Where the Wealth Is: The Geographic Distribution of Wealth in the United States

By Rebecca Chenevert, Alfred Gottschalck, Mark Klee, and Xingyou Zhang

United States Census Bureau
U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
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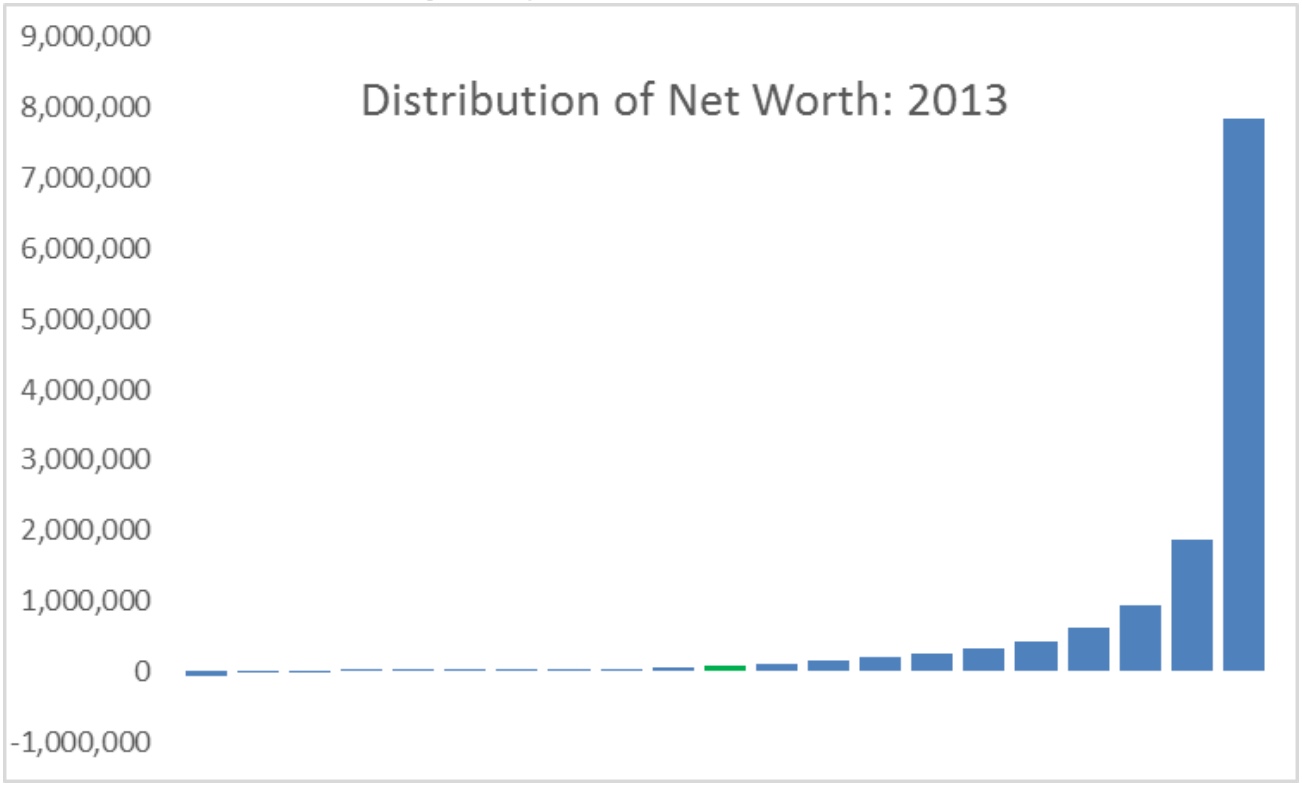
Motivation

- Wealth has a highly skewed distribution



Source: Authors' calculations, 2013 Survey of Consumer Finances. Bars represent the 1st, 99th, and every 5th percentile from the 5th to the 95th.

Motivation

- Wealth, or net worth, is important for economic well-being
- Savings can smooth consumption over shocks, and allows for easier borrowing
- Net worth is an important factor in retirement decisions
- We routinely get requests from data users for statistics about the wealth distribution for their state or metro area

Motivation

- Few surveys have enough information on assets and debts to calculate household net worth
  - SCF, SIPP, HRS, PSID
- None of these are representative below the national level

Our Idea

- We have access to internal information in both the Survey of Income and Program Participation (SIPP) and the American Community Survey (ACS)
  - This includes detailed geography information and values for assets and debts before disclosure avoidance procedures (ie, topcoding).
- Combine the strengths of the two surveys to create wealth estimates for lower level geographies

Data: SIPP

- Nationally representative panel survey
- Covers many content areas, including household composition, employment, health insurance, eligibility and participation in government programs, assets and liabilities, child care and food security
- Recently redesigned (2014 panel forthcoming)
- Sample size is ~27,000 households

