Appendix

Appendix for "Deaths of Despair and the Decline of American Religion"

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A1. Supplementary Analysis using the ANES

This analysis uses the American National Election Studies, Cumulative Data File, 1948-2004, made available by the Association of Religion Data Archives (2024)). The ANES is a biennial nationally-representative cross section survey that has been conducted since 1948. The cumulative-data version of the dataset was prepared by the ANES Staff and merges into a single data file cases and variables from each of the biennial American National Election Studies. Our analysis goes from 1970 to 2004. In obtaining this data, we noted that thearda.com offers both a text-formatted version of the data and an Excel-formatted version, and the former was missing data from 1998 onwards; our analysis uses the data provided in the Excel-format. The ANES results are weighted. Using alternate post-stratification weights or no weights at all produces almost identical results.

The ANES attendance question breaks attendance responses down into six categories: 1) Every week; 2) Almost every week; 3) Once or twice a month; 4) A few times a year; 5) Never; 6) No religious preference. To make our responses as comparable as possible to the GSS results, we define weekly attendance as one for those responding "every week" and zero otherwise, and never attend as one for those who answer "never" or "no religious preference" and zero otherwise. The response of less than once a year in the GSS is not available in the ANES, the next highest level of attendance is "a few times a year"; this difference in how the surveys code low attendance may lead the prevalence of low attendance in the ANES to be slightly lower than in the GSS.

Two facts should be kept in mind when considering the ANES data. First, this survey

is smaller than the GSS and many states have small (e.g., less than 20 observations) sample sizes in a given year, making the replication of figures 4 and 5 problematic. Second, in 1990 the ANES changed the wording of its attendance question in two ways. First, the question was moved to before questions about affiliation, and second, the question clarified that funerals, weddings, and baptisms were not being asked about. While it is not obvious if or how such questions would differentially bias answers from the less-educated white group (unless they already had falling levels of attendance, which would fit with the main results), the weekly-attendance and the never-attend figures both appear to show large changes in 1990.[32]

With these caveats in mind, figure A2 shows trends in weekly religious attendance and never attending for all respondents, white respondents, white respondents without a college degree, and whites without a college degree ages 45-64. The figures calculate the mean value of these variables in each year from 1970 to 2004; given the small samples, the figures are smoothed by using a three-year running average of these means. Panel A shows the fraction reporting that they never attend religious services, and panel B shows weekly attendance.

Both figures present results consistent with the main estimates earlier: in the early 1980s less-educated middle-aged whites had higher levels of religious participation than other groups, but this had changed by the end of the 1990s. Overall, the ANES has several limitations relative to the GSS, but this notwithstanding, both datasets show relatively large declines over the same time period for the same group of individuals: less-educated, middle-aged whites.

A2. Supplementary Analysis using the LRCM

This analysis uses the 1990 and 2000 waves of the Longitudinal Religious Congregations and Membership File (State Level). These are decennial datasets attempting to measure

[32]This matches output produced by ANES itself; see for example the ANES figure "Church Attendance, 5 Categories" at https://electionstudies.org/data-tools/anes-guide/anes-guide.html?chart=religious_attendance_5_cat

religious membership in the United States. We focus on the years 1990 and 2000; in both years this data in this dataset was collected by The Association of Statisticians of American Religious Bodies. As discussed in Bacon et al. (2018), challenges with using this dataset include the fact that the religious groups participating in this purely voluntary survey changed over time, so that comparisons over time may reflect changes in participation in the survey rather than participation by adherents. Moreover, several groups also changed how they counted membership, although several of the largest groups to do so changed in 2010, which is after our period of analysis (these include the United Methodist Church, the Catholic Church, and the Church of Latter Day Saints). Traditionally Black Protestant groups have low levels of participation. Given these issues, when using this data we focused on groups that report adherent levels in both 1990 and 2000.

Adherent totals are divided by the state population in each case. While the data is reported by religious groups themselves, there is still likely measurement error. Most notably, for Rhode Island there is an extraordinarily large change in adherence of over 12 percent of the entire state population during this period. This was driven by a large reported fall in Catholic adherents. The 1990 LRCM Rhode Island numbers for Catholics match almost exactly the numbers given in the Official Catholic Directory, but the 2000 LRCM numbers are much smaller; we replaced the 2000 Catholic RI numbers using the numbers from the Official Catholic Directory. Unlike the GSS figures, which capture both extensive and intensive margin changes in adherent behavior, the data here only capture extensive margin changes.

Figure A4 shows a cross-sectional across-state comparison of adherent rates (the x axis) and deaths of despair per 100,000 (the y axis) in 1990. Panel B reports the change in these values from 1990 to 2000, as in Figure 5 in the main text. While the data here is less reliable than the figures used in the main text, more states can be included. Both figures show a negative relationship that is qualitatively similar to the figures in the main text, suggesting that higher adherence rates are associated with lower levels of deaths of despair.

A3. International Mortality Trends

Our data on deaths of despair outside of the U.S. come from the World Health Organization's (WHO's) Mortality Database (World Health Organization, 2024). This dataset contains mortality counts by year, age group, sex, and cause of death for a broad collection of countries. These counts come from each country's own vital statistics system. We aggregate the data to the country-year-age group-cause of death level. Cause of death is labeled using either ICD8, ICD9, or ICD10 classification codes, and the timing of the usage of each set of codes varies across countries.

