certain types of telecommunications services companies. This means that the flow-through from telecommunications services companies to consumers is not equitable.

The indifference toward consumer needs is exemplified by how regulators refuse to reallocate funds when consumers clearly qualify for them. In the 1990's several larger telephone companies began selling their rural operating areas to smaller telephone companies, because these areas were costly to serve and not adequately supported by USF funds. When small rural carriers purchased these rural areas, the areas appeared to qualify for high-cost support. Instead of directing money to help these rural consumers, the FCC passed rules to prevent these areas from qualifying for additional support. In this case, regulators had lost sight of the fact that these funds were supposed to support rural customers, and instead were preoccupied with allocating funds between companies. As often as we are told to the contrary, the USF high-cost programs are not about helping consumers; they are about helping telephone companies. It is just done in the *name* of consumers.

[18] The FCC has discussed this "rural-rural divide" in its Order and FNPRM. See FCC 11-1161, par. 158-159, par. 127-129, and fn. 201.

Do Telephone Companies Really Need Help?

Could it be that some telephone companies need help to operate in less profitable and more costly-to-serve markets? One way to understand the extent to which subsidies are needed by telecommunications service companies is to analyze the financial data for these companies. The United States Telecom Association (USTA), the major association for local telephone service companies, had for many years published financial statistics for its members.[19] The last year the data was published was 2000, which included data from 236 participating local telephone companies covering the year 1999. An analysis of this data organized the data into the following groups:[20]

- Rural Loop-Funded Companies – These are small (in this sample having a median value of 9,000 access lines in service) and mostly rural companies. Besides, rural High-Cost Loop Support Program, many of these companies qualified for other programs, such as Local Switching Support and Interstate Common Line Support Programs.

- Other Loop-Funded Companies – These are larger and mid-sized telephone companies (median value of 110,000 lines in service), often having multiple operations that serve both rural and urban customers. In some instances, these companies qualified for High-Cost Loop Support, but due to their size, may not have qualified for other funds.

- Model-Funded Companies – These are larger telephone companies, referred to as *non-rural* telephone companies, though all of these companies do serve some rural communities. High cost areas support these companies using the High-Cost Model Support program, which currently funds high-cost operations in ten states.

[19] "2000 Statistics of Local Exchange Carriers," USTA, Washington, DC, 2000.
[20] Before beginning this analysis, it is helpful to point out that these results are based on a sample of companies, and that the results presented are revenue-weighted averages.

Based on the USTA survey data of telecommunications companies,[21] **Figure 1** summarizes the sources of revenues for the sampled telephone companies[22] and shows that consumers in low-cost markets pay more for telephone service than consumers in more subsidized high-cost markets. It also means that the universal service dollars are going from consumers who pay more for local telephone services to consumers who pay less. This backwards logic flies in the face of market forces, and serves to impede competitive entry in rural areas, creates artificially higher prices in more competitive markets, encourages inefficient use of technologies (such as wireless and cable-based alternatives), and misallocates investment. Last fall's *Connect America Fund Order* adopted reforms that are designed to reduce support when local rates that had been subsidized beyond what was necessary.[23]

Figure 1: Consumers Served By Loop-Funded Companies Pay Less for Local Telephone Services

(Monthly Operating Revenues Per Line)

	Looped-Funded Companies		
	Rural	**Other**	**Model-Funded**
Local Network	$22.45	$24.81	$28.58
Network Access	$43.42	$22.18	$17.10
Long Distance	$4.82	$2.30	$3.65
Miscellaneous	$5.92	$9.79	$6.42
Uncollectibles	($0.26)	(0.43)	($0.79)
	$76.34	$58.65	$54.97

Source: Calculations of FCC and company data, 1999.

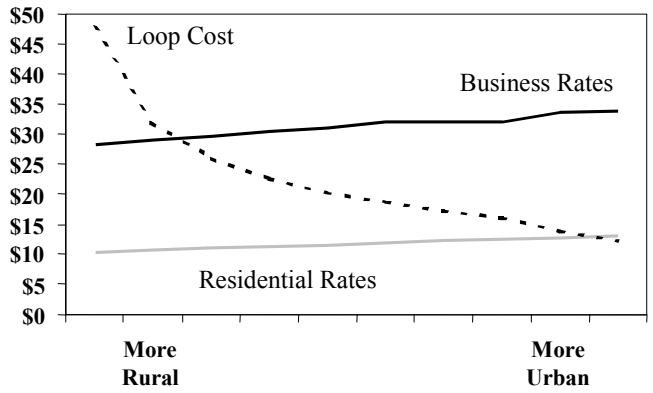
[21] In order to make comparisons from year-to-year, the sample of companies was paired with data in prior years. Data for four small companies had insufficient financial information and were removed from the sample. The final sample included all the large telephone companies, 39 small telephone companies, and 45 mid-sized and large telephone companies.

