

Rural Reliability: Determining the Reliability of ACS Estimates for Rural Communities

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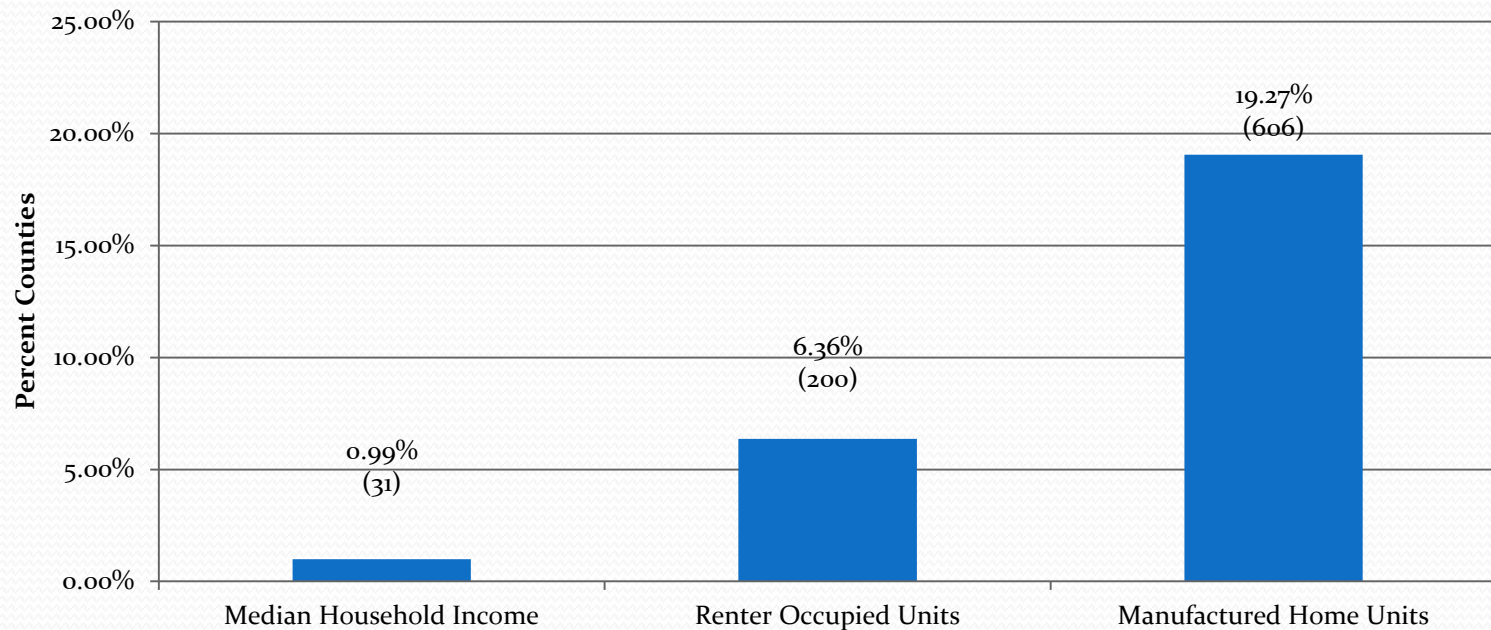
Housing Assistance Council

Data Misinterpreted

- Many users ignore margin of error and simply use estimate as if it precisely reflects population
- Kalawao County, Hawaii
 - Median Income Estimate \$52,813
 - Margin of Error \$33,177
 - Confidence Interval \$19,636 - \$85,990

Estimate Reliability Problem

**Select ACS 2008-12 Percent Select ACS 2008-12 County Estimates
By Cases with Coefficient of Variation of 15.0 or Higher**



