Income Inequality and Wellbeing

Draft: Friday 28th March, 2014

Abstract

This study investigates the effect of income inequality (gini) on health outcomes across U.S. counties using recent data. Health outcomes are both subjective and objective: mentally and physically unhealthy days, years of potential life lost and low birth weight. Regression models control for many county-level characteristics: county size, per capita income, persistent poverty, percent uninsured, percent unemployed, percent college, and percent Black. In addition, state dummies are included to account for state-level differences. This is a more extensive set of controls than that used in any study so far. Results show that inequality is associated with worse health in terms of all the above measures. The magnitude of the effect is comparable to, or even higher than that of the per capita income. The reason may be that, as suggested in the literature, the level of contextual income does not matter for health in the rich countries, such as the United States. What matters is the distribution of income. This is an ecological study, and hence, it does not claim causal relationship.

KEYWORDS: PUBLIC HEALTH, MENTAL HEALTH, QUALITY OF LIFE, U.S. COUNTIES, INCOME INEQUALITY, GINI

Introduction

The 400 wealthiest Americans have a greater combined net worth than the bottom 150 million (Kristof 2011). On the other hand, the middle quintile of Americans does not pay any effective tax–they receive about as much from the government as they pay in taxes. The bottom quintile receives from the government even as much as $3 for every $1 they make (Mankiw 2012).

Inequality is a widely debated topic. One outcome to consider is health. The question that that this study is trying to answer is whether inequality makes communities less healthy. Specifically, this study tests whether inequality depresses population (county-level) health. Results show that inequality makes communities less healthy. To paraphrase Jeremy Bentham, if the goal is "the greatest health for the greatest number," then our society should become more equal.

There is a disagreement about whether income inequality affects health. This study adds evidence that there is a negative relationship between inequality and county-level health. I am using recent data about objective and subjective health outcomes and control for many county characteristics. I find a robust effect of income inequality on health. The reasons that some studies failed to find a significant relationship at the county level may be following: There used to be less inequality.[1] The data were less precise or not available at all. Many studies did not control for as many relevant characteristics as I do.

[1] As explained later, inequality has been on the rise in the US over several decades. The assumption is that some inequality is not harmful to human wellbeing. It will be shown later that the disproportionally largest harm happens at high levels of inequality.

What predicts poor health? Poverty or income inequality?

There have been proposed several causal pathways from inequality to health (e.g. Zimmerman and Bell 2006):

- income inequality reduces social capital (interactions with other people), and social capital predicts better health
- income inequality causes the rich to withdraw support for public services, which in turn leads to poorer health
- income inequality increases individual comparisons, which increase stress and frustration leading to poor health

These mechanisms are theoretically sound, and the underlying theme is social capital. Social capital is about connecting with others: People want to connect with people like them. In other words, similarity breeds connection (McPherson et al. 2001). The more inequality, the less social capital. There is substantial evidence that social isolation and stress predict worse health. In addition, human beings compare among themselves (Michalos 1985). Robert H. Frank has persuasively shown that social comparison in the presence of high income inequality results in declining wellbeing, and the US already has already reached high levels of inequality in 1990s (Frank 2005, 1997, 2012).

Yet some scholars were unconvinced that inequality is harmful for health (Fiscella and Franks 1997, Lynch et al. 2001, Muller 2002, Sturm and Gresenz 2002, Lynch et al. 2004). They usually argue it is insufficient income (poverty) that produces poor health. Poverty may be defined as a form of inequality, and by eliminating poverty, inequality would be eliminated as well. Even if only poverty were related to poor health, it is still inequality (in broad sense) that relates to health. The question remains whether it is only poverty or only narrowly defined inequality (discrepancies in incomes above poverty) that results in poor health.

Because poverty and inequality are a similar condition, then, by definition, they are correlated. When analyzing inequality and health at the aggregate level, poverty may result in a so-called "artifact effect": If a disproportionate number of poor people live in unequal areas, then the relationship between inequality and health would be spurious. The "artifact effect" will be tested in this study. Also, there is an intriguing related finding–a person benefits from living among people like her–they both face similar obstacles and share collective knowledge for overcoming those obstacles, hence it is actually rich people living in a predominantly poor areas that may be disadvantaged in terms of health care (Kirby 2008).