Data: ACS

- Representative at the national and state level, and produces annual estimates for all geographies with 65,000+ population
- Includes content on topics including demographics, employment, health insurance, income, and housing characteristics, but many times less detailed than SIPP
- Sample size is ~2,000,000 households

Methodology

- Multilevel Regression and Poststratification (MRP) model
  - Construct and fit the multilevel model for the outcome of interest
  - Make predictions of the outcome using a large survey or census population data to produce its reliable small area estimates

Methodology

- Use a rank within the wealth distribution as the outcome of interest
  - This helps with the skew of the distribution in both tails
  - Allows out-of-sample prediction
  - Makes the assumption of linearity in rank, but not in the outcome of interest
- Unit of observation is a household
  - SIPP characteristics are as of December 2013

Methodology

- $Y_{is}^{SIPP} = x_{is}^{SIPP}\beta + \theta_s + \varepsilon_{is}$
- Y is the rank
- x is a vector of household characteristics available in both surveys
- θ is a state level random effect
- ε is household specific error term

Methodology

- Predicted rank
- (2) $\widehat{Y_{is}}^{ACS} = X_{is}^{ACS}\hat{\beta} + \widehat{\theta_s}$
- Use the initial distribution to extrapolate values of net worth
  - Linear extrapolation for values outside the SIPP distribution

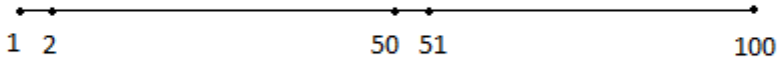
Methodology

Table 1.
Regression of Net Worth Rank on Household Chacteristics

Effect	Estimate	Standard Error	P value
Intercept	10011.0	850.7	<.0001
Male	-46.7	93.1	0.6160
Non-Hispanic White	-947.1	112.1	<.0001
Non-Hispanic Black	275.5	132.9	0.0382
Non-Hispanic Asian	-1075.0	194.3	<.0001
Non-Hispanic Other races	259.6	235.5	0.2702
Less high school	4002.3	805.8	<.0001
High school	1973.6	779.5	0.0114
Some college	1344.1	839.4	0.1093
College	1279.3	897.3	0.1540
Never Married	296.4	130.9	0.0235
Previously married	990.7	106.3	<.0001
Disability	1165.7	81.4	<.0001
Urban	709.0	85.6	<.0001
Home Owner	-5625.1	84.8	<.0001
Residental Property Value (per $10,000)	-37.4	1.4	<.0001
Tract Median Household Income (per $10,000)	-174.0	18.9	<.0001
Tract Median Property Value (per $10,000)	-33.7	3.5	<.0001
Sex x marital status	Yes		
Age x education	Yes		
Age	Yes		
Household Income	Yes		

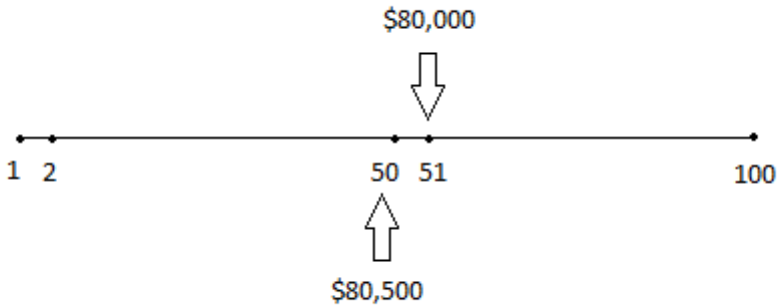
Source: Survey of Income and Program Participation, 2014 Panel, Wave 1.

Converting back to Amounts

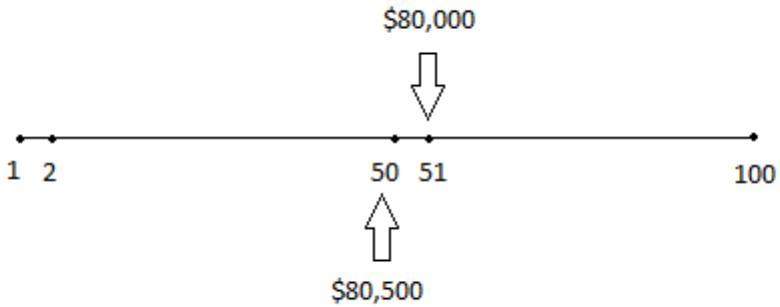


- Original distribution has net worth values associated with every rank. Suppose there were 100 SIPP households.