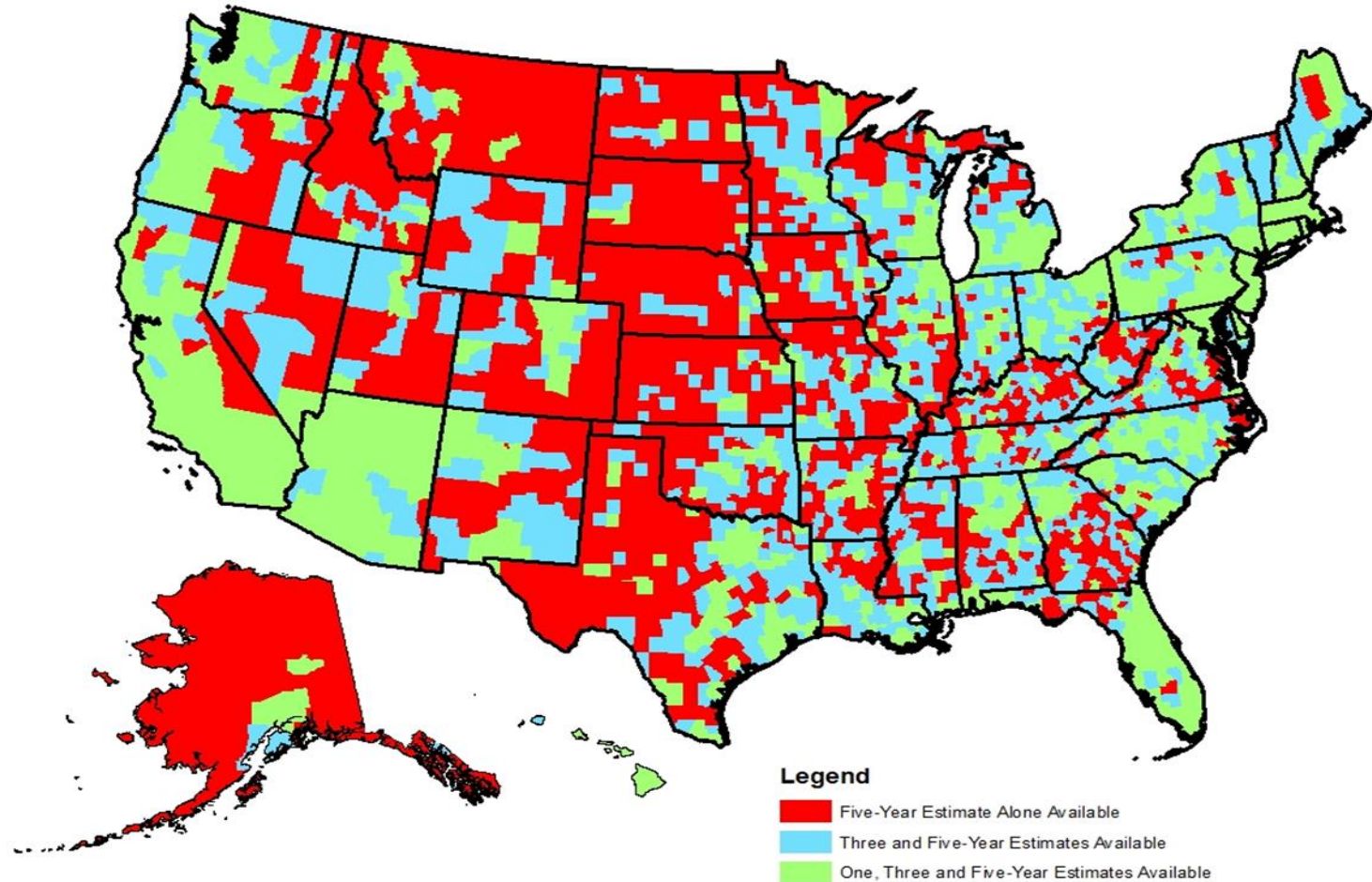
Example of it as a Problem

ACS 2008-12 Poverty Estimates for Select Geographies

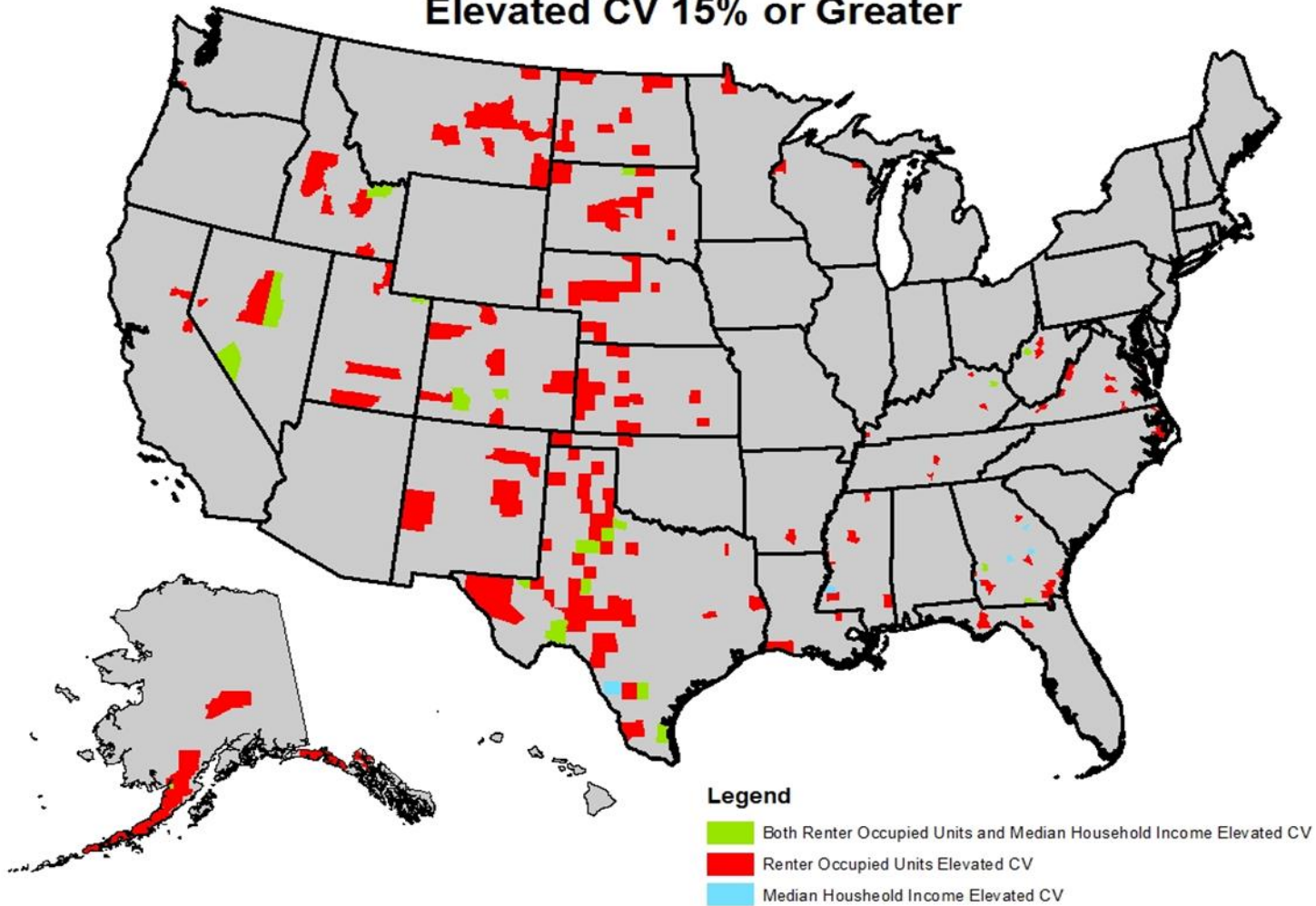
Geography	Population For Whom Poverty Status was Estimated	Percent Living Below Poverty Threshold the Past 12 Months	Margin of Error
West Feliciana Parish	11,145	15.3	4.1
Louisiana	4,400,761	18.7	0.2
United States	301,333,410	14.9	0.1

Rural Nature of Problem

ACS Data Estimate Availability for Counties



ACS 2008-12 Five-Year County Estimate Elevated CV 15% or Greater



Identifying Potential Problems

- Back of Envelop Method: Margin of Error/Estimate
- Preferred Method: Coefficient of Variation (CV)
 - $CV = [SE/X^{\wedge} * 100]$