[22] The charts to follow refer to the local telecommunications companies as *telcos*.

[23] The FCC has discussed this in its Order and FNPRM. See FCC 11-1161, par. 234-247.

A similar problem results from state regulations that frequently require local telephone companies to price rural services lower than urban services, despite the fact that rural costs are often more costly to serve. As **Figure 2** indicates, prices are not aligned with network costs. The divergence between price and cost exists in virtually every state in the U.S. Under monopoly, telephone companies were not visibly harmed by overcharging some customers and undercharging others, since these companies were guaranteed a fair return on their investments. However, now that competition has been introduced, competitors often avoid residential markets that are low-priced but high-cost, while entering business markets that are high-priced but low-cost. Thus, regulatory imposed implicit subsidies are creating market distortions that affect investments, job creation and competition. This explains why competitors serve disproportionately more urban and business customers than rural and residential customers.[24]

Figure 2: Artificial Prices Not Sustainable Under Competition



Source: TeleNomic Research. This chart uses actual incumbent data. Costs are monthly incremental costs for voice grade 2-wire analog loops, plotted as percentiles. Prices are monthly recurring rates for various rate groups.

[24] Competitors serve disproportionately more business customers than residential customers, and tend to serve business customers located in metropolitan rather than business customers located in non-metropolitan areas. See Stephen B. Pociask, "A Survey of Small Businesses' Telecommunications Use and Spending," under contract for the Small Business Administration, Office of Advocacy, SBA-HQ-02-M-0493, March 2004, pp. 66-67. Cable-based telephony is an exception to this, typically serving more residential lines than business.

Assuming that subsidies are needed, a more efficient way to raise funds would be through general taxes, not hidden subsidies. In fact, studies have found that telecommunications surcharges cause more market distortions, cost consumers more, and are far less efficient than simply paying for them out of income or sales taxes.[25] In the economics of taxation, a tax on a good or service imposes an extra cost on consumers, called an *excess burden*, whereas an income tax would not.[26] In fact, whether implicit or explicit, general taxes would always be a better way to fund universal service programs, particularly broadband. Unfortunately, a tax increase is not a popular solution for policymakers, when taxes can be hidden in prices, such as the small fees that appear on consumer telephone bills.

In order to confirm whether funds are actually passed along to consumers at all, an analysis of industry profits is necessary.

Do Subsidies Help Less Profitable Firms?

For 1999 sample data, rural loop-funded telephone companies were, collectively, very profitable, having a cash flow (defined here as *revenues net expenses, but before depreciation, taxes and interest*) per access line of $42.56, compared to $28.42 for other loop-funded companies and $28.01 for model-funded companies. **Figure 3**, shows other measures of profitability of regulated telephone companies – namely, net income per line, net income as a percent of gross telephone plant and net income as a percent of net telephone plant (i.e., net of depreciation). Whether you use cash flow or net income, the result is the same – heavily subsidized telephone companies earn more profits than other telephone companies.

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[25] Jerry Hausman, "Efficiency Effects on the U.S. Economy from Wireless Taxation," National Bureau of Economic Research (NBER), Working Paper 7281, Cambridge, MA, 1999; Jerry Hausman, "Taxation by Telecommunications Regulation, NBER, Working Paper 6260, Cambridge, MA, 1998; and Christopher DeMuth, "The Strange Case of the E-Rate," American Enterprise Institute, *On the Issues*, August 1998.

[26] For a graphical proof of why this is always the case, see Neil M. Singer, *Public Microeconomics: An Introduction to Government Finance*, Little, Brown and Company, Second Edition, Toronto, 1976, pp. 182-184.

Figure 3: High USF Support Make Some Telephone Companies Very Profitable

	Loop-Funded Companies		
	Rural	**Other**	**Model-Funded**
Mthly Net Income Per Line	$18.81	$8.00	$5.98
Return on Gross Tel. Plant	8.9%	4.8%	3.7%
Return on Net Plant	17.2%	9.7%	7.1%

Source: TeleNomic Research Calculations from FCC and USTA data; 1999.