A staunch proponent of no relationship between income inequality and health is Angus Deaton. However, he has investigated this topic at country-level (e.g., Deaton 1999, 2001), and this study explores variation at much less aggregated level than country. This resolves Deaton's criticism about income inequality data quality (Deaton 2001)–data quality in the US is better than elsewhere. Also studying only one country helps with consistency of measurement across units of analysis. In a study at city and state levels, Deaton and Lubotsky (2003) argue that the link between inequality and health is confounded by race, especially by Blacks. Ram (2005), however, contradicts Deaton's findings: income inequality has negative effect on health even controlling for race and other potential confounders such as education and urbanization. Similarly, Ram (2006) found that the negative effect of income inequality on health persists after controlling for ethnic heterogeneity. The present study will also control for race, and will do so at county-level, much finer geographic resolution than country-level (Ram 2006) or state-level (Ram 2005). Still, not all criticism of Deaton is overcome in this study–I am also not able to show that inequality causes poor health because this study uses ecological design. The unit of analysis is county, not person. There is a relationship between inequality and health controlling for many predictors of health and confounders, but it remains for the future research to determine if this relationship is causal.

Health can be measured in multiple ways. Many studies use either subjective/self-reported measures, or objective measures. There is a correlation between the two, but they are not the same. Inequality may have an effect on subjective health: People may be upset or feel bad about inequality, but otherwise be in a good (objective) health. The present study measures health using both objective and subjective outcomes.

That poverty results in poor health is widely recognized, but it is less clear that increasing income for people not in poverty results in better health. The relationship between income and health is quadratic–there are diminishing returns in health from income (Lynch et al. (2004) shows many examples). At some point a person may not need any more income to have better health. Richard G. Wilkinson (2006, 2010) finds that among the rich countries there is no relationship between PCGDP (Per Capita Gross Domestic Product) and health, and so it is not absolute but relative income that matters:

> If absolute living standards were overwhelmingly important, it would be difficult to understand why, despite having a median income four times as high, life expectancy among Black men in the USA was 9 years shorter than for men in Costa Rica.

Overall (for all races) life expectancy differs, too: Greece with half of the per capita income of the U.S. has a longer life expectancy; and Cuba with less than a third of U.S. per capita income has about the same life expectancy

as the U.S. (Marmot 2005a). The famous Whitehall studies (Marmot 2005b) showed that people of higher status have better health. But social status is a result of inequality. The more inequality, the more gradation in social status. That may be another mechanism through which inequality affects health (here it actually improves health of those of high-rank).

An integral component of social comparison process is a comparison group. People tend to compare to those of similar status (near equals) (Wilkinson and Pickett 2006). People also compare to others in the same geographic area, same occupation and similar age (Michalos 1985, Barrington-Leigh and Helliwell 2008, Ravallion and Lokshin 2009). The point is that comparison to others is very frequent and quite universal. I can speculate that it is a part of human nature. Humans also compare over time–they comapre their current situation to their own past conditions (Michalos 1985, Okulicz-Kozaryn 2014). And in addition to poor health, inequality can have other negative consequences such as loss of dignity (Marmot 2004), loss of freedom, social exclusion and ultimately loss of economic development (Mackenbach 2002, Wilkinson and Pickett 2010).

A relevant concept in the study of the effect of inequality on health is social capital. Social capital is simply defined as "connectedness with others" that takes many forms: time with friends, church attendance, marriage, civic engagement, and so forth. Social capital does produce better health: "Socially isolated people die at two or three times the rate of people with a network of social relationships and sources of emotional and instrumental support" (Kawachi and Kennedy 1997). There is less social capital when there is more inequality. Kawachi et al. (1997) and Subramanian et al. (2002) found that low social capital is associated with poor health. For a recent review of a relationship between social capital and health see Holt-Lunstad et al. (2010). Inequality affects health with a lag. The lag length depends on the measurement of health outcome (Lynch et al. 2004). Subramanian and Kawachi (2004) suggest that income inequality would have the strongest effects on health up to 15 years later.