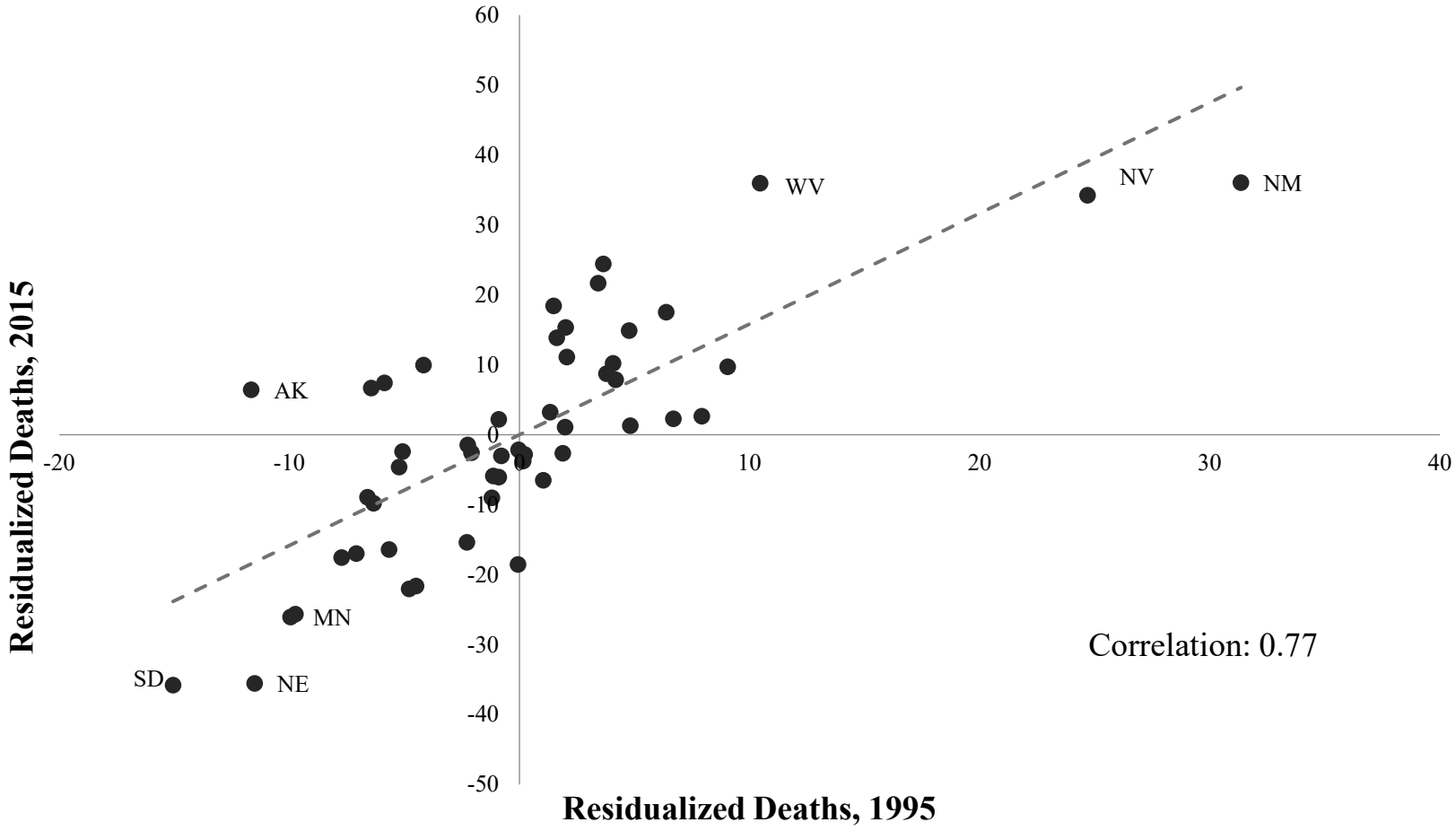
Mortality counts reported using the ICD8 and ICD9 codes are only available in coarse categories that group together several causes of death; for example, in years when the ICD8 codes are used, accidental drug poisonings (E850-E859) cannot be isolated and are instead lumped into all accidental poisonings (E850-E877). As such, we must define deaths of despair slightly differently in our international analysis than in our main analysis. In the ICD8 codes, we define deaths of despair using the codes E950-E959 (suicide), 571 (liver cirrhosis), E850-E877 (accidental poisonings), and E980-E989 (injury, undetermined whether accidentally or purposely inflicted). In the ICD9 codes, we use the codes E950-E959 (suicide), 571 (liver cirrhosis), E850-E869 (accidental poisonings), and E980-E989 (injury, undetermined whether accidentally or purposely inflicted). In the ICD10 codes, we use the codes X60-X84 (suicides), K70, K73-K74 (liver cirrhosis), X40-X49 (accidental poisonings), and Y10-Y34 (event of undetermined intent).

To construct mortality rates, we use population data from the United Nations' Population Division Data Portal (United Nations, Department of Economic and Social Affairs, Population Division, 2024). Our mortality rates for the middle-aged (45 to 64 year olds) are age-adjusted; i.e., they are convex combinations of the four different five year age group rates within this broader age range and are calculated using the same set of weights across all countries and years. Our weights are based off the age distribution in the United States in 1980. This age adjustment prevents misleading comparisons of mortality rates across

countries that are driven purely by differing age distributions.

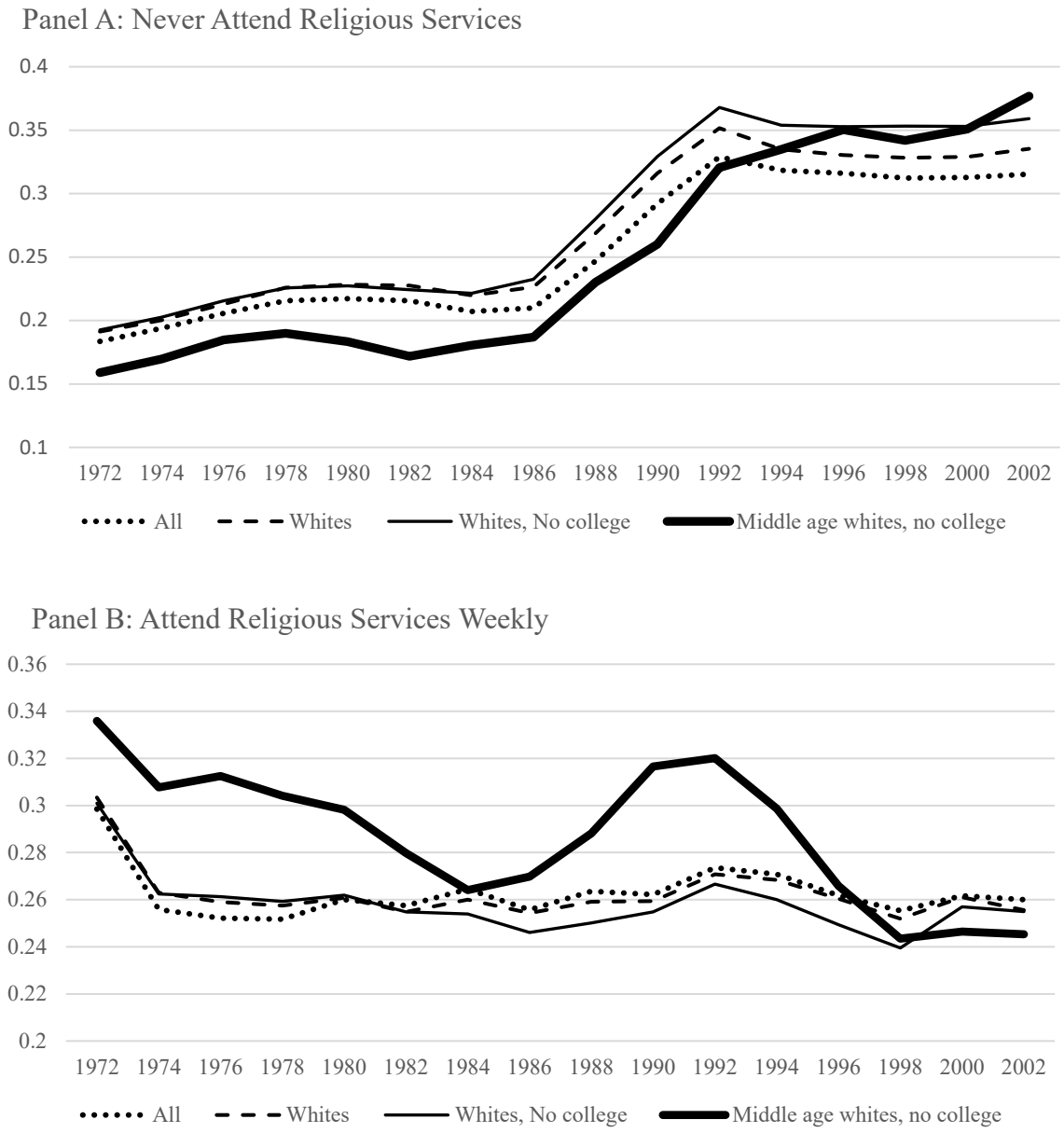
Prior to 1990, mortality counts in Germany are reported separately for the Former Democratic Republic (East Germany) and the Former Federal Republic (West Germany), and the causes of death in East Germany are reported using a slightly different coding system that does not identify accidental poisonings. In 1990, mortality counts are reported for Germany as a whole as well as East and West Germany; from 1991 onward, they are reported for Germany as a whole only. To construct mortality rates for Germany prior to 1990, we begin with the rate for West Germany in the given year and then add in the 1990 difference in rates between Germany and West Germany; in other words, the pre-1990 Germany mortality rate is the West Germany rate that has been level-shifted to connect with the overall German rate in 1990.

