

# Secularization and the Tribulations of the American Working-Class<sup>1</sup>

Brian Wheaton<sup>2</sup>  
Harvard University  
August 23, 2021

**Abstract:** Over the past several decades, working-class America has been plagued by multiple adverse trends: a sharp increase in social isolation, an even sharper increase in single parenthood, a decline in male labor force participation rates, and a decline in generational economic mobility – amongst other things. Material economic factors have been unable to fully explain these phenomena, often yielding mixed results or – in some cases, such as that of single parenthood – lacking explanatory power altogether. I study the decline in religiosity and, using a shift-share instrument leveraging the fact that different religious denominations are declining at different rates, I find that religious decline has a strong adverse effect on the aforementioned variables. The effects are not weakened by including other potential explanatory factors (such as China trade shocks and variation in public assistance). I present evidence that, to the extent reverse causality exists, it creates bias in the *opposite* direction of my estimates. These findings are also robust to several alternative instruments. Two instruments – the repeal of state blue laws banning retail activity on Sundays and the repeal of state anti-evolution laws mandating teaching of creationism in school – allow me to ascertain whether the effect proceeds through religious attendance or beliefs. I find that, for most outcomes, the bulk of the effect is driven by religious attendance.

## 1 Introduction

In the half-century from the 1960s to the 2010s, the labor-force participation rate of prime-age males declined from approximately 98% to 90%. Amongst those working, average hours worked declined. Over the same period, the percentage of children born to single mothers increased from 6% to 41%. The percentage of individuals making more than their parents did at the corresponding age has declined from 90% to 50%. And the percentage of working-age individuals on SSDI disability rolls has increased from less than 1% to nearly 6%. While these figures for the whole U.S. population are shocking, they mask the fact that these increases are

---

<sup>1</sup> I am grateful to Alberto Alesina, Robert Barro, Ed Glaeser, Gautam Rao, and David Yang for excellent comments and advice. Any errors are my own.

<sup>2</sup> Contact: bwheaton@g.harvard.edu

driven disproportionately by lower-skilled individuals, amongst whom the situation is even more dire. Amongst people with a high school diploma or less, the percentage of children born to single mothers increased from 10% to 60%. The prevalence of divorce increased from 5% to 35% -- and the rate of individuals remaining single, never-married spiked from 8% to 25% as well.

These trends are not adverse merely from a particular subjective perspective. Outcomes of children raised by single parents are significantly worse than those raised by a two-parent family, and despite suggestions that this is entirely driven by how poor single parents are in the United States, studies from European countries where the poverty rate of single parents is little to no different from the general population (due to high tax-and-transfer policies) have produced similar results (see, e.g., Weitoft et al. 2003). A rise in self-reported disability indicates either (i) an actual increase in disability rates or (ii) an increase in the societal prevalence of lying in applications for disability income, both of which are undesirable. Even if the latter is viewed as less problematic, there is evidence that increased parental receipt of disability benefits causally induces more receipt by children, increasing the burden on the welfare system (Dahl 2014). Reduced labor-force participation directly means a lower level of economic output and has also been associated with reduced life-satisfaction and subjective well-being.

What, then, is driving these results? Some – notably Murray (1984) – have suggested the generosity of child-support benefits as the cause for both the increases in single parenthood and divorce rates. Yet, while the 1996 welfare reform seems to have spurred more single mothers to enter the labor force (Meyer and Rosenbaum 2001), changes in subsidies for single mothers seem to have very little to no causal effect on the actual rise of single motherhood itself (Blau, Kahn, and Waldfogel 2004) or on divorce (Hoffman and Duncan 1995). Welfare benefits more

generally have been blamed for the decreased male LFPR and hours worked. While most of the increase in welfare expenditure as a share of GDP since 1970 has been on health, there is indeed a body of literature which finds strong evidence that increased health expenditure (such as through Medicaid) decreases labor force participation and hours worked. On the whole, this relationship is a relatively straightforward income effect – that more transfer payments lead to less labor supply by those taking the payments – but it is not necessarily the one and only channel for these developments, and most of the effects identified in the literature are not large enough to explain the totality of the LFPR decline.

Because these trends range from partially to wholly unexplained, I consider examining them through a more cultural lens. This is motivated by the fact that the 1960s – the period when these trends began – was a period that set off very rapid cultural change. One of the most notable and persistent changes, which endured and even intensified in subsequent decades, was the beginning of the decline of religiosity in the United States. Survey data indicates that church attendance and religious belief reached their zenith in the United States during the late 1950s and early 1960s. Although the specifics vary from denomination to denomination, Christianity – like other major religions – puts substantial emphasis on the value of the traditional nuclear family and on a strong, honest work ethic. Being removed from the social networks of the church may reduce the social cost associated with single parenthood, divorce, or non-participation in the labor force. Being removed from the teachings of the church may decrease the moral cost associated with these activities.

While the time-series correlations match up, the key question is whether the relationship is causal. To this end, I utilize four distinct sources of plausibly-exogenous variation in religiosity. The first is a shift-share instrument leveraging the fact that different religious denominations are

concentrated in different geographical areas and, at the national level, different religious denominations have declined at different rates. The second is the repeal of the state-level Blue Laws that used to exist in most states in the U.S. These laws banned all retail activity on Sundays, with the implication being that everyone was supposed to be at church and at rest on the day of rest. Seminal work by Gruber and Hungerman (2008) on the blue laws found that their repeal induced a decline in attendance but no change in religious belief. The third instrument is the repeal of the state-level Anti-Evolution Laws which formerly existed in many U.S. states. I show that their repeal induced a decline in religious belief but no change in attendance. Thus, the blue laws and anti-evolution laws can be used in conjunction to determine whether effects proceed primarily through attendance or beliefs. The fourth and final instrument is the Catholic Church scandals of the past few decades. As found by Bottan and Perez-Truglia (2015), these induced a long-term decline in church attendance and a temporary move away from Catholicism. Each of these instruments has its strengths and weaknesses but together they tell a consistent story.

Using data on county-level religious adherence by denomination, 1980-2010, from the U.S. Religion Census in conjunction with data on socio-economic outcomes from the long-form decennial U.S. Census of Population, I find strong evidence that religious decline induces higher divorce rates, more individuals living alone, higher single parenthood rates, lower male LFPR amongst low-skilled males, higher welfare reciprocity, a higher rate of self-reported disability, and worse outcomes for children (high-school dropout rates and institutionalization). The aforementioned effects hold up to the shift-share instrument, and IV estimates are somewhat larger than OLS estimates. Using GSS data in conjunction with the blue law instrument, most of the aforementioned effects are reproduced: increased divorce, increased single parenthood,

decreased male LFPR, and decreased hours worked. An effect on divorce and single parenthood is also found using the anti-evolution law instrument, but no effect is found on other outcomes. This is taken to mean that church attendance matters at least as much as actual religious belief in inducing these positive outcomes. Indeed, since the male LFPR effect proceeds entirely through attendance, this suggests that social enforcement and positive network effects are of greater importance than an explanation along the lines of a Protestant work ethic. The effects I find are robust to the addition of further fixed-effects, dynamic difference-in-differences specifications, a test for reverse causality, and the additional of potential alternative explanatory variables (such as welfare benefits and China trade shocks).

These results are interpreted to mean that religion – belief and especially attendance – has strong, positive, and oft-underestimated effects on individuals and societies. Religion can be thought of as a glue that helped hold together many communities. For many working-class American communities – which have been hit hard in so many other ways – religion may have been one of the last sources of order that they had to cling to. For all these reasons, it can be said that secularization has played a strong and harmful role in the painful decline of the American working-class.

## **2 Political Economic Context**

### **2.1 Descriptive Statistics**

In this section, I descriptively outline the trends in single parenthood, divorce, labor force participation, self-reported disability, and related indicators, also showing that they are indeed concentrated amongst low-skilled individuals. To do this, I utilize data from the General Social Survey (GSS), the Annual Social and Economic Supplement (ASEC) of the Current Population

Survey (CPS), Opportunity Insights, and the Social Security Administration (SSA).

Figure 1 plots the share of parents who are single (no spouse or co-habiting partner). It illustrates the substantial rise in single parenthood over the past several decades. The fact that the GSS is micro data permits decomposing the trend into high-education and low-education individuals, making it clear that the most significant increase is concentrated amongst low-education individuals<sup>3</sup>. As of 2016, nearly 45% of low-education parents raise their children without a spouse or partner. The trend is even starker when one looks at the share of parents who are single and never-married, as seen in Figure 2. Almost the entirety of the substantial increase stems from low-education parents.