There are many inequality-health relationship hypotheses (Subramanian and Kawachi 2004, Lynch et al. 2004, Zimmerman and Bell 2006, Wilkinson and Pickett 2006, 2010), but they can all be subsumed under two or three concepts:

- AII (Absolute Income Hypothesis): absolute level of income→health
- RII/IIH (Relative Income Hypothesis/Income Inequality Hypothesis): relative level of income→health
  - strong IIH: income inequality→worse health for everybody
  - weak IIH: income inequality→worse health for the poor/disadvantaged

Several other variables are thought to predict health. Education predicts better physical and mental health (Zimmerman and Bell 2006, Muller 2002). Crime and income inequality are correlated and high crime predicts low health (Zimmerman and Bell 2006). Income and employment improves health (Zimmerman and Bell 2006). Also, racial composition and regional differences affect health (Subramanian and Kawachi 2004). I control for all of these factors using recent data.

The level of analysis determines results. The bigger the area, the bigger the effect, even among the counties. In Texas, for instance, no relationship was found in counties $< 150,000$ people, but there was a relationship in counties with $> 150,000$ people (Franzini et.al, cited in Chen and Crawford (2012)). One explanation is that income inequality in small areas is affected by the degree of residential segregation and the health of people in small areas is not poorer because of the inequality within a small area but because of the inequality in a larger area (Wilkinson and Pickett 2006). Another explanation is that in smaller areas inequality may provide a positive signaling effect (Hirschman's "tunnel effect" (Hirschman, quoted in Ravallion and Lokshin 2000, p. 88)), while in bigger areas there may be more social comparison. Senik (2002) and Graham and Felton (2006) discuss these two channels with respect to inequality in Russia and in Latin America. Also, see work by John Knight about inequality in China.[2] The unit of analysis in the present study is a county. Census tracts are designed to be homogeneous. Hence, they are too small. State, on the other hand, is too big: A person is more likely to be affected by incomes of other people in her county, not state. Finally, as McLaughlin and Stokes (2002) point out, county is a level at which local services are provided and organized. There are several major findings at the county-level.

Income inequality and minority racial concentration predict higher mortality (McLaughlin and Stokes 2002). Income inequality increases depression levels among old people (>70 years) (Muramatsu 2003). Blakely et al. (2002) used a multilevel model and found week association between inequality and self-reported health. Fiscella and Franks (1997) argued that it is individual income, not county level inequality, that affects health. Muramatsu (2003), on the other hand, found a robust relationship between gini and depression, and argued that inequality is especially bad for mental health. Wilkinson and Pickett (2006) in their review reported that among 40 studies at county or tract level, 12 were wholly supportive, 14 partially, and 14 unsupportive of the link between inequality and public health, and there is more support at higher levels of aggregation. In a recent study, Cheng and Kindig (2012) found that income inequality predicts mortality. In another recent study, Chen and Crawford (2012) found a rather inconclusive relationship between gini and health outcomes. Their models are multilevel and at the county level they control for percentage of population in poverty and median household income.

[2] I am grateful for these points to an anonymous reviewer.

Methods

This study uses the County Health Rankings dataset and supplement it with data from ICPSR Study No. 20660. Both datasets are described in the data appendices A and B. The variables are defined in table 1. Many variables are measured over time interval, which makes them more reliable, because these measures are estimates, not the actual values, and so they have a confidence interval.