Figure A1: State-Level Correlation Between Deaths of Despair in 1995 and 2015



Notes: The figure presents a state-level scatterplot of the residualized deaths of despair mortality rate for white Americans aged 45 to 64 in 1995 against the same rate in 2015. We plot the residuals from a regression of the state-level mortality rates from 1995 and 2015 on state-level controls from those respective years. Controls include the fraction of the state population aged 20 to 39, 40 to 64, and over 65, the fraction male, the fraction white, the fraction black and the state population. We plot the line of best fit and report the correlation coefficient.

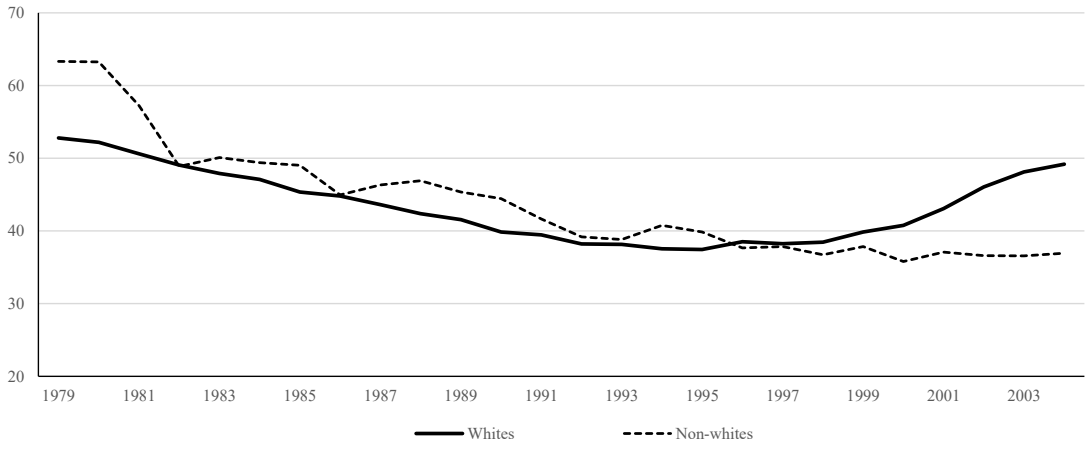
Appendix Figure A2: Religiosity in the ANES



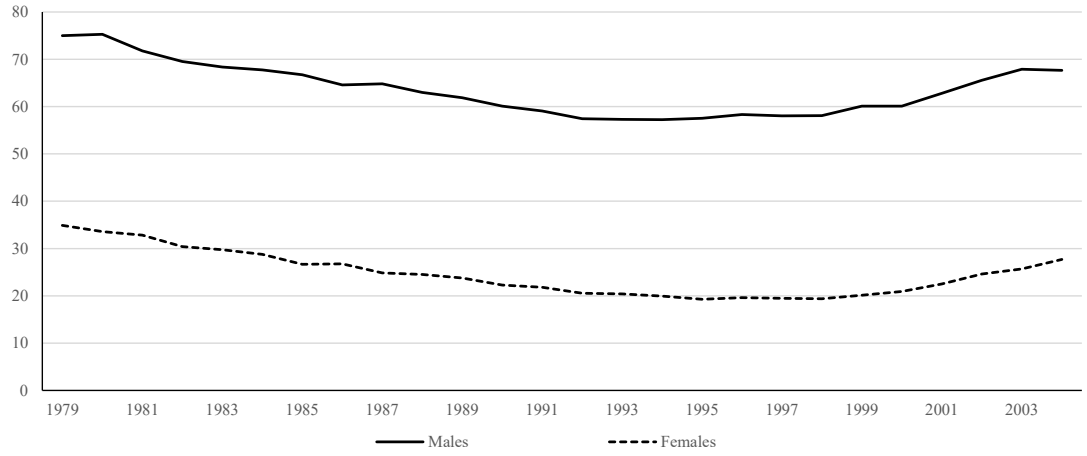
Notes: The figure presents, for different groups of respondents, measures of religious behavior found in the American National Election Studies (ANES) Cumulative Data File. Panel (a) plots the fraction of respondents who report never attending worship services. Panel (b) plots the fraction of respondents who attend worship services weekly. The label "no college" refers to those without a college degree, and "middle-aged" includes respondents aged 45-64. The attendance question in the ANES changed in 1990 (see Appendix A1).