Determining Acceptable Levels

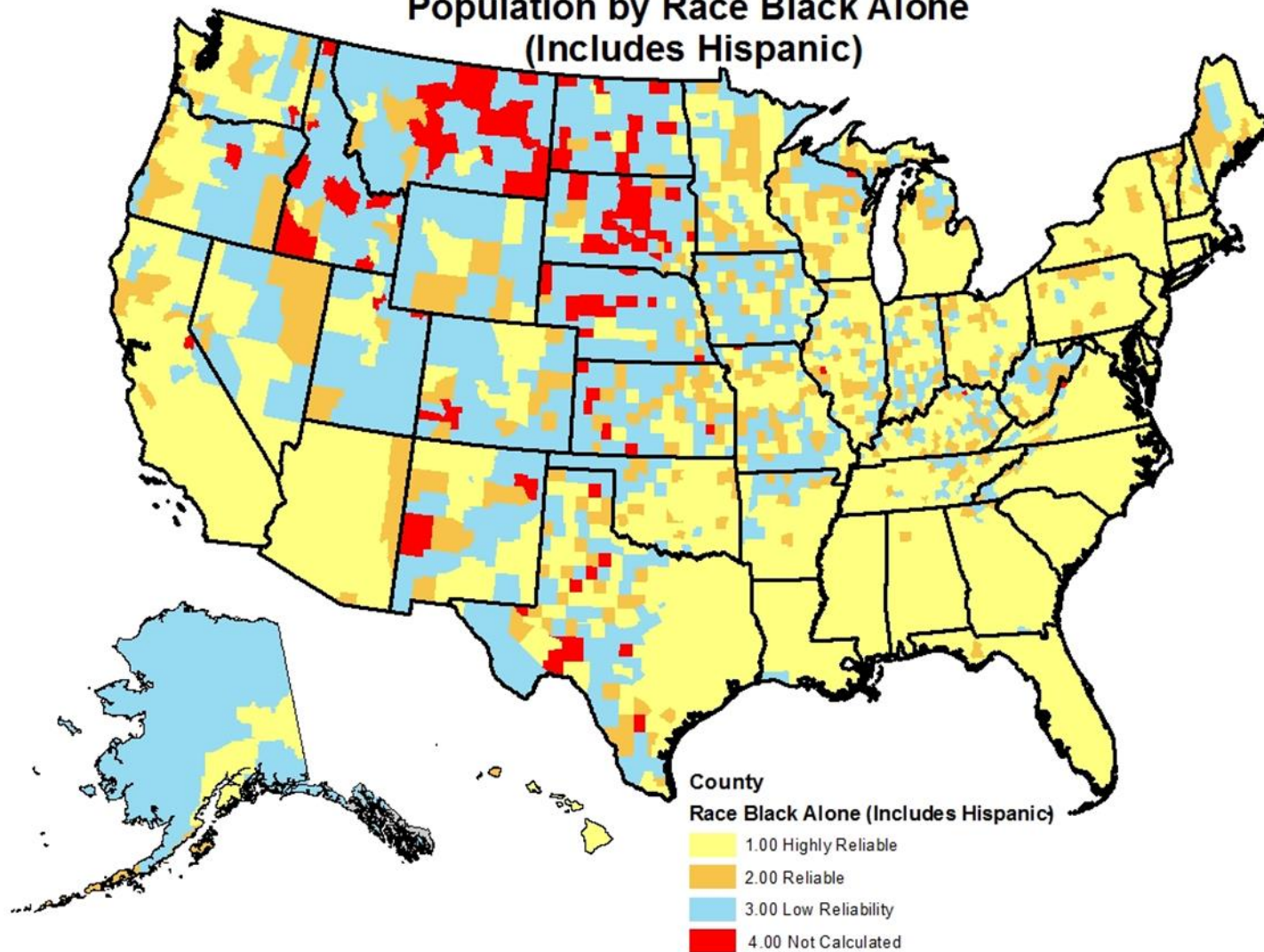
- No agreed upon threshold
- Most approaches identify levels of reliability
- Census Thresholds
 - Less Than 15 Good
 - 15-30.00 Fair
 - Greater Than 30 percent Caution

HAC Reliability Index

For County-Level Attributes:

- Green = High Reliability (less than 15 percent)
- Yellow = Reliable (between 15 and 29.9 percent)
- Red = Low Reliability (30 percent or higher)
- Gray = Reliability Estimate Not Available

**ACS 2008-12 Five-Year County Estimate
Population by Race Black Alone
(Includes Hispanic)**



ACS 2008-12 County Housing Units by Structure Type

Housing Units by Structure Type	High Reliability (CV= 0-14.99)		Reliable (CV=15.00-29.99)		Low Reliability (CV=30.00 or Greater)		Not Calculated		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1 Unit Detached	3,139	99.87	4	0.13	0	0.00	0	0.00	3,143	100.00
1 Unit Attached	837	26.63	792	25.20	1,449	46.10	65	2.07	3,143	100.00
2 Units	862	27.43	1,094	34.81	1,116	35.51	71	2.26	3,143	100.00
3 or 4 Units	941	29.94	1,225	38.98	908	28.89	69	2.20	3,143	100.00
5 to 9 Units	900	28.64	1,017	32.36	1,114	35.44	112	3.56	3,143	100.00
10 to 19 Units	698	22.21	752	23.93	1,465	46.61	228	7.25	3,143	100.00
20 to 49 Units	607	19.31	788	25.07	1,457	46.36	291	9.26	3,143	100.00
50 or More Units	653	20.78	518	16.48	1,263	40.18	709	22.56	3,143	100.00
Mobile Homes	2,538	80.75	506	16.10	93	2.96	6	0.19	3,143	100.00
Boats, RVs, etc.	11	0.35	91	2.90	1,605	51.07	1,436	45.69	3,143	100.00

Importance of Context

- Key element in determining data use is context
- Example: Calhoun County, Alabama
 - Estimate of 99 units
 - MOE of 89
 - Confidence Interval (10 – 188)

Error big deal to planner of program to improve plumbing

Error not big issue to researcher looking at overall rate of inadequate plumbing.