

---

*The Geography of Desperation in America:  
Labor Force Participation, Mobility Trends, Place, and Well-being*

*Federal Reserve Bank of Boston 63<sup>rd</sup> Economic Conference  
A House Divided: Geographic Disparities  
in Twenty-First Century America*

*October 4-5, 2019*

Carol Graham, The Brookings Institution / University of Maryland

and

Sergio Pinto, University of Maryland / The Brookings Institution

## The problem and the puzzles

---

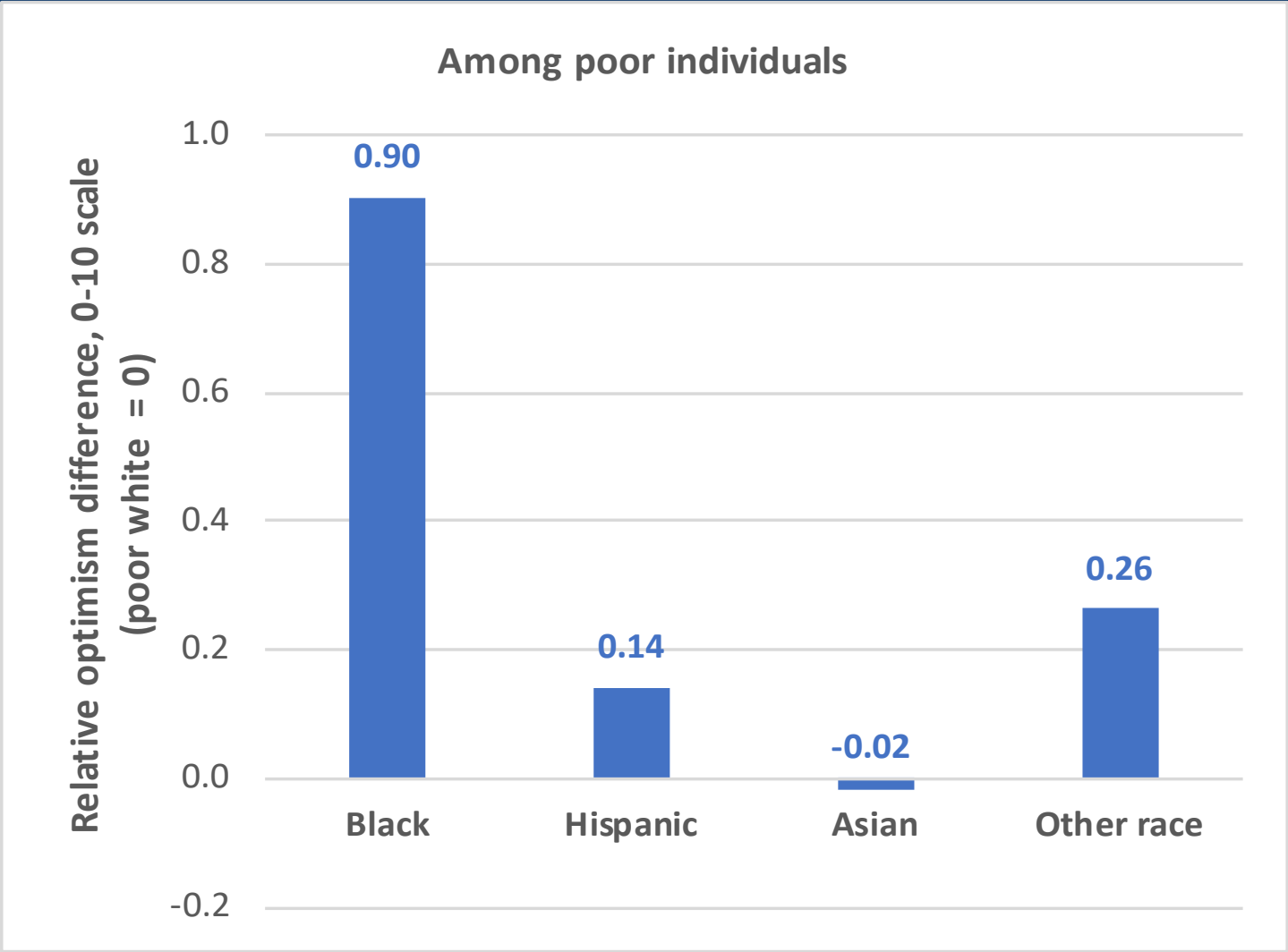
- Standard economic indicators tell a story of prosperity in America – booming stock markets, record low levels of unemployment, low inflation, relatively high GDP growth
- Yet these indicators co-exist with 15-20% of prime age workers out of the labor force and significant sectors of society dying prematurely from preventable deaths (suicides, opioid and other drug overdoses, alcohol related diseases – “deaths of despair”)
- Average life satisfaction levels in the U.S. are lower than in most countries of comparable income levels (the US has dropped 10 points to #17 in the WHR rankings in the last decade), and we have high levels of inequality of well-being
- Americans report more pain on a daily basis than 30 countries of comparable and lower levels of income
- Some *puzzles*: desperation and the associated trends in mortality, which are concentrated among the less than college educated, are *much* higher among whites than minorities, who remain optimistic about the future
- Geographic dispersion: racially and economically diverse urban places on the coasts are much more optimistic and have, on average, much lower instances of premature mortality. Trends in both desperation and death are much higher in the heartland, particularly in declining manufacturing and mining communities

## What we know

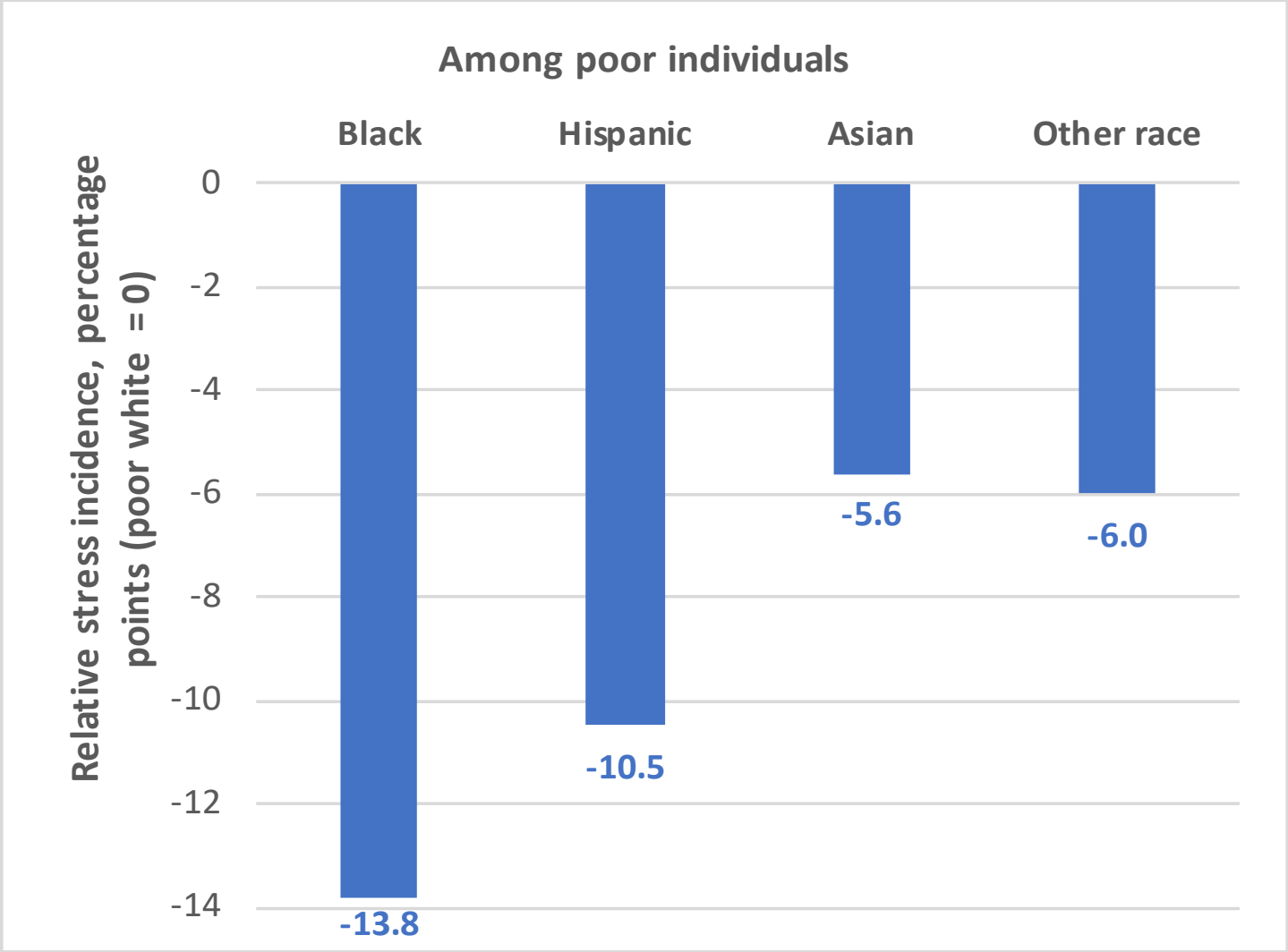
---

- Our earlier work matches trends in well-being/ill-being (lack of hope, worry, reported pain) with those on deaths of despair at the level of individuals and place (counties, MSAs)
- Minorities display much higher levels of optimism and lower levels of stress and worry (figures), and are much less likely to die of deaths of despair; new panel data suggests that the optimism of poor minorities lasts over time
- Broader geographic patterns also reflect in our well-being metrics (figures)
- Monnat and Brown (2017) find that counties with higher levels of poverty, obesity, deaths due to drugs, alcohol and suicide, reliance on disability, and percent of non-Hispanic whites are the same places with high levels of Trump voting
- In newer work (based on PSID and respondents born between 1935-45), we find that those who reported to be optimistic in their 20's were much more likely to be alive in 2015 than non-optimists. Blacks and women increased in their reported optimism in the 1970's; the one group that experienced decreases in optimism were less than high school/college educated whites; our new pilot surveys suggest robust links between hope and investments in the future in deprived communities

