Unequal Recovery, Labor Market Polarization, Race, and 2016 U.S. Presidential Election

Maoyong Fan and Anita Alves Pena[1]

Abstract:

Growing income inequality and labor market polarization and increasing racial and demographic tensions have characterized economic and social conditions in the period since the Great Recession. Donald Trump's U.S. presidential campaign platform highlighted protectionism of U.S.-born workers. We relate changes in the Republican vote share between 2012 and 2016 to demographic and economic characteristics of U.S. counties and to significantly shifted rates of returns on these characteristics that reflect structural changes in how community attributes affect elections.

Keywords: Presidential Election; Unequal Recovery; Decomposition; Republican

Declarations of interest: none

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How did Donald Trump's unprecedented presidential victory as a businessman with little political experience running under a slogan of "Make America Great Again" relate to economic factors such as growing income inequality and labor market polarization in the U.S.? Or, was the election outcome more related to ongoing and compounded racial and demographic tensions such as those debated in relation to the 2008 presidential election (Mas and Moretti, 2009; Pasek et al., 2009)? Academic literature and stories in the popular press have documented an increasing spread in the income distribution and a dilution of the middle class since the Great Recession (e.g., Meyer and Sullivan, 2013; Cynamon and Fazzari, 2015), and likewise have noted the specific importance of local dynamics for understanding changing spatial inequality (e.g. Economic Innovation Group, 2016; Holmes and Berube, 2016).

Further articles on labor markets have described worker substitutions and changing skill needs in industries sensitive to technological change and mechanization of production processes reducing the availability of jobs for people in the lower end of the skill distribution (e.g., Autor and Dorn, 2013). Polarization therefore is seen as a feasible explanation of increasing earnings inequality over time as employment becomes concentrated in services on one hand and in non-routine high skill occupations on the other, squeezing out occupations traditionally in the middle (e.g., Rendall and Weiss, 2016).

Concurrent to these economic dynamics, the 2012 to 2016 time period was characterized by racial and ethnic tensions in local communities. These tensions, coupled with Trump's campaign platform highlighting protectionism of U.S.-born workers, provided a setting for a seemingly unpredictable election (Collingwood, 2016). We provide an ex post decomposition of

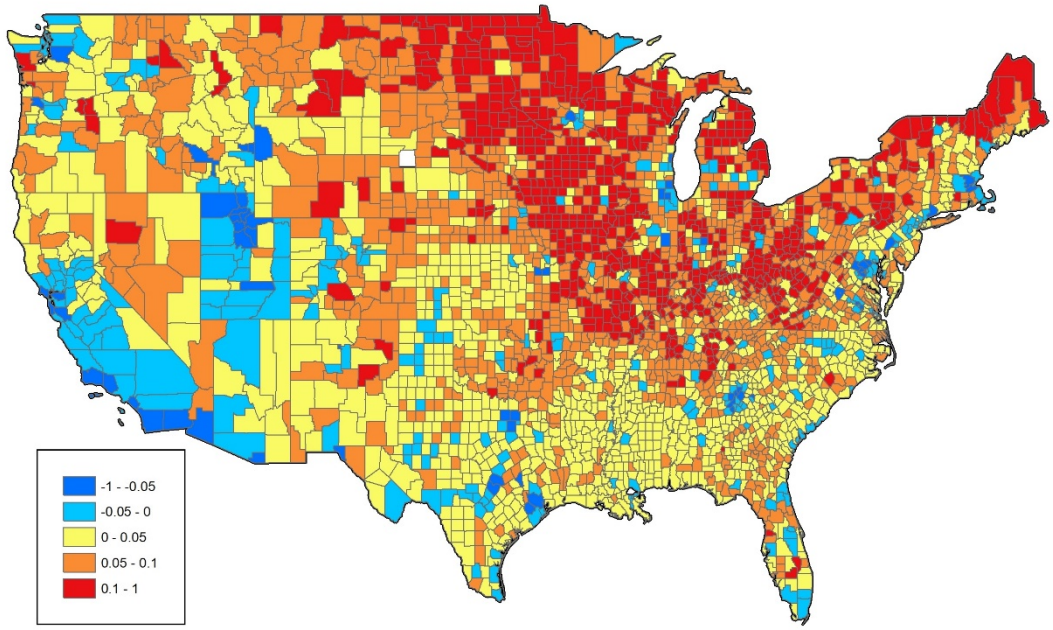
the relative importance of differences in observed economic indicators capturing inequality and polarization of continued, yet unequal, recovery following the Great Recession, and of changes in demographic distributions which may reflect economic class and racial pressures reaching a critical tipping point in 2016 and manifesting in Donald Trump's win. We compare these differences to changing rates of returns of economic and demographic variables, and highlight the importance of structural change in recent election dynamics.

I. Spatial Patterns and the Republican Shift in the 2016 Electorate

County-level party share data from Dave Leip's Atlas of U.S. Presidential Elections reveals substantial spatial variation. We illustrate patterns in the difference between the Republican presidential vote share in 2012 and 2016 in Figure 1. Republican vote share in 2012 and in 2016 separately are depicted in Appendix Figures A1 and A2 respectively, and Figure A3 documents county switch behavior. Counties with higher Republican shares in 2016 than in 2012 tend to be located in the Midwest and northeastern U.S. Counties with higher Democratic shares over this period tend to be the southwest.

We estimate Republican vote share regressions for 2012 and for 2016 and decompose differences. Republican vote share is modeled as function of the economic variables of real median household income ($10,000s, 2016 USD), and poverty and unemployment rates (as percentages). County median income and poverty rates come from the Small Area Income and Poverty Estimates of the Census. Unemployment rates are from the Bureau of Labor Statistics, Local Area Unemployment Statistics. We also include percentages employed in manufacturing and in services are from the American Community Survey (ACS).

