Farm Businesses, the Digital Economy, and Broadband Internet

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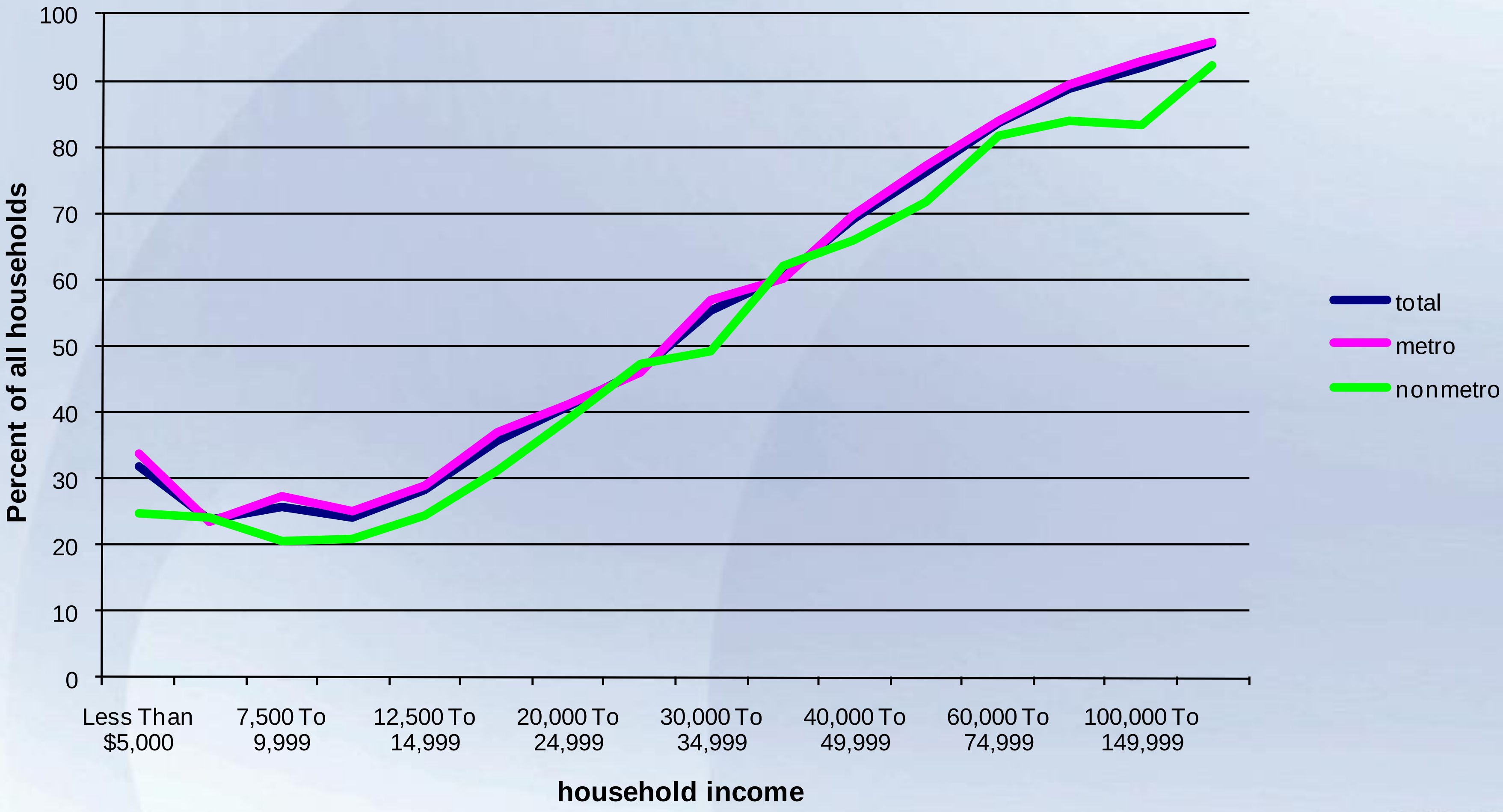
Introduction