Table 1: Outcome and explanatory variables.

name	description
mentally unhealthy days	average number of reported mentally unhealthy days per month, for adults, Behavioral Risk Factor Surveillance System (BRFSS), 2002-2008
physically unhealthy days	average number of reported physically unhealthy days per month for adults, Behavioral Risk Factor Surveillance System (BRFSS), 2002-2008
years lost	age-adjusted years of potential life lost (YPLL) rate per 1000 persons, 2004-2006 (before the age of 75)
% low birthweight	percent of births with low birth weight (<2500g), 2000-2006
% uninsured	percent of adults 18-64 without health insurance, Census/Current Population Survey (CPS) Small Area Health Insurance Estimates (SAHIE), 2005
% college	percent of population age 25+ with 4-year college degree or higher, American Community Survey (ACS), 2005-2007
gini	gini coefficient, decennial census, 2000
% unemployed	percent of population age 16+ unemployed and looking for work, Local Area Unemployment Statistics, Bureau of Labor Statistics, 2008
violent crime rate	violent crimes / aggregate population * 100,000 (2005-2007)
% obese	percent of adults that report BMI >= 30, 2006-2008; CDC
% smokers	Percent of adults that report smoking at least 100 cigarettes in their lifetime and that they currently smoke BRFSS, 2002-2008
persistent poverty	20 percent or more of residents were poor as measured by each of the last 4 censuses, 1970, 1980, 1990, and 2000
population	census 2000 total resident population
per capita personal income (USD 1,000)	per capita personal income (USD 1,000), 2005
violent crime rate	violent crimes / aggregate population * 100,000 (2005-2007)
% black	percent black, 2005
no social-emotional support	percent of adults that report not getting social/emotional support (2005-2008); BRFSS

The first panel shows measures of the health outcomes. There are two subjective/self-reported measures: MENTALLY UNHEALTHY DAYS and PHYSICALLY UNHEALTHY DAYS. And there are two objective measures: YEARS LOST and % LOW BIRTHWEIGHT. The second panel shows the explanatory variables. The choice of variables is motivated by previous studies; however, not a single study has used all of them. This is a contribution of this study–to show that the relationship between inequality and multiple health outcomes holds after controlling for all hypothesized predictors of health. Health insurance measures access to health care (Chen and Crawford 2012). Crime predicts health (Lynch et al. 2004). Social context affects health: social capital, unemployment, social status and quality of social environment (Wilkinson and Pickett 2006). Ethnicity/race is another predictor of health outcomes (Zahran et al. 2005, McLaughlin and Stokes 2002). Educational attainment matters, too (Subramanian and Kawachi 2004). Table 2 shows health measures for the 5 most equal and 5 most unequal counties.

Table 2: Health outcomes in 5 most equal (first panel) and 5 most unequal (second panel) counties.

County name	state	gini	per capita income (1,000)	mentally unhealthy days	physically unhealthy days	years lost	% low birth-weight
Tooele County	Utah	32.6	22.2	3.6	3.8	73	6.8
Kendall County	Illinois	32.6	31.0	2.0	2.0	49	6.7
Paulding County	Georgia	32.9	25.1	4.5	4.9	76	7.0
Bristol Bay Borough	Alaska	33.3	44.0	2.4	3.2		
Manassas Park city	Virginia	33.3				51	5.4
Boone County	Indiana	55.1	42.9	2.3	3.3	53	6.4
Kenedy County	Texas	56.6	33.1				
Bolivar County	Mississippi	56.9	20.6	4.1	4.0	136	12.8
Lee County	Kentucky	58.6	18.6	5.0	6.9	124	9.4
New York County	New York	60.1	93.4	3.6	3.6	55	8.3

Interestingly, among equal and unequal counties there are both poor and rich counties, but overall health is worse for the unequal counties. The equal counties are located near big cities: Kendall County Illinois close to Chicago; Tooele County Utah close to Salt Lake City; Paulding County Georgia close to Atlanta; Chisago County Minnesota close to Minneapolis; Columbia County Oregon close to Portland. Unequal counties, on the other hand, tend to be either cities or rural areas. The following counties are rural: Lee County Kentucky; Bolivar County Mississippi; Owsley County Kentucky.