Figure 1. Change in Republican Vote Share in Presidential Elections from 2012 until 2016



Source: Dave Leip's Atlas of U.S. Presidential Elections and authors' calculations.

Previous political science papers support hypotheses that income distributions are related to election outcomes. Weatherford (1978), for example, argues that the lower income class was the most responsive in election behavior during and after recession and discussed what he referred to as "status polarization" (p. 933). Other papers document positive relationships between per capita income and incumbent success (e.g., Markus, 1988), between urban status and Republican vote indicating the importance of local space (Kim et al., 2003), and between economic inequality as measured by household-level Gini coefficients and Democratic vote (Galbraith and Hale, 2008).

Since we are concerned with how economic variables relative to demographic ones relate to presidential election outcomes, we include the percentages of county populations that are immigrant, that are non-Hispanic white, and that are college educated from the ACS. Finally, we

include life expectancy from the Institute for Health Metrics and Evaluation to proxy for health and physical wellbeing as there are substantial differences across U.S. counties. Finally, we construct an estimate of the county-level voter turnout rate using information on total votes cast from Dave Leip and population estimates for those 18 and older from the Census Bureau.

Table 1—County-level Economic and Demographic Characteristics

	2012		2016	
	Mean	S.D.	Mean	S.D.
Republican Share (%)	60.79	15.01	66.68	16.13
Median Household Income ($10,000)	4.68	1.19	4.91	1.25
Poverty Rate (%)	17.22	6.55	16.29	6.44
Unemployment Rate (%)	7.83	2.75	5.22	1.81
Service Occupation (%)	17.55	3.57	18.26	3.57
Manufacturing Industry (%)	12.68	7.20	12.23	7.04
Immigrant (%)	4.34	5.43	4.59	5.60
Non-Hispanic White (%)	79.05	19.40	77.57	19.63
College or Higher (%)	19.01	8.67	20.39	9.01
Life Expectancy (years)	77.70	2.25	77.75	2.37
Turnout Rate (%)	56.60	9.84	58.09	9.50
Counties	3,109		3,109	

Summary statistics for variables across counties are presented in Table 1. Comparison of 2012 to 2016 county characteristics is consistent with a period of economic recovery (i.e., decreasing poverty and unemployment, and increasing median household income). Data are broadly consistent with the economic literature's polarization hypotheses as evidenced by suggestive patterns such as increases on average in the service occupation category. Simultaneously, average immigrant percentage across counties is increasing while non-Hispanic white percentage is decreasing, and the college educated percentage is increasing on average.

Average life expectancy is relatively constant, though there is significant spatial variation. Appendix figures (A4-A13) illustrate geographic changes over time in independent variables.

Compositional changes in levels of observable county characteristics tell part of the election's story. Structural changes relating to rates of return of these characteristics toward vote share also determine how the elected played out. We therefore separate these components while isolating the impacts of individual economic and demographic drivers.

II. Decomposition of the Change in Republican Favor over Time

Our methodology is an adaptation of decomposition methodologies presented elsewhere (Oaxaca, 1973; Blinder, 1973). We decompose the change in Republican vote share between 2012 and 2016 into components due to changes in the means (levels) of observed economic and demographic variables and changes in the estimated coefficients (rates of return) to economic and demographic factors identifiable in available data. These can be interpreted as explained versus unexplained components of vote shifting.

While patterns in the baseline regressions confirm media perceptions of electoral dynamics (Appendix Table A1), we apply decomposition methodology to these regression results by calculating the contribution of each economic and demographic variable to the increase in the Republican vote share from 2012 to 2016, and present these results in Table 2.

Table 2. Contribution of County-Level Characteristics to Presidential Election Outcomes, 2012-2016

	Change	Effect on Republican's Vote Share	
	(2016-2012)	Explained	Unexplained
	(1)	(2)	(3)
Median Household Income ($10,000)	0.23	-0.09	0.95
		(0.14)	(1.83)
Poverty Rate (%)	-0.93	0.38**	-3.94**
		(0.16)	(1.60)
Unemployment Rate (%)	-2.61	3.27***	0.67
		(0.92)	(1.43)
Service Occupation (%)	0.71	-0.80***	-0.11
		(0.11)	(1.47)
Manufacturing Industry (%)	-0.45	0.30***	-1.47**
		(0.06)	(0.65)
International Immigrant (%)	0.25	0.05*	-0.41
		(0.02)	(0.32)
Non-Hispanic White (%)	-1.48	-0.61***	8.19***
		(0.08)	(1.83)
College or Higher (%)	1.38	-1.17***	-7.50***
		(0.11)	(1.17)
Life Expectancy (years)	0.05	-0.07**	22.68
		(0.03)	(15.90)
Turnout Rate (%)	1.49	-0.43***	-0.48
		(0.13)	(2.85)
Total		0.83	5.05

Note: We conduct Oaxaca-Blinder decomposition and calculate contributions of each indicator. Column (1) shows differences between 2012 and 2016. Column (2) is the contribution to Republican's vote share for the level change in each variable from 2012 to 2016. Column (3) represents unexplained differences. The average Republican vote share increased by 5.88% from 2012 to 2016. *** p<0.01, ** p<0.05, * p<0.1

The first column in Table 2 shows the average of the change of each variable between 2012 and 2016. The second column shows the resulting effect of the change of each variable on the Republican vote share. Nine of ten explanatory variables are statistically significant at

conventional levels. Poverty and unemployment rate impacts on Republican vote share reflect the unequal recovery from the Great Recession. Changes in racial and immigrant compositions also matter in the determination of the Republican outcome, as do distributions of employment across occupations and the demographic and voter participation profiles of communities.

The effects on the Republican vote share of rates of return are presented in column (3). We find that significant changes are most associated with rates of return on the poverty rate, percentage of employment in manufacturing, percentage of a country that is non-Hispanic white, and percentage that is college educated. We find that Non-Hispanic white and college educated percentages have particularly impactful magnitudes in predicting the unexplained portion of the gap between the 2012 and 2016 Republican vote shares. An alternative nonlinear specification of the decomposition is consistent (Appendix Table A2).

