The Economics of Universal Service: Estimating Rural Valuations for High Speed Broadband

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Abstract: Universal service is a common public policy objective whereby access to some otherwise readily available technology is extended to those without it. Commonly, the service has high fixed costs of delivery (eg. home phone, broadband) resulting in better access in denser urban areas while rural areas lag behind. A common justification for subsidy programs to generate universal access relies on the existence of positive externalities from adoption. This paper examines the extent to which rural adoption would occur, a necessary pre-requisite for positive externalities to be generated. To do so, I exploit the fact that high speed satellite broadband currently exists throughout the United States, including areas without access to a wired broadband provider. Using an empirical strategy involving aspects of revealed preference and geographic regression discontinuities, together with a unique dataset documenting the household-level choice sets and adoption decisions of over 4.5 million households in North Carolina, I find preliminary evidence that (i) adoption of high speed broadband in rural areas would be lower than in urban areas at comparable prices, and (ii) those most likely to adopt high speed wired broadband are those already subscribed to high speed satellite broadband. The main implication of the paper is that subsidy programs should not only consider the cost of reaching certain areas, but also the extent to which adoption (net of cannibalization of existing technologies) will occur.