Figure 3 plots the share of prime-age men (25-54) not in the labor force. Once again, the trend is sharp and is almost entirely concentrated amongst the low-education individuals. Figure 4 shows the decline of yet another crucial indicator of the health of conditions for the working-class: economic mobility. From the 1940 birth cohort onward, the share of individuals making more money than their parents did at the corresponding age has declined almost monotonically. Finally, Figure 5 plots the increase in the share of individuals on disability income rolls – another statistic relevant to the well-being of the working-class, given the income limits of SSDI (\$1170 per month or less, as of 2018). Because there has not been a commensurate increase in the dangers associated with work, this increase is typically commented upon in the literature as reflective of increased cheating on SSDI benefits (the expansion of which has almost entirely occurred through an expansion of difficult-to-verify “chronic pain” reports) rather than a legitimate increase in disabilities.

---

<sup>3</sup> Proxying for skill level by instead using an individual’s occupation is a worse choice in this context, as individuals who are unemployed or not in the labor force will not have a reported occupation – and it is precisely these individuals who are a major focus of this study.

## 2.2 Literature Review

Much literature exists studying the effects of various economic variables on the aforementioned trends. Meyer and Rosenbaum (2001) find evidence that increases in employment by single mothers during the 1980s and 1990s are attributable to the earned income and other tax changes – with a smaller but still non-trivial share due to welfare benefit cuts, welfare waivers, job training, and child care programs. Eissa, Kleven, and Kreiner (2008) re-examine the 1986, 1990, 1993, and 2001 tax reforms and find that they did indeed lead to large increases in labor supply by single mothers – and that the vast majority of these increases were on the extensive margin. Blundell et al. (2016) similarly find, using U.K. reforms as variation, that the labor supply of single mothers is highly responsive to tax credits for work.

While there is much evidence that welfare reform puts single parents back to work, the evidence that such policies have an effect on the actual incidence of single parenthood or divorce in the first place is much weaker despite an equal or greater amount of investigation. A sizeable literature in the 1990s and early 2000s studied this question, finding little to no effect in each case<sup>4</sup>. Somewhat more recently, papers studying this question have used the variation induced by the 1996 welfare reform, again tending to find null or mixed effects<sup>5</sup>. Most recently, Moffitt, Phelan, and Winkler (2018) use the 1996 welfare reform as exogenous variation but decompose its effect into the effects driven by each of the individual policies modified by the reform. They find that most transfer policies had no effect on family structure. However, they find evidence that the institution of certain work requirement reforms actually increased the rate of single

---

<sup>4</sup> See Blackburn (2003), Blau, Kahn, and Waldfogel (2004), Duncan and Hoffman (1990), Ellwood and Jencks (2001), Hoffman and Foster (2000), Lichter, LeClere, and McLaughlin (1991), McLaughlin and Lichter (1997), Moffitt, Reville, and Winkler (1998), and Winkler (1995). Moffitt (1998) provides a review of this literature through its publication.

<sup>5</sup> See Acs and Nelson (2004), Bitler et al. (2004), Bitler, Gelbach, and Hoynes (2006), Blau and van der Klaauw (2013), Dunifon, Hynes, and Peters (2009), Ellwood (2000), Fitzgerald and Ribar (2004), and Fraker et al. (2002).

parenthood – albeit by a relatively small magnitude. On the whole, this literature is unable to find evidence that tax-and-transfer policies are responsible for much of the increase in single parenthood or divorce over the past several decades.

Another proposed channel for the trends in divorce and single parenthood is the decline of “marriageable” males with decently-paying, stable jobs. The idea here is simply that, if fewer men are willing or able to support a family, then fewer women will get married (and thereby any children they have will be raised by a single parent). While conceptually straightforward, there is less evidence on this conjecture. Autor, Dorn, and Hansen (2018) exploit trade competition shocks between 1990 and 2010 as exogenous variation, finding that the resulting decline in male employment opportunities led to a decline in marriage and an increase in the share of children raised in single-parent families. Conversely, though, Kearney and Wilson (2018) exploit oil discoveries during the fracking boom of the 2000s as an exogenous increase in male employment opportunities, finding no change in marriage rates and an increase in childbearing both in *and* out of wedlock as a result of the increased wages and jobs for men induced by the boom. So, once again, the evidence is mixed.

Turning to the decline in male labor-force participation, while it is well-documented, its causes remain somewhat uncertain. While part of the decline is due to natural and expected population aging along with increased life expectancies and another part is due to increased schooling for young (16-24 year-old males), the decline in participation of prime-age (25-54) males is more puzzling. Krueger (2017) finds that these out-of-the-labor-force males are significantly more likely to report a disability and take opioids. They report very low levels of well-being and life satisfaction. Harrington (2019) finds some causal evidence that opioid consumption/addiction induces exit from the labor force, thereby pinning part of the blame on



the opioid crisis. Aguiar et al. (2017) find that improvements in leisure technology (specifically, video games) are responsible for part of the decline amongst 21-to-30 year-old males, but the fact that the typical prime-age male out of the labor force reports very low life satisfaction suggests that the whole of the trend is not being driven by men making utility-improving decisions in response to improved non-addictive technologies. Coglianesse (2018) finds that much of the decline has been operationalized through men who are drifting in-and-out of the labor force – doing occasional work interspersed with periods wherein they do not even search for a job. Elsby and Shapiro (2012), Autor, Dorn, and Hanson (2013), Autor and Wasserman (2013), and Council of Economic Advisers (2016) present evidence that declining labor-market opportunities and real wages available to many prime-age young men are responsible for some of the decline. The availability of disability insurance has been suggested by Autor and Duggan (2003), Eberstadt (2016), and Winship (2017) as a factor; however, almost the entirety of the increase in welfare expenditures as a fraction of GDP over the past few decades has been in the form of health expenditures – Medicare and Medicaid – the former of which is not available to prime-age males. And although evidence is plentiful that increased Medicaid expenditure leads to decreased labor supply – a fairly standard income effect – the size of these effects are not large enough to explain the LFPR decline.

Meanwhile, there also exists a growing body of literature on the political economy of religion. A subset of this literature documents the effects of religiosity on economic outcomes. Barro and McCleary (2003) study the effect of religiosity on economic growth in a cross-country panel, finding that growth depends positively on religious belief but negatively on religious attendance. The interpretation is that belief may impart work ethic and other traits beneficial to growth; however, attendance is a time commitment – time which could be spent on other

activities. Although more attendance is likely to be strongly correlated with more belief, a country with higher belief for the same level of attendance can be thought of as having gained the positive traits more efficiently. Campante and Yanagizawa-Drott (2015) study the Muslim religious practice of Ramadan – a month-long-period of daily fasting – leveraging the fact that countries at different latitudes experience differential fluctuations in the length of Ramadan due to differential fluctuations in sunset-to-sundown duration over the course of the year. They find that Ramadan induces decreased economic growth but increased self-reported happiness.

Basten and Betz (2013) focus on the partition of a part of Western Switzerland between Catholic and Protestant regional powers, studying the effect of the forced conversion to Protestantism using a regression discontinuity design. They find evidence of sharply more preference for work and less preference for leisure and redistribution on the Protestant side of the discontinuity (but, curiously, no effect on actual income). Becker and Woessmann (2009) study the effects of Protestantism on human capital accumulation using the distance from Wurttemberg – the founding city of Protestantism – as an instrument. They find that Protestantism induced better education and more economic prosperity. Meyersson (2014), using a close-election regression discontinuity, finds evidence that the election of a Turkish Islamist party led to better educational outcomes for women and the poor. The effect is interpreted as representing the fact that the Islamist party normalized public expressions of piety, allowing women wearing headscarves and the poor (a group that is typically religious in Turkey) to more readily interact with public society.

Another set of papers find evidence that the causality goes in the other direction as well. Chen (2010) finds that the economic shock of the 1998 Indonesian financial crisis led to an Islamic resurgence in Indonesia, partially due to individuals turning to religious institutions for

social and economic support. Chaney (2013) finds that, in Egypt during the Middle Ages, extreme rainfall shocks which led to crop failure (and thus severe economic tribulation) induced more political power to be ceded from the secular government to religious elites. Belloc, Drago, and Galbiati (2016) find that, in Italy during the Middle Ages, the experience of disruptive earthquakes caused cities to construct more religious buildings and ornamentation and delayed institutional transition from autocracy to self-government in cities where the religious and secular leaders were the same person (but not in cities where they were different individuals). Taken as a whole, this literature indicates that, in times of tribulation and despair, people turn to religion for solace.

Further papers study the decline of religiosity in a more modern context. Stark (1999), Bruce (2001), and Hout and Fischer (2014) debate the extent and causes of the decline in religiosity in the UK and the US. Froese (2008) does the same in the Eastern European post-Communist setting. These papers, however, largely focus on discussing potential causes for secularization rather than its effects on individuals and communities. Perhaps the paper that comes closest to doing this is Gruber and Hungerman (2008), which examines the effects of the repeals of the state-level blue laws that existed in the United States, finding a decrease in church attendance and donation as a result – along with, interestingly, an increase in alcohol, marijuana, and cocaine consumption. In a sense, this paper builds on that final result, hoping to paint a thorough and robust picture of the full consequences of religious decline.