- Broadband Internet's integration into the economy
- Rural areas lag in broadband access
  - Is there pent-up demand for rural broadband access?
- Measuring broadband adoption resulting from rural broadband availability

Rural broadband Internet availability

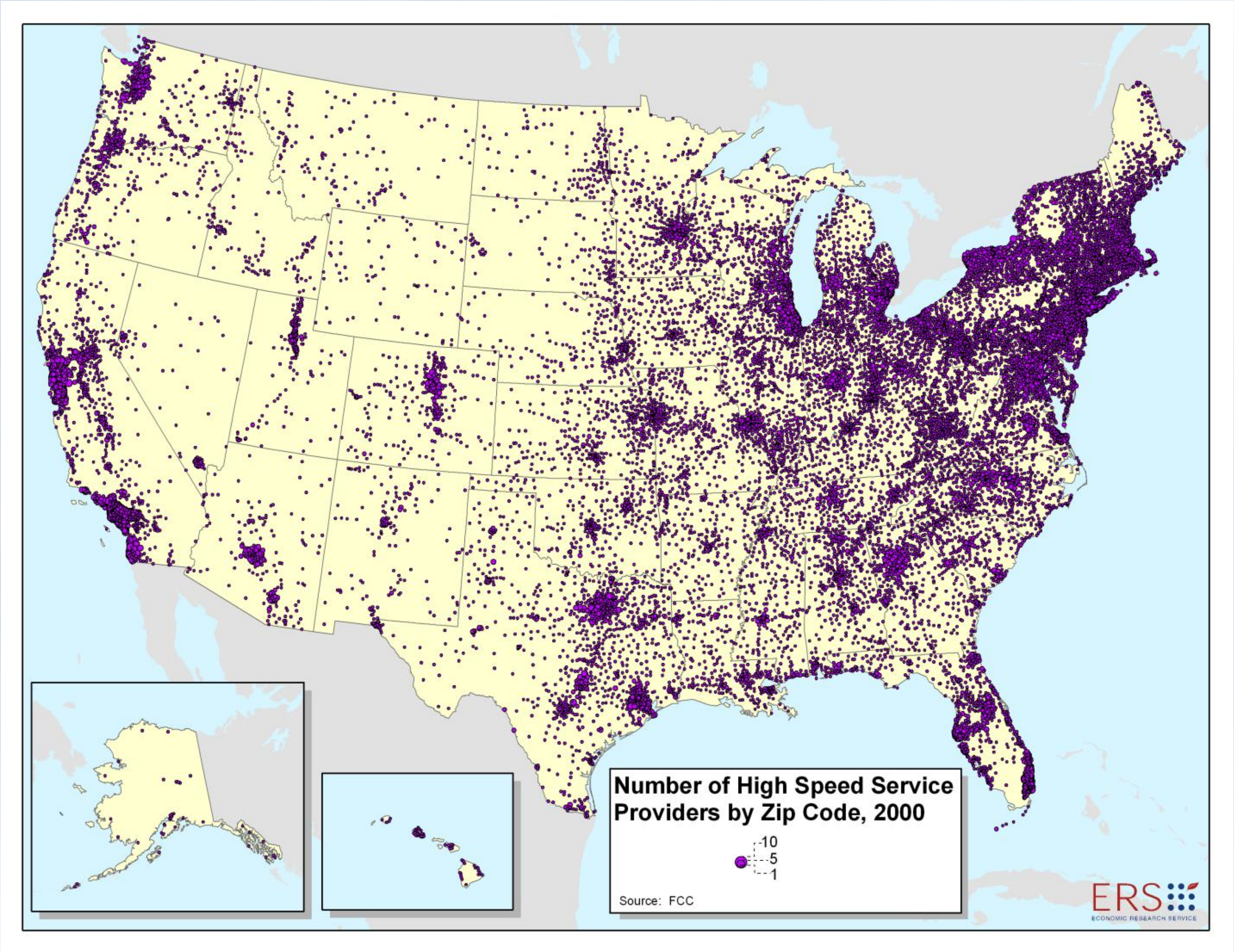
- Definition of rural
  - ERS Rural-urban continuum code
- Sources of measures
  - Location specific
    - FCC – form 477 data