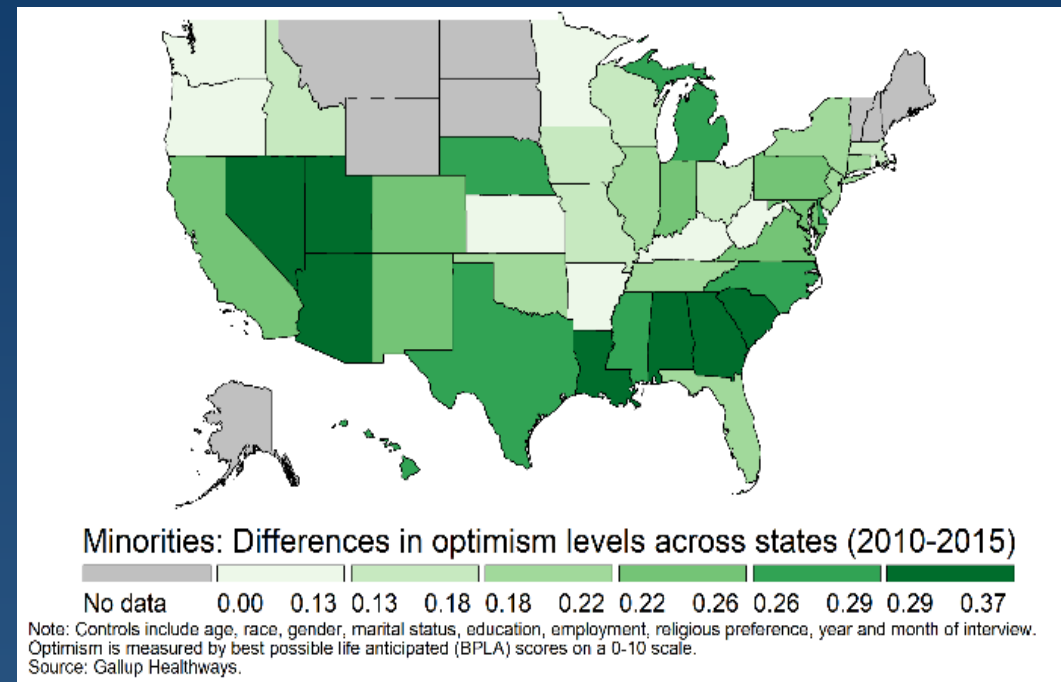
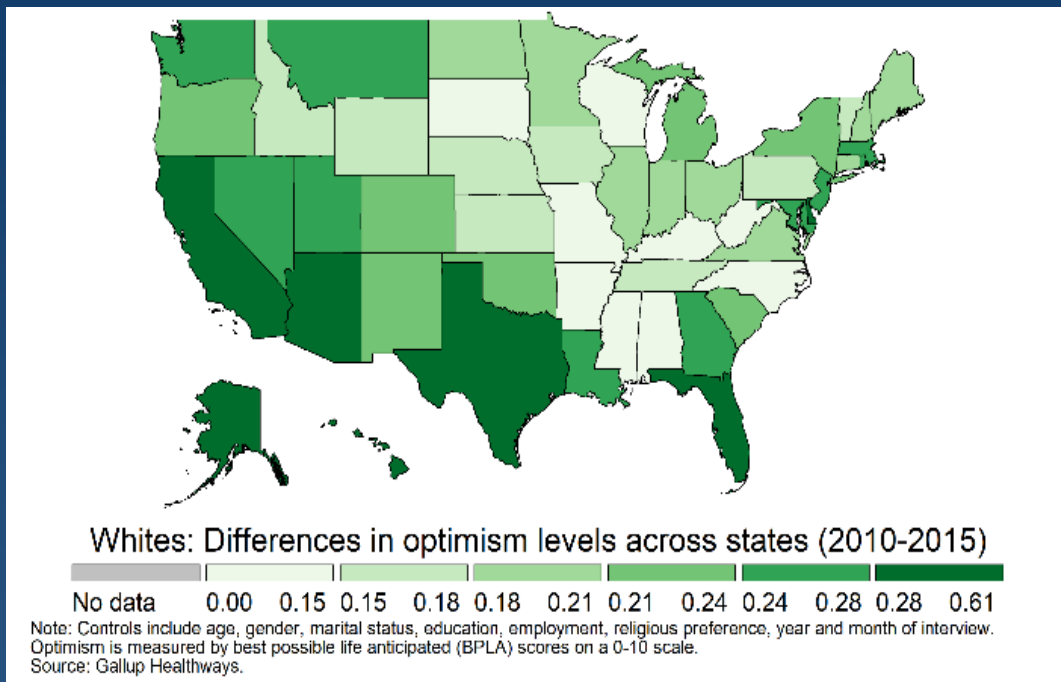
# Racial differences: Poor blacks optimistic about the future, poor whites desperate...



... and stress patterns are similar



# The role of place – What we know and don't know



## What we explore in this paper

---

- We supplement what we know about these race and place-based trends with new research on:
  - out of the labor force populations (men in particular)
  - county-level mobility (inter-generational and geographic)
  - differences across rural, micropolitan, and metropolitan counties
- We also add new indicators on financial, social, purpose, and community level well-being, as well as objective and selective health indicators (from self rated health to disease diagnostics)
- A related issue that we do not explicitly explore, but is reflected in our findings, is the lower levels of geographic mobility in the U.S. today vs a few decades ago
- Work in progress, at this point identifying associations that we want to know more about

## Data

---

- Gallup Healthways: cross sectional, nationally representative survey that is collected daily for adults in the U.S. (same source for earlier work); here, we mostly use 2010-2016 data
- Key outcome variable is well-being, in various dimensions:
  - More traditional ones: evaluative (life satisfaction and future life satisfaction/optimism) and hedonic (stress, worry, anger, and sadness for negative affect; enjoyment, happiness, smiling/laughing for positive affect)
  - We also consider indices for purpose, community well-being, financial well-being, social well-being, physical health/well-being, and perceptions about the economy
- Standard socio-economic and demographic data (age, gender, race, education, labor market status, marital status, pre-tax household income, household size, religious preference, county of residence)
- In some specifications, we add county-level data:
  - Intergenerational mobility (relative and absolute), share of people living at parents' address, share of people living in childhood census tract, and teenage birth rate from the Opportunity Insights project
  - Mortality rate data for 35-64 year olds following Case and Deaton's (2015) deaths of despair classification from the CDC
  - Other county level controls from a variety of sources: household income, gini coefficient, top 10% income share, total population, share of non-Hispanic white population, poverty rate, unemployment rate, and labor force participation rate



## Part 1: Well-being/Ill-being, labor market status, gender, and race – specifications

---

- Initial specification, for heterogeneities across labor market status: (1)  $SWB_{ict} = \alpha_0 + \sum_{j=1}^6 \beta_j * LMstatus_{j,ict} + \delta_1 * (X_{ict}) + \pi_c + \tau_t + \varepsilon_{ict}$ 
  - *SWB* represents each of the 11 well-being indices (standardized) for individual *i*, from county *c*, in year *t*
  - *LMstatus* is our key variable of interest and represents labor market status: unemployed, out of the labor force (OLF), self-employed, employed PT but wants FT, employed PT, employed FT (reference category). Therefore, our key parameters of interest are the set of  $\beta_j$
  - *X* is a vector containing other individual-level controls mentioned earlier, as well as controls for the month and days of week where the interview took place
  - $\pi_c$  and  $\tau_t$  represent county and year fixed effects, respectively
  - OLS regressions, with robust standard errors clustered at the county level
- Focus on prime-age, explore well-being heterogeneities across gender and labor market status:
  - (2)  $SWB_{ict} = \alpha_0 + \sum_{j=1}^6 \beta_j * LMstatus_{j,ict} + \gamma_1 * Female_{ict} + \sum_{j=1}^6 \theta_j * LMstatus_{j,ict} * Female_{ict} + \delta_1 * (X_{ict}) + \pi_c + \tau_t + \varepsilon_{ict}$
  - *Female* is the binary indicator for gender and *LMstatus \* Female* is the interaction term. Key parameters of interest are  $\beta_j$ ,  $\gamma_1$ , and  $\theta_j$
  - *X* is again a vector containing the same individual-level socio-demographic controls as before (except for gender)
- Focus on prime-age males, explore well-being heterogeneities across race and labor market status
  - Use an analogous specification to (2), but interacting labor market status with race (instead of gender).