### **3 Empirical Framework**

#### **3.1 Data**

The U.S. Religion Census (USRC), which has been conducted by the Association of

Statisticians of American Religious Bodies almost every decade since 1952, reports the number of adherents of each religious denomination in each county in the United States. This information is collected by reaching out to the administration of each religious denomination. In recent waves, participating religious denominations include the Catholic church, almost all Mainline Protestant denominations, most major Evangelical Protestant denominations, and religious bodies corresponding to other faiths (Judaism, Islam, Zoroastrianism, etc.). Together, this means that the vast majority of total adherents of any faith in the United States are captured in recent waves. The USRC defines an adherent to include all those with an affiliation to a congregation: members, children, and attendees who are not formal members. The 1952 and 1971 waves featured a much smaller list of participating denominations than 1980 onward and thus captured a significantly smaller fraction of the total population of religious adherents. As such, for consistency, I restrict analysis to denominations which were present in every wave from 1980 onward.

The U.S. Decennial Census of Population and Housing has been conducted by the Census Bureau of the U.S. government every 10 years since the foundation of the United States. During the latter half of the 20<sup>th</sup> century, the Census included a short form – distributed to everyone in the United States – and a long form – distributed to a randomly-selected subset of 10% to 20% of individuals (depending on the year). For 2010, the long form was not distributed, as it had been replaced by the rolling annual American Community Survey, which collected the same data as the long-form Census previously did. The long-form Census and the American Community Survey include publicly-available data down to the Census tract level on labor force participation, marital status, household type (of which single parent with child is one type), education, total income, public assistance income, disability status, and various other

demographic variables.

The General Social Survey (GSS) has been conducted by the National Organization for Research at the University of Chicago (NORC) since 1972 – annually from 1972-1994 and biennially since 1996. In each wave, it asks a random sample of the U.S. population a battery of socio-political and demographic questions – including questions on religion, marital status, labor force participation, education, income, and a multitude of questions on beliefs and values. The question on religious attendance asks each individual the frequency with which they attend religious services. The question that I take as proxying for religious beliefs asks each individual the extent to which they consider the Bible to be the true word of God (as opposed to a book of stories).

I merge the tract-level Census data with the USRC in order to run the shift-share specifications. And I use data from Gruber and Hungerman (2008) on Blue Law repeals with the GSS. I collect data on Anti-Evolution Law repeals from a variety of sources, primarily Moore (1998, 1999), state legislative websites, and state Department of Education websites. I use this with the GSS as well. Finally, I merge data from Bottan and Perez-Truglia (2015) into the GSS.

### **3.2 Econometric Approach**

To construct the shift-share instrument, I leverage the fact that different religious denominations tend to be clustered in different geographic areas and have declined at different rates. As such, I define

$$S_i = \sum_j \pi_{ij}^{1980} \Delta_j$$

where  $\pi_{ij}^{1980}$  denotes the proportion of adherents of denomination  $j$  in the population of county  $i$  in year 1980 and  $\Delta_j$  denotes the national-level change in the proportion of adherents of denomination  $j$  between 1980 and 2010.  $S_i$  can then be used as a shift-share instrument for the

change in religious adherence in county  $i$ ,  $R_i$ .

$$R_i = \gamma + \pi \cdot S_i + u_i$$

$$Y_i = \alpha + \beta \cdot \hat{R}_i + X\gamma + \varepsilon_i$$

where  $Y_i$  denotes the value of some outcome variable  $Y$  for county  $i$  and  $X$  represents a vector of control variables that are included in some specifications (for example, China trade shocks).

In the context of the GSS micro data used in conjunction with the Blue Law and Anti-Evolution Law instruments, I run the following similar specifications as a baseline:

$$Y_{ichst} = \alpha + \beta \cdot YrsBlue_{ch} + \chi_c + \eta_h + \varphi_s + \theta_t + \varepsilon_{ichst}$$

$$Y_{ichst} = \alpha + \beta \cdot AntiEvo_{ch} + \chi_c + \eta_h + \varphi_s + \theta_t + \varepsilon_{ichst}$$

where  $Y_{ichst}$  denotes the value of some outcome variable  $Y$  for individual  $i$  born in cohort  $c$  in home-state  $h$ , currently living in state  $s$  in year  $t$ .  $\chi_c$  denotes cohort fixed-effects.  $\eta_h$  denotes home-state fixed effects.  $\varphi_s$  denotes current-state fixed effects.  $\theta_t$  denotes year fixed-effects.  $YrsBlue_{ch}$  denotes the number of years to which an individual born in cohort  $c$  growing up in state  $h$  would have been exposed to a Blue Law between ages 18 and 25. The use of ages 18 to 25 as the relevant range draws on Giuliano and Spilimbergo (2013) and a large sociology literature finding that these ages – as the first years a young adult spends making their own decisions – are crucial for young-adult socialization and formation of habits/attitudes that endure later in life.  $AntiEvo_{ch}$  is an indicator variable denoting whether an individual born in cohort  $c$  growing up in state  $h$  was exposed to an Anti-Evolution Law. In both cases, I cluster standard errors at the home-state level, as this is the level at which treatment was assigned. Note that this yields 50 clusters, a number by which the concerns associated with finite-sample, few-cluster inference have dissipated, especially when coupled with critical values taken from a  $T(G - 2)$

distribution, where  $G$  denotes the number of clusters<sup>6</sup>.

For robustness, I run permutation tests as an alternative way of generating standard errors within-sample. Holding fixed the number of treated units (states), I (i) randomize the units which are treated and, for each unit, the year in which treatment was assigned and (ii) fix the units which are treated and, for each unit, randomize the year in which treatment was assigned. As another robustness check, I run dynamic difference-in-differences specifications that build on the static specifications above:

$$Y_{ichst} = \alpha + \sum_{m=A}^B \beta_m \cdot I_{hc}^m + \beta_{(B,\infty)} I_{hc}^{(B,\infty)} + \chi_c + \eta_h + \varphi_s + \theta_t + \varepsilon_{ichst}$$

where  $I_{hc}^m$  is an indicator variable denoting whether – for the Blue Laws specification – cohort  $c$  was either the  $m^{\text{th}}$  or  $(m + 1)^{\text{th}}$  cohort in state  $h$  to never be exposed to a Blue Law between ages 18 and 25. It is analogously defined for the Anti-Evolution Laws.

## 4 Results

### 4.1 U.S. Religion Census and Shift-Share Instrument

Table 1 contains the baseline results from the regressions of various family outcomes on religiosity. The OLS and shift-share IV regressions that decreased religiosity induces increased rates of divorce, single parenthood, living alone, high-school dropout, and juvenile delinquency. For a sense of the magnitudes, a 20% decline in religiosity over 1980-2010 – a high but not uncommonly high figure – is associated with approximately a 6 percentage-point increase in the single parenthood rate, per the OLS specification, or a 7 percentage-point increase, per the IV specification. This is a large but not at all implausible effect, given that the rate of single

---

<sup>6</sup> See Bertrand, Duflo, and Mullainathan (2004) and Cameron and Miller (2015) for more information on inference with few clusters.

parenthood increased by approximately 35 percentage points between 1960 and 2010. Thus a non-trivial fraction of this increase can be attributed to declining religiosity.

Turning to Table 2, we can observe the effects of declining religiosity on economic mobility. Consistent across all measures of mobility and both the OLS/IV specifications, declining religiosity induces higher mobility. A 20% decline in religiosity again induces an approximately 5.5 percentage-point increase in the share of individuals born into a family the bottom 50 percentiles of income who manage to make it into the top 20 percentiles of income in their own adulthood.

Table 3 examines the effect of religiosity on male labor-force participation. While, overall, there is no significant effect, in low-skill places in particular, there are. The coefficient on the interaction effect between the share of unskilled workers in an area and its change in religiosity is strongly significant. So, for instance, where the share of unskilled workers is approximately 10% (near the minimum), there is no statistically-significant net effect of changes in religiosity on male labor-force participation. Where the share is 40% (near the maximum), a 20% decline in religiosity induces approximately an 8 percentage-point decline in the male labor-force participation rate.

Table 4 proceeds to examine disability and public assistance receipt. Once again, a sharper decline in religiosity induces a greater rise in reported disability rates and public assistance receipt. A 20% decline in religiosity induces approximately a 2.6 percentage-point increase in rates of self-reported disability and a 2.8 percentage-point increase in public assistance receipt, per the IV results. This relationship is even sharper where the share of unskilled workers is higher.

Table 5 studies Evangelical adherence. A trend that has been much commented-upon in the



popular press and some existing literature on the economics of religion is that, as mainstream religious denominations have declined, evangelical denominations have flourished. Table 5 provides evidence that this relationship is, in fact, a causal one. Per the IV specification, a 20% decline in religiosity induces a 3 percentage-point increase in Evangelical adherence. Notably, the sign on the OLS coefficient and the IV coefficient differ. This is unsurprising – in terms of correlations, declining evangelical adherence is likely to go along with declining religiosity overall. Once one uses a more exogenous source of variation – the shift-share instrument – the inverse relationship emerges.