Home Internet Access by Income, 2007

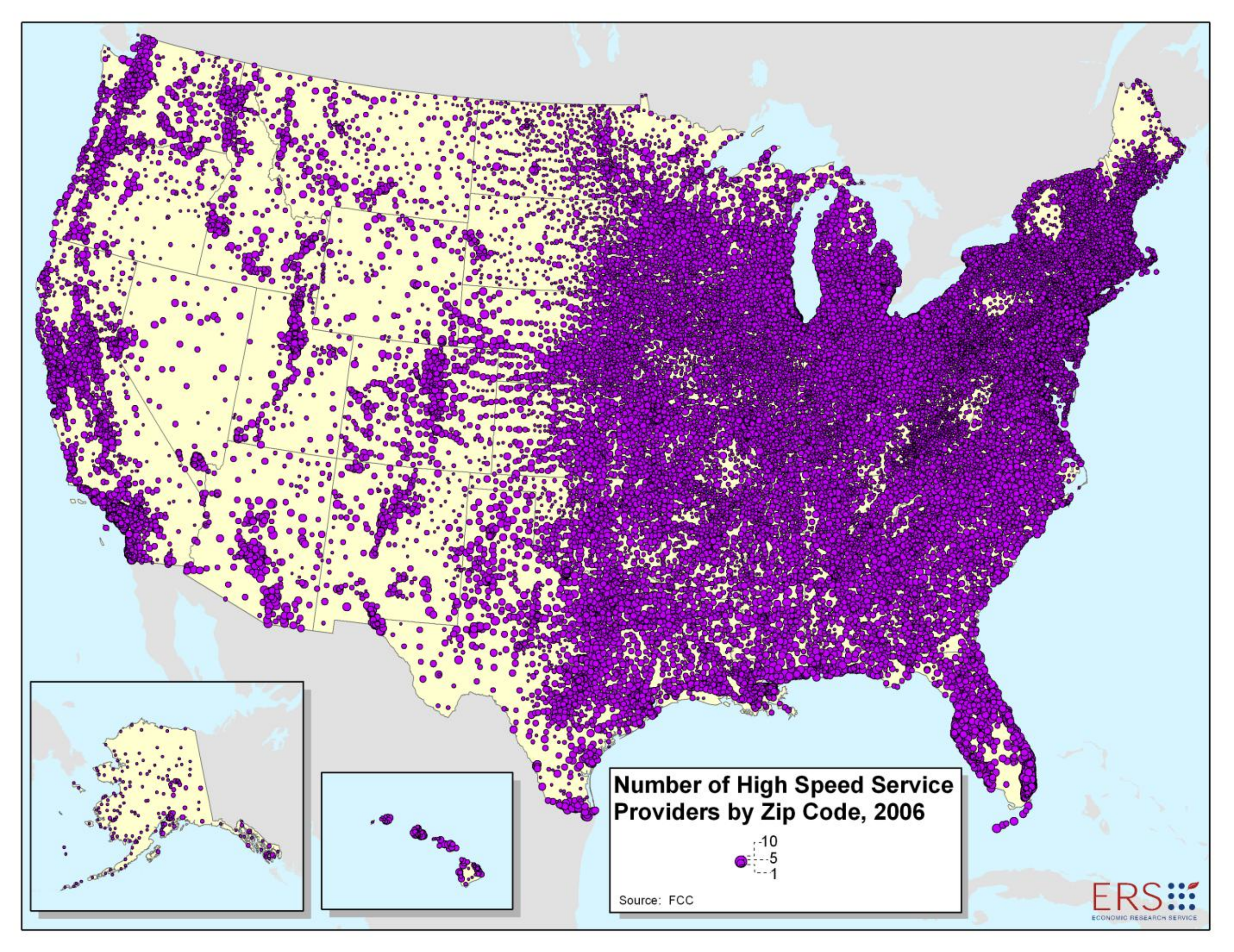


On-line Households with Broadband