III. Conclusion

Previous studies have shown how economic inequality has risen in the U.S. over time and how this process was worsened by the Great Recession and its slow recovery. A trend of polarization has been documented in which job characterized by routine technology have become less available leading to concentrations of employment in both the lowest and highest parts of the income distribution, thus furthering inequality. Concurrently, racial tensions have risen.

This paper provides evidence that the determination of the 2016 electorate may be another consequence of the growing unevenness of the American income distribution and of racial and ethnic conflict at localized geographies. We formalize how both economic and demographic variables matter to the determination of vote shares, and document importance of

structural changes in the contributions of rates of returns of various economic and racial variables in addition to observed changes in levels of community characteristics.

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Online Appendix

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Data

We collected our data from multiple sources. The presidential election data are from Dave Leip's Atlas of U.S. Presidential Elections.[1] The Atlas collected election data from various official sources for presidential and congressional elections at the county level. The Republican vote share is calculated using the number of Republican votes cast over the sum of Republican and Democratic votes cast in a county. Republican win indicator is equal to one if Republican votes are more than Democratic votes. The turnout rate is the sum of total votes cast over the sum of people aged 18 and above. The election data were combined with county-level economic and demographic variables. The economic explanatory variables include: median household income, unemployment rate, poverty rate, manufacturing share of employment; and service share of employment. The demographic variables as share of population include: international immigrants, non-Hispanic white, and college graduates. The main sources of the explanatory variables is the U.S. Census Bureau and Bureau of Labor Statics. The medium household income and poverty rate are from Census Bureau Small Area Income and Poverty Estimates.[2] Unemployment rate is from Bureau of Labor Statistics.[3] Manufacturing share of employment and service share of employment are from American Community Survey (ACS) that is for 5-year period.[4] For example, estimates of 2015 are for the period 2011–15. Population data are from Census Bureau County Population Data by Characteristics.[5] Race, education and international immigration data are also from the ACS. Life expectancy data are from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington.[6]

[1] Data are available online: www.uselectionatlas.org.
[2] Data are available online: https://www.census.gov/programs-surveys/saipe.html.
[3] Data are available online: https://www.bls.gov/lau/#cntyaa.
[4] Data are available online: https://www.census.gov/programs-surveys/acs/.
[5] Data are available online: https://www.census.gov/data/tables/2016/demo/popest/counties-detail.html.
[6] Data are available online: http://ghdx.healthdata.org/us-data.

Table A1. Predictors of Republican Vote Share in Presidential Elections, 2012-2016

	2012	2016	Pooled
	(1)	(2)	(3)
Median Household Income ($10,000)	-0.48	-0.28	-0.00
	(0.68)	(0.59)	(0.58)
Poverty Rate (%)	-0.29	-0.52***	-0.32*
	(0.18)	(0.17)	(0.18)
Unemployment Rate (%)	-1.38***	-1.32***	-1.89***
	(0.35)	(0.31)	(0.23)
Gini Coefficient	-1.08***	-1.09***	-0.96***
	(0.10)	(0.09)	(0.08)
Service Occupation (%)	-0.60***	-0.72***	-0.63***
	(0.08)	(0.08)	(0.08)
Manufacturing Industry (%)	0.22**	0.13	0.23***
	(0.10)	(0.09)	(0.08)
International Immigrant (%)	0.36***	0.47***	0.41***
	(0.04)	(0.04)	(0.04)
Non-Hispanic White (%)	-0.65***	-1.03***	-0.86***
	(0.07)	(0.06)	(0.06)
College or Higher (%)	-1.55***	-1.26***	-1.67***
	(0.46)	(0.34)	(0.36)
Life Expectancy (years)	-0.29***	-0.30***	-0.24***
	(0.08)	(0.06)	(0.07)
Turnout Rate (%)	224.98***	211.45***	233.24***
	(42.83)	(34.53)	(35.24)
Constant			
	3,109	3,109	6,218
Counties			
R-squared			

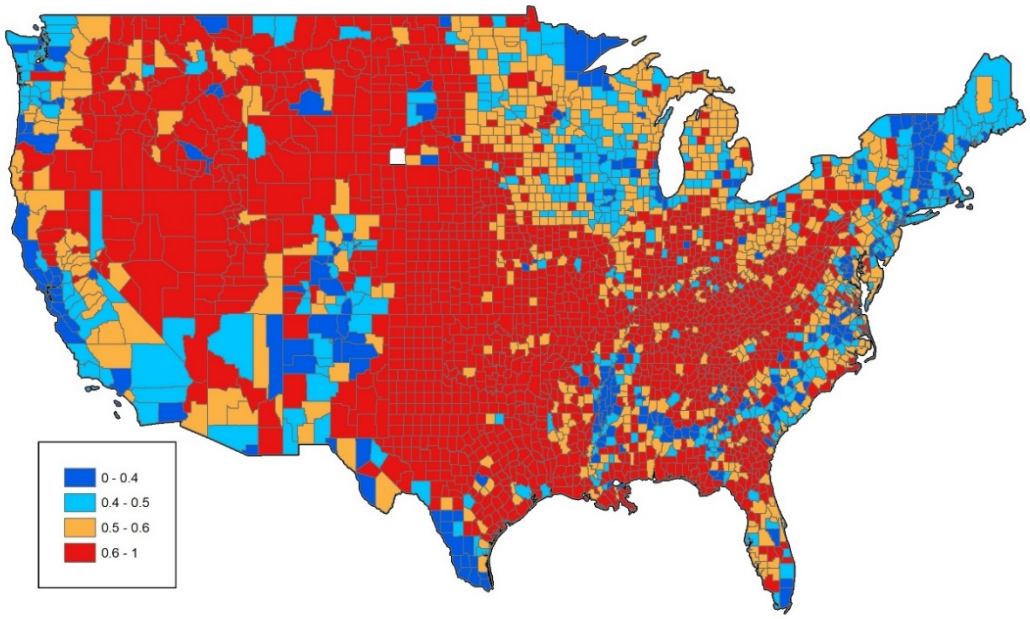
Note: Dependent variable in columns (1)-(3) is the share of votes of the Republican candidates (scale from 0 to 100). Standard errors clustered at the state level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table A2. Predictors of Republican Vote Share in Presidential Elections, 2012-2016