Converting back to Amounts

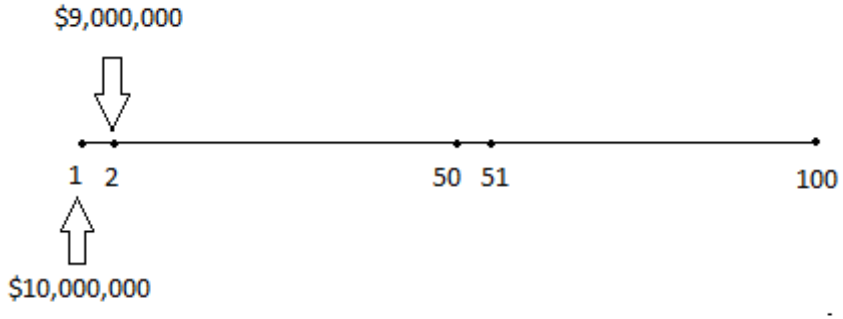


Converting back to Amounts



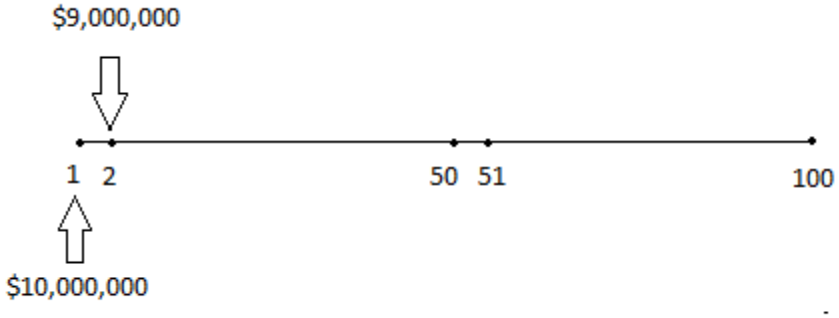
- Suppose an ACS household has a predicted rank value of $\hat{Y}$ = 50.5.
- The associated net worth assigned to that household would be 0.5*(80,500)+0.5*(80,000) = $80,250.

Converting back to Amounts



- Now suppose an ACS household has a predicted rank value of $\hat{Y}$ = -1.
- We used linear extrapolation outside the distribution. This assumption should compress the distribution in the extreme tails.

Converting back to Amounts



- In this case, that would mean that the associated net worth assigned to the household with a predicted rank of -1 would be $12,000,000.
- (10M-9M)*(1 – (-1)) + 10M = $12M