Access by Income, 2007

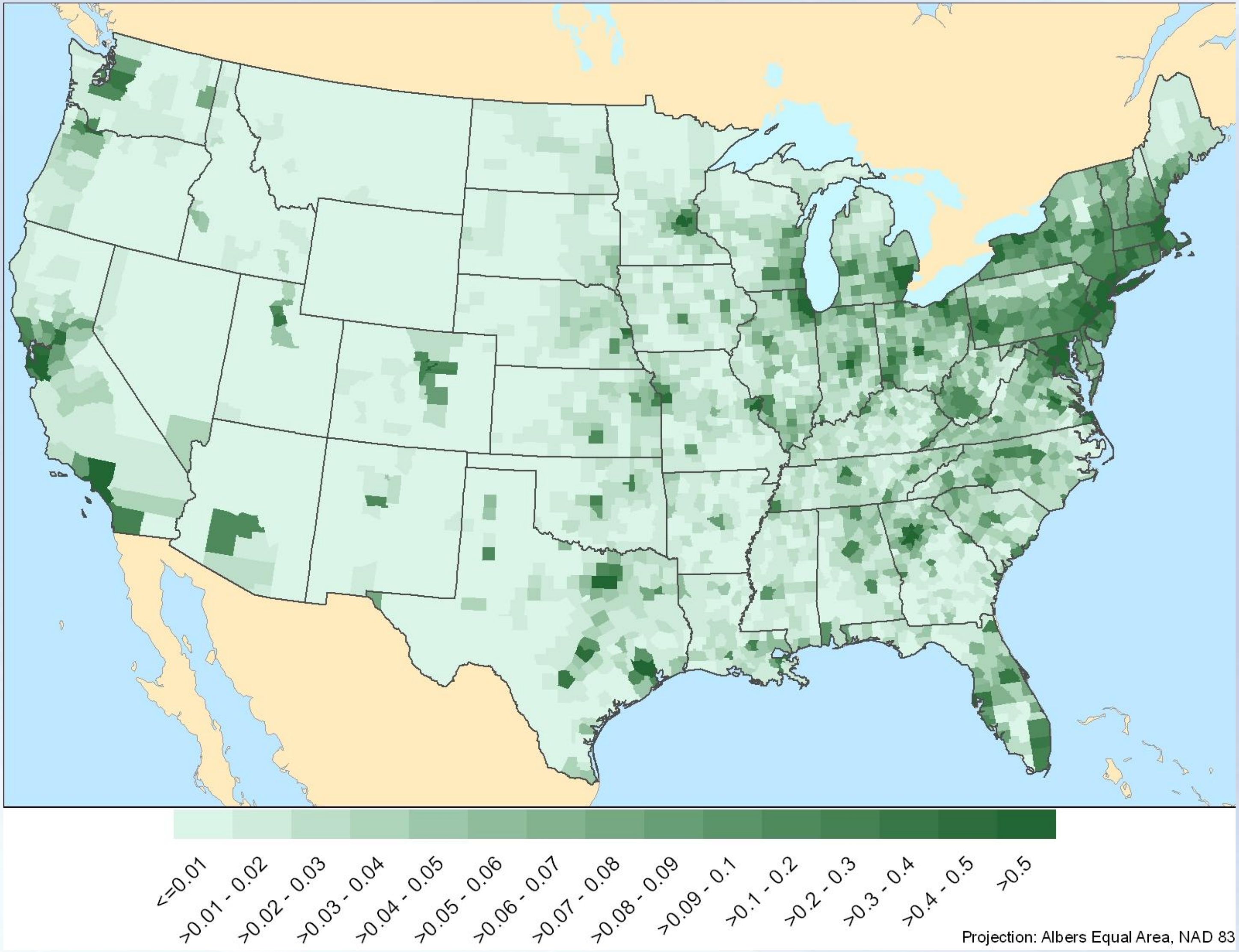
Broadband Internet Availability, December 2000