## Part 1: Well-being/Ill-being, labor market status – (1) results for full sample

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Out of the workforce prime-age (25-54)	-0.110*** (0.005)	-0.088*** (0.006)	-0.100*** (0.005)	0.227*** (0.007)	0.185*** (0.006)	0.073*** (0.006)	0.145*** (0.006)	0.294*** (0.007)	-0.236*** (0.006)	-0.195*** (0.006)	-0.179*** (0.006)	-0.207*** (0.005)
Out of the workforce youth (<25)	-0.016** (0.007)	0.021*** (0.008)	-0.046*** (0.006)	0.016* (0.010)	0.053*** (0.009)	-0.039*** (0.010)	-0.021** (0.010)	0.057*** (0.010)	-0.015** (0.008)	-0.025*** (0.008)	0.019** (0.008)	-0.031*** (0.008)
Out of the workforce older (>54)	-0.106*** (0.004)	-0.017*** (0.004)	-0.157*** (0.004)	0.084*** (0.005)	0.101*** (0.005)	-0.045*** (0.005)	0.036*** (0.004)	0.177*** (0.004)	-0.140*** (0.004)	-0.110*** (0.004)	-0.091*** (0.004)	-0.140*** (0.004)
Unemployed	-0.206*** (0.005)	-0.340*** (0.006)	-0.033*** (0.005)	0.286*** (0.006)	0.297*** (0.006)	0.135*** (0.006)	0.133*** (0.006)	0.280*** (0.006)	-0.137*** (0.005)	-0.119*** (0.005)	-0.080*** (0.005)	-0.136*** (0.005)
Observations	1558271	1558271	1558271	1278586	1278586	1278586	1278586	1278586	1615002	1615002	1615002	1615002
R-squared	0.111	0.100	0.145	0.081	0.059	0.079	0.030	0.064	0.055	0.043	0.043	0.035

- Full sample results:
  - Being unemployed is associated with the largest evaluative and hedonic well-being reductions (up to 0.34 standard deviations)
  - OLF: prime age respondents typically worse off than younger and older counter-parts report. They also report much worse health than the unemployed, suggesting their labor force dropout may be related to objective health conditions.
  - OLF youth: as expected given the likely different reasons for dropout, higher well-being than the other OLF groups and closer to the well-being of those who are employed FT than to the unemployed (broadly consistent with Krueger 2017)

## Part 1: Well-being/Ill-being, labor market status and gender – (2) results for prime age sample

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Female	0.170*** (0.004)	0.139*** (0.004)	0.154*** (0.004)	0.086*** (0.004)	0.071*** (0.005)	0.091*** (0.004)	-0.028*** (0.005)	0.101*** (0.004)	0.043*** (0.004)	0.039*** (0.003)	-0.006 (0.004)	0.072*** (0.004)
Unemployed	-0.272*** (0.011)	-0.451*** (0.012)	-0.042*** (0.010)	0.368*** (0.012)	0.396*** (0.012)	0.230*** (0.011)	0.125*** (0.014)	0.312*** (0.012)	-0.179*** (0.012)	-0.157*** (0.012)	-0.124*** (0.012)	-0.160*** (0.011)
Out of the workforce	-0.226*** (0.009)	-0.199*** (0.009)	-0.190*** (0.009)	0.317*** (0.010)	0.267*** (0.009)	0.169*** (0.009)	0.153*** (0.011)	0.356*** (0.010)	-0.322*** (0.009)	-0.273*** (0.010)	-0.254*** (0.009)	-0.266*** (0.008)
(Female) X (Unemployed)	0.120*** (0.014)	0.140*** (0.015)	0.071*** (0.013)	-0.055*** (0.018)	-0.088*** (0.016)	-0.067*** (0.015)	0.027 (0.019)	-0.011 (0.018)	0.038** (0.015)	0.042*** (0.016)	0.040** (0.016)	0.014 (0.014)
(Female) X (Out of the workforce)	0.157*** (0.010)	0.151*** (0.010)	0.120*** (0.010)	-0.122*** (0.013)	-0.107*** (0.012)	-0.105*** (0.011)	-0.027** (0.013)	-0.107*** (0.013)	0.119*** (0.010)	0.118*** (0.011)	0.103*** (0.010)	0.075*** (0.010)
Observations	634168	634168	634168	512949	512949	512949	512949	512949	645596	645596	645596	645596
R-squared	0.114	0.124	0.090	0.079	0.061	0.057	0.031	0.085	0.062	0.052	0.048	0.041

- Prime age sample:
  - Prime age males OLF have very low well-being; markers very close to those of unemployed males, some worse (e.g., optimism, all positive affect indicators, more sadness)
  - Women employed FT report clearly higher evaluative and hedonic well-being than men employed FT
  - Relative to the respondents employed full-time, the well-being differences across gender are even greater among the unemployed and especially among those who are OLF (again in line with Krueger 2017) – likely different dropout reasons (OLF women more likely to be care-givers)

## Part 1: Well-being/Ill-being, labor market status and race – (3) results for prime age, male sample

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Black	0.208*** (0.009)	0.060*** (0.010)	0.285*** (0.008)	-0.212*** (0.010)	-0.181*** (0.010)	-0.297*** (0.011)	-0.054*** (0.011)	-0.043*** (0.010)	0.053*** (0.009)	0.001 (0.009)	0.039*** (0.009)	0.084*** (0.009)
Hispanic	0.165*** (0.009)	0.189*** (0.009)	0.101*** (0.008)	-0.158*** (0.010)	-0.090*** (0.011)	-0.269*** (0.010)	-0.072*** (0.010)	0.004 (0.010)	0.111*** (0.007)	0.026*** (0.008)	0.078*** (0.008)	0.157*** (0.007)
Unemployed	-0.331*** (0.013)	-0.545*** (0.013)	-0.053*** (0.013)	0.392*** (0.015)	0.428*** (0.015)	0.248*** (0.014)	0.129*** (0.017)	0.326*** (0.015)	-0.213*** (0.015)	-0.166*** (0.015)	-0.149*** (0.015)	-0.205*** (0.014)
Out of the workforce	-0.308*** (0.011)	-0.295*** (0.011)	-0.238*** (0.011)	0.387*** (0.012)	0.336*** (0.011)	0.200*** (0.011)	0.180*** (0.013)	0.434*** (0.012)	-0.395*** (0.012)	-0.326*** (0.012)	-0.298*** (0.011)	-0.346*** (0.011)
(Black) X (Unemployed)	0.204*** (0.030)	0.286*** (0.034)	0.078*** (0.027)	-0.027 (0.033)	-0.080*** (0.031)	-0.006 (0.032)	0.067* (0.038)	-0.044 (0.035)	0.034 (0.036)	0.006 (0.038)	0.018 (0.033)	0.056* (0.034)
(Black) X (Out of the workforce)	0.285*** (0.024)	0.317*** (0.027)	0.180*** (0.020)	-0.078*** (0.027)	-0.096*** (0.024)	0.019 (0.024)	-0.036 (0.029)	-0.128*** (0.026)	0.107*** (0.025)	0.065** (0.027)	0.067*** (0.024)	0.125*** (0.023)
Observations	337748	337748	337748	271636	271636	271636	271636	271636	343776	343776	343776	343776
R-squared	0.125	0.134	0.098	0.081	0.066	0.063	0.035	0.086	0.067	0.057	0.052	0.046

- Within whites, the OLF display as low well-being as the unemployed, and significantly lower positive affect
- Blacks (and Hispanics) have higher well-being than whites, within every labor market status, across nearly every indicator...
- ... and even more so within the unemployed and, especially, the OLF. Within the latter group, black respondents also report higher purpose, community, financial, and (self-reported) health well-being
- Difference due to stigma of being OLF within whites vs. minorities' experience with discrimination? Worse health indicators for white OLF in part related to opioids? Prime age white males OLF more likely to reside in counties with higher opioid prescriptions (Krueger, 2017) and geographic distribution of prime age males OLF in part reflects the broader geography of desperation

## Part 2: Intergenerational and Geographic Mobility and Well-Being

---

- Increasingly evident that mobility rates in the U.S. have declined in the past decades; public perceptions about mobility have also changed: 62% of Americans in 2016 reported that their children would live *worse* than they do
- Absolute mobility: expected rank of children whose parents were at the P25 of national income (higher value = more mobility);  
Relative mobility: slope from an OLS regression of child rank on parents' rank (thus lower value = more mobility)
- $SWB_{ict} = \alpha_0 + \beta_1 * W_{ct} + \delta_1 * (X_{ict}) + \varepsilon_{ict}$ 
  - $W$  is the vector of county-level variables: it includes the mobility indicators above, the % living at parents' home, the % living in a childhood census tract, rate of deaths of despair for those ages 35-64, as well as controls for mean household income, inequality, poverty, unemployment, labor force participation, population size, and % of non-white population.
  - $X$  corresponds to individual-level socio-demographic controls (age group, gender, race, labor market status, household income bracket, education, marital status, and religious preference, day of the week and month of the interview, year, and state of residence.)