Results

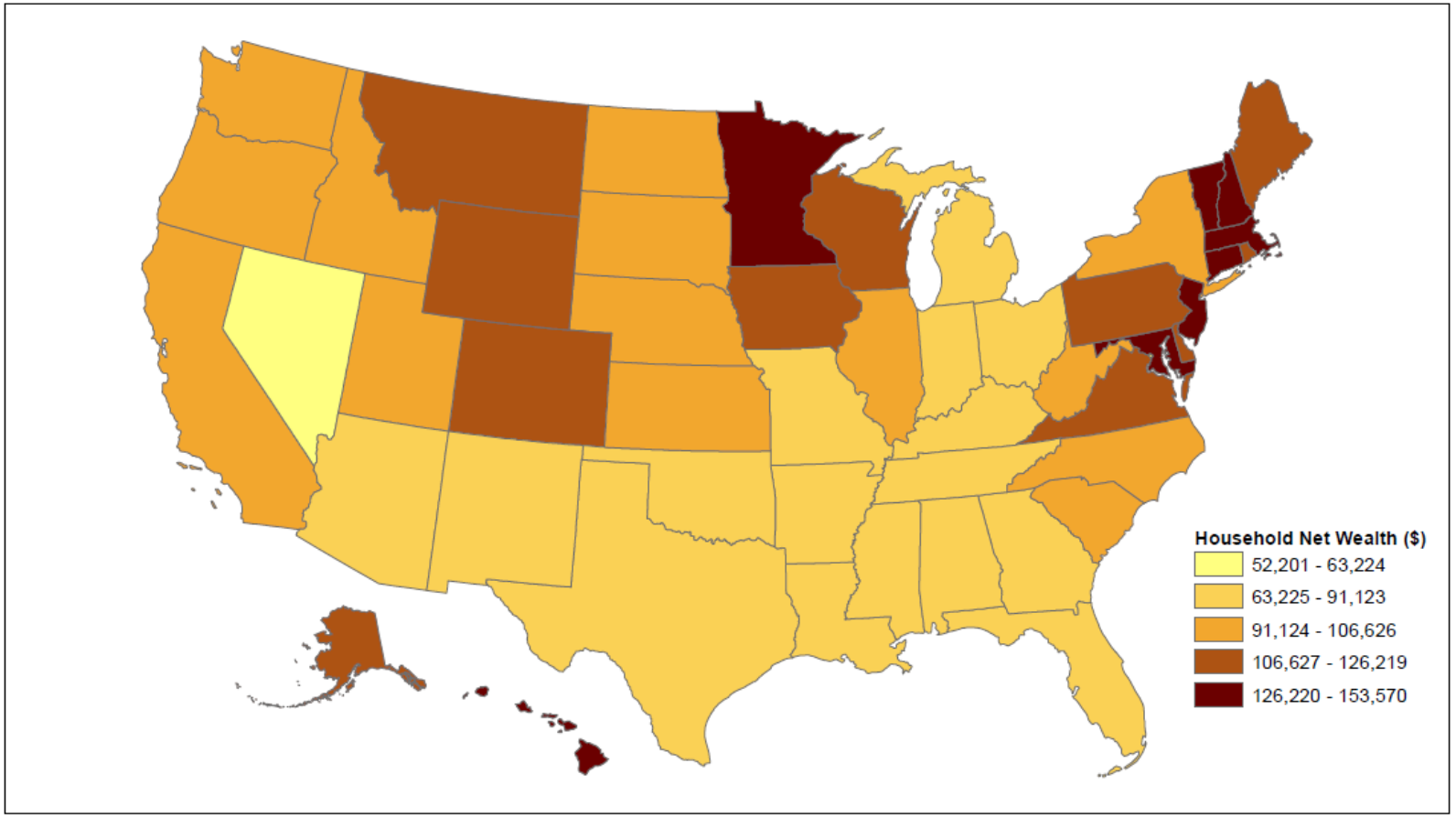
Table 3.
Net Worth by State

	Net Worth	Mean Net Worth	Home Value		Net Worth	Net Worth	Home Value
United States	**96,679**	**2,561,365**	**173,900**	Missouri	91,123	630,802	133,200
Alabama	83,349	621,898	122,700	Montana	112,580	1,210,327	190,100
Alaska	120,365	988,504	254,000	Nebraska	96,347	381,617	132,700
Arizona	79,785	1,371,127	166,000	Nevada	63,224	1,181,840	165,300
Arkansas	78,554	446,046	109,500	New Hampshire	148,468	1,461,193	233,300
California	96,190	8,452,846	373,100	New Jersey	143,831	4,257,367	307,700
Colorado	118,180	2,381,632	240,500	New Mexico	88,135	1,268,174	159,200
Connecticut	147,278	6,718,527	267,000	New York	100,543	5,584,790	277,600
Delaware	126,219	1,728,596	226,200	North Carolina	93,956	1,116,113	154,300
District of Columbia	52,201	11,153,890	470,500	North Dakota	103,615	438,364	155,400
Florida	88,938	1,760,407	153,300	Ohio	87,717	418,669	127,000
Georgia	78,710	956,223	141,600	Oklahoma	82,256	380,345	116,500
Hawaii	153,570	8,070,434	500,000	Oregon	93,621	815,600	229,700
Idaho	95,389	761,704	159,000	Pennsylvania	113,131	1,073,438	164,200
Illinois	102,768	1,612,807	169,600	Rhode Island	108,967	1,917,104	232,300
Indiana	90,247	431,133	122,200	South Carolina	93,925	1,234,139	139,200
Iowa	108,512	407,859	126,900	South Dakota	99,726	804,990	138,400
Kansas	96,608	564,284	129,700	Tennessee	87,508	776,648	140,300
Kentucky	87,998	551,148	120,900	Texas	78,825	1,220,117	132,000
Louisiana	86,574	588,047	140,300	Utah	104,950	1,104,458	211,400
Maine	115,971	763,743	172,800	Vermont	141,716	1,367,707	218,300
Maryland	136,853	4,882,869	280,200	Virginia	119,459	4,240,759	239,300
Massachusetts	148,838	4,690,209	327,200	Washington	106,626	1,800,999	250,800
Michigan	87,983	555,774	117,500	West Virginia	92,262	401,557	103,200
Minnesota	133,224	851,740	180,100	Wisconsin	111,986	594,762	163,000
Mississippi	75,772	511,858	97,500	Wyoming	119,763	1,178,441	195,500

Source: Columns (1) and (2), modeled estimates of net worth from the American Community Survey, 2013. Column (3), American Community Survey, 2013.

Results

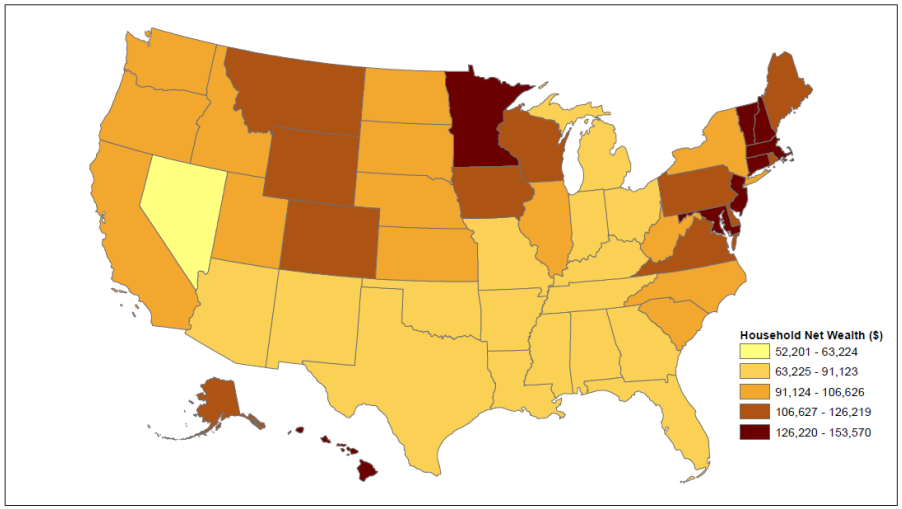
Model-based Median Household Net Worth By State, ACS2013