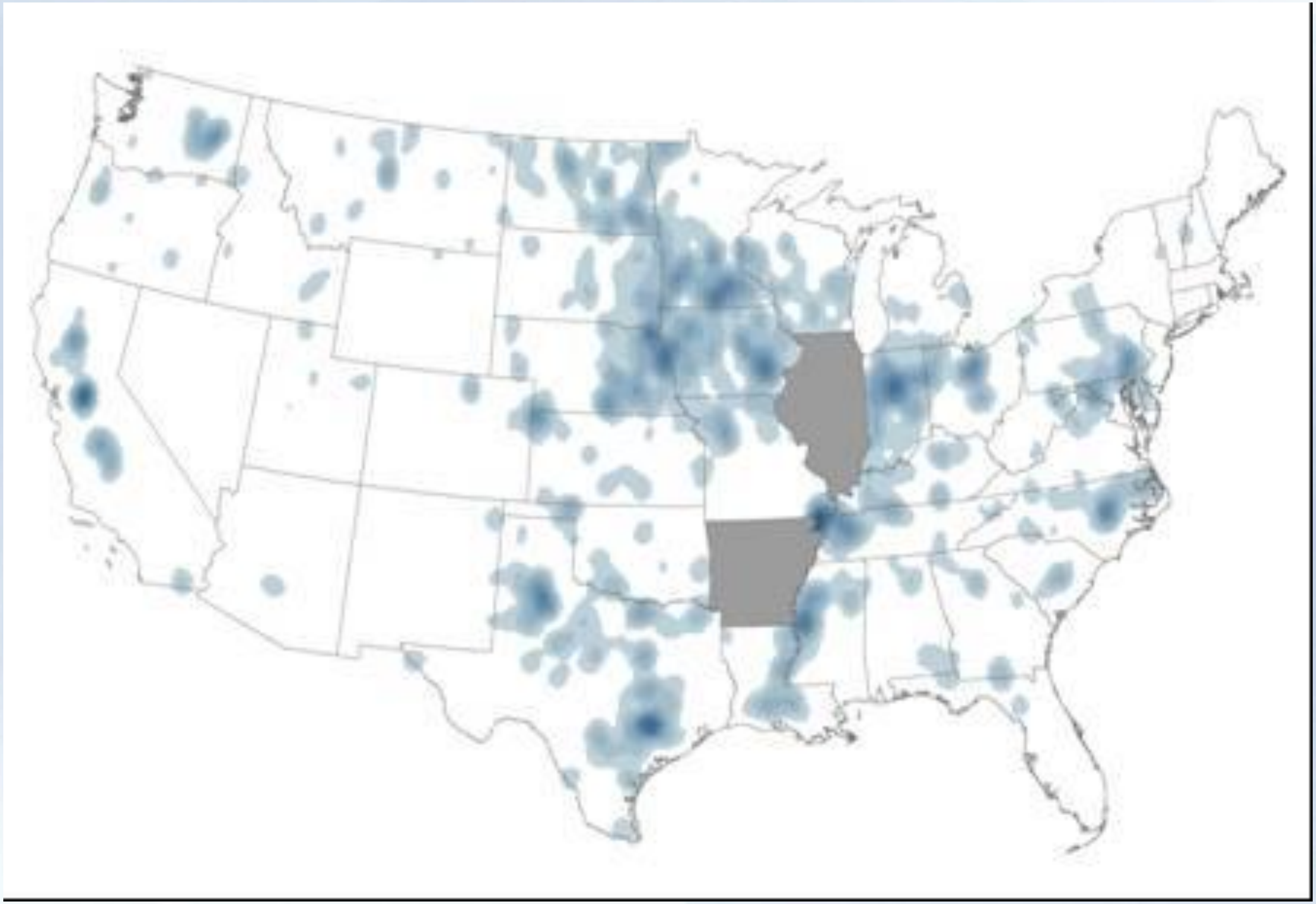
Broadband Internet Availability, December 2006