	Characteristic (1)	Percent (%) (2)
Republican's Winning Rate in 2012	0.7774	
Republican's Winning Rate in 2016	0.8427	
2012/2016 Winning Gap	0.0653	
Median Household Income ($10,000)	0.0031*	4.75
	(0.0018)	
Poverty Rate (%)	0.0075***	11.49
	(0.0024)	
Unemployment Rate (%)	0.0644***	98.62
	(0.0055)	
Service Occupation (%)	-0.0035***	-5.36
	(0.0008)	
Manufacturing Industry (%)	0.0118***	18.07
	(0.0010)	
International Immigrant (%)	-0.0000	0.00
	(0.0002)	
Non-Hispanic White (%)	-0.0020	-3.06
	(0.0015)	
College or Higher (%)	-0.0357***	-54.67
	(0.0017)	
Life Expectancy (years)	-0.0134***	-20.52
	(0.0022)	
Turnout Rate (%)	-0.0150***	-22.97
	(0.0017)	
Sum, All Variables		26.34

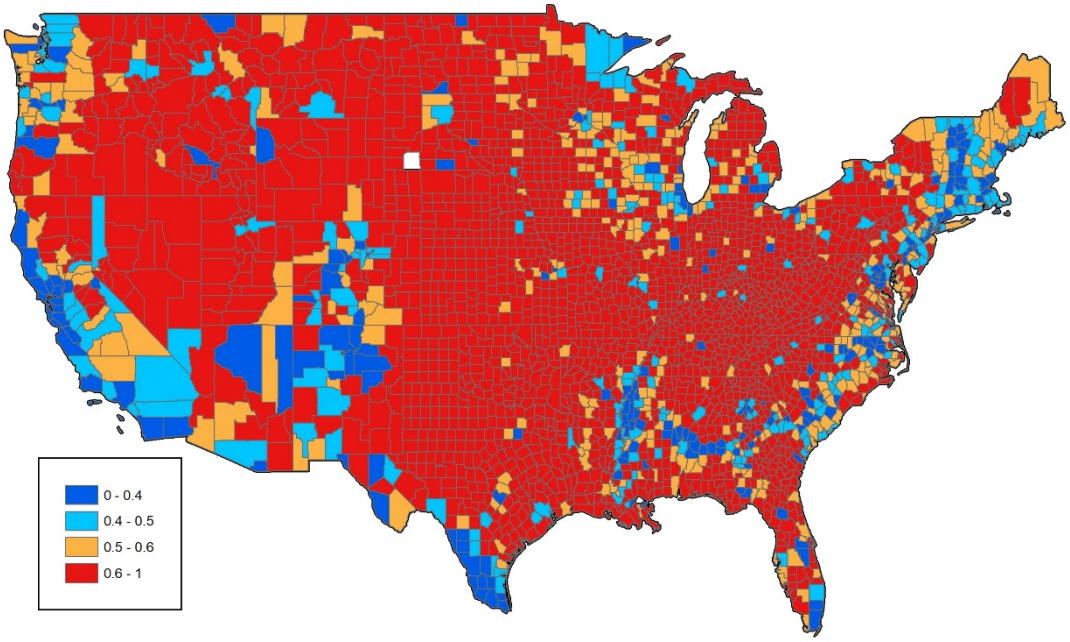
Note: We conduct non-linear decomposition and calculate the contribution of each indicator. The dependent variable is a binary variable with 1 indicating Republican's victory in the county. *** p<0.01, ** p<0.05, * p<0.1

Figure A1. 2012 Republican Vote Share in Presidential Election



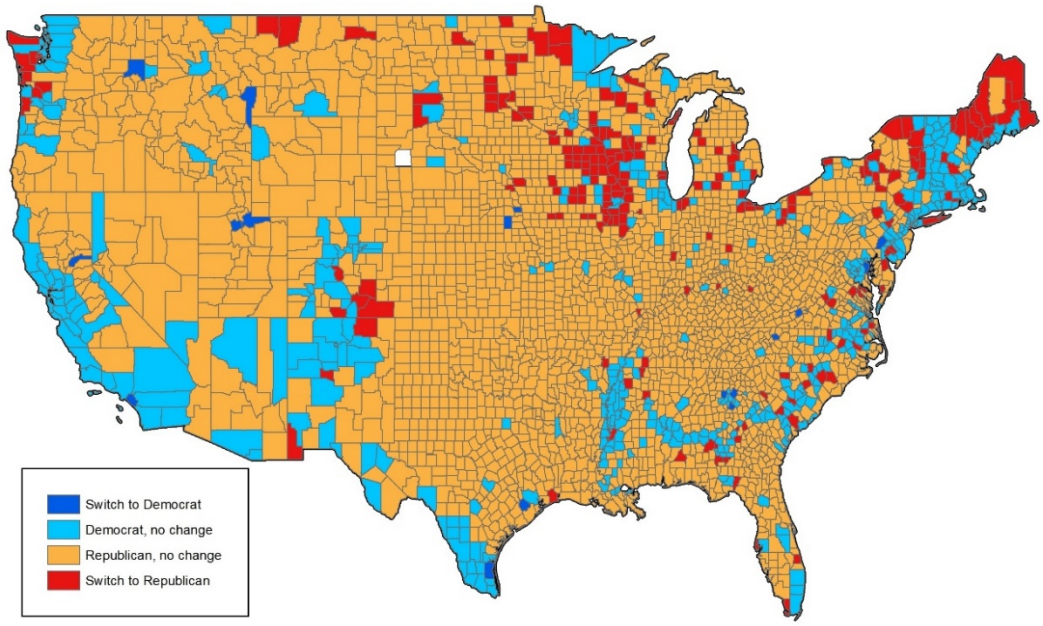
Source: Dave Leip's Atlas of U.S. Presidential Elections and authors' calculations.