U.S. Median: $96,679

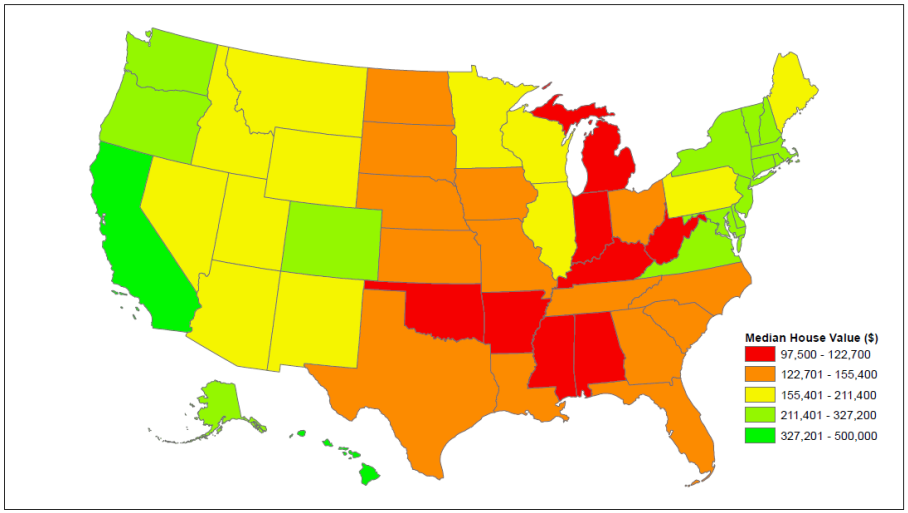
Comparison

Model-based Median Household Net Worth By State, ACS2013



U.S. Median: $96,679

Median House Value By State, ACS2013



U.S. Median: $173,900

Results

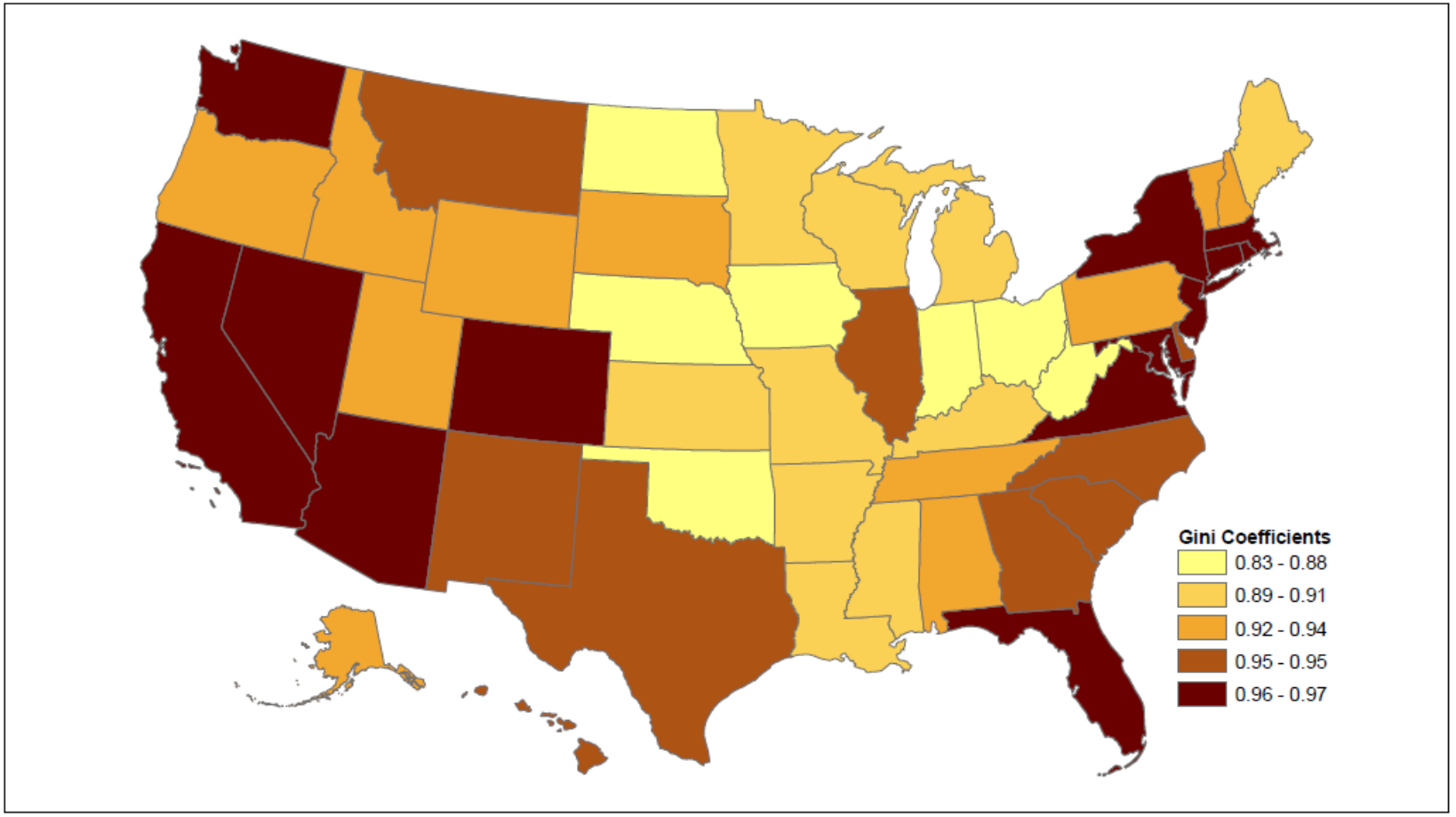
Table 5.
Distribution of Net Worth from Modeled and Survey Estimates