Results

Figure 1 (below) shows health outcomes against quartiles of gini. Advancing from one quartile to another results in worse health on all measures and the effect happens all along, so there does not appear to be a threshold effect at which inequality starts to matter. Results are similar if gini is broken down into deciles instead of quartiles. If anything, there is a more dramatic increase between the 3rd and 4th quartiles, meaning that extreme inequality is much worse than some inequality. It is a substantial effect: Advancing from the 1st to 3rd quartile produces about half a day more of physical or mental unhealthiness per month per person–a lot of public sickness, indeed. A county has about 100,000 people, so it has 50,000 unhealthy days more per one county per one month. Of course, there may be other factors correlated with income inequality such as poverty or state-level policies. I will control for them later. Because self-reported/subjective health measures may be sensitive to income inequality, let's turn to objective measures. Years potentially lost is a visual measure: Advancing from one to another quartile of gini results in about 10 years lost for 1,000 people–this is a lot of time.

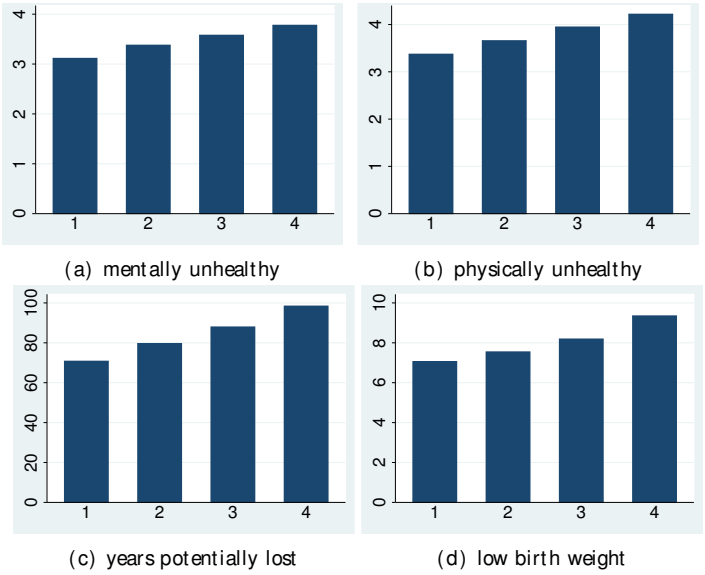

Figure 1: Health outcomes against quartiles of gini.

As mentioned in the introduction, there is one important relationship between the two explanatory variables–gini and poverty are likely to be correlated. Poor people live in more unequal areas–gini correlates with percent in poverty at 0.43 as shown in figure 2 (below). Again, there is a substantial increase between the third and fourth quartile.

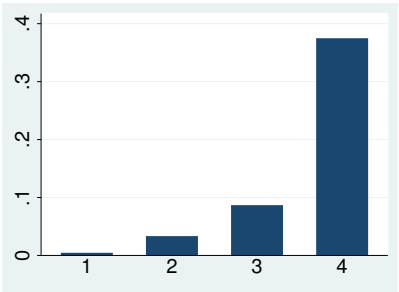

Figure 2: Persistent poverty against gini.

Regression results are shown in the tables (3 and 4). In addition to the usual predictors of health, the models control for county population, because literature suggests that income inequality depresses health in big counties only. I also include state dummies, as it is important to control for administrative regions. Welfare policies/generosity of state-level spending and regional effects (e.g. the uniqueness of the South) are likely to affect the link between inequality and health.

Table 4 shows standardized coefficients–let's compare income with income inequality. Income correlates with persistent poverty and hence the coefficient on both is lower, but still the effect of gini is higher than that of income.

Table 3: OLS regressions of health measures.

	mentally unhealthy days	physically unhealthy days	years lost	% low birth-weight
gini	0.048***	0.055***	1.478***	0.068***
per capita personal income (USD 1,000)	-0.013***	-0.019***	-0.204*	0.005
persistent poverty	0.024	0.346***	8.546***	0.229**
% uninsured	-0.043***	-0.044***	-0.795***	-0.039***
% unemployed	0.029*	0.026	1.302***	-0.012
% college	-0.023***	-0.038***	-1.036***	-0.035***
% black	-0.015***	-0.017***	0.168***	0.066***
population	0.000**	0.000*	-0.000	0.000*
state dummies	yes	yes	yes	yes
constant	3.551***	4.107***	60.383***	6.156***
N	2861	2860	2987	2861

*** p<0.01, ** p<0.05, * p<0.1; robust std err

Table 4: OLS regression of health measures. Standardized coefficients reported.