Small Telco's Make Nearly as Much in Profits as They Collect in Local Network Revenues

This again highlights an imbalance in funding between telephone companies and parallels the inequitable distribution of support between rural consumers, as cited earlier in this study. To summarize, the most subsidized telephone companies charge consumers less for local telephone services. This raises a simple question: Are telephone subsidies even needed?

It may be argued that, without subsidies, rural telephone companies would collectively be unprofitable. However, after subtracting out the USF support from all of the telephone companies in the 1999 sample of companies, the most subsidized telephone companies are still very profitable. In terms of cash flow, smaller loop-funded telephone companies averaged $31.29 per line, while the model-funded telephone companies averaged $27.44 per line. **Figure 4** shows the traditional measures of profitability and confirms the same results as the cash flow analysis did – if USF payments were eliminated, telephone companies would still prosper. In other words, USF payments (on average) do not go to the least profitable telephone companies. Effectively, USF is sending funds to companies that do not need support, while failing to focus on truly high-cost companies and needy consumers. The reforms adopted in last year's *Connect America Fund Order* take only modest steps in that direction. The order

does not reduce the overall level of support for rate-of-return carriers, and most carriers will actually see an increase in support. Rather, the Order takes a targeted approach to impose reasonable limits on reimbursable capital and operating expenses.[27] For that reason, the FCC "believe[d] strongly that carriers that invest and operate in a prudent manner will be minimally affected by the Order."[28]

Figure 4: If High-Cost Support Were Eliminated, Telephone Companies Would Still Be Profitable

	Loop-Funded Companies		
	Rural	**Other**	**Model-Funded**
EXCLUDES HC-USF:			
Mthly Net Income Per Line	$9.65	$7.59	$5.96
Return on Gross Tel. Plant	4.5%	4.6%	3.6%
Return on Net Plant	8.8%	9.2%	7.1%

Source: TeleNomic Research Calculations from FCC and company data; 1999. Assumes a decline in taxes and in proportion to the decline in USF revenues.

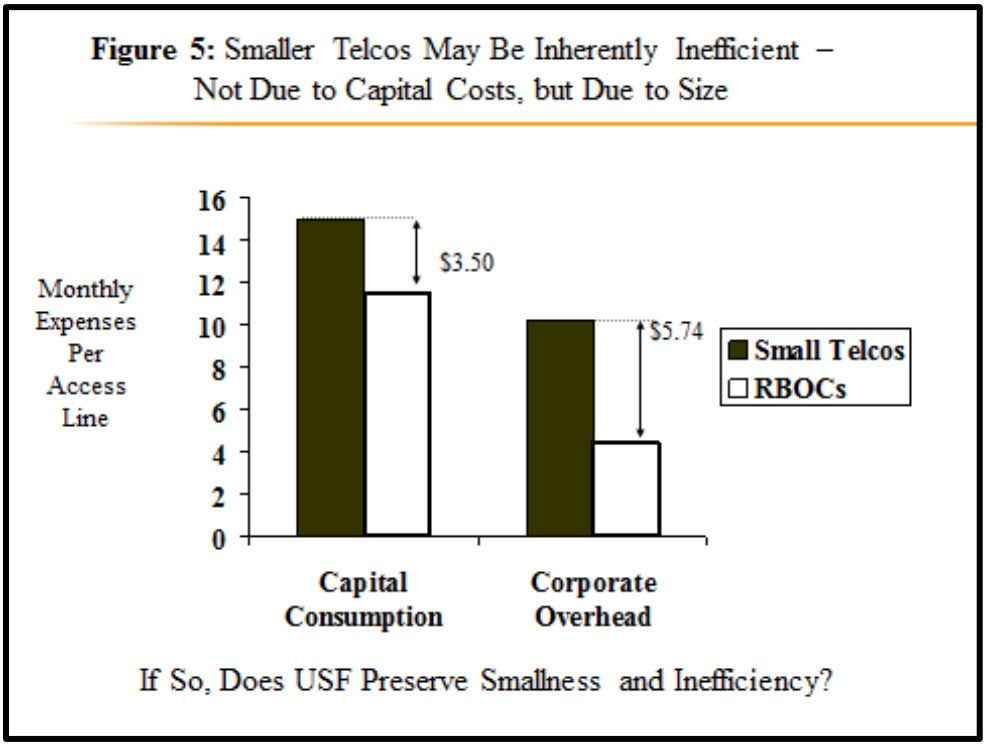
These data show that USF high cost funds fail to reach needy consumers and go to many telephone companies that are sufficiently profitable. While the data shown represents only one year, it clearly demonstrates that need and support are not aligned.