Percentile	ACS Modeled Estimates	SCF Estimates
10	1,250	-2,072
20	6,826	4,261
30	27,921	14,739
40	64,085	38,043
50	96,740	81,049
60	132,611	146,952
70	173,829	245,750
80	233,532	425,809
90	365,139	939,123

Source: Source: Column (1), modeled estimates of net worth from the American Community Survey, 2013. Column (2), Author's calculations from the Survey of Consumer Finances, 2013.

Results

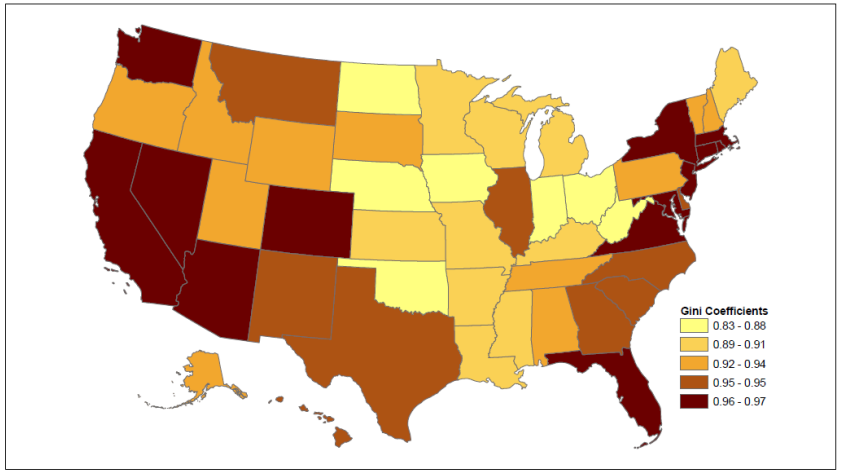
Model-based Wealth Gini Coefficients by State, ACS2013