## Part 2: Intergenerational and Geographic Mobility and Well-Being results (1)

Table 6 excerpt - Absolute mobility, all controls

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Sadness yesterday	(9) Positive affect index	(9) Happiness yesterday	(10) Enjoyment yesterday	(11) Smiled or laughed yesterday
Log(Abs mobility: Expected rank of children whose parents are at P25)	-0.094 (0.058)	-0.087 (0.061)	-0.076 (0.052)	0.032 (0.056)	0.098* (0.056)	-0.020 (0.054)	-0.005 (0.056)	-0.046 (0.056)	-0.036 (0.059)	-0.052 (0.055)	-0.029 (0.054)
Log(% who live in one of their childhood Census tracts in adulthood)	-0.043* (0.024)	-0.019 (0.025)	-0.052** (0.022)	0.044** (0.022)	0.032 (0.022)	0.035 (0.022)	0.040* (0.023)	0.004 (0.023)	0.001 (0.024)	-0.003 (0.022)	0.010 (0.023)
Log(% of children who live at the same address as their parents in 2015)	-0.017 (0.025)	-0.033 (0.026)	0.002 (0.023)	0.081*** (0.023)	0.083*** (0.022)	0.050** (0.023)	0.060*** (0.023)	-0.054** (0.024)	-0.043* (0.024)	-0.048** (0.024)	-0.045** (0.022)
Log(Case-Deaton composite mortality rate, ages 35-64 (per 100,000))	-0.024** (0.010)	-0.031*** (0.010)	-0.012 (0.009)	0.028*** (0.009)	0.028*** (0.009)	0.026*** (0.009)	0.010 (0.010)	-0.008 (0.010)	-0.010 (0.010)	-0.007 (0.009)	-0.005 (0.009)
Log(White non-Hispanic share of population (0-100%))	-0.013 (0.015)	-0.018 (0.017)	-0.005 (0.012)	0.010 (0.013)	-0.001 (0.013)	0.015 (0.011)	0.010 (0.014)	-0.003 (0.013)	0.005 (0.016)	-0.006 (0.013)	-0.006 (0.012)
Observations	312,748	312,748	312,748	322,215	322,215	322,215	322,215	320,566	320,566	320,566	320,566
R-squared	0.108	0.095	0.151	0.077	0.051	0.076	0.065	0.062	0.050	0.048	0.042

- County level absolute mobility broadly non-significant in the specification including all individual controls
- Percent of people living in parents' homes: associated with higher negative affect and lower positive affect in all indicators. Perhaps picking up the worst aspects of the lack of mobility prevailing in some counties? OLF males likely over-represented?
- Percent of people living in a childhood census tract is associated with lower optimism and higher negative affect (as well as lower financial WB, expectations about the economy, and lower health WB, but higher community WB). Given share of people in parents' home is accounted for, this may reflect situation of counties where people are unlikely to move, perhaps content where they are?

## Part 2: Intergenerational and Geographic Mobility and Well-Being results (2)

Table 7 excerpt - Relative mobility, all controls

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Sadness yesterday	(8) Positive affect index	(9) Happiness yesterday	(10) Enjoyment yesterday	(11) Smiled or laughed yesterday
Log(Rel mobility: Slope from OLS regression of child rank on parent rank)	-0.000 (0.021)	0.020 (0.022)	-0.018 (0.018)	-0.025 (0.019)	-0.053*** (0.019)	-0.003 (0.020)	-0.002 (0.019)	-0.001 (0.020)	0.008 (0.022)	-0.008 (0.019)	-0.002 (0.020)
Log(% who live in one of their childhood Census tracts in adulthood)	-0.061*** (0.021)	-0.033 (0.022)	-0.072*** (0.020)	0.045** (0.020)	0.041** (0.020)	0.030 (0.019)	0.038* (0.021)	-0.005 (0.021)	-0.004 (0.021)	-0.015 (0.020)	0.004 (0.021)
Log(% of children who live at the same address as their parents in 2015)	-0.004 (0.023)	-0.022 (0.024)	0.013 (0.021)	0.077*** (0.021)	0.071*** (0.020)	0.053** (0.021)	0.061*** (0.021)	-0.048** (0.022)	-0.038* (0.022)	-0.041* (0.023)	-0.042** (0.021)
Log(Case-Deaton composite mortality rate, ages 35-64 (per 100,000))	-0.023** (0.010)	-0.031*** (0.010)	-0.011 (0.009)	0.028*** (0.009)	0.028*** (0.009)	0.026*** (0.009)	0.010 (0.010)	-0.008 (0.010)	-0.010 (0.010)	-0.006 (0.009)	-0.004 (0.009)
Log(White non-Hispanic share of population (0-100%))	-0.009 (0.015)	-0.017 (0.017)	0.001 (0.012)	0.012 (0.013)	0.003 (0.014)	0.016 (0.012)	0.011 (0.014)	-0.001 (0.014)	0.005 (0.017)	-0.003 (0.013)	-0.005 (0.012)
Observations	312,748	312,748	312,748	322,215	322,215	322,215	322,215	320,566	320,566	320,566	320,566
R-squared	0.108	0.095	0.151	0.077	0.051	0.076	0.065	0.062	0.050	0.048	0.042

- With all individual controls county-level relative mobility also generally insignificant for evaluative and hedonic WB – except worry. Still lower mobility is associated with lower community WB and health/physical WB (appendix) [NOTE: negative sign = more mobility]
- County-level despair-related mortality rate associated with lower life sat and higher negative affect (also negatively associated with purpose, community, financial, and health well-being – see Appendix)
- Again, percentage of respondents in parents’ census tract and homes are starker markers of low well-being, with low optimism in particular
- Only well-being dimension that is positively correlated with % non-Hispanic whites in community well-being (whites like living with whites?)

## Part 3: Well-being in Metropolitan, Micropolitan, and Rural Counties – specification

---

- How does well-being vary by county type?
  - Oswald and Wu (2011) find that when controlling for socio-demographic traits (but not income), state-level well-being is *uncorrelated* with state GDP
  - When controlling for socio-demographic traits AND for income, well-being is *negatively* associated with state GDP
  - They consider their findings to be broadly in line with what would be predicted by compensating differentials theory
- We take a similar approach but focus on county types (data from Hendrickson et al. 2018):
  - Those in MSAs with more than one million people, in MSAs with between 250,000 and 1 million people, in MSAs with less than 250,000 people, in micropolitan statistical areas, rural counties adjacent to MSAs, and rural counties not adjacent to MSAs
- $SWB_{ist} = \alpha_0 + \sum_{j=1}^6 \beta_j * County\ type_{j,ist} + \delta_1 * (X_{ist}) + \pi_s + \tau_t + \varepsilon_{ist}$ 
  - *SWB* represents the same well-being indices and indicators as before
  - County type is a variable dividing counties into 6 types, as above; key parameters of interest are again the set of coefficients  $\beta_j$ .
  - *X* is still a vector containing individual-level socio-demographic controls,  $\pi_s$  corresponds to state fixed effects (we cannot use county fixed effects),  $\pi_t$  corresponds to year fixed effects



## Part 3: Well-being in Metropolitan, Micropolitan, and Rural Counties – results (1): controls for age, race, gender, month of interview, day of the week, year, and state of residence

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Large metro (1M+)	0.145*** (0.009)	0.089*** (0.009)	0.157*** (0.009)	-0.010 (0.011)	-0.028*** (0.010)	0.029*** (0.009)	0.010 (0.009)	-0.047*** (0.011)	0.041*** (0.010)	0.023*** (0.009)	0.029*** (0.009)	0.047*** (0.009)
Medium metro (250k to 1M)	0.113*** (0.009)	0.068*** (0.009)	0.123*** (0.009)	-0.012 (0.011)	-0.032*** (0.010)	0.021** (0.009)	0.011 (0.009)	-0.038*** (0.011)	0.038*** (0.009)	0.022** (0.009)	0.029*** (0.009)	0.041*** (0.009)
Small metro (<250k)	0.078*** (0.010)	0.044*** (0.010)	0.088*** (0.009)	-0.003 (0.011)	-0.021** (0.010)	0.019* (0.010)	0.013 (0.010)	-0.022* (0.011)	0.023** (0.010)	0.010 (0.009)	0.020** (0.009)	0.025*** (0.009)
Micropolitan	0.045*** (0.009)	0.023** (0.009)	0.053*** (0.009)	-0.004 (0.011)	-0.023** (0.010)	0.009 (0.009)	0.021** (0.010)	-0.015 (0.011)	0.011 (0.009)	0.005 (0.009)	0.007 (0.009)	0.015 (0.009)
Rural - metro adjacent	0.009 (0.010)	-0.002 (0.010)	0.016* (0.009)	0.006 (0.012)	-0.006 (0.011)	0.006 (0.010)	0.020** (0.010)	0.002 (0.012)	-0.008 (0.010)	-0.008 (0.009)	-0.010 (0.009)	-0.002 (0.010)
Observations	1558198	1558198	1558198	1278527	1278527	1278527	1278527	1278527	1614927	1614927	1614927	1614927
R-squared	0.039	0.013	0.107	0.035	0.023	0.059	0.012	0.013	0.012	0.009	0.011	0.010