	mentally unhealthy days	physically unhealthy days	years lost	% low birth-weight
gini	0.163***	0.169***	0.211***	0.125***
per capita personal income (USD 1,000)	-0.085***	-0.114***	-0.055*	0.018
persistent poverty	0.008	0.099***	0.116***	0.040**
% uninsured	-0.230***	-0.219***	-0.189***	-0.112***
% unemployed	0.060*	0.049	0.112***	-0.014
% college	-0.183***	-0.283***	-0.349***	-0.155***
% black	-0.204***	-0.215***	0.100***	0.511***
population	0.044**	0.030*	-0.002	0.014*
state dummies	yes	yes	yes	yes
constant	***	***	***	***
N	2861	2860	2987	2861

*** p<0.01, ** p<0.05, * p<0.1; robust std err

Discussion

What do these coefficients really mean? Adding more variables to the right hand side of the model cuts the magnitude of the gini coefficient at most by two or three times as compared to a bivariate model (the interpretations given above for the bar charts in figure 1). For instance, instead of 50,000 unhealthy days per month per county by advancing from first to third quartile we would generate 20,000-30,000 unhealthy days–still a substantial effect. Gini ranges in this dataset from 32 to 60. For instance, if it goes up by $6 * .05$ gini coefficient$=.3 * 100{,}000$ people in an average county results in 30,000 unhealthy days. If quartiles of gini are included instead of gini, the coefficient on the dummy for the third quartile (first quartile being the base) is .3. Similarly, the YEARS LOST effect decreased by about half as compared to the bivariate model: Advancing from one to another quartile of gini results in 5 more years lost per 1,000 people. Again, this is a substantial effect–for a typical county it would mean 500 years lost. % LOW BIRTHWEIGHT is also both statistically and practically significant.

Let's turn to the other coefficients. Per capita income, percent unemployed and percent college have hypothesized signs. But percent uninsured and percent Black have unexpected signs–the reason is correlations between right-hand side variables–the bivariate correlations are as expected. I do not try to explain the unexpected signs and do not explore interrelationships between these variables because they are just used as controls. I am solely focused on gini.

Finally, causality needs to be discussed. I excluded alternative explanations: It is not poverty, state-level peculiarities, social capital or income that is responsible for a potentially spurious relationship between inequality and health. It is unlikely that causality goes the other way round: Poor health causes more inequality. If anything, inequality in health could cause inequality in income, but I use here the level of health. Hence, causality may be present, but I am not able to answer it definitely. Again, because it is ecological study at county level, it does not claim causal relationship. I merely suggest that causality may be present because results are quite robust and there are theoretical reasons to expect causality (these mechanisms were discussed at the beginning). I have done several robustness checks. Model estimates are shown in the appendix (tables 5 and 6). I added 4 variables. No social-emotional support, violent crime rate, % obese[3] and % smokers were not available for many counties, but they are thought to predict health, and need to be controlled for. Gini remains significant and the magnitude of the effect is similar to that in the tables reported above. In addition, counties within states may be correlated–a model with clustered standard errors was estimated. Finally, most measures of health are not normally distributed and models were reestimated using logged dependent variables. Again, the results are similar.

Limitations

I do not control for person-level characteristics: e.g., socio-demographics, and personal/household income. All measures used here are estimates themselves, so there is added uncertainty. It would be a problem if the measurements were erroneous in different directions by the inequality measure: e.g., health outcomes would be shown to be worse than they are in unequal counties and better than they are in equal counties, but I do not see why that could be the case.

Again, this is an ecological study, that is, it is done at county-level. Hence, results at person-level may be different. Still, ecological relationships are of interest in themselves. But these results should not be interpreted as causal at person-level.

Appendix A: County Health Rankings

The following comes from `http://www.countyhealthrankings.org/ranking-methods/data-sources-and-measures` (and there is more information available).

[3] In addition, these variables may be on the causal pathway between inequality and health–I am grateful for this point to an anonymous reviewer.

