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**The Adverse Impact of Municipal and Cooperative Internet Service on Entry
and Competition**

by

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I. Introduction and Summary

Current government policies encourage states to consider funding deployment of government-owned (municipal) and cooperative-owned broadband infrastructure in the same way as privately offered Internet services. Yet, eighteen states have laws prohibiting or limiting municipal and/or cooperative broadband provision. And for seemingly good reason.

In a recent analysis of 2015-2020 FCC Form 477 data for Illinois, Tianjiu Zuo and I find that, all else equal, municipal and cooperative participation in the broadband marketplace had a disproportionately negative impact on additional Internet service provider (ISP) entry – and, consequently, overall competition. Municipal ISPs are found to have a particularly large dampening effect on further ISP entry relative to cooperative ISPs, suggesting concerns over inherent municipal regulatory conflicts of interest are strongly dissuasive to private ISPs when they consider entering a market. The smaller but still significant negative impact of cooperative ISP presence reflects private ISP concerns over competing with municipal- and cooperative-owned ISPs that are partially insulated from market forces and have the ability to charge

discriminatory rates for access to utility poles. Combined with the observation that municipal and cooperative ISPs were not generally the first providers within their territories, these findings suggest that looking to municipalities and cooperative utilities to lead deployment in unserved areas or increase competition in underserved areas is misguided. Policies that promote these groups' eligibility for federal subsidies are likely to reduce rather than increase longer-term competition.

Those in favor of encouraging municipal and cooperative entry in the broadband market consider this to be a good way to increase deployment to unserved areas, especially rural, low-income areas. Even if an area currently has Internet service, municipal or cooperative entry is viewed as improving competition and, ultimately, helping end user consumers.

Those against encouraging municipal and cooperative broadband provisions point to three anti-competitive concerns: regulatory conflicts of interest for municipal ISPs, insulation from market pressures (i.e., non-economic market entry and exit), and exemption from pole attachment rate regulation in cases where the municipal/cooperative ISP also provides electric and/or telephone service and therefore owns local utility poles.

Tianjiu Zuo and I empirically consider these arguments in "[Impact of Municipal and Cooperative Internet Provision on Broadband Entry and Competition](#)" (2022). Looking at within-census-block variation over twelve time periods from 2015 to 2020, we find evidence that potential ISPs do not consider competition from municipal and cooperative ISPs to be the same as that from private ISPs. Specifically, we find, all else equal, that relative to a private ISP incumbent, the presence of a municipal or cooperative ISP incumbent lowers the likelihood of further ISP entry into a census block.

II. Data

Looking at FCC Form 477 data for the state of Illinois from June 2015 to December 2020, we observe two patterns that are not consistent with common assumptions about municipal and cooperative ISPs. First, within their service areas, municipal and cooperative ISPs were very rarely the first ISP in that block. Municipal ISPs were the first broadband provider less than 0.4 percent of the time. Cooperative ISPs were the first provider in their service area less than 8.5 percent of the time. This means that in Illinois, municipal and cooperative entry into the broadband market has not historically been a huge factor in overall deployment. Second, while cooperative ISPs are in rural areas 75 percent of the time, the ten municipal ISPs provided service to rural areas less than 3 percent of the time. Municipal ISPs were also not necessarily in particularly poor areas.

III. Findings

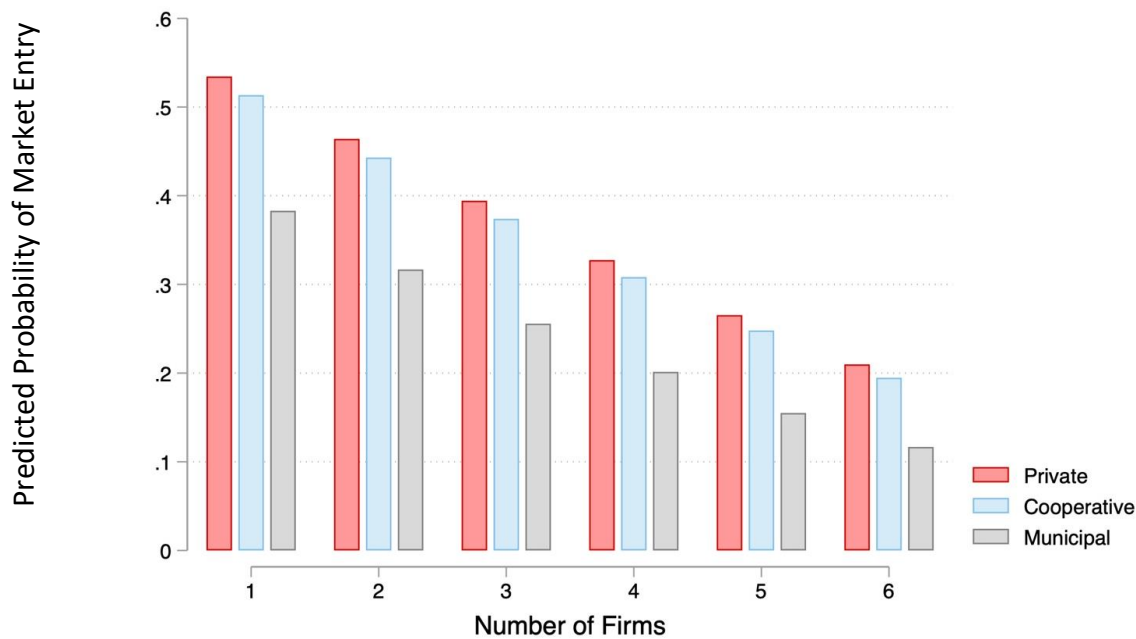
We are interested in seeing whether the presence of a municipal or a cooperative ISP in a census block impacts the likelihood of further ISP entry differently from the presence of a private ISP. For each six-month period, we consider the impact on current ISP entry of the "state" of the market in a census block in the previous period. The "state" of the market is based on information available to a potential ISP entrant when considering future expected profits if it