Figure A2. 2016 Republican Vote Share in Presidential Election



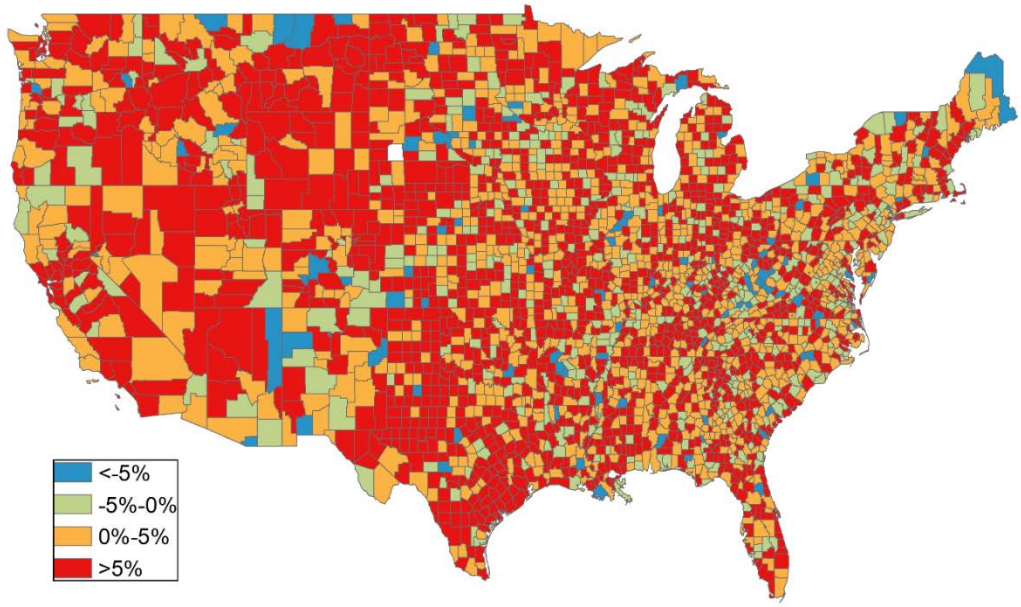
Source: Dave Leip's Atlas of U.S. Presidential Elections and authors' calculations.

Figure A3. County Switch Behavior from 2012 to 2016 in Presidential Election



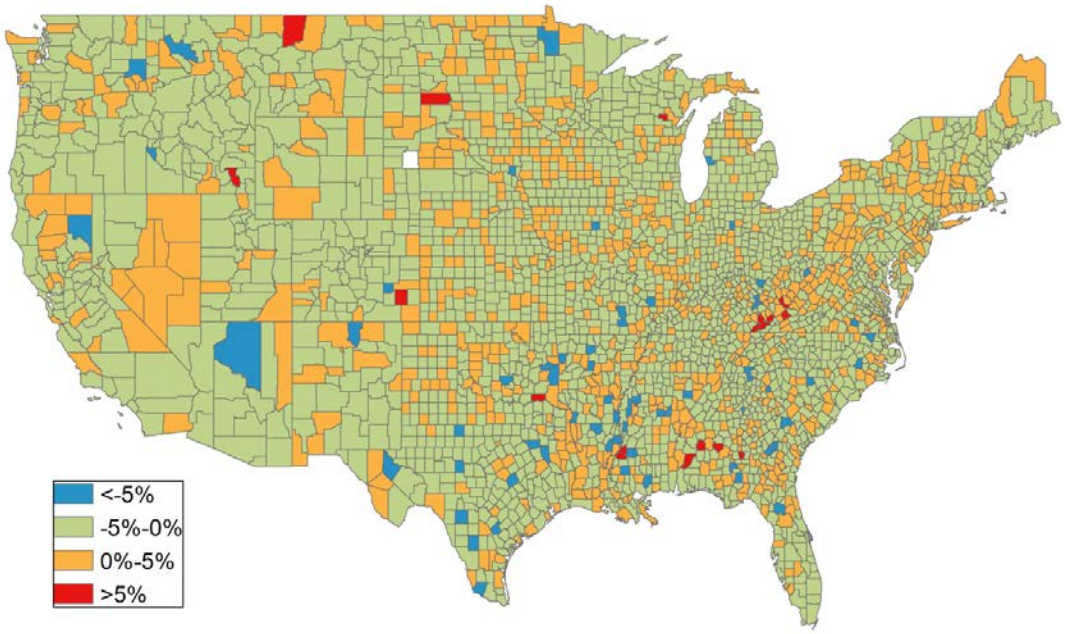
Source: Dave Leip's Atlas of U.S. Presidential Elections and authors' calculations.