Goldsmith-Pinkham, Sorkin, and Swift (2018) suggest checking balance on observables across units (here, denominations) to verify the validity of the shift-share regressions. The value of many observables is quite similar across areas containing different denominations, as seen in Table 6. Not all are wholly similar, though, so I add the variables in the balance table as control variables and re-run the preceding specifications. I also add the China trade shocks from Autor, Dorn, and Hansen (2013) as controls, since they are known to have a sharp effect on the material decline of working-class areas in the United States. These specifications with added control variables are in Table 7. Although the exact magnitudes of the coefficients differ slightly, the results all remain similar to the baseline specifications and statistically significant.

In a similar spirit, I examine the effects in low-education (below median) versus high-education (above median) areas in Table 8. I find that the effects largely proceed through low-education areas – they are much more minor and less significant in high-education areas. Religiosity appears to be more important for preserving social fabric in low-education areas than high-education ones. Adao, Kolesar, and Morales (2018) suggest alternative standard errors for shift-share regressions as a robustness check to account for the complex correlations across

places generated by the fact that there may be, for example, a county in North Dakota that is majority Lutheran, another one in Minnesota, and another one in Iowa – despite the fact that they are in different states (and thus these correlations will not be captured by state clustering), commonalities in the underlying denomination may induce complex correlations amongst these three counties. Table 9 show that, even after adopting these revised standard errors, the effects persist.

It is worth noting that, in many or most of the specifications in the preceding tables, the IV coefficients have exceeded the magnitude of the OLS coefficients. This should ideally be accounted for. The literature on the economics of religion finds plentiful evidence that negative economic conditions and other material challenges tend to lead to *increases* in religiosity. Insofar as this relationship exists, it should be biasing the OLS coefficients toward zero. To verify that this relationship does indeed exist in the modern US setting, I run shift-share specifications leveraging the fact that different industries have declined/grown at different national rates and are concentrated in different areas. These regressions are contained in Table 10, and they do indeed bear out this relationship: worsened economic conditions (in terms of either reduced wages or a decline in manufacturing employment share) induce increased religiosity, providing evidence that the baseline IV shift-share specifications have larger coefficients than their corresponding OLS specifications precisely because the OLS coefficients are biased downward.

## 4.2 GSS Analysis

Table 11 reports the results of the Blue Law regressions. Blue Laws are found – as has been previously confirmed in the literature, particularly Gruber and Hungerman (2008) – to

contribute to increased attendance of religious services but no change in religious beliefs (where the latter is measured by a question on belief in the Bible). For the outcomes that I am able to analyze using the GSS, I again find evidence that reduced religiosity – in particular, reduced religious attendance – increases rates of single parenthood and divorce and decreases rates of male labor force participation and hours worked.

Table 12 reports the results of the Anti-Evolution Law regressions. Anti-Evolution Laws are found to contribute to increased religious belief but no change in attendance of religious services. Here, I find evidence that the family outcomes are affected, but not the material outcomes. That is, increased religious belief appears to contribute to increased rates of single parenthood and divorce but no change in rates of male labor force participation or hours worked.

Table 13 pools the Blue Law variation in attendance with the church scandal variation in attendance from Bontan and Perez-Truglia (2015). The resulting regressions are in Table 13. The coefficients are of a more sensible magnitude here than in Table 11, potentially due to the additional variation.

Figures 6 and 7 plot the dynamic version of the reduced-form Blue Laws and Anti-Evolution Law difference-in-differences specification. In both cases, the effects are significant, and there is no evidence of pre- trends.

### **4.3 Discussion**

Taken as a whole, these results speak of one voice. Declining religiosity is systematically associated with worsened outcomes in terms of both family stability and material conditions. This is particularly true in the context of working-class communities. All of the multiple sources of instrumental variation, too, suggest that this relationship is a causal one.

The GSS analysis sheds light on the mechanism of the effect. Much consequence has been granted in the literature on the economics of religion to the distinction between religious attendance and religious belief. While the family stability outcomes are affected by both attendance and belief, the economic outcomes are only affected by attendance. This suggests that social enforcement and positive network effects are of greater importance than an explanation along the lines of a Protestant work ethic. Having said that, beliefs do not totally wash out, and are important when it comes to ensuring family stability.

## **5 Conclusion**

Working-class America has been plagued by multiple adverse trends over the past several decades. Rises in single parenthood and self-reported disability along with declines in male labor-force participation and economic mobility have been sharp and persistent. Attempts to tie these trends exclusively to material factors have mostly – or entirely – failed, depending on the outcome. As such, I examine the effects of declining religiosity on these aforementioned variables, motivated by the fact that substantial secularization has occurred – once again, concentrated in working-class communities – over the same time period.

Using a shift-share instrument exploiting the fact that, nationally, different religious denominations declined at different rates and, locally, different denominations are concentrated in different areas, I find evidence that declining religiosity is causally responsible for each of the aforementioned trends. I apply various robustness checks – controlling for potential correlates and other variables known to have a significant effect on these adverse trends – and the relationship survives. Indeed, I show that if one reverses the relationship and uses a shift-share instrument for variation in economic conditions, the usual relationship of heightened religiosity

in response to harsher material challenges emerges – providing strong evidence that reverse causality is not what is driving my findings.

Next, using the state Blue Laws banning retail activity on Sundays and the state Anti-Evolution Laws mandating teaching of creationism over evolution, I delve into the mechanism of the effect. Since the former laws are found to affect attendance (but not beliefs) and the latter are found to affect beliefs (but not attendance), I am able to instrument for changes in religiosity with them. I find that the family stability trends and the economic outcomes are both driven by changes in attendance, whereas only the family stability trends are driven by changes in belief. This suggests that the positive effects of religiosity on working-class communities have most to do with the community-enforcement, networking, and positive social capital that comes with church attendance – but that beliefs, too, play a role.

These findings contribute further to the increasingly-broad literature finding that beliefs, values, and culture have important implication. In particular, the results demonstrate that even a wide array of standard material economic outcomes can be very powerfully influenced by non-material factors. Finally, the results make clear that religion serves as an important force for stability in the lives of many, and secularization may come with harsh costs that are disproportionately inflicted on the most vulnerable in society.

## References

Acs, G., & Nelson, S. (2004). "Changes in living arrangements during the late 1990s: Do welfare policies matter?" *Journal of Policy Analysis and Management*, 23(2), 273-290.

Adao, R., Kolesár, M., & Morales, E. (2018). "Shift-share designs: Theory and inference." NBER Working Paper No. 24944.

Aguiar, M., Bils, M., Charles, K. K., & Hurst, E. (2017). "Leisure luxuries and the labor supply of young men." NBER Working Paper No. 23552.

Autor, D., Dorn, D., & Hanson, G. H. (2013). "The China syndrome: Local labor market effects of import competition in the United States." *American Economic Review*, 103(6), 2121-68.

Autor, D., Dorn, D., & Hanson, G. (2017). "When Work Disappears: Manufacturing Decline and the Falling Marriage-Market Value of Young Men." NBER Working Paper No. 23173.

Autor, D., & Wasserman, M. (2013). *Wayward sons: The emerging gender gap in education and labor markets*. Washington, DC: Third Way.

Basten, C., & Betz, F. (2013). "Beyond work ethic: Religion, individual, and political preferences." *American Economic Journal: Economic Policy*, 5(3), 67-91.

Barro, R. J., & McCleary, R. M. (2003). "Religion and Economic Growth across Countries." *American Sociological Review*, 760-781.

Becker, S. O., & Woessmann, L. (2009). "Was Weber wrong? A human capital theory of Protestant economic history." *The Quarterly Journal of Economics*, 124(2), 531-596.

Belloc, M., Drago, F., & Galbiati, R. (2016). Earthquakes, religion, and transition to self-government in Italian cities. *The Quarterly Journal of Economics*, 131(4), 1875-1926.

Bertrand, M., E. Duflo, and S. Mullainathan (2004). "How much should we trust differences-in-differences estimates?" *Quarterly Journal of Economics*, 119(1): 249-275.

Bitler, M. P., Gelbach, J. B., & Hoynes, H. W. (2006). "Welfare reform and children's living arrangements." *Journal of Human resources*, 41(1), 1-27.

Bitler, M. P., Gelbach, J. B., Hoynes, H. W., & Zavodny, M. (2004). "The impact of welfare reform on marriage and divorce." *Demography*, 41(2), 213-236.

Blackburn, M. L. (2003). The effects of the welfare system on marital dissolution. *Journal of Population Economics*, 16(3), 477-500.

Blau, F. D., Kahn, L. M., & Waldfogel, J. (2004). "The Impact of Welfare Benefits on Single Motherhood and Headship of Young Women Evidence from the Census." *Journal of Human*

Resources, 39(2), 382-404.