Figure A3: Deaths of Despair by Demographic Group

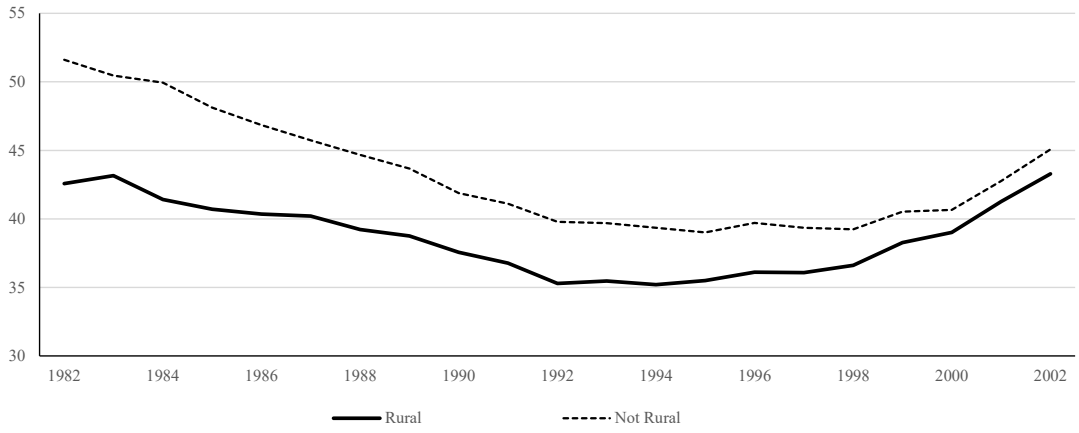
Panel A: By Race



Panel B: By Gender

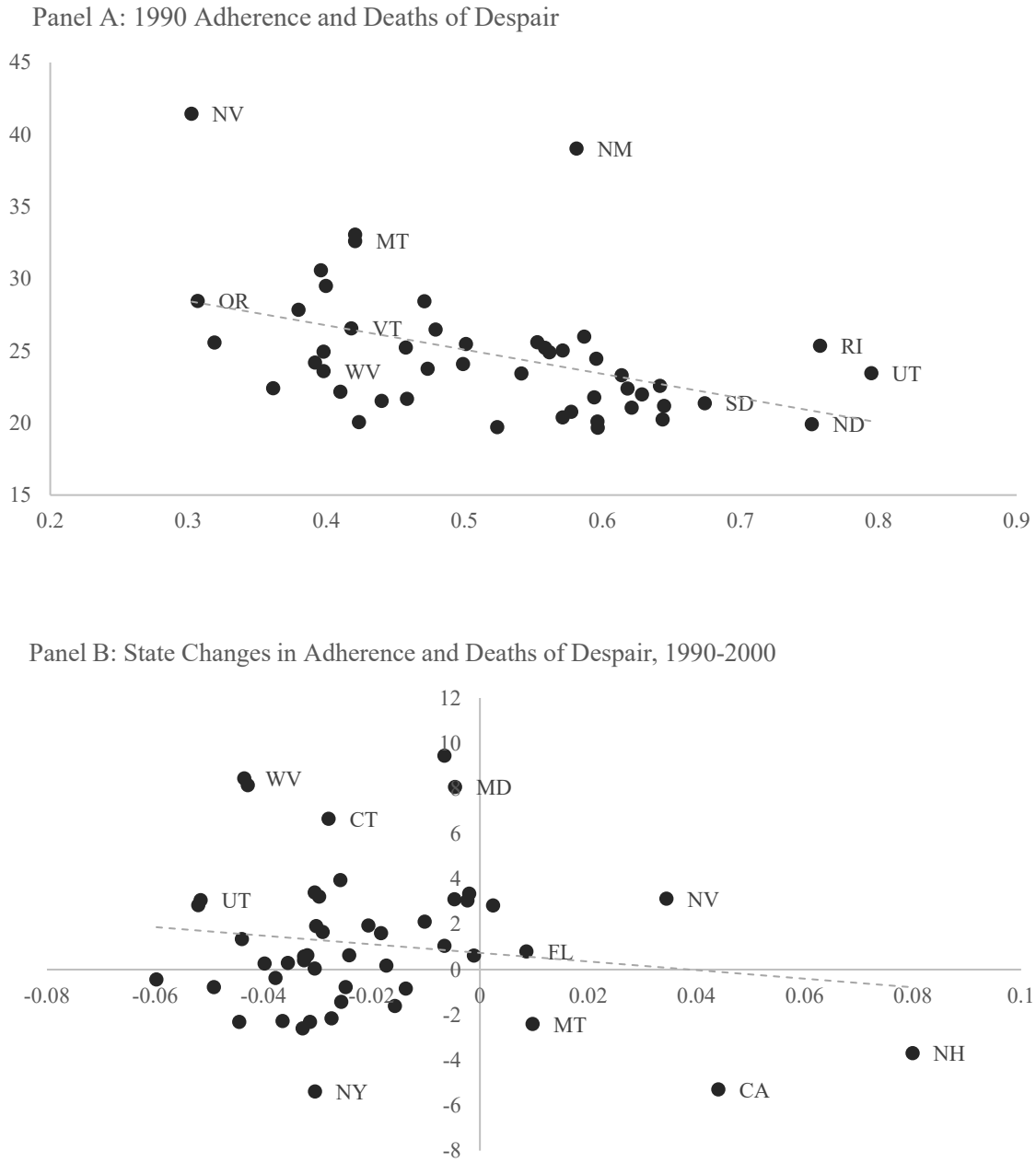


Panel C: By Rural Status



Notes: The figure presents trends in deaths of despair (per 100,000) among Americans ages 45-64 by subgroup. Figure 3 presents analogous trends in weekly attendance. Panel (a) presents trends by race, panel (b) presents trends by gender, and panel (c) presents trends by rural/urban status.

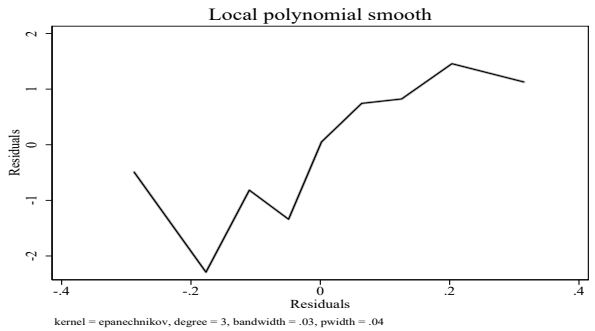
Appendix Figure A4: Adherence and Deaths of Despair in the LRCM



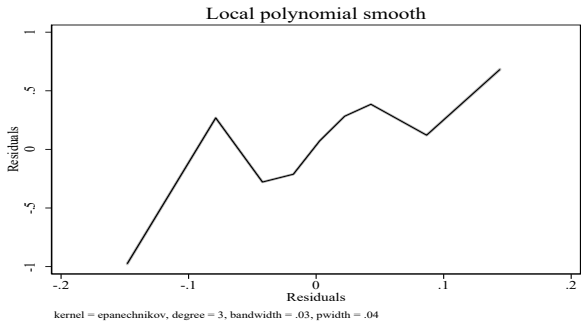
Notes: Figure plots the 1990 and 2000 waves of the Longitudinal Religious Congregations and Membership file. Panel A shows the correlation between state adherence rates in 1990 (on the x axis) and deaths of despair per 100,000 on the y axis. Panel B shows the 2000 - 1990 difference in adherence rates (x axis) and difference in deaths of despair per 100,000 (y axis). The dashed lines represent the best-fit lines.