Figure A4. Change (%) of Real County Median Household Income between 2012 and 2016



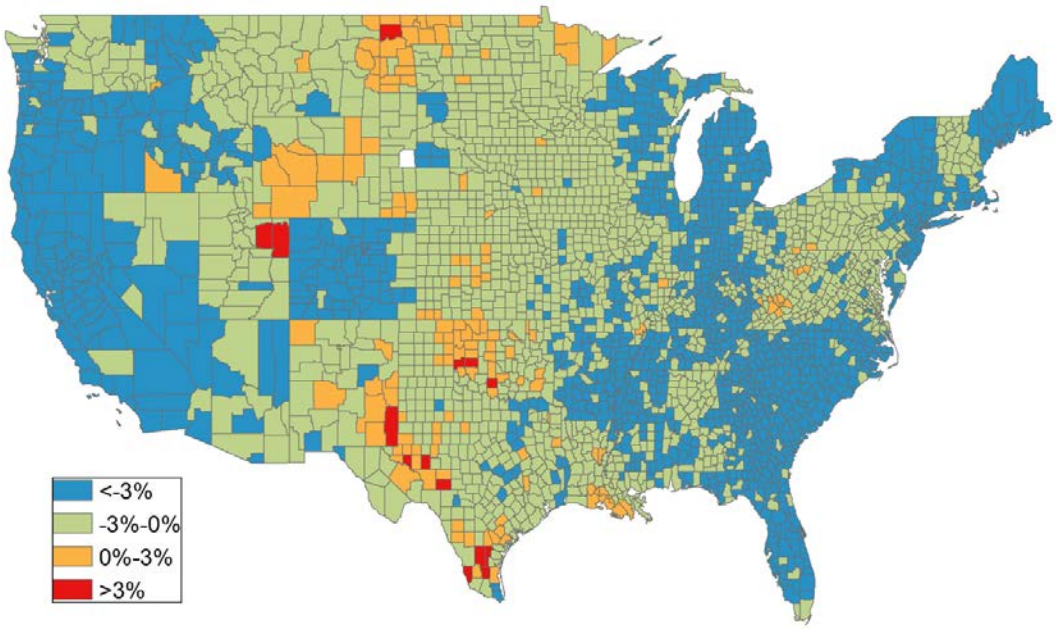
Source: U.S. Census Bureau and authors' calculations.

Figure A5. Change (%) of County Poverty Rate between 2012 and 2016



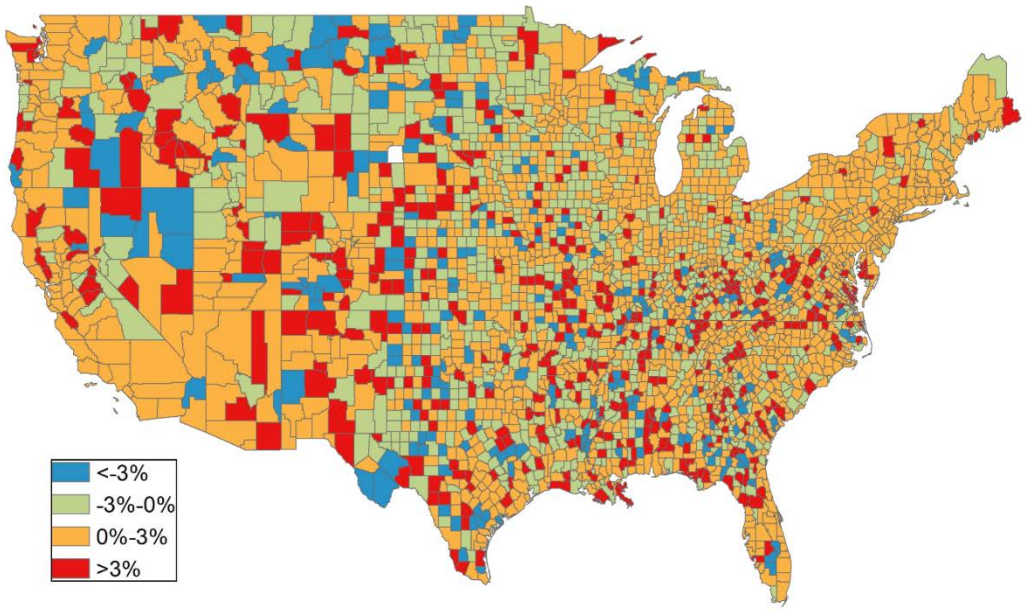
Source: U.S. Census Bureau and authors' calculations.

Figure A6. Change (%) of County Unemployment Rate between 2012 and 2016



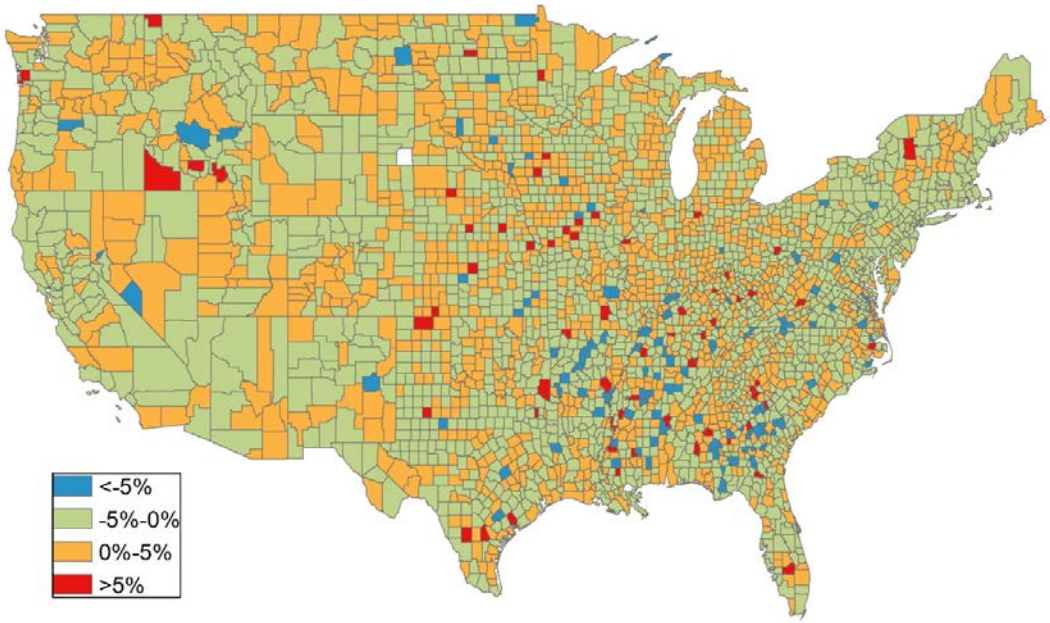
Source: U.S. Bureau of Labor Statistics and authors' calculations.