Blau, D. M., & Van der Klaauw, W. (2013). "What determines family structure?" *Economic Inquiry*, 51(1), 579-604.

Blundell, R., Costa Dias, M., Meghir, C., & Shaw, J. (2016). "Female labor supply, human capital, and welfare reform." *Econometrica*, 84(5), 1705-1753.

Bottan, N. L., & Perez-Truglia, R. (2015). "Losing my religion: The effects of religious scandals on religious participation and charitable giving." *Journal of Public Economics*, 129, 106-119.

Bruce, S. (2001). "Christianity in Britain, RIP." *Sociology of religion*, 62(2), 191-203.

Cameron, A. C. and D.L. Miller (2015). "A practitioner's guide to cluster-robust inference." *Journal of Human Resources*, 50(2): 317-372.

Campante, F., & Yanagizawa-Drott, D. (2015). "Does religion affect economic growth and happiness? Evidence from Ramadan." *The Quarterly Journal of Economics*, 130(2), 615-658.

Chaney, E. (2013). "Revolt on the Nile: Economic shocks, religion, and political power." *Econometrica*, 81(5), 2033-2053.

Council of Economic Advisers (2016) "The Long-Term Decline in Prime-Age Male Labor Force Participation." White Paper.

Chen, D. L. (2010). "Club goods and group identity: Evidence from Islamic resurgence during the Indonesian financial crisis." *Journal of political Economy*, 118(2), 300-354.

Coglianesse, J. (2018). "The rise of in-and-outs: Declining labor force participation of prime age men." Working Paper.

Dahl, G. B., Kostøl, A. R., & Mogstad, M. (2014). "Family welfare cultures." *Quarterly Journal of Economics*, 129(4), 1711-1752.

Duncan, G. J., & Hoffman, S. D. (1990). Welfare benefits, economic opportunities, and out-of-wedlock births among black teenage girls. *Demography*, 27(4), 519-535.

Duncan, G. J., & Hoffman, S. D. (1995). "The effect of incomes, wages, and AFDC benefits on marital disruption." *Journal of Human Resources* 30(1), 19-41.

Dunifon, R., Hynes, K., & Peters, H. E. (2009). State welfare policies and children's living arrangements. *Social Service Review*, 83(3), 351-388.

Eberstadt, N. (2016). *Men without work: America's invisible crisis*. West Conshohocken, PA: Templeton Foundation Press.

- Eissa, N., Kleven, H. J., & Kreiner, C. T. (2008). "Evaluation of four tax reforms in the United States: Labor supply and welfare effects for single mothers." *Journal of Public Economics*, 92(3-4), 795-816.
- Ellwood, D. T. (2000). "The impact of the earned income tax credit and social policy reforms on work, marriage, and living arrangements." *National tax journal* 53(4, Pt. 2), 1063-1105.
- Ellwood, D. & Jencks, C. (2001). "The Uneven Spread of Single-Parent Families: What Do We Know? Where Do We Look for Answers?" In *Social Inequality*, ed. K.M. Neckerman, pp. 3-77. New York, NY: Russell Sage Foundation.
- Elsby, M. W., & Shapiro, M. D. (2012). Why does trend growth affect equilibrium employment? A new explanation of an old puzzle. *American Economic Review*, 102(4), 1378-1413.
- Fitzgerald, J. M., & Ribar, D. C. (2004). "Welfare reform and female headship." *Demography*, 41(2), 189-212.
- Fraker, T. M., Ross, C. M., Stapulonis, R. A., Olsen, R. B., Kovac, M. D., Dion, M. R., & Rangarajan, A. (2002). *The evaluation of welfare reform in Iowa: Final impact report*. Mathematica Policy Research: DEA-0699.
- Froese, P. (2008). *The plot to kill God: Findings from the Soviet experiment in secularization*. Berkeley, CA: University of California Press.
- Goldsmith-Pinkham, P., Sorkin, I., & Swift, H. (2018). "Bartik instruments: What, when, why, and how." NBER Working Paper No. 24408.
- Gruber, J., & Hungerman, D. M. (2008). "The church versus the mall: What happens when religion faces increased secular competition?" *Quarterly journal of economics*, 123(2), 831-862.
- Harrington, E. (2019). "Work and Pain in the Age of Opioids." Working Paper.
- Hoffman, S. D., & Foster, E. M. (2000). AFDC benefits and nonmarital births to young women. *Journal of Human Resources* 35(2), 376-391.
- Hout, M., & Fischer, C. S. (2014). "Explaining Why More Americans Have No Religious Preference: Political Backlash and Generational Succession, 1987-2012." *Sociological Science*, 1.
- Kearney, M. S., & Wilson, R. (2018). "Male earnings, marriageable men, and nonmarital fertility: Evidence from the fracking boom." *Review of Economics and Statistics*, 100(4), 678-690.
- Krueger, A. B. (2017). "Where Have All the Workers Gone?: An Inquiry into the Decline of the US Labor Force Participation Rate." *Brookings papers on economic activity*, 2017(2), 1-87.



- Lichter, D. T., LeClere, F. B., & McLaughlin, D. K. (1991). "Local marriage markets and the marital behavior of black and white women." *American journal of Sociology*, 96(4), 843-867.
- McLaughlin, D. K., & Lichter, D. T. (1997). "Poverty and the marital behavior of young women." *Journal of Marriage and the Family*, 59(3), 582-594.
- Meyer, B. D., & Rosenbaum, D. T. (2001). "Welfare, the earned income tax credit, and the labor supply of single mothers." *Quarterly journal of economics*, 116(3), 1063-1114.
- Meyersson, E. (2014). "Islamic Rule and the Empowerment of the Poor and Pious." *Econometrica*, 82(1), 229-269.
- Moffitt, R. A. (1998). "The Effect of Welfare on Marriage and Fertility: What Do We Know and What Do We Need to Know?" In *Welfare, the Family, and Reproductive Behavior*, ed. R.A. Moffitt. Washington, DC: National Research Council.
- Moffitt, R. A., Phelan, B. J., & Winkler, A. E. (2018). "Welfare rules, incentives, and family structure." NBER Working Paper No. 21257.
- Moffitt, R. A., Reville, R., & Winkler, A. E. (1998). "Beyond single mothers: Cohabitation and marriage in the AFDC program." *Demography*, 35(3), 259-278.
- Murray, Charles (1984). *Losing Ground: American Social Policy, 1950-1980*. New York, NY: Basic Books.
- Stark, R. (1999). "Secularization, RIP." *Sociology of religion*, 60(3), 249-273.
- Weitof, G. R., Hjern, A., Haglund, B., & Rosén, M. (2003). "Mortality, severe morbidity, and injury in children living with single parents in Sweden: a population-based study." *The Lancet*, 361(9354), 289-295.
- Winkler, A. E. (1995). "Does AFDC - up encourage two - parent families?" *Journal of Policy Analysis and Management*, 14(1), 4-24.
- Winship, S. (2017). "What's Behind Declining Male Labor Force Participation: Fewer Good Jobs or Fewer Men Seeking Them?" Mercatus Research Paper.

## Tables and Figures

**Table 1: Effect of Secularization on Family Outcomes**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Divorce	Divorce	Single Parenthood	Single Parenthood	Share Living Alone	Share Living Alone	HS Dropout Rate	HS Dropout Rate	Share Incarc Minors	Share Incarc Minors
Specification Type:	OLS	IV	OLS	IV	OLS	IV	OLS	IV	OLS	IV
$\Delta$ Adherence <sub>80,10</sub>	-0.090*** (0.028)	-0.164*** (0.043)	-0.295*** (0.052)	-0.351*** (0.114)	-0.141*** (0.052)	-0.416*** (0.083)	-0.086** (0.034)	-0.403*** (0.072)	-0.006* (0.003)	-0.013† (0.007)
Years of Data	1980- 2010	1980- 2010	1980-2010	1980-2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract
Clustering	County	County	County	County	County	County	County	County	County	County
Observations	57,852	57,852	58,050	58,050	58,038	58,038	57,569	57,569	17,446	17,446

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 2: Effect of Secularization on Economic Mobility**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Mobility - Bottom 25% to Top 20%	Mobility - Bottom 25% to Top 20%	Mobility - Bottom 50% to Top 20%	Mobility - Bottom 50% to Top 20%	Mobility - Bottom 25% to Top 20% (Males)	Mobility - Bottom 25% to Top 20% (Males)	Mobility - Bottom 25% to Top 20% (Females)	Mobility - Bottom 25% to Top 20% (Females)
Specification Type:	OLS	IV	OLS	IV	OLS	IV	OLS	IV
$\Delta$ Adherence <sub>80,10</sub>	0.162*** (0.029)	0.359*** (0.043)	0.135*** (0.027)	0.279*** (0.073)	0.187*** (0.027)	0.484*** (0.078)	0.141*** (0.033)	0.210** (0.082)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980-2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract
Clustering	County	County	County	County	County	County	County	County
Observations	57,852	57,852	58,050	58,050	58,038	58,038	57,569	57,569