Figure A5: Relating Regression Weights to Residualized Outcomes

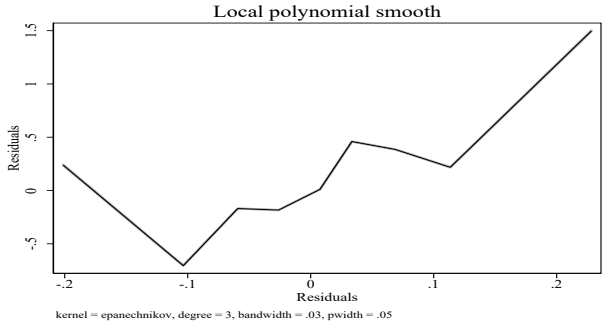
Panel A: No Trends--Deciles



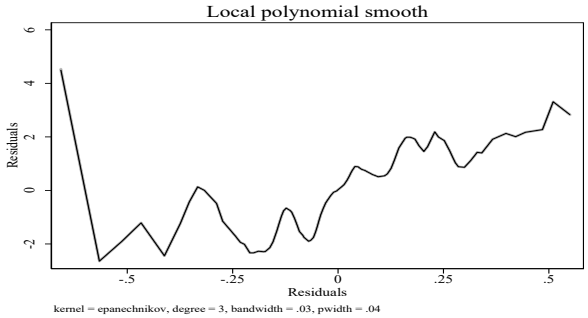
Panel B: Trends--Deciles



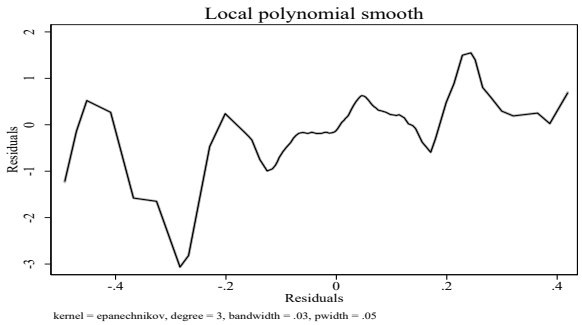
Panel C: Quadratic Trends--Deciles



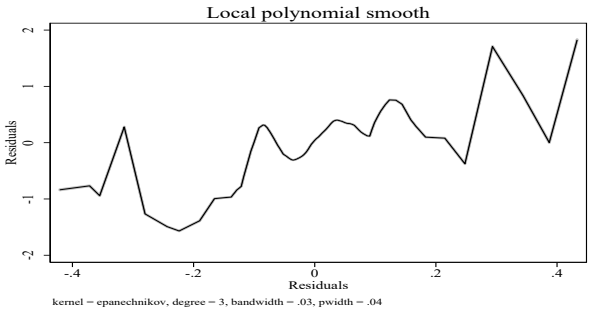
Panel D: No Trends--Percentiles



Panel E: Trends--Percentiles



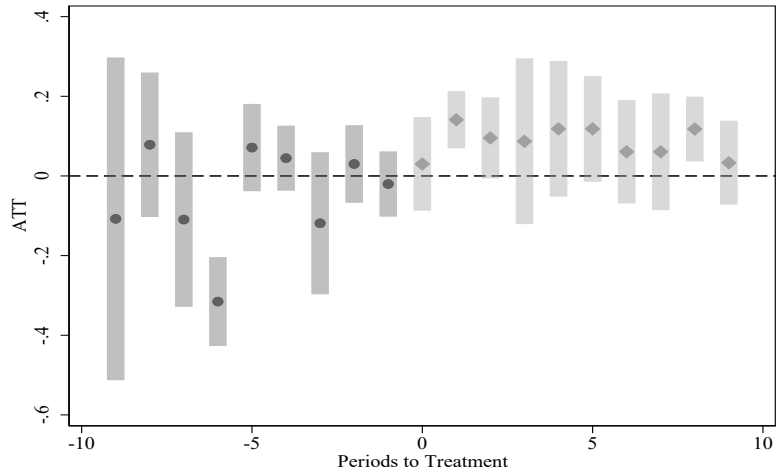
Panel F: Quadratic Tends--Percentiles



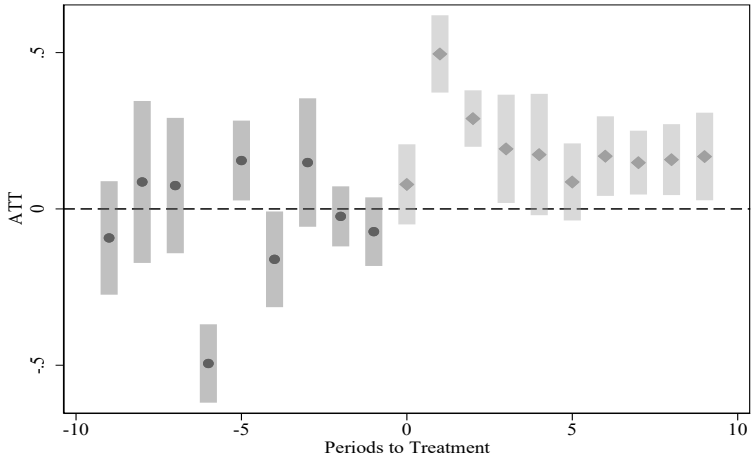
Notes: The figures show a nonlinear regression estimate of the residuals from regressing mortality due to deaths of despair on all other controls excluding blue law repeals and the residuals from regressing a indicator for blue law repeals on all other controls. Panels (a) and (d) are from regressions without state trends. Panels (b) and (e) include linear trends and panels (c) and (f) include linear and quadratic trends. Panels (a) (b) and (c) show estimates calculated at decile values of the x axis, while panels (d) (e) and (f) use each percentile (so that these figures have a smaller x-axis range and less noise in the tails). Using an alternate smoother, such as a nearest-neighbor-based estimator that replaces each y-axis residual with the median residual among the nearest nine observations, can lessen the noise at the top & bottom percentiles but generally yields similar results. For panel (f) a regression of the mortality residuals on the blue law repeal residuals and the square of the blue law repeal residuals produces coefficients of 2.15 (.67) and -1.77 (2.16)

Figure A6: Robust Effects on Religiosity Over Time

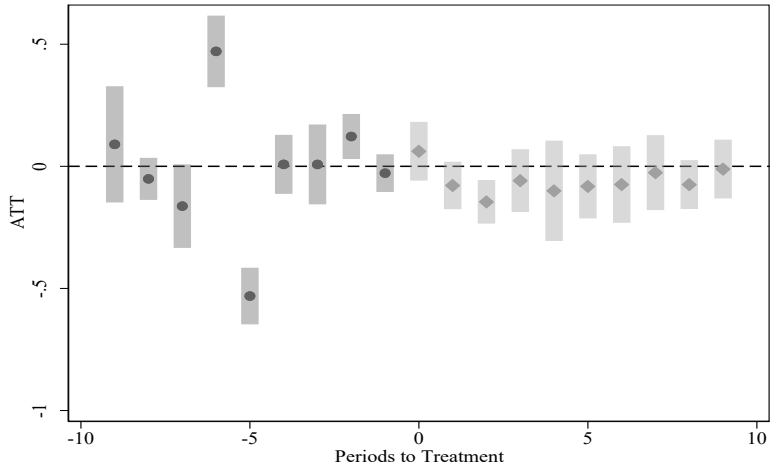
Panel A: Attend Religious Services Once a Year or Less