enters a particular census block. Factors relevant to this decision include measures of ISP competition (number of firms, highest download speed offered, presence of a municipal ISP, and presence of a cooperative ISP), a measure of potential competition from ISPs in adjacent blocks, time varying measures of market attractiveness (housing density, median household income), time fixed effects to control for macroeconomic and technological changes over time, and census block fixed effects.¹

Detailed results are available in [Zuo and Connolly \(2022\)](#). Here I focus on the key variables of interest, namely the presence of municipal and cooperative ISPs.

Figure 1 shows the average predicted probability of ISP entry based on the number and type of incumbent ISPs. As one would expect, the more incumbent firms in a census block, the lower the likelihood of further ISP entry. Results also show that the presence of an incumbent municipal ISP or an incumbent cooperative ISP significantly reduces the likelihood of further ISP entry relative to the presence of a private ISP incumbent. For example, when two private firms provide ISP service in a census block, the average predicted probability of entry is 46.4 percent. If one of these is a cooperative, the probability of entry is 44.3 percent, and if one of these is a municipality, the predicted probability falls to 31.7 percent.

Figure 1. Average Predicted Probability of ISP Entry



Source: [Zuo and Connolly \(2022\)](#)

¹ The use of census block fixed effects controls for block level traits that are time invariant such as topography and the time average levels of income, education, etc. Hence, our findings are driven by changes within a census block over time and do not come from comparing the general attractiveness of one census block versus another. This importantly avoids the risk of biasing the estimated impact of municipal or cooperative ISPs due to locational patterns.

Strikingly, the dampening effect on further ISP entry due to the presence of an incumbent municipal ISP is approximately equivalent to the dampening effect of three incumbent private ISPs. As noted above, the predicted probability of entry in a census block with two incumbent ISP providers, one private and one municipal, is 31.7 percent. This is just below the 32.7 percent predicted probability of entry in a census block with four incumbent private ISPs.

These results demonstrate that potential private ISP entrants do not see municipal or cooperative ISP incumbents as being the same as private ISP incumbents. Specifically, this pattern demonstrates that, all else equal, expected profits for a potential ISP are significantly lower when considering entering a census block in which a municipal or cooperative ISP is present. The fact that municipal ISPs in Illinois are seen to have a more negative impact on entry than cooperative ISPs suggests that concerns over regulatory conflicts of interest when entering the service territory of a municipality already providing broadband service are particularly salient for potential entrants.

Since cooperative ISPs do not have regulatory authority over competitors, the negative impact on entry from their presence is attributable to some combination of non-economic entry-exit concerns and/or higher pole attachment costs relative to privately owned utility poles.² It is worth noting that in 2017 municipal and cooperative pole owners in Illinois charged a premium relative to investor-owned poles of 8 percent and 27 percent, respectively. While significant, this is actually small relative to the national average premium of 217 percent and 225 percent charged by municipal and cooperative pole owners respectively for attachments to their utility poles ([Connolly, 2019](#)). Hence, the estimated negative impact of both municipal and cooperative ISP presence on further ISP entrance would likely be greater if considering the nation as a whole.

IV. Conclusion

These findings suggest that the current emphasis on encouraging municipalities and cooperatives to begin providing broadband service as a means of both pushing further deployment and increasing competition is misguided.

Concerns over regulatory conflicts of interest for municipal ISPs are strongly supported by our findings. Given that municipalities have control over permitting and rights of way, this is not a problem that can be circumvented.

Concerns over municipal and cooperative ISP insulation from market forces and risks of excessive pole attachment rates in locations where the municipality or cooperative owns the utility poles are also supported by our findings. This lends support to the argument that municipal and cooperative pole owners (whether providing ISP service or not) should not be exempt from Section 223 of the Telecommunications Act of 1996. If municipalities and cooperatives were subject to the same regulatory treatment as private pole owners, their ability to discourage further ISP entry in their service areas through charging excessive pole attachment rates would be greatly reduced.

² In our data set, all cooperative ISPs and the three (of ten) municipal ISPs that filed Form 477 were also electric and/or telephone utilities and therefore owned utility poles within their service areas.

Overall, these empirical findings show that rather than encouraging deployment and competition, the presence of municipal and cooperative ISPs discourages further entry and competition from private ISPs. In Illinois, we observe that since municipal and cooperative ISPs were rarely the first provider within their territory, their entry into the broadband market has not generally increased deployment. In turn, if their presence then discourages further entry, then the net effect is to decrease the number of broadband providers that would otherwise potentially provide service in those markets.

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