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 3: Effect of Secularization on Labor Force Participation**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Share Males Not in LF	Share Males Not in LF	Share Males Not in LF	Share Males Not in LF	Share Females Not in LF	Share Females Not in LF	Share Females Not in LF	Share Females Not in LF
Specification Type:	OLS	IV	OLS	IV	OLS	IV	OLS	IV
$\Delta$ Adherence <sub>80,10</sub>	0.002 (0.022)	-0.066 (0.070)	0.148*** (0.038)	0.282* (0.136)	0.127*** (0.029)	0.105 (0.071)	0.194*** (0.046)	0.294** (0.127)
ShareUnskilled <sub>80</sub>			-0.067** (0.026)	-0.159*** (0.058)			-0.133*** (0.027)	-0.182*** (0.060)
$\Delta$ Adherence <sub>80,10</sub> *ShareUnskilled <sub>80</sub>			-0.794*** (0.167)	-1.773*** (0.555)			-0.470*** (0.180)	-1.035† (0.530)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980-2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract
Clustering	County	County	County	County	County	County	County	County
Observations	58,004	58004	58,004	58,004	57,979	57,979	57,979	57,979

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 4: Effect of Secularization on Welfare and Disability**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Share on Public Assistance	Share on Public Assistance	Share on Public Assistance	Share on Public Assistance	Share Disabled	Share Disabled	Share Disabled	Share Disabled
Outcome Type:	OLS	IV	OLS	IV	OLS	IV	OLS	IV
$\Delta$ Adherence <sub>80,10</sub>	-0.038*** (0.012)	-0.138*** (0.047)	0.032† (0.017)	0.186*** (0.070)	-0.080*** (0.017)	-0.128*** (0.036)	-0.014 (0.017)	0.002 (0.054)
ShareUnskilled <sub>80</sub>			-0.102*** (0.018)	-0.223*** (0.063)			0.041* (0.021)	0.005 (0.245)
$\Delta$ Adherence <sub>80,10</sub> *ShareUnskilled <sub>80</sub>			-0.449*** (0.085)	-1.710*** (0.463)			-0.283** (0.126)	-0.618** (0.245)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract
Clustering	County	County	County	County	County	County	County	County
Observations	57,883	57,883	57,870	57,870	57,939	57,939	57,933	57,933

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 5: Effect of Secularization on Evangelical Adherence**

	(1)	(2)
	Share Evangelical	Share Evangelical
Outcome Type:	OLS	IV
$\Delta$ Adherence <sub>80,10</sub>	0.132*** (0.017)	-0.149*** (0.053)
Years of Data	1980-2010	1980-2010
Data Level	Tract	Tract
Clustering	County	County
Observations	72,228	72,228

† Denotes significance at 10% level;  
 \* Denotes significance at 5% level;  
 \*\* Denotes significance at 2.5% level;  
 \*\*\* Denotes significance at 1% level

**Table 6: Balance Table**

	(1)	(2)	(3)	(4)	(5)	(6)
	Median Household Income	Share White	Share Urban	Share College Grads	Share Manuf. Employmnt	Share Unskilled Workers
Statistic:	Mean	Mean	Mean	Mean	Mean	Mean
Plurality Mainline Protestant Tracts	13260.64	0.887	0.615	0.354	0.218	0.175
Plurality Evangelical Protestant Tracts	10437.46	0.836	0.595	0.336	0.204	0.183
Plurality Catholic Tracts	13799.68	0.819	0.796	0.344	0.219	0.169
Overall	12957.25	0.837	0.714	0.344	0.215	0.173

**Table 7: Effects with Controls**

	(1)	(2)	(3)	(4)
	Share Single Parents	Mobility - Bottom 25% to Top 20%	Share Disabled	Share Males Not in LF
Outcome Type:	IV	IV	IV	IV
$\Delta$ Adherence <sub>80,10</sub>	-0.416*** (0.109)	0.463*** (0.118)	-0.110*** (0.039)	0.493*** (0.164)
ShareUnskilled <sub>80</sub>				-0.100 (0.077)
$\Delta$ Adherence <sub>80,10</sub> *ShareUnskilled <sub>80</sub>				-2.054*** (0.618)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract
Clustering	County	County	County	County
Observations	56,961	53,151	57,044	57,110

† Denotes significance at 10% level; \* Denotes significance at 5% level;  
 \*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1%  
 level



**Table 8: Split by Education**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Share Single Parents	Share Single Parents	Mobility - Bottom 25% to Top 20%	Mobility - Bottom 25% to Top 20%	Share Disabled	Share Disabled	Share Males Not in LF	Share Males Not in LF
Outcome Type:	IV	IV	IV	IV	IV	IV	IV	IV
$\Delta$ Adherence <sub>80,10</sub>	-0.412*** (0.125)	-0.275* (0.141)	0.535*** (0.134)	0.271** (0.118)	-0.205*** (0.056)	-0.044 (0.032)	-0.240** (0.100)	0.079 (0.082)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980-2010	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract	Tract	Tract	Tract	Tract
Type	Low- Educ Tracts	High- Educ Tracts	Low- Educ Tracts	High-Educ Tracts	Low- Educ Tracts	High- Educ Tracts	Low- Educ Tracts	High- Educ Tracts
Clustering	County	County	County	County	County	County	County	County
Observations	28,921	28,930	25,672	28,272	28,936	29,002	28,980	29,024

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 9: Adao, Kolesar, Morales Standard Errors**

	(1)	(2)	(3)	(4)
	Share Single Parents	Mobility - Bottom 25% to Top 20%	Share Disabled	Share Males Not in LF
Outcome Type:	IV	IV	IV	IV
$\Delta$ Adherence <sub>80,10</sub>	-0.295*** (0.089)	0.162*** (0.049)	-0.080** (0.030)	0.282* (0.145)
ShareUnskilled <sub>80</sub>				-0.159* (0.079)
$\Delta$ Adherence <sub>80,10</sub> *ShareUnskilled <sub>80</sub>				-1.773** (0.752)
Years of Data	1980- 2010	1980- 2010	1980- 2010	1980- 2010
Data Level	Tract	Tract	Tract	Tract
Observations	57,852	67,271	57,939	58,004

† Denotes significance at 10% level; \* Denotes significance at 5% level;  
 \*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1%  
 level

**Table 10: Bartik – Test for Reverse Causality**

	(1)	(2)	(3)	(4)
	$\Delta$ Adherence	$\Delta$ Adherence	$\Delta$ Adherence	$\Delta$ Adherence
Outcome Type:	OLS	IV	OLS	IV
$\Delta$ Wage <sub>80,10</sub>	0.006 (0.004)	-0.020*** (0.008)		
$\Delta$ ManufEmpShare <sub>80,10</sub>			0.001 (0.003)	-0.009* (0.005)
Years of Data	1980-2010	1980-2010	1980-2010	1980-2010
Data Level	County	County	County	County
Observations	3,089	3,089	3,089	3,089

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 11: Blue Laws**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Blue Laws: Attend	Blue Laws: Belief	Reduced Form: Single Parent	IV: Single Parent	Reduced Form: Divorce	IV: Divorce	Reduced Form: Male Employ	IV: Male Employ	Reduced Form: Hours Worked	IV: Hours Worked
Outcome Type:	Z-Score	Z-Score	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Linear	Linear
Attendance				-0.203*		-0.283***		0.421**		-15.381†
				(0.099)		(0.087)		(0.176)		(9.031)
Yrs Blue Law (18-25)	0.014***	0.001	-0.004***		-0.004***		0.009***		-0.227*	
	(0.003)	(0.001)	(0.001)		(0.001)		(0.002)		(0.110)	
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Current-State FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home-State FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GSS Data Used	All	All	All	All	All	All	All	All	All	All
Clustering	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State
Observations	25,110	7,268	25,355	25,110	25,596	25,408	11,221	11,082	8,460	8,425

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Table 12: Anti-Evolution Laws**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Anti- Evol Laws: Belief	Anti- Evol Laws: Attend	Reduced Form: Single Parent	IV: Single Parent	Reduced Form: Divorce	IV: Divorce	Reduced Form: Male Employ	IV: Male Employ	Reduced Form: Hours Worked	IV: Hours Worked
Outcome Type:	Z-Score	Z-Score	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Linear	Linear
Belief				-0.723** (0.298)		-0.398*** (0.135)		0.215 (0.373)		13.975 (9.391)
AntiEvLaw Indicator	0.098*** (0.032)	0.038 (0.059)	-0.041*** (0.008)		-0.027*** (0.008)		0.009 (0.016)		0.503 (0.468)	
Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cohort FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Current-State FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Home-State FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
GSS Data Used	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920
Clustering	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State	Home State
Observations	28,693	42,916	43,252	28,697	43,252	28,697	43,242	28,691	27,880	18,258