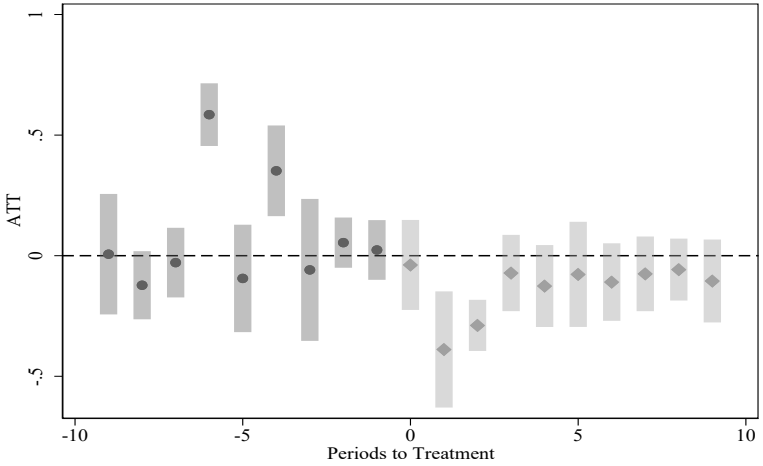
Panel B: Weak Religious Affiliation



Panel C: Attend Religious Services Weekly

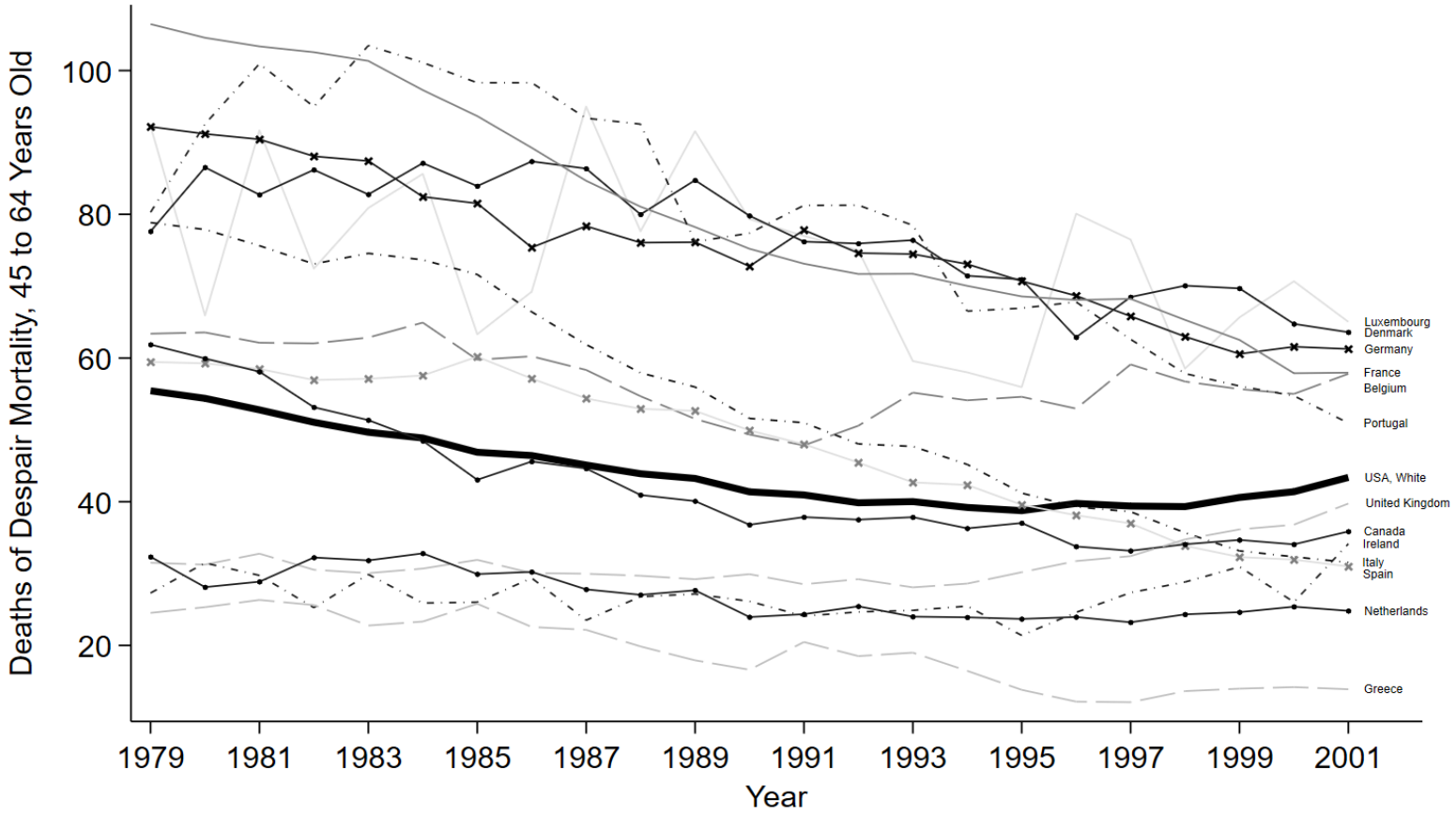


Panel D: Strong Religious Affiliation



Notes: The figure depicts ATT effects before and after treatment (the repeal of blue laws) estimated using the outcome regression method proposed by Callaway and Sant'Anna (2021). All observations that have not repealed blue laws are used as control groups. The shaded areas represent 95% confidence intervals based on standard errors clustered at the state level. The method here makes calculations assuming a repeated cross-section, as the GSS is a repeated cross-section.

Appendix Figure A7: International Rates of Deaths of Despair



Notes: The figure presents deaths of despair mortality rates per 100,000 amongst the middle-aged (45 to 64 year olds) for a collection of countries from 1979 to 2001. The U.S. rate is calculated using white Americans only; all other rates include all racial demographic groups. The mortality rate for white Americans is bolded. See Appendix Section A3 for information on data sources and mortality rate construction.

Table A1: Effect of Blue Law Repeals on Religiosity -- Extensions

	Attend Once a Year or Less (1)	Over Once a Yr, l.t. Weekly (2)	Weekly (3)	Over Weekly (4)	No Religion (5)	Weak or No Religion (6)	Somewhat Strong (7)	Strong (8)
Ages 25-44								
Blue Law Repeals	0.0435	0.0422	-0.0707*	-0.0150	0.0208	0.0247	0.00697	-0.0298
	(0.0286)	(0.0291)	(0.0358)	(0.0177)	(0.0239)	(0.0419)	(0.0223)	(0.0401)
Ages 45-64								
Blue Law Repeals	0.0705	-0.000667	-0.0927	0.0229	0.0385**	0.194***	-0.0821**	-0.111*
	(0.0471)	(0.0582)	(0.0562)	(0.0278)	(0.0175)	(0.0476)	(0.0291)	(0.0624)
Ages 65 and Up								
Blue Law Repeals	0.0762	0.0925**	-0.0498	-0.119***	0.0384	0.0787**	0.0143	-0.0905
	(0.0463)	(0.0435)	(0.0577)	(0.0397)	(0.0263)	(0.0354)	(0.0522)	(0.0609)
All Ages								
Blue Law Repeals	0.0618***	0.0346	-0.0770***	-0.0194	0.0271*	0.0830**	-0.0146	-0.0668
	(0.0168)	(0.0238)	(0.0193)	(0.0121)	(0.0140)	(0.0351)	(0.0211)	(0.0401)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State Trends	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad

Notes: Each coefficient is from a separate regression of equation (1). State-clustered standard errors are in parentheses. The sample includes 20,279 individuals from the General Social Survey from 1973 to 1998. Controls include the fraction of the state population aged 20 to 39, 40 to 64, and over 65, the fraction male, the fraction white, the fraction black and the state population. Individual controls include age, age squared, gender, race, and dummies for educational attainment and for marital status. The first row uses only respondents aged 25-44 at the time of the survey, the second row uses those aged 45-64, and the third row uses those aged 65 and up. The regressions in the first column are a dummy for whether an individual reports attending worship less than once a year (as in Table 2); in column (2), it is a dummy for those attending more than once a year but less than weekly (and zero otherwise), column (3) uses a dummy for weekly attendance (as in Table 2), and column (4) uses a dummy for more than weekly attendance. The next set of columns consider religious intensity. Column (5) uses a dummy for an individual's self-stated religious affiliation as "none." In column (6), we use a dummy indicating than an individual's self-stated religious affiliation is "not very strong" or "none." Column (7) uses a dummy indicating "somewhat strong" religious affiliation (other answers, including "none" are coded as zeros), and column (8) uses a dummy for "strong" religious affiliation.