- After accounting for those factors, average well-being is considerably higher in metropolitan areas, especially larger ones:
  - Significant differences across different types of counties: evaluative well-being increasing – driven by both current life satisfaction and especially expected life satisfaction (optimism) – as we move from rural areas into metropolitan ones
  - Positive affect also increases for all indicators as we move along the rural-metropolitan spectrum; mixed results for negative affect
  - Same for all other dimensions – purpose, financial, social, health, economic expectations – except for community-level indicators (appendix)

## Part 3: Well-being in Metropolitan, Micropolitan, and Rural Counties – results (2): all controls except income

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Large metro (1M+)	0.072*** (0.008)	0.022*** (0.008)	0.098*** (0.008)	0.022** (0.010)	-0.003 (0.009)	0.028*** (0.009)	0.039*** (0.009)	0.003 (0.010)	0.001 (0.008)	-0.011 (0.008)	-0.010 (0.008)	0.020** (0.008)
Medium metro (250k to 1M)	0.064*** (0.008)	0.023*** (0.008)	0.084*** (0.008)	0.011 (0.010)	-0.013 (0.009)	0.021** (0.009)	0.031*** (0.009)	-0.003 (0.010)	0.010 (0.008)	-0.003 (0.008)	0.002 (0.008)	0.022*** (0.008)
Small metro (<250k)	0.045*** (0.008)	0.014 (0.009)	0.061*** (0.008)	0.014 (0.010)	-0.007 (0.010)	0.019** (0.009)	0.028*** (0.009)	0.003 (0.010)	0.004 (0.008)	-0.006 (0.008)	0.001 (0.008)	0.013 (0.009)
Micropolitan	0.027*** (0.008)	0.006 (0.008)	0.039*** (0.008)	0.006 (0.010)	-0.015 (0.009)	0.010 (0.009)	0.029*** (0.009)	-0.001 (0.010)	0.001 (0.008)	-0.004 (0.008)	-0.003 (0.008)	0.008 (0.008)
Rural - metro adjacent	0.006 (0.009)	-0.005 (0.009)	0.014 (0.009)	0.008 (0.011)	-0.005 (0.010)	0.006 (0.010)	0.021** (0.010)	0.004 (0.010)	-0.009 (0.009)	-0.009 (0.009)	-0.011 (0.008)	-0.003 (0.009)
Observations	1558198	1558198	1558198	1278527	1278527	1278527	1278527	1278527	1614927	1614927	1614927	1614927
R-squared	0.087	0.072	0.133	0.065	0.046	0.070	0.023	0.051	0.044	0.034	0.034	0.028

- Many patterns hold, with coefficients of smaller magnitude, after including all controls except income (as in Oswald and Wu (2011))
  - Larger metro areas may offer lower non-pecuniary utility, but not enough to erase the well-being gap (possibly also reflects recent findings of declining labor mobility and job searching typically happening within a limited geographic span?)
  - Main difference: positive affect becomes non-significant, negative affect is now more associated with large metro areas, driven by higher incidence of stress and anger (due to higher expectations?)
  - In the other indices, purpose and self-related health index also become insignificant (appendix)

## Part 3: Well-being in Metropolitan, Micropolitan, and Rural Counties – results (3): all controls, with income

Variables	(1) Evaluative well-being index	(2) Life satisfaction today (0-10)	(3) Expected life sat in 5 years (0-10)	(4) Negative affect index	(5) Worry yesterday	(6) Stress yesterday	(7) Anger yesterday	(8) Sadness yesterday	(9) Positive affect index	(10) Happiness yesterday	(11) Enjoyment yesterday	(12) Smiled or laughed yesterday
Large metro (1M+)	0.028*** (0.008)	-0.026*** (0.008)	0.068*** (0.008)	0.050*** (0.010)	0.024*** (0.009)	0.046*** (0.009)	0.052*** (0.009)	0.028*** (0.010)	-0.023*** (0.008)	-0.032*** (0.008)	-0.032*** (0.008)	0.003 (0.008)
Medium metro (250k to 1M)	0.036*** (0.008)	-0.007 (0.008)	0.064*** (0.008)	0.030*** (0.010)	0.004 (0.009)	0.033*** (0.009)	0.040*** (0.009)	0.014 (0.010)	-0.007 (0.008)	-0.017** (0.008)	-0.013* (0.008)	0.011 (0.008)
Small metro (<250k)	0.029*** (0.008)	-0.003 (0.009)	0.050*** (0.008)	0.026*** (0.010)	0.004 (0.009)	0.027*** (0.009)	0.034*** (0.009)	0.014 (0.010)	-0.007 (0.008)	-0.015* (0.008)	-0.008 (0.008)	0.005 (0.009)
Micropolitan	0.016** (0.008)	-0.005 (0.008)	0.031*** (0.008)	0.014 (0.010)	-0.007 (0.009)	0.015* (0.009)	0.033*** (0.009)	0.007 (0.010)	-0.006 (0.008)	-0.010 (0.008)	-0.009 (0.008)	0.003 (0.008)
Rural - metro adjacent	0.002 (0.009)	-0.008 (0.009)	0.011 (0.009)	0.011 (0.010)	-0.002 (0.010)	0.008 (0.010)	0.023** (0.010)	0.007 (0.010)	-0.012 (0.009)	-0.011 (0.008)	-0.014* (0.008)	-0.005 (0.009)
Observations	1558198	1558198	1558198	1278527	1278527	1278527	1278527	1278527	1614927	1614927	1614927	1614927
R-squared	0.107	0.096	0.142	0.077	0.055	0.075	0.025	0.060	0.052	0.040	0.040	0.032

- Controlling for income, most of the associations turn negative, as expected
  - However, even then, we see a striking difference in optimism/expectations for the future – much higher in metro areas compared rural ones
- With all controls: respondents in rural areas report lower worry and stress and higher WB across most other domains – happy peasants vs frustrated achievers?

## Tentative Conclusions

---

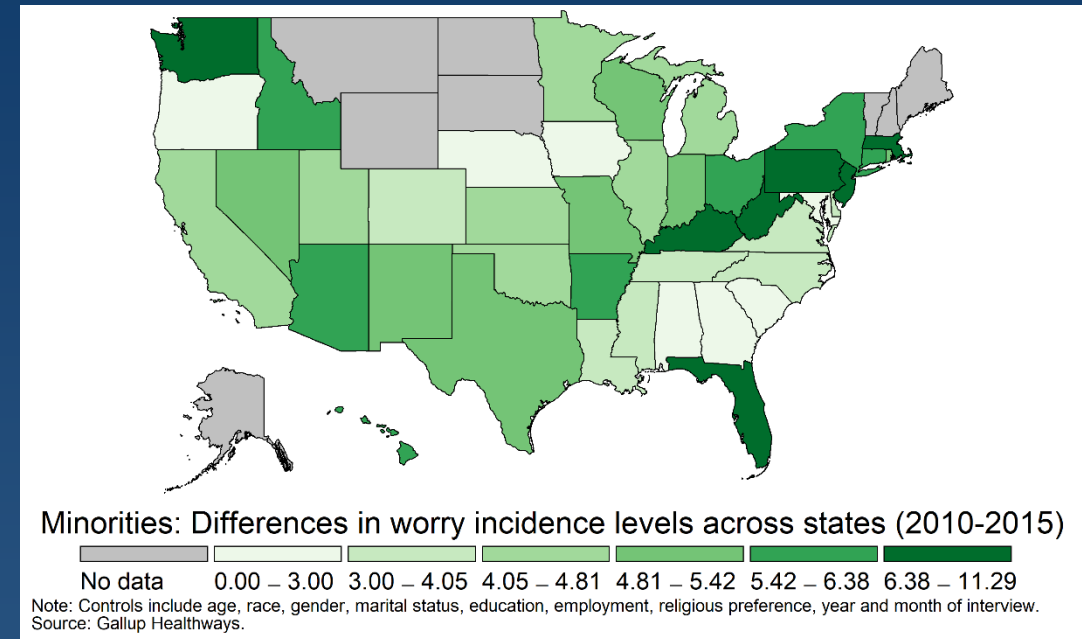
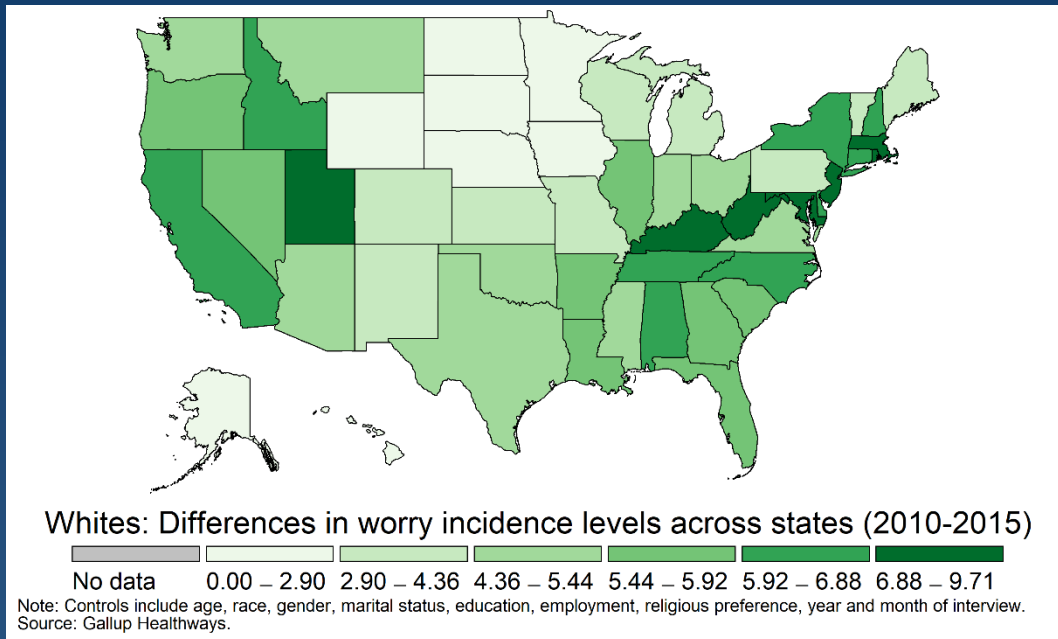
- Story of a divided America in terms of hope for the future, satisfaction with life, stress, and worry; deep divisions across rich and poor, and whites and minorities, with poor minorities remarkably more optimistic than whites
- Divisions across places and cohorts. Prime age males OLF, particularly whites, are troubled compared to other labor groups, to OLF women and minorities, and even compared to the OLF in other regions (particularly LAC and EU)
- Gaps between minority well-being – and particularly African Americans –and whites are particularly high in the less desirable labor market categories (OLF and unemployed). Like our earlier findings suggests higher resilience to adversity
- Geographic mobility (or lack thereof) reveals more than inter-generational mobility. Counties with higher shares of people living in their parents' homes are broadly unhappy and unhealthy; those in childhood census tracts are content today and with their communities but not optimistic about the future and not very healthy
- Rural and micropolitan areas display lower levels of well-being on most dimensions than larger metros, with the exception of community well-being; biggest gap is in optimism, which is much higher in urban areas
- Understanding lost hope among particular populations is a new challenge for economics!