† Denotes significance at 10% level; \* Denotes significance at 5% level;

\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

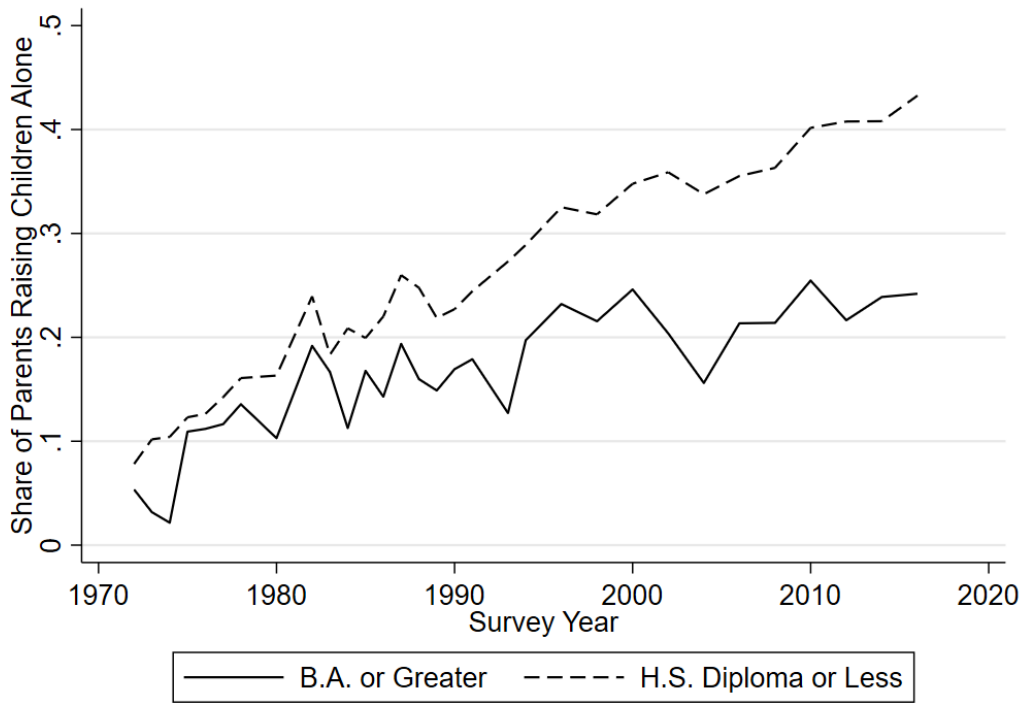
**Table 13: Pooled Variation – Blue Laws & Church Scandals**

	(1)	(2)	(3)	(4)	(5)
	Single Parenthood	Divorce	Living Alone	Mobility (Educational)	Male Employment
Outcome Type:	Z-Score	Z-Score	Indicator	Indicator	Indicator
Attendance	-0.126*** (0.037)	-0.119*** (0.037)	-0.105** (0.047)	1.311† (0.789)	0.182 (0.114)
Year FEs	Yes	Yes	Yes	Yes	Yes
Cohort FEs	Yes	Yes	Yes	Yes	Yes
Age FEs	Yes	Yes	Yes	Yes	Yes
Current-State FEs	Yes	Yes	Yes	Yes	Yes
Home-State FEs	Yes	Yes	Yes	Yes	Yes
GSS Data Used	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920	Cohorts after 1920
Clustering	Home State	Home State	Home State	Home State	Home State
Observations	22,005	21,912	21,912	17,385	9,729

† Denotes significance at 10% level; \* Denotes significance at 5% level;

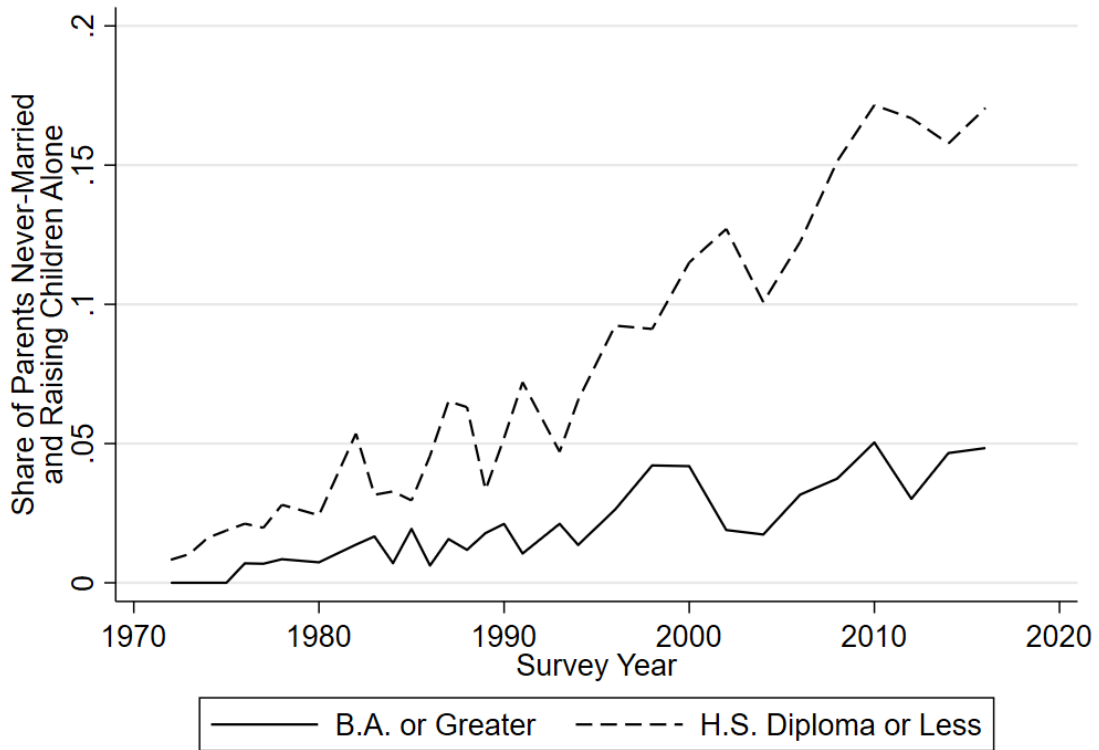
\*\* Denotes significance at 2.5% level; \*\*\* Denotes significance at 1% level

**Figure 1: Share of Single Parents**



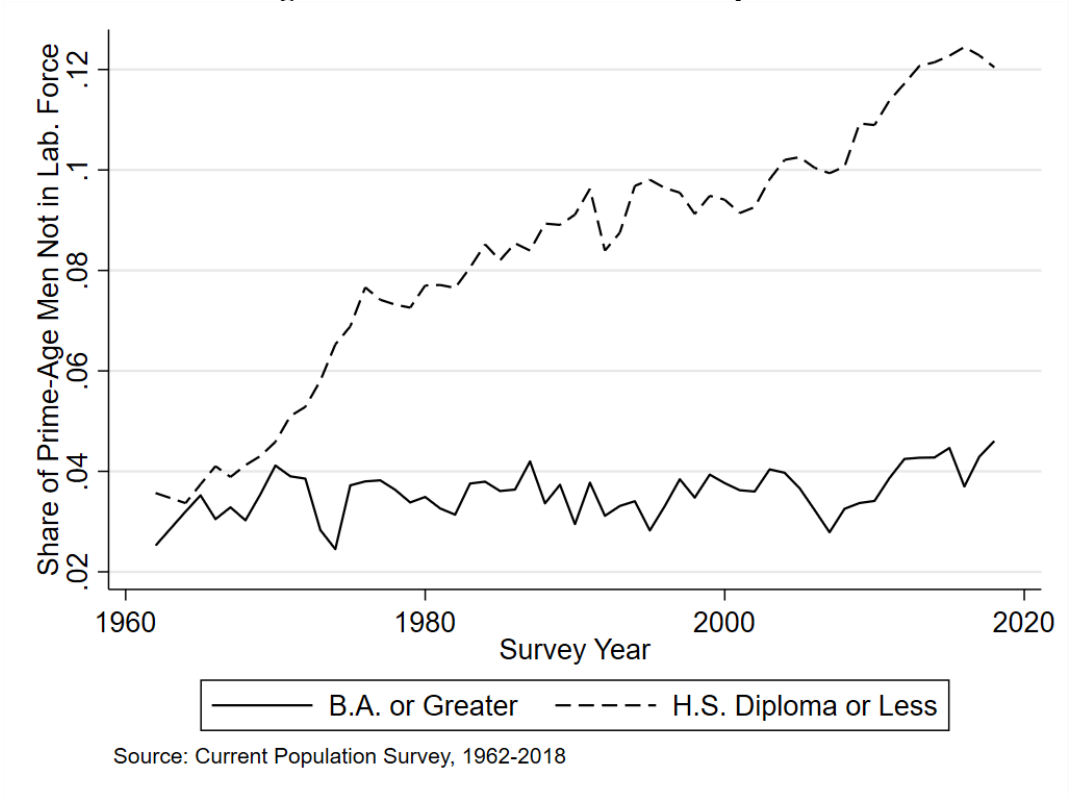
Source: General Social Survey, 1972-2016 waves