Table A2: Effect of Blue Laws Repeal on Religiosity by Gender

	Measures of Low Religiosity		Measures of High Religiosity	
	Attend Once a Year or Less (1)	Weak or No Religion (2)	Attend Weekly (3)	Strong Religion (4)
Ages 25-44				
Blue Law Repeals × Female	0.00669	-0.0114	0.00286	0.0105
	(0.0288)	(0.0203)	(0.0192)	(0.0211)
Blue Law Repeals	0.0398	0.0310	-0.0723*	-0.0356
	(0.0343)	(0.0458)	(0.0389)	(0.0428)
Ages 45-64				
Blue Law Repeals × Female	0.0197	0.0144	-0.0293	-0.00488
	(0.0263)	(0.0273)	(0.0255)	(0.0253)
Blue Law Repeals	0.0593	0.186***	-0.0760	-0.108*
	(0.0487)	(0.0468)	(0.0502)	(0.0603)
Ages 65 and Up				
Blue Law Repeals × Female	0.00982	0.0415	-0.0297	-0.0372
	(0.0225)	(0.0354)	(0.0288)	(0.0286)
Blue Law Repeals	0.0698	0.0512	-0.0304	-0.0659
	(0.0504)	(0.0341)	(0.0573)	(0.0597)
All Ages				
Blue Law Repeals × Female	0.00977	0.00101	-0.0116	0.00204
	(0.0164)	(0.0136)	(0.0143)	(0.0135)
Blue Law Repeals	0.0562**	0.0825**	-0.0703***	-0.0680
	(0.0198)	(0.0363)	(0.0222)	(0.0404)
Controls	Yes	Yes	Yes	Yes
State Trends	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad

Notes: State-clustered standard errors are in parentheses. The regressions redo the GSS results in table 2, but include an interaction of the repeal dummy with a dummy for gender (the regressions also include non-interacted dummies for gender). The outcome in column (1) is an indicator for whether an individual reports attending worship once a year or less. In column (2), the outcome is an indicator for whether a respondent's stated religious preference is "weak" or "none." Column (3) uses an indicator for whether an individual reports attending worship weekly, and the outcome in column (4) is an indicator for whether a respondent's stated religious preference is "strong."

Table A3: Effect of Blue Laws Repeal on Religiosity by Rural Status

	Measures of Low Religiosity		Measures of High Religiosity	
	Attend Once a Year or Less (1)	Weak or No Religion (2)	Attend Weekly (3)	Strong Religion (4)
Ages 25-44				
Blue Law Repeals × Rural	0.0772	0.0221	-0.0373	-0.0569
	(0.0531)	(0.0385)	(0.0361)	(0.0434)
Blue Law Repeals	0.0271	0.0176	-0.0618*	-0.0192
	(0.0295)	(0.0432)	(0.0352)	(0.0381)
Ages 45-64				
Blue Law Repeals × Rural	-0.00266	-0.0430	-0.0119	0.0531
	(0.0763)	(0.0756)	(0.0570)	(0.0772)
Blue Law Repeals	0.0642	0.193***	-0.0884	-0.111*
	(0.0488)	(0.0515)	(0.0549)	(0.0605)
Ages 65 and Up				
Blue Law Repeals × Rural	-0.00436	-0.0277	-0.0258	-0.0482
	(0.0583)	(0.0327)	(0.0623)	(0.0642)
Blue Law Repeals	0.0737	0.0847**	-0.0410	-0.0781
	(0.0516)	(0.0363)	(0.0582)	(0.0635)
All Ages				
Blue Law Repeals × Rural	0.0362	-0.00886	-0.0196	-0.0224
	(0.0564)	(0.0344)	(0.0403)	(0.0500)
Blue Law Repeals	0.0508**	0.0801*	-0.0705***	-0.0597
	(0.0210)	(0.0384)	(0.0210)	(0.0416)
Controls	Yes	Yes	Yes	Yes
State Trends	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad

Notes: State-clustered standard errors are in parentheses. The regressions redo the GSS results in table 2, but include an interaction of the repeal dummy with a dummy for rural residence (the regressions also include non-interacted rural-status dummies). The outcome in column (1) is an indicator for whether an individual reports attending worship once a year or less. In column (2), the outcome is an indicator for whether a respondent's stated religious preference is "weak" or "none." Column (3) uses an indicator for whether an individual reports attending worship weekly, and the outcome in column (4) is an indicator for whether a respondent's stated religious preference is "strong."

Table A4: Alternate Specifications for Effect of Blue Law Repeals on Deaths of Despair

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ages 25-44										
Blue Law Repeals	-0.240	0.501	-0.0115	0.0178	-0.236	0.499	-0.059	0.683	-0.295	0.518
	(0.563)	(0.536)	(0.0152)	(0.0189)	(0.563)	(0.533)	(0.546)	(0.558)	(0.541)	(0.540)
Ages 45-64										
Blue Law Repeals	1.941**	2.154***	0.0338**	0.0462***	1.883**	2.137***	2.02**	2.07***	1.911**	2.157***
	(0.754)	(0.669)	(0.0125)	(0.0164)	(0.753)	(0.666)	(.742)	(0.627)	(0.763)	(0.673)
Ages 65-84										
Blue Law Repeals	-1.047	0.210	-0.0181	-0.00106	-1.064	0.169	-0.926	0.506	-1.076	0.176
	(1.021)	(0.980)	(0.0194)	(0.0180)	(1.005)	(0.974)	(0.995)	(0.983)	(1.015)	(0.984)
Mortality Rate	Levels	Levels	Logs	Logs	Levels	Levels	Levels	Levels	Levels	Levels
State Trends	Linear	Linear + Quad	Linear	Linear + Quad	Linear	Linear + Quad	Linear	Linear + Quad	Linear	Linear + Quad
Age Group Trends	No	No	No	No	Linear	Linear + Quad	No	No	Linear	Linear + Quad
State * Race * Age FEs	No	No	No	No	No	No	No	No	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Each coefficient is from a separate regression of equation (2), where the outcome is the mortality rate due to deaths of despair (per 100,000). Standard errors clustered by state are in parentheses. Regressions are weighted by population and include the same controls as in table 3. The first two columns reproduce the main estimates using state linear or linear and quadratic trends. Columns (3) and (4) use the natural logarithm of deaths as the dependent variable. Columns (5) and (6) add age group-specific trends. Columns (7) and (8) add controls for state per capita spending on Medicaid and Medicare. The last two columns repeat the specifications of columns (5) and (6), but here state fixed effects are replaced by state-by-age-bin-by-race fixed effects for each five-year age bin and for the white and nonwhite racial groups.