County Representation of Average Broadband Provision per Square Kilometer, 2000



Change in Farm Broadband Use, 2005-2007



Adoption of broadband Internet Access by farms, 2005-2007

	No conversion	Low conversion	High conversion	All farms
		Percent		
Broadband availability				
Broadband not newly available	100.0	96.0	90.6	96.7
Broadband newly available	0.0	4.0	9.5	3.4
Total	100	100	100	100
Farm has Internet access				
Yes	60.3	60.5	64.0	61.0
No	37.7	38.5	35.0	37.6
Total	100	100	100	100

Data Source: June Agricultural Surveys (2005 and 2007).

Note: Due to changes in survey data mechanisms, Illinois and Arkansas could not be included.

Note: No conversion means no farms in area went from dial-up to broadband access.

Low conversion means fewer than 50 percent of farms in area conversted to broadband.

Adoption of broadband Internet Access by farms, 2005-2007

	No conversion	Low conversion	High conversion	All farms
		Percent		
Internet used to purchase farm inputs				
Yes	18.5	20.0	20.8	19.5
No	80.2	78.7	76.0	78.8
Total	100	100	100	100

Data Source: June Agricultural Surveys (2005 and 2007).

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Adoption of broadband Internet Access by farms, 2005-2007

	No conversion	Low conversion	High conversion	All farms
		Percent		
Economic class				
$1,000-$9,999	44.6	45.4	34.0	43.1
$10,000-$99,000	31.4	32.1	32.6	31.9
$100,000-$249,000	10.3	10.8	13.5	11.1
$250,000 or more	13.7	11.8	19.9	13.9
Total	100	100	100	100

Data Source: June Agricultural Surveys (2005 and 2007).

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Adoption of broadband Internet Access by farms, 2005-2007

	No conversion	Low conversion	High conversion	All farms
		Percent		
Access method				
Dial-up	73.3	39.9	11.9	48.4
DSL	13.2	30.2	48.7	26.6
Cable	4.1	7.9	10.1	6.8
Satellite	2.8	8.3	12.3	6.8
Wireless	3.6	8.2	9.7	6.6
Total	100	100	100	100

Data Source: June Agricultural Surveys (2005 and 2007).

Note: Due to changes in survey data mechanisms, Illinois and Arkansas could not be included.

Note: No conversion means no farms in area went from dial-up to broadband access.

Low conversion means fewer than 50 percent of farms in area conversted to broadband.

Table 2: Binomial Logit for dial-up to terretrial broadband conversion, 2005-7.

Coefficients	Estimate	Std. Error	t- value	Pr(>|t|)
(Intercept)	-7.93E-01	8.44E-02	-9.39	<2e-16 ***
Age of proprietor	2.18E-01	1.46E-01	1.49	0.13504
Farm's sales	5.35E-01	1.09E-01	4.91	9.6e-07 ***
New broadband service	1.06E+00	2.98E-01	3.56	0.00038 ***
Urban population	3.23E-07	1.06E-07	3.05	0.00231**

Source: authors

Signif. codes: ('***' 0.001) ('**' 0.01) ('*' 0.05)

Conclusion

- Sharp differences in conversion rates across the country.
- Some credence to the common hypothesis that people do choose to use broadband if given the option.
- Farms buying over the Internet were more likely to have converted, supporting the argument that users find positive utility in acquiring broadband Internet access.
- The preponderance of DSL service for farms indicates both the mostly rural location of most farms as well as Internet users finding satellite a less desirable option.
- Government policies that encourage deployment of broadband services have broadened, and will further broaden, availability in Rural America as they address unserved and underserved communities.