Figure A7. Change (%) of County Service Occupation Share between 2012 and 2016



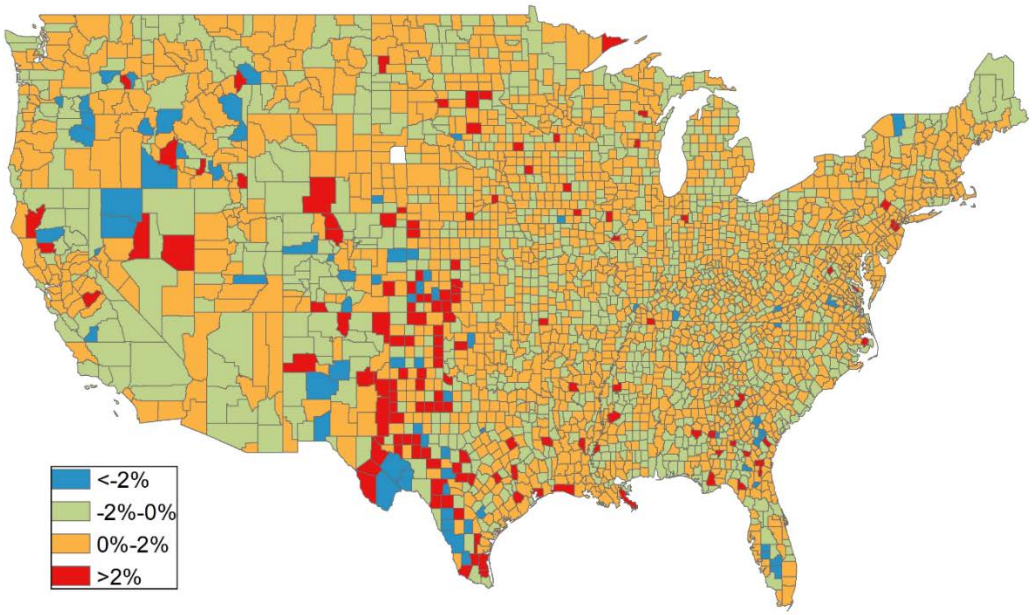
Source: U.S. Census Bureau and authors' calculations.

Figure A8. Change (%) of County Manufacturing Industry Employment Share between 2012 and 2016



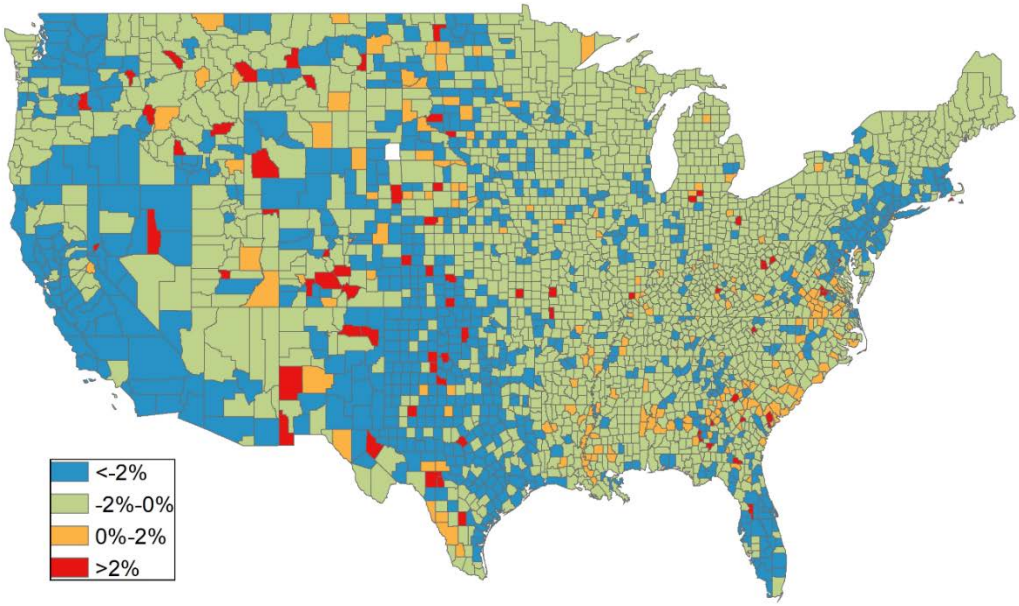
Source: U.S. Census Bureau and authors' calculations.

Figure A9. Change (%) of International Immigrant Share between 2012 and 2016



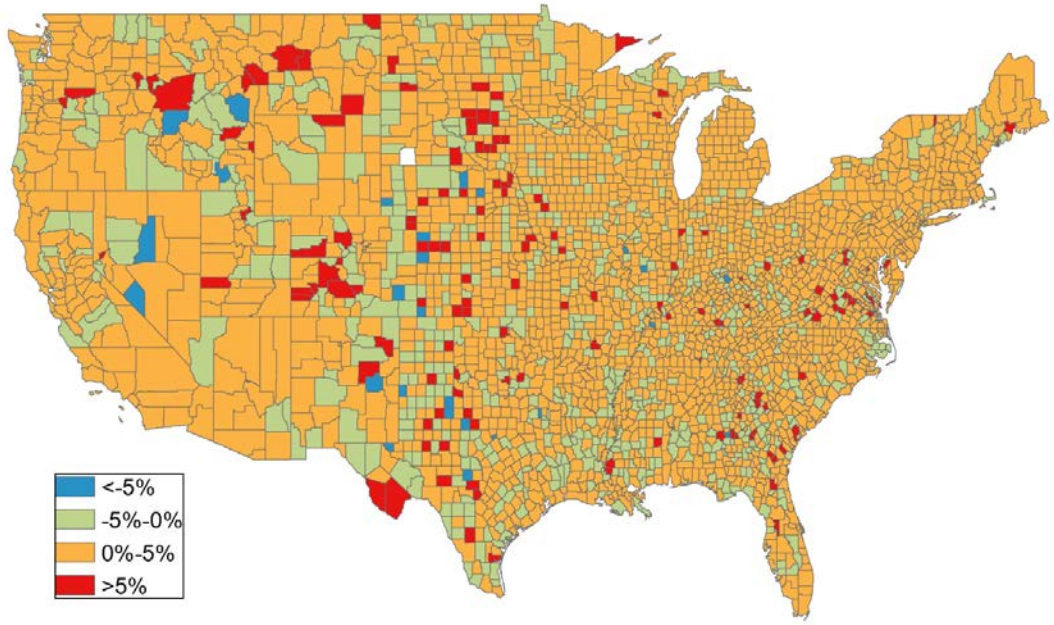
Source: U.S. Census Bureau and authors' calculations.