Table A5: Effect of Blue Law Repeals on Mortality by Race

White

	(1)	(2)	(3)	(4)	(5)
Ages 25-44					
Blue Law Repeals	-0.627	0.215	-0.139	0.312	0.0425
	(0.569)	(0.606)	(0.220)	(0.392)	(0.318)
Ages 45-64					
Blue Law Repeals	2.005**	1.987***	0.496	0.254	1.237***
	(0.765)	(0.620)	(0.558)	(0.227)	(0.267)
Ages 65-84					
Blue Law Repeals	-0.978	0.559	0.439	-0.320	0.440
	(0.968)	(1.054)	(0.763)	(0.201)	(0.601)

Nonwhite

	(1)	(2)	(3)	(4)	(5)
Ages 25-44	2.674	2.447	1.084	-0.525	1.888**
Blue Law Repeals	(2.048)	(1.600)	(1.162)	(0.929)	(0.697)
Ages 45-64	2.584	4.494**	3.107	-0.139	1.527***
Blue Law Repeals	(1.854)	(2.060)	(1.927)	(0.610)	(0.411)
Ages 65-84	-1.104	-2.385	-0.478	-1.836***	-0.0721
Blue Law Repeals	(2.836)	(2.286)	(2.259)	(0.574)	(1.181)
Mortality Cause	All	All	Liver	Poison	Suicide
State Trends	Linear	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad
Controls	Yes	Yes	Yes	Yes	Yes

Notes: Each coefficient is from a separate regression of equation (2), where the outcome is the mortality rate due to deaths of despair for white (top panel) and nonwhite (bottom panel) individuals per 100,000. The sample, controls and weighting are the same as in table 3.

Table A6: Effect of Blue Law Repeals on Mortality, Dropping Each State

Panel A: No Trends

No AZ	No CA	No CO	No FL	No IA	No ID	No IN	No KS	No MN	No ND	No NM	No NV
5.378***	4.939***	5.209***	3.727***	5.369***	5.307***	5.431***	5.426***	5.489***	5.419***	5.567***	5.364***
(0.968)	(0.872)	(0.958)	(0.615)	(1.005)	(0.978)	(1.053)	(0.998)	(1.107)	(1.002)	(0.998)	(0.995)
No OH	No OR	No PA	No SC	No SD	No TN	No TX	No UT	No VA	No VT	No WA	No WY
5.514***	5.204***	4.867***	5.37***	5.298***	5.239***	4.522***	5.395***	5.037***	5.542***	5.492***	5.182***
(1.285)	(0.958)	(1.034)	(0.951)	(0.995)	(0.946)	(0.900)	(0.977)	(1.062)	(0.956)	(1.019)	(0.969)

Panel B: Linear and Quadratic State Trends

No AZ	No CA	No CO	No FL	No IA	No ID	No IN	No KS	No MN	No ND	No NM	No NV
2.219***	1.912**	2.170***	2.130***	2.081***	2.160***	2.002***	2.234***	2.152***	2.246***	2.180***	2.204***
(0.684)	(0.843)	(0.686)	(0.658)	(0.679)	(0.666)	(0.702)	(0.652)	(0.756)	(0.644)	(0.678)	(0.673)
No OH	No OR	No PA	No SC	No SD	No TN	No TX	No UT	No VA	No VT	No WA	No WY
1.817**	2.064***	1.938**	1.813**	2.103***	2.369***	2.737***	2.127***	2.148***	2.121***	2.152***	2.123***
(0.774)	(0.680)	(0.812)	(0.650)	(0.676)	(0.763)	(0.565)	(0.681)	(0.706)	(0.684)	(0.623)	(0.675)

Notes: Each coefficient is from a separate regression of equation (2), where the outcome is mortality due to deaths of despair (per 100,000) for ages 45-64. Each regression omits one of the 24 states from the sample. Standard errors are clustered at the state level and given in parentheses. All regressions include right-hand-side controls, year dummies, and state dummies, and are weighted by population. Panel (a) omits state-specific trends, and panel (b) includes linear and quadratic trends.

Table A7: Effect of Blue Laws Repeal on Religiosity by Religious Tradition

	Measures of Low Religiosity		Measures of High Religiosity	
	Attend Once a Year or Less	Weak or No Religion	Attend Weekly	Strong Religion
	(1)	(2)	(3)	(4)
Ages 25-44				
Blue Law Repeals × Catholic	0.0146	-0.0638***	0.0103	0.0362
	(0.0341)	(0.0220)	(0.0344)	(0.0287)
Blue Law Repeals	0.0340	0.0330	-0.0748*	-0.0324
	(0.0303)	(0.0394)	(0.0383)	(0.0396)
Ages 45-64				
Blue Law Repeals × Catholic	0.0124	-0.0177	0.0163	0.0223
	(0.0276)	(0.0517)	(0.0328)	(0.0492)
Blue Law Repeals	0.0605	0.186***	-0.113**	-0.106
	(0.0381)	(0.0439)	(0.0510)	(0.0625)
Ages 65 and Up				
Blue Law Repeals × Catholic	-0.0119	-0.0447	0.0912**	0.0275
	(0.0360)	(0.0360)	(0.0357)	(0.0385)
Blue Law Repeals	0.0594	0.0732*	-0.0609	-0.0874
	(0.0422)	(0.0388)	(0.0559)	(0.0654)
All Ages				
Blue Law Repeals × Catholic	0.00970	-0.0519*	0.0256	0.0367
	(0.0292)	(0.0258)	(0.0303)	(0.0267)
Blue Law Repeals	0.0510***	0.0843**	-0.0874***	-0.0664
	(0.0177)	(0.0327)	(0.0211)	(0.0392)
Controls	Yes	Yes	Yes	Yes
State Trends	Linear + Quad	Linear + Quad	Linear + Quad	Linear + Quad

Notes: State-clustered standard errors are in parentheses. The regressions redo the GSS results in table 2, but include an interaction of the repeal dummy with a dummy for religious tradition (the regressions also include non-interacted religious tradition dummies). The outcome in column (1) is an indicator for whether an individual reports attending worship once a year or less. In column (2), the outcome is an indicator for whether a respondent's stated religious preference is "weak" or "none." Column (3) uses an indicator for whether an individual reports attending worship weekly, and the outcome in column (4) is an indicator for whether a respondent's stated religious preference is "strong."

Table A8: Trends in Religious Attendance; European Countries and the US

Year	France	Belgium	Netherlands	Germany	Italy	Lux.	Denmark	Ireland	Britain	N. Ireland	US
1973	19	38	33	22	48	48	5	91	16	59	28
1985	12	27	24	19	37	32	6	88	8	58	33
1994	11	27	28	16	41	22	3	77	12	54	27

Notes: The European data is taken from Table 3.5 in Norris and Inglehart (2004) and are calcualted from the Mannheim Eurobarometer Trend File 1970-1999; each column shows the percentage of respondents reporting attending religious services "several times a week" or "once a week." The US data are the author's calculations using the number of respondents reporting weekly or more than weekly attendance in the GSS. The definition of this variable and the use of single years of data differs slightly from the construction in figure 2 earlier; remaking figure 2 using these definitions of attendance and years produces similar results. Three countries in Norris and Ingelhart's table (Greece, Portugal, and Spain) lack data before 1980 and are ommitted here. The fraction of respondents with weekly or more attendance in Greece falls from 27 to 24 from 1985 to 1995; for Spain it is 47 to 36. Portugal lacks any data prior to 1988. Northern Ireland lacks data in 1973 and 1994; for this country the above table uses 1975 and 1992 instead.