## Appendix 1: Well-Being Indices

---

- *Evaluative well-being index*: “compared to the best possible life you can imagine, on a ladder scale where 10 is the best possible life you can imagine and 0 is the worst possible life you can imagine, how satisfied are you with your life today?”; on the same ladder, where do you expect your life satisfaction to be in five years?”
- *Negative affect index*: “did you experience worry frequently yesterday” yes or no; the same phrasing and binary response choices for: stress, anger, and sadness, respectively
- *Positive affect index*: “did you experience happiness frequently yesterday” – yes or no; the same phrasing and binary response choices for: enjoyment, smiling or laughing
- *Purpose well-being*: I like what I do every day (agree/disagree); same phrasing and binary response choices for: learn or do something interesting every day; use my strengths to do what I do best every day; leader in my life makes me enthusiastic about the future; reached most of my goals in the past 12 months
- *Community well-being*: are you satisfied with the city/area where you live – agree/disagree; the city/area where you live is the best place for you (agree/disagree); same answers for: house/apartment is ideal for you/your family; can’t imagine a better community; proud of your community/area where you live; always feel safe/secure; recognition/help improve city/area past 12 months
- *Financial well-being*: did not lack money to buy food (past 12 months); did not lack money for health care (12 ms); enough money to do everything you want to do (agree/disagree); worried about money (past 7 days) (disagree/agree); satisfied with standard of living compared to ppl spend time with (agree/disagree)
- *Economic perceptions*: economic conditions today are good/excellent (agree/disagree); economic conditions are getting better (agree/disagree)
- *Social well-being*: someone always encourages you to be health (agree/disagree); family/friends give you positive energy every day (agree/disagree); relationship with partner stronger than ever (agree/disagree); always make time for vacation/trips with friends/fam (agree/disagree)
- *Health index 1*: did not experience physical pain yesterday (yes/no); no poor health days in previous 30 (yes/no); did not have heart problems preventing doing things people your age normally do (yes/no); health self-assessment is in general excellent/very good (yes/no); physical health is near perfect (agree/dis); doc would say I do great job managing health (agree/disagree); always feel good about my physical appearance (agree/disagree)
- *Health index 2*: at least one day with 30+ mins of exercise in past 7 days (yes/no); no restrictions on the amount of exercise you do (yes/no); did you eat healthy all day yesterday (yes/no); at least one day with 5+ servings of fruits and vegetables in past 7 days (yes/no); not obese (yes/no); felt active and productive every day (agree/dis); little pleasure/interest in doing things last two weeks (not at all/yes); never uses drugs (or prescription meds) which affect mood/help you relax (yes/no); does not smoke (yes/no); zero alcoholic drinks in a typical week (yes/no);
- *Health index 3*: have never been told by physician/nurse you have high blood pressure (yes/no); same question phrasing/answers for: cholesterol; diabetes; depression; heart attack; asthma; cancer

## Appendix 2: Maps for worry



## Appendix 3: Table 1 – OLF/Full Sample Well-Being Indices

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Out of the workforce prime-age (25-54)	-0.110*** (0.005)	0.227*** (0.007)	-0.236*** (0.006)	-0.328*** (0.008)	-0.088*** (0.008)	-0.111*** (0.008)	-0.038*** (0.005)	-0.116*** (0.007)	-0.506*** (0.012)	-0.346*** (0.013)	0.409*** (0.008)
Out of the workforce youth (<25)	-0.016** (0.007)	0.016* (0.010)	-0.015** (0.008)	-0.128*** (0.016)	0.027* (0.016)	0.080*** (0.014)	0.048*** (0.010)	-0.074*** (0.015)	-0.109*** (0.013)	0.036** (0.015)	0.064*** (0.005)
Out of the workforce older (>54)	-0.106*** (0.004)	0.084*** (0.005)	-0.140*** (0.004)	-0.269*** (0.007)	-0.021*** (0.006)	0.012** (0.006)	0.005 (0.004)	-0.087*** (0.006)	-0.478*** (0.007)	-0.293*** (0.007)	0.415*** (0.004)
Unemployed	-0.206*** (0.005)	0.286*** (0.006)	-0.137*** (0.005)	-0.435*** (0.011)	-0.190*** (0.011)	-0.384*** (0.010)	-0.104*** (0.006)	-0.190*** (0.010)	-0.226*** (0.010)	-0.188*** (0.011)	0.156*** (0.004)
Observations	1558271	1278586	1615002	483507	482777	482830	1113224	481753	480194	453301	1614662
R-squared	0.111	0.081	0.055	0.094	0.122	0.247	0.084	0.101	0.140	0.111	0.239

## Appendix 3: Table 2 – OLF/Gender Well-Being Indices

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Female	0.170*** (0.004)	0.086*** (0.004)	0.043*** (0.004)	0.137*** (0.007)	0.079*** (0.007)	-0.037*** (0.006)	-0.050*** (0.006)	0.072*** (0.007)	-0.026*** (0.006)	0.090*** (0.006)	0.003 (0.003)
Unemployed	-0.272*** (0.011)	0.368*** (0.012)	-0.179*** (0.012)	-0.519*** (0.021)	-0.233*** (0.021)	-0.468*** (0.020)	-0.109*** (0.011)	-0.209*** (0.020)	-0.238*** (0.020)	-0.231*** (0.020)	0.114*** (0.009)
Out of the workforce	-0.226*** (0.009)	0.317*** (0.010)	-0.322*** (0.009)	-0.396*** (0.013)	-0.122*** (0.013)	-0.202*** (0.012)	-0.045*** (0.008)	-0.139*** (0.013)	-0.632*** (0.017)	-0.434*** (0.016)	0.473*** (0.009)
(Female) X (Unemployed)	0.120*** (0.014)	-0.055*** (0.018)	0.038** (0.015)	0.073*** (0.028)	0.026 (0.030)	0.080*** (0.027)	-0.001 (0.015)	0.012 (0.028)	-0.031 (0.027)	0.030 (0.028)	0.086*** (0.012)
(Female) X (Out of the workforce)	0.157*** (0.010)	-0.122*** (0.013)	0.119*** (0.010)	0.074*** (0.016)	0.041** (0.017)	0.118*** (0.016)	0.005 (0.010)	0.016 (0.016)	0.182*** (0.016)	0.141*** (0.018)	-0.102*** (0.010)
Observations	634168	512949	645596	189877	188869	189528	444030	189352	188513	178219	645450
R-squared	0.114	0.079	0.062	0.114	0.115	0.252	0.093	0.110	0.162	0.141	0.143