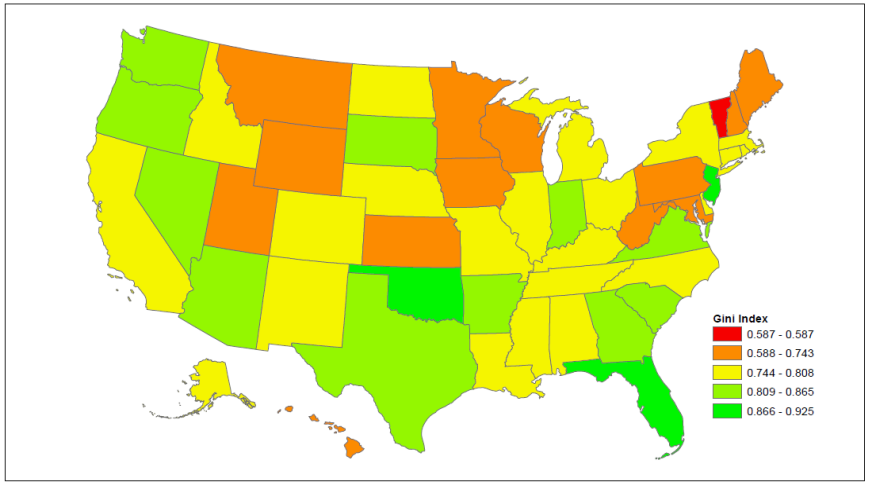
U.S.: 0.97

Comparison

Model-based Wealth Gini Coefficients by State, ACS2013



Household Income Gini Coefficient By State, ACS2013



From Noss, 2014. "Household Income: 2013." *American Community Survey Briefs.*

U.S.: 0.481

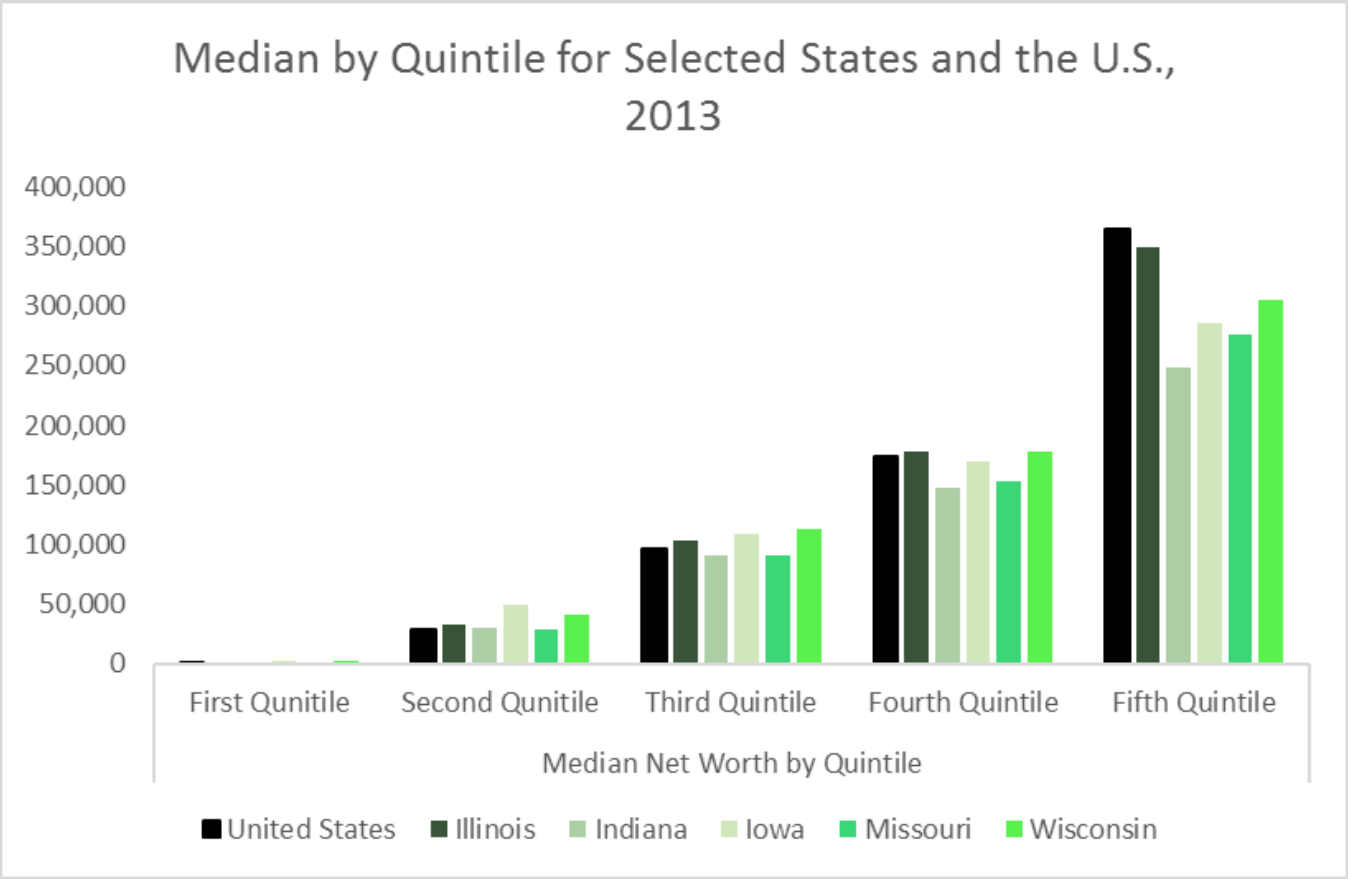
Distributions

Table 4.
Measures of Inequality by State

					Median Net Worth by Quintile				
	Gini Coefficient	90/10 Wealth Ratio	90/50 Wealth Ratio	50/10 Wealth Ratio	First Qunitile	Second Qunitile	Third Quintile	Fourth Quintile	Fifth Quintile
United States	**0.97**	**292.1**	**3.8**	**77.4**	**1,250**	**27,914**	**96,739**	**173,829**	**365,139**
Illinois	0.95	263.7	3.4	77.8	1,325	32,748	103,133	177,441	349,304
Indiana	0.88	498.9	2.8	181.3	498	30,155	90,241	147,754	248,429
Iowa	0.83	149.8	2.6	57.0	1,908	49,236	108,705	170,002	285,783
Missouri	0.91	301.9	3.0	99.7	916	28,002	91,333	153,392	276,427
Wisconsin	0.89	181.3	2.7	66.7	1,682	40,396	112,205	177,820	305,201