The County Health Rankings team synthesizes health information from a variety of national data sources to create the Rankings. Most of the data we use are public data available at no charge. Measures based on vital statistics data, sexually transmitted disease rates, and Behavioral Risk Factor Surveillance System (BRFSS) survey data were calculated for us by staff at the National Center for Health Statistics and other units of the Centers for Disease Control and Prevention (CDC). The same is true for our health care quality measures, which were calculated for us by the authors of the Dartmouth Atlas of Healthcare, using Medicare claims data. Another key data source, primarily for social and economic variables, is the American Community Survey. We download these data sets and, where needed, calculate the estimates ourselves. Similarly, we downloaded publicly available data on violent crime and some built environment measures, and calculated point estimates.

Appendix B: ICPSR County Health characteristics

The following comes from `http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/20660/detail`.

This file contains an array of county characteristics by which researchers can investigate contextual influences at the county level. Included are population size and the components of population change during 2000-2005 and a wide range of characteristics on or about 2005: (1) population by age, sex, race, and Hispanic origin, (2) labor force size and unemployment, (3) personal income, (4) earnings and employment by industry, (5) land surface form typography, (6) climate, (7) government revenue and expenditures, (8) crimes reported to police, (9) presidential election results (10) housing authorized by building permits, (11) Medicare enrollment, and (12) health profession shortage areas.

Subject Terms: age, arson, assault, auto theft, birth rates, burglary, climate, counties, crime, demographic characteristics, disabled persons, economic conditions, election returns, employee benefits, employment, gender, geography, government expenditures, government revenues, group homes, Hispanic or Latino origins, housing, housing construction, income, labor force, larceny, manufacturing industry, Medicare, migration, mortality rates, murder, natural environment, occupations, older adults, pensions, physician availability, poverty, public assistance programs, race, rape, retail trade, robbery, taxes, unemployment, wages and salaries, weather data, workers

Appendix C: Robustness Checks

Table 5: OLS regression of health measures. Clustered standard errors on state

	mentally unhealthy days	physically unhealthy days	years lost	% low birth-weight
gini	0.047**	0.058***	1.810***	0.076***
per capita personal income (USD 1,000)	-0.010	-0.012	0.040	0.017*
persistent poverty	-0.259*	0.351*	3.190	-0.024
% uninsured	-0.001	-0.001	0.237	-0.008
% unemployed	0.023	0.031	-0.809	-0.100*
% college	-0.001	-0.018*	-0.993***	-0.035**
no social-emotional support	0.048***	0.023**	0.086	0.008
violent crime rate	-0.000	-0.000	0.010**	0.001**
% black	-0.006*	-0.007	0.387***	0.080***
population	0.000	0.000	-0.000**	-0.000*
% obese	0.012	0.022	0.776*	0.018
% smokers	0.051***	0.039***	1.010***	0.055***
state dummies	yes	yes	yes	yes
constant	-0.571	-0.042	-30.648	2.557
N	860	860	860	856

*** p<0.01, ** p<0.05, * p<0.1; robust std err

Table 6: OLS regression of health measures. Logs of dependent variables

	mentally unhealthy days	physically unhealthy days	years lost	% low birth-weight
gini	0.012***	0.013***	0.021***	0.009***
per capita personal income (USD 1,000)	-0.004**	-0.005**	-0.002*	-0.000
persistent poverty	-0.063*	0.083*	-0.018	-0.021
% uninsured	-0.007**	-0.008***	-0.005**	-0.004***
% unemployed	0.012*	0.013**	0.004	-0.004
% college	0.000	-0.005***	-0.012***	-0.003**
no social-emotional support	0.010***	0.005**	-0.001	0.001
violent crime rate	0.000	0.000	0.000***	0.000***
% black	-0.004***	-0.004***	0.003***	0.006***
population	0.000	0.000	-0.000	0.000*
% obese	0.001	0.004	0.007**	0.002
% smokers	0.014***	0.008***	0.009***	0.003*
state dummies	yes	yes	yes	yes
constant	0.537***	0.803***	3.478***	1.670***
N	860	860	860	856

*** p<0.01, ** p<0.05, * p<0.1; robust std err

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