## Appendix 3: Table 3 OLF/Race Well-Being Indices

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Black	0.208*** (0.009)	-0.212*** (0.010)	0.053*** (0.009)	0.014 (0.017)	-0.066*** (0.017)	-0.078*** (0.016)	0.451*** (0.016)	0.040** (0.016)	0.200*** (0.014)	0.053*** (0.015)	-0.016** (0.008)
Hispanic	0.165*** (0.009)	-0.158*** (0.010)	0.111*** (0.007)	0.293*** (0.014)	0.280*** (0.015)	0.118*** (0.013)	0.343*** (0.013)	0.173*** (0.015)	0.165*** (0.011)	0.269*** (0.015)	-0.075*** (0.007)
Unemployed	-0.331*** (0.013)	0.392*** (0.015)	-0.213*** (0.015)	-0.628*** (0.025)	-0.288*** (0.028)	-0.544*** (0.024)	-0.099*** (0.012)	-0.219*** (0.026)	-0.329*** (0.025)	-0.324*** (0.025)	0.164*** (0.011)
Out of the workforce	-0.308*** (0.011)	0.387*** (0.012)	-0.395*** (0.012)	-0.510*** (0.017)	-0.190*** (0.017)	-0.275*** (0.016)	-0.059*** (0.010)	-0.193*** (0.017)	-0.775*** (0.020)	-0.568*** (0.019)	0.584*** (0.011)
(Black) X (Unemployed)	0.204*** (0.030)	-0.027 (0.033)	0.034 (0.036)	0.273*** (0.053)	0.127** (0.056)	0.126*** (0.047)	-0.116*** (0.033)	0.058 (0.054)	0.170*** (0.050)	0.129** (0.051)	0.002 (0.024)
(Black) X (Out of the workforce)	0.285*** (0.024)	-0.078*** (0.027)	0.107*** (0.025)	0.243*** (0.036)	0.156*** (0.039)	0.146*** (0.031)	-0.028 (0.023)	0.161*** (0.036)	0.160*** (0.039)	0.173*** (0.037)	-0.054** (0.025)
(Hispanic) X (Unemployed)	0.123*** (0.030)	0.095** (0.038)	-0.017 (0.030)	0.210*** (0.052)	0.040 (0.056)	0.158*** (0.049)	-0.039 (0.031)	-0.001 (0.052)	0.123** (0.050)	0.116** (0.054)	0.020 (0.025)
(Hispanic) X (Out of the workforce)	0.179*** (0.024)	-0.039 (0.035)	0.090*** (0.028)	0.216*** (0.034)	0.096*** (0.035)	0.107*** (0.033)	-0.003 (0.022)	0.096*** (0.034)	0.318*** (0.038)	0.242*** (0.039)	-0.169*** (0.025)
Observations	337748	271636	343776	103914	103339	103619	238317	103664	103044	98900	343677
R-squared	0.125	0.081	0.067	0.128	0.122	0.253	0.109	0.131	0.172	0.143	0.141

## Appendix 3: Table 6 - Absolute Mobility Well-Being Indices

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Log(Abs mobility: Expected rank of children whose parents are at P25)	-0.094 (0.058)	0.032 (0.056)	-0.046 (0.056)	0.006 (0.054)	0.118 (0.097)	0.079 (0.050)	-0.216*** (0.064)	0.015 (0.054)	0.030 (0.054)	0.062 (0.059)	-0.079 (0.053)
Log(% who live in one of their childhood Census tracts in adulthood)	-0.043* (0.024)	0.044** (0.022)	0.004 (0.023)	0.007 (0.022)	0.126*** (0.033)	-0.035* (0.021)	-0.082*** (0.026)	-0.011 (0.022)	-0.008 (0.021)	-0.010 (0.024)	0.056*** (0.021)
Log(% of children who live at the same address as their parents in 2015)	-0.017 (0.025)	0.081*** (0.023)	-0.054** (0.024)	-0.079*** (0.023)	-0.072** (0.035)	-0.097*** (0.022)	0.032 (0.027)	-0.028 (0.023)	-0.036* (0.021)	-0.027 (0.023)	0.013 (0.022)
Log(Teenage Birth Rate)	0.001 (0.016)	-0.056*** (0.015)	0.017 (0.015)	0.035** (0.014)	-0.046* (0.024)	0.021 (0.014)	-0.061*** (0.018)	-0.000 (0.015)	0.005 (0.015)	-0.014 (0.015)	0.020 (0.015)
Log(Gini coefficient (0-100))	-0.063 (0.091)	0.159* (0.086)	-0.112 (0.086)	-0.134 (0.084)	0.174 (0.127)	-0.061 (0.082)	-0.014 (0.096)	0.051 (0.087)	0.057 (0.085)	-0.038 (0.090)	0.057 (0.082)
Log(Top 10% income share (0-100))	0.144*** (0.040)	-0.045 (0.036)	0.059 (0.037)	0.130*** (0.036)	0.160*** (0.056)	0.061* (0.036)	0.135*** (0.042)	0.022 (0.037)	0.160*** (0.036)	0.115*** (0.041)	-0.173*** (0.034)
Log(Mean household income)	0.002 (0.033)	-0.031 (0.035)	0.013 (0.035)	0.021 (0.034)	-0.098* (0.056)	0.041 (0.030)	0.041 (0.036)	0.029 (0.033)	-0.027 (0.035)	-0.017 (0.033)	0.017 (0.038)
Log(Case-Deaton composite mortality rate, ages 35-64 (per 100,000))	-0.024** (0.010)	0.028*** (0.009)	-0.008 (0.010)	-0.019** (0.009)	-0.063*** (0.013)	-0.022** (0.009)	-0.035*** (0.009)	-0.012 (0.009)	-0.021** (0.009)	-0.033*** (0.010)	0.018** (0.009)
Log(Total population)	-0.007* (0.004)	0.004 (0.003)	-0.003 (0.003)	-0.012*** (0.004)	-0.019*** (0.006)	-0.007** (0.003)	-0.005 (0.005)	-0.004 (0.003)	-0.003 (0.003)	-0.005 (0.004)	0.005 (0.003)
Log(White non-Hispanic share of population (0-100%))	-0.013 (0.015)	0.010 (0.013)	-0.003 (0.013)	-0.019 (0.012)	0.086*** (0.024)	-0.017 (0.014)	-0.057*** (0.012)	-0.004 (0.011)	-0.039*** (0.011)	-0.027** (0.011)	0.030** (0.012)
Log(Poverty rate (0-100%))	0.006 (0.022)	0.032 (0.022)	-0.007 (0.022)	0.007 (0.022)	-0.116*** (0.035)	0.020 (0.020)	0.025 (0.025)	0.015 (0.022)	-0.045* (0.023)	-0.039* (0.022)	0.023 (0.022)
Log(Unemployment rate (0-100%))	-0.031 (0.020)	-0.027 (0.019)	-0.019 (0.019)	0.010 (0.018)	-0.108*** (0.035)	-0.035** (0.017)	-0.112*** (0.023)	0.007 (0.017)	0.003 (0.020)	-0.003 (0.020)	-0.030* (0.018)
Log(Labor force participation rate (0-100%))	-0.090* (0.048)	0.044 (0.041)	-0.029 (0.040)	0.030 (0.038)	0.067 (0.068)	-0.032 (0.042)	0.277*** (0.054)	-0.011 (0.040)	0.017 (0.043)	-0.094** (0.044)	-0.061 (0.038)
Observations	312,748	322,215	320,566	318,797	318,223	318,212	318,585	317,590	316,406	297,980	320,153
R-squared	0.108	0.077	0.062	0.087	0.107	0.238	0.078	0.092	0.132	0.103	0.237