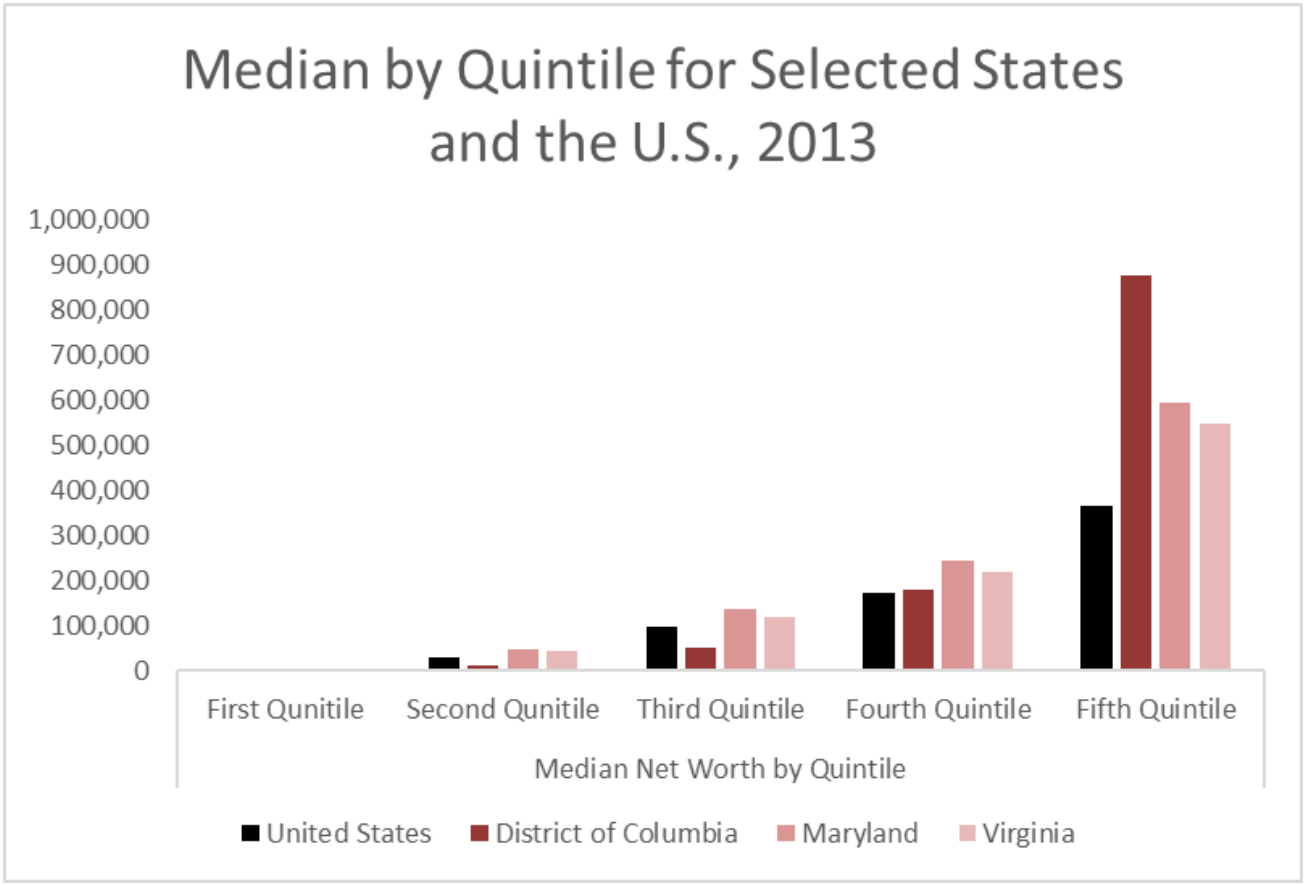
Source: Modeled estimates of net worth from the American Community Survey, 2013

Distributions



Source: Modeled estimates of net worth from the American Community Survey, 2013

Distributions



Source: Modeled estimates of net worth from the American Community Survey, 2013

Next Steps

- Adding additional data sources
  - Plan to seek approval from other federal agencies to include data from 1040s, 1099s, detailed earnings record, and other sources
- Refine the model

Next Steps

- Expand to additional geographies, small populations
- Possibly predict additional components of wealth
- Expand the method to other years – look at changes over time by state.
- Broaden the use of small area estimation with SIPP

Conclusion

- First step in creating state level estimates of net worth
- Preliminary results indicate that there is considerable variation in wealth levels across the country
- Results also indicate differences in inequality across the country

Contact Info

Rebecca Chenevert
Rebecca.L.Chenevert@census.gov

Alfred Gottschalck
Alfred.O.Gottschalck@census.gov

Mark Klee
Mark.A.Klee@census.gov

Xingyou Zhang
Xingyou.Zhang@census.gov