**Figure 2: Share of Single, Never-Married Parents**

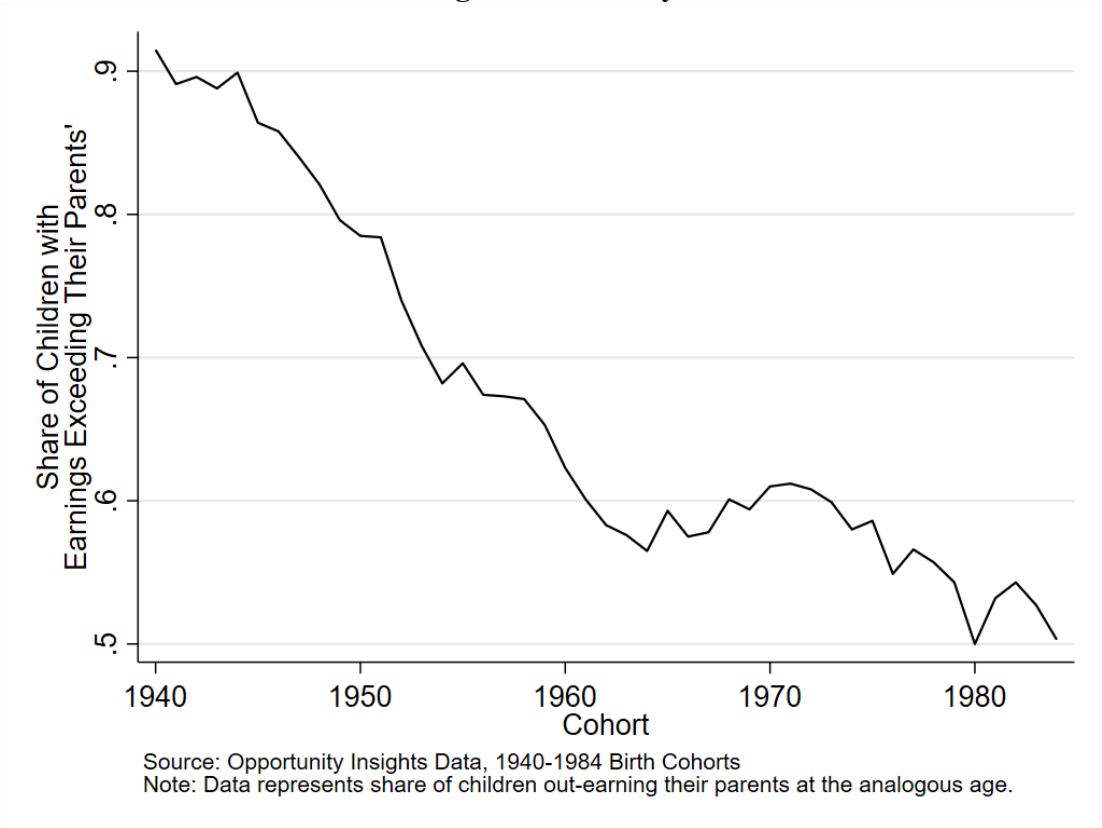


Source: General Social Survey, 1972-2016 waves

**Figure 3: Male Labor Force Participation**

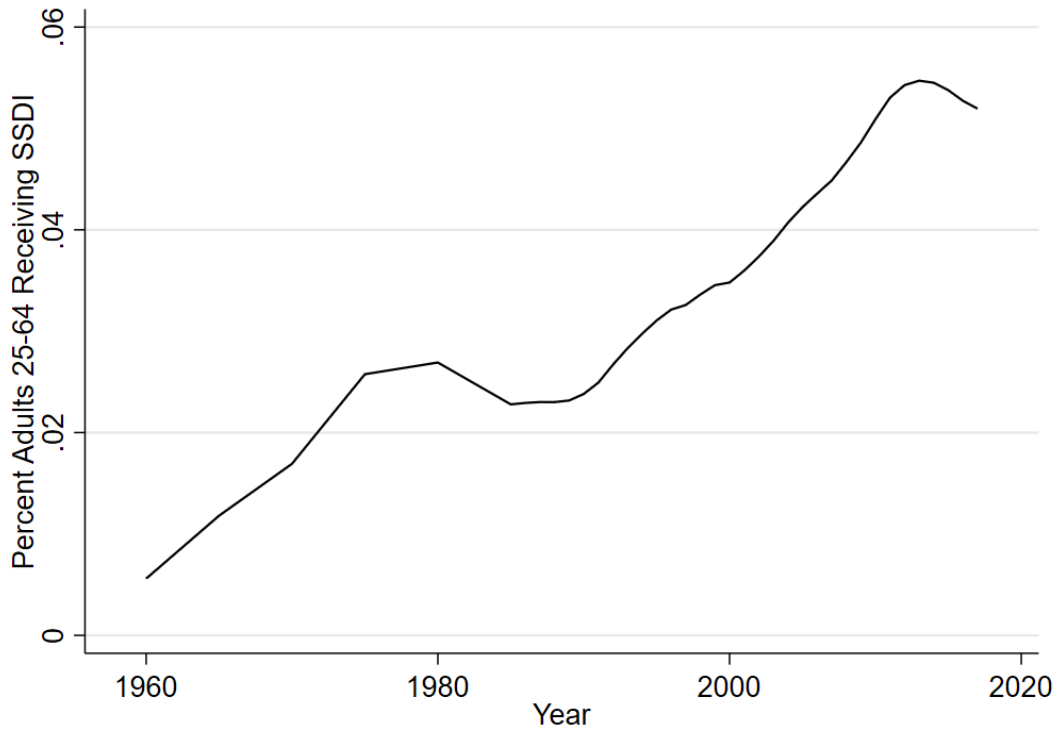


**Figure 4: Mobility**



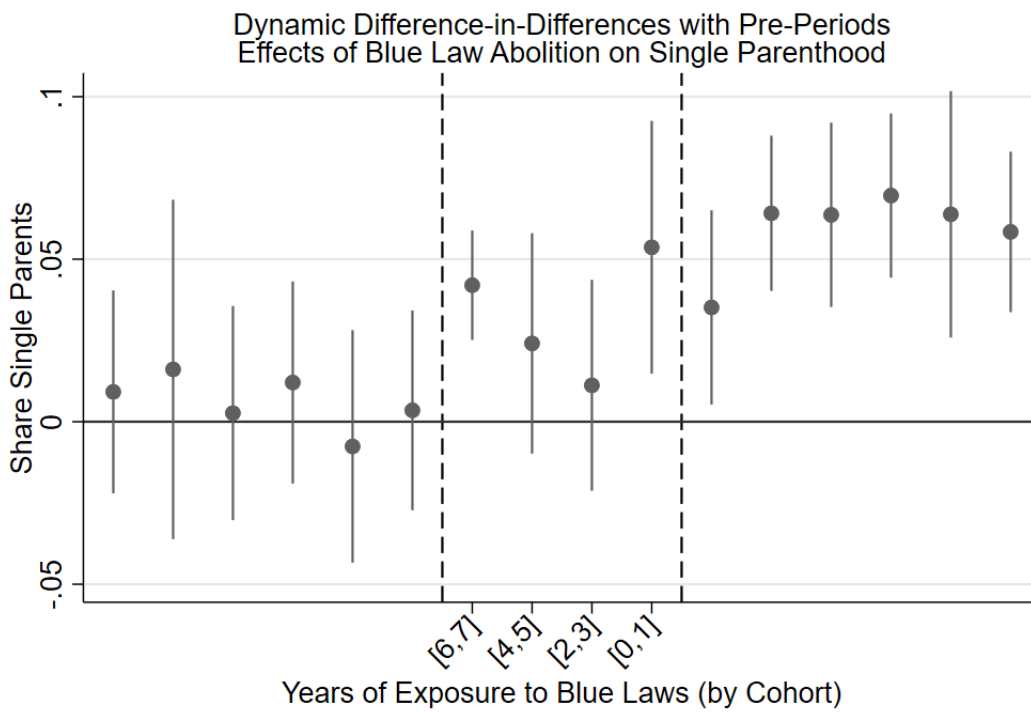


**Figure 5: Disability**



Source: Social Security Administration

**Figure 6: Dynamic Diff-in-Diff – Blue Laws**



Note: Leftmost cohorts exposed to Blue Laws throughout 18-25 y.o. period.  
Rightmost cohorts never exposed during 18-25 y.o. period.

**Figure 7: Dynamic Diff-in-Diff – Anti-Evolution Laws**