## Appendix 3: Table 7 - Relative Mobility Well-Being Indices

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Log(Rel mobility: Slope from OLS regression of child rank on parent rank)	-0.000 (0.021)	-0.025 (0.019)	-0.001 (0.020)	-0.007 (0.019)	-0.203*** (0.027)	-0.018 (0.018)	-0.032 (0.022)	-0.008 (0.018)	-0.048** (0.019)	-0.085*** (0.020)	0.037* (0.019)
Log(% who live in one of their childhood Census tracts in adulthood)	-0.061*** (0.021)	0.045** (0.020)	-0.005 (0.021)	0.007 (0.019)	0.107*** (0.030)	-0.023 (0.019)	-0.132*** (0.025)	-0.010 (0.020)	-0.012 (0.019)	-0.015 (0.022)	0.048** (0.019)
Log(% of children who live at the same address as their parents in 2015)	-0.004 (0.023)	0.077*** (0.021)	-0.048** (0.022)	-0.080*** (0.021)	-0.084*** (0.031)	-0.107*** (0.021)	0.062** (0.026)	-0.030 (0.020)	-0.039** (0.020)	-0.033 (0.021)	0.023 (0.021)
Log(Teenage Birth Rate)	0.015 (0.014)	-0.054*** (0.013)	0.025* (0.013)	0.036*** (0.012)	-0.013 (0.020)	0.014 (0.013)	-0.021 (0.016)	-0.001 (0.013)	0.012 (0.013)	-0.002 (0.013)	0.023* (0.014)
Log(Gini coefficient (0-100))	-0.036 (0.090)	0.159* (0.085)	-0.098 (0.086)	-0.133 (0.084)	0.209* (0.122)	-0.077 (0.081)	0.060 (0.096)	0.049 (0.086)	0.064 (0.083)	-0.026 (0.088)	0.067 (0.082)
Log(Top 10% income share (0-100))	0.142*** (0.040)	-0.045 (0.036)	0.058 (0.037)	0.130*** (0.036)	0.154*** (0.053)	0.062* (0.036)	0.129*** (0.044)	0.022 (0.037)	0.158*** (0.036)	0.113*** (0.041)	-0.174*** (0.034)
Log(Mean household income)	-0.002 (0.033)	-0.030 (0.034)	0.011 (0.035)	0.022 (0.034)	-0.090* (0.051)	0.045 (0.030)	0.031 (0.037)	0.030 (0.033)	-0.025 (0.036)	-0.013 (0.036)	0.013 (0.040)
Log(Case-Deaton composite mortality rate, ages 35-64 (per 100,000))	-0.023** (0.010)	0.028*** (0.009)	-0.008 (0.010)	-0.019** (0.009)	-0.059*** (0.012)	-0.023** (0.009)	-0.032*** (0.009)	-0.012 (0.009)	-0.020** (0.009)	-0.031*** (0.009)	0.018** (0.009)
Log(Total population)	-0.007** (0.004)	0.004 (0.003)	-0.003 (0.003)	-0.012*** (0.004)	-0.016** (0.006)	-0.006* (0.003)	-0.006 (0.005)	-0.004 (0.003)	-0.002 (0.003)	-0.003 (0.004)	0.004 (0.003)
Log(White non-Hispanic share of population (0-100%))	-0.009 (0.015)	0.012 (0.013)	-0.001 (0.014)	-0.018 (0.012)	0.111*** (0.023)	-0.018 (0.015)	-0.044*** (0.013)	-0.003 (0.012)	-0.033*** (0.011)	-0.017 (0.011)	0.028** (0.013)
Log(Poverty rate (0-100%))	0.007 (0.022)	0.032 (0.021)	-0.007 (0.022)	0.007 (0.022)	-0.111*** (0.034)	0.020 (0.020)	0.027 (0.026)	0.015 (0.022)	-0.044* (0.024)	-0.037* (0.022)	0.022 (0.022)
Log(Unemployment rate (0-100%))	-0.031 (0.020)	-0.027 (0.019)	-0.019 (0.019)	0.010 (0.018)	-0.109*** (0.034)	-0.035** (0.017)	-0.113*** (0.023)	0.007 (0.017)	0.002 (0.020)	-0.004 (0.020)	-0.030* (0.018)
Log(Labor force participation rate (0-100%))	-0.092* (0.048)	0.043 (0.041)	-0.030 (0.040)	0.030 (0.038)	0.062 (0.066)	-0.031 (0.042)	0.272*** (0.055)	-0.011 (0.040)	0.016 (0.043)	-0.096** (0.043)	-0.062 (0.038)
Observations	312,748	322,215	320,566	318,797	318,223	318,212	318,585	317,590	316,406	297,980	320,153
R-squared	0.108	0.077	0.062	0.087	0.108	0.238	0.078	0.092	0.132	0.103	0.237

## Appendix 4: Table 8 - County Types Well-Being Indices, Minimum Controls

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Large metro (1M+)	0.145*** (0.009)	-0.010 (0.011)	0.041*** (0.010)	0.034** (0.015)	-0.060*** (0.021)	0.177*** (0.016)	0.236*** (0.012)	0.085*** (0.014)	0.166*** (0.017)	0.097*** (0.016)	-0.109*** (0.011)
Medium metro (250k to 1M)	0.113*** (0.009)	-0.012 (0.011)	0.038*** (0.009)	0.024 (0.015)	-0.075*** (0.020)	0.122*** (0.016)	0.162*** (0.012)	0.063*** (0.014)	0.101*** (0.016)	0.060*** (0.015)	-0.072*** (0.011)
Small metro (<250k)	0.078*** (0.010)	-0.003 (0.011)	0.023** (0.010)	0.030** (0.015)	-0.063*** (0.020)	0.083*** (0.016)	0.112*** (0.012)	0.053*** (0.014)	0.078*** (0.017)	0.042*** (0.015)	-0.045*** (0.011)
Micropolitan	0.045*** (0.009)	-0.004 (0.011)	0.011 (0.009)	0.013 (0.015)	-0.050*** (0.019)	0.054*** (0.016)	0.082*** (0.011)	0.037*** (0.014)	0.041** (0.016)	0.009 (0.015)	-0.024** (0.011)
Rural - metro adjacent	0.009 (0.010)	0.006 (0.012)	-0.008 (0.010)	-0.005 (0.016)	-0.005 (0.019)	-0.002 (0.017)	0.032*** (0.011)	0.005 (0.015)	0.009 (0.017)	-0.011 (0.016)	-0.017 (0.012)
Observations	1558198	1278527	1614927	483502	482773	482827	1113181	481749	480189	453301	1614589
R-squared	0.039	0.035	0.012	0.012	0.059	0.065	0.053	0.008	0.025	0.020	0.179

## Appendix 4: Table 9 - County Types Well-Being Indices, All Controls Except Income

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Large metro (1M+)	0.072*** (0.008)	0.022** (0.010)	0.001 (0.008)	-0.008 (0.013)	-0.086*** (0.020)	0.063*** (0.014)	0.157*** (0.011)	0.041*** (0.013)	0.066*** (0.014)	0.009 (0.014)	-0.045*** (0.009)
Medium metro (250k to 1M)	0.064*** (0.008)	0.011 (0.010)	0.010 (0.008)	-0.000 (0.013)	-0.090*** (0.019)	0.045*** (0.014)	0.112*** (0.011)	0.032** (0.013)	0.039*** (0.014)	0.004 (0.014)	-0.032*** (0.009)
Small metro (<250k)	0.045*** (0.008)	0.014 (0.010)	0.004 (0.008)	0.015 (0.013)	-0.072*** (0.019)	0.029** (0.014)	0.078*** (0.011)	0.030** (0.013)	0.036** (0.014)	0.003 (0.014)	-0.018* (0.009)
Micropolitan	0.027*** (0.008)	0.006 (0.010)	0.001 (0.008)	0.005 (0.013)	-0.054*** (0.018)	0.023 (0.014)	0.063*** (0.010)	0.024* (0.013)	0.018 (0.014)	-0.011 (0.014)	-0.010 (0.009)
Rural - metro adjacent	0.006 (0.009)	0.008 (0.011)	-0.009 (0.009)	-0.010 (0.015)	-0.008 (0.018)	-0.013 (0.015)	0.029*** (0.010)	-0.001 (0.014)	0.001 (0.015)	-0.018 (0.015)	-0.014 (0.010)
Observations	1558198	1278527	1614927	483502	482773	482827	1113181	481749	480189	453301	1614589
R-squared	0.087	0.065	0.044	0.074	0.089	0.163	0.075	0.081	0.114	0.091	0.228

## Appendix 4: Table 10 - County Types Well-Being Indices – All Controls + Income

Variables	(1) Evaluative well-being index	(2) Negative affect index	(3) Positive affect index	(4) Purpose well-being index	(5) Community well-being index	(6) Financial well-being index	(7) Economy perceptions index	(8) Social well- being index	(9) Health well- being index 1 (self- assessment)	(10) Health well- being index 2 (behaviors)	(11) Health well- being index 3 (diseases)
Large metro (1M+)	0.028*** (0.008)	0.050*** (0.010)	-0.023*** (0.008)	-0.043*** (0.013)	-0.120*** (0.020)	-0.027** (0.013)	0.143*** (0.011)	0.005 (0.013)	0.023* (0.014)	-0.022 (0.014)	-0.023** (0.009)
Medium metro (250k to 1M)	0.036*** (0.008)	0.030*** (0.010)	-0.007 (0.008)	-0.022* (0.013)	-0.110*** (0.019)	-0.011 (0.013)	0.103*** (0.011)	0.010 (0.013)	0.012 (0.013)	-0.017 (0.013)	-0.017* (0.009)
Small metro (<250k)	0.029*** (0.008)	0.026*** (0.010)	-0.007 (0.008)	0.003 (0.013)	-0.084*** (0.019)	-0.003 (0.014)	0.072*** (0.011)	0.017 (0.013)	0.020 (0.014)	-0.008 (0.014)	-0.009 (0.009)
Micropolitan	0.016** (0.008)	0.014 (0.010)	-0.006 (0.008)	-0.005 (0.013)	-0.063*** (0.018)	-0.003 (0.013)	0.059*** (0.010)	0.014 (0.013)	0.005 (0.014)	-0.021 (0.014)	-0.004 (0.009)
Rural - metro adjacent	0.002 (0.009)	0.011 (0.010)	-0.012 (0.009)	-0.013 (0.014)	-0.010 (0.018)	-0.021 (0.014)	0.027*** (0.010)	-0.004 (0.014)	-0.003 (0.014)	-0.021 (0.015)	-0.012 (0.010)
Observations	1558198	1278527	1614927	483502	482773	482827	1113181	481749	480189	453301	1614589
R-squared	0.107	0.077	0.052	0.086	0.101	0.239	0.077	0.093	0.132	0.102	0.235