Figure A10. Change (%) of Non-Hispanic White Share between 2012 and 2016



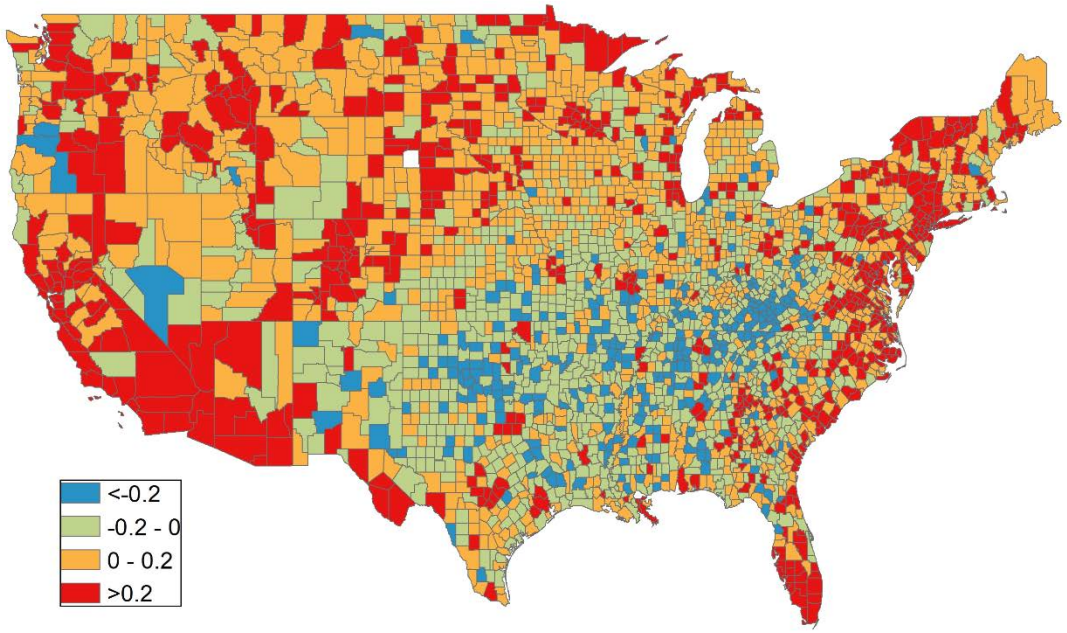
Source: U.S. Census Bureau and authors' calculations.

Figure A11. Change (%) of College (and Higher) Graduates Share between 2012 and 2016



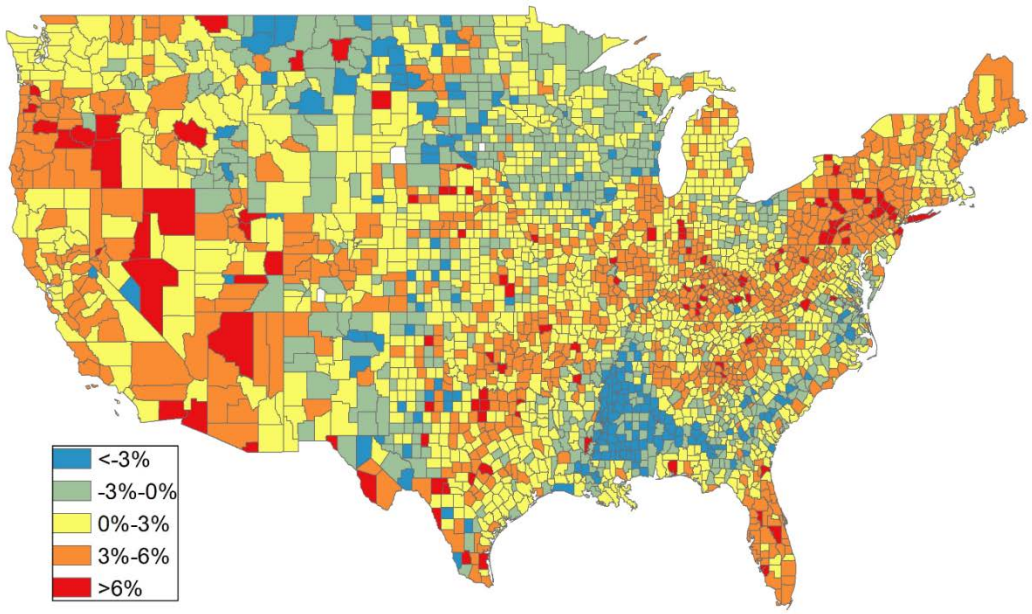
Source: U.S. Census Bureau and authors' calculations.

Figure A12. Change of Life Expectancy (years) between 2012 and 2016



Source: Institute for Health Metrics and Evaluation (IHME) and authors' calculations.

Figure A12. Change (%) of Turnout Rate between 2012 and 2016



Source: Dave Leip's Atlas of U.S. Presidential Elections, U.S. Census, and authors' calculations.