Do Rural Carriers Have High Capital Costs?

Another common assumption about USF is that it is a high-cost fund, generally meaning that it supports telephone companies facing high fixed or capital costs. The data set used in this study, however, suggests that these small rural carriers are more burdened by high

[27] Order at para. 214.
[28] Order at para. 290.

administrative costs, not capital costs. **Figure 5** shows that small telephone companies pay about $3.50 more in capital consumption per access line than the largest telephone companies (labeled *RBOCs*, denoting the one-time Regional Bell Operating Companies). Yet, administrative overhead is near $6 more per access line for the smallest of companies. This means that administrative costs are not very scalable for small operating companies. It also means that capital costs are less important than overhead costs for these small companies. Therefore, if USF focuses on the "high costs" of these small telephone companies, it is effectively targeting high administrative costs. Ideally, mergers and joint ventures between smaller companies could help these companies achieve more optimal scale. However, USF support appears to be subsidizing "smallness," thereby rewarding those with high overhead costs and passing these inefficiencies along to consumers. The proposed CAF plan should try to avoid this pitfall.



Are These Results Relevant?

While cable and wireless competitors have changed the landscape of the telecommunications marketplace, the data presented in this paper, though dated, are still

relevant, since the USF mechanism has largely unchanged. USF still targets companies, not consumers; it still uses different formulae between company types that determine different results for these company types; and it still gives a majority of high-cost funding to a minority of rural consumers. The data is also consistent with work by many economists over the years. Most recently, a study by Wallsten found 59% of USF subsidies going toward "general and administrative expenses" and not telephone provision.[29] Despite having been identified in numerous studies, major problems with USF continue. However, these problems "should not be repeated as the FCC works to develop a broadband support mechanism."[30]

To summarize, the most subsidized telephone companies charge consumers less for local telephone services, have only slightly elevated capital costs, have higher administrative costs, and, in the end, are most profitable. If subsidies are even needed, they should be more modestly allocated, better targeted, and focused on consumers living in remote and truly high cost areas, such as some tribal areas. Any funding would also need to be competitively and technologically neutral.

Summary and Recommendations

This study shows that, while consumers clearly pay USF fees, it is not always clear who really benefits from the funding. Contrary to common beliefs and the words of regulators and policymakers, this study finds that USF high-cost payments are not designed to help consumers. This is because USF high-cost support is not distributed in proportion to consumer needs; it is disbursed to help, for the most part, profitable telephone companies. While policymakers argue that without these subsidies many local telephone companies would not be able to serve rural areas and telephone prices would be so high that consumers could not afford them, this study finds that USF high-cost funds often go to the most profitable telephone companies. In fact, if the USF high-cost subsidies were completely eliminated, this study finds that most

[29] Scott Wallsten, "The Universal Service Fund: What Do High-Cost Subsidies Subsidize?" Technology Policy Institute, February 2011.

[30] Wallsten writes that his results are just "another in a long series of analyses demonstrating the inefficiency of the high-cost fund and the need for radical overhaul. The FCC's intention to switch the focus of USF from voice to broadband presents an opportunity that should not be overlooked." (Ibid, p. 15.)

companies would still remain very profitable. Furthermore, USF appears to encourage smallness, which rewards those with higher administrative costs. This means that consumers pay once for USF, and then they pay again for the inefficiencies of firms that are discouraged from moving toward a more optimal scale of production.

Reforming the USF high-cost funding process is in desperate need. The focus of USF high-cost funding should be on benefiting consumers. This can be done by reforming the programs so that they target only truly needy consumers living in very high-cost areas. In order to accomplish this, high-cost funds can be consolidated, distributed by a single and equitable formula, and targeted to consumers based on need. This would most benefit consumers, while encouraging competition for rural consumers and attracting investments into rural markets.

This study finds that local telephone services in supposed high-cost areas are sometimes offered at prices that are lower than those offered in supposed low-cost areas. However, artificially low prices impede rural investment and discourage competitive entry, harming both rural and urban telephone consumers. Clearly, consumer prices should be somewhat more aligned with cost, with rural subsidies as the backstop for exorbitant pricing and not an enabler of predatory pricing.

In summary, this study shows that the USF high-cost fund is in serious need of reform. The FCC should not replicate these flaws as it transitions the current USF mechanism to support broadband services. We should not justify these subsidies in the *name* of consumers.