AN OVERVIEW OF
Social Capital in America

social capital project

A project of the Joint Economic Committee — Republicans | Ranking Member Senator Mike Lee
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An Introduction to the Social Capital Project from U.S. Senator Mike Lee

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The Social Capital Project is a multi-year research effort to investigate the evolving nature, quality, and importance of our associational life—namely, our families, communities, workplaces, and religious congregations. These institutions are critical to forming our character and capacities, providing our lives with meaning and purpose, and addressing the challenges we face in an increasingly disconnected world.

Unfortunately, over the last few decades, the distribution of social capital across the country has become more unequal, and associational life has declined by many measures. In *An Overview of Social Capital in America*, the Social Capital Project describes American associational life, the distribution of social capital, and trends in social capital. Utah is a bright spot in that research, as it consistently ranks as the state with the highest social capital, and it provides an aspirational vision of what could be elsewhere.

In a subsequent volume, *A Policy Agenda for Social Capital*, the Social Capital Project proposes specific policies to realize that vision across the country and strengthen families, communities, and civil society. Taken together, *An Overview of Social Capital in America* and *A Policy Agenda for Social Capital* provide insights into American associational life along with essential recommendations for expanding opportunity and strengthening America's social fabric.

Mike Lee,
Ranking Member, Joint Economic Committee

What We Do Together:

The State of Associational Life in America

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Today, Americans face a wide variety of challenges in our era of tumultuous transition. We are materially better off in many ways than in the past. But despite this real progress, there is a sense that our social fabric has seen better days. Leading thinkers have issued warnings that we are increasingly "bowling alone," "coming apart," and inhabiting a "fractured republic." At the heart of those warnings is a view that what happens in the middle layers of our society is vital to sustaining a free, prosperous, democratic, and pluralistic country. That space is held together by extended networks of cooperation and social support, norms of reciprocity and mutual obligation, trust, and social cohesion. In short, it is sustained by *what we do together*.

The following report is the first product of the Social Capital Project—a multi-year research effort that will investigate the evolving nature, quality, and importance of our associational life. "Associational life" is our shorthand for the web of social relationships through which we pursue joint endeavors—namely, our families, our communities, our workplaces, and our religious congregations. These institutions are critical to forming our character and capacities, providing us with meaning and purpose, and for addressing the many challenges we face.

The goal of the project is to better understand why the health of our associational life feels so compromised, what consequences have followed from changes in the middle social layers of our society, why some communities have more robust civil society than others, and what can be done—or can stop being done—to improve the health of our social capital. Through a series of reports and hearings, it will study the state of the relationships that weave together the social fabric enabling our country—our laws, our institutions, our markets, and our democracy—to function so well in the first place.

This introductory report contains a broad overview of what we mean by "associational life," discusses its importance, and provides an initial portrait of several long-term changes in the state of American associational life across the domains of family, religion, community, and work. Here are some key findings in each of those domains:

Family: Fewer living in families, no less time spent with our families, later marriage and childbearing, fewer children, more single parenthood

- Between 1975 and 2011, the share of three- and four-year-olds cared for by a parent during the day declined from 80 percent to somewhere between 24 and 48 percent. But parents are spending no less time with their children overall.

- Between 1973 and 2016, the percentage of Americans age 18-64 who lived with a relative declined from 92 percent to 79 percent. The decline was driven by a dramatic 21-point drop in the percentage who were living with a spouse, from 71 percent to 50 percent.
- In 1970, there were 76.5 marriages per 1,000 unmarried women aged 15 and older. As of 2015, that rate had declined by more than half to 32 per thousand.

- In 1970, 56 percent of American families included at least one child, but by 2016 just 42 percent did. The average family with children had 2.3 children in 1970 but just 1.9 in 2016. Among all families—with or without children—the average number of children per family has dropped from 1.3 to 0.8.
- Between 1970 and 2016, the share of children being raised by a single parent (or by neither parent) rose from 15 percent to 31 percent.
- Between 1970 and 2015, births to single mothers rose from 11 percent of all births to 40 percent.

Religion: Lower membership and attendance, fewer raised in a religious tradition, less confidence in organized religion

- In the early 1970s, nearly seven in ten adults in America were still members of a church or synagogue. While fewer Americans attended religious service regularly, 50 to 57 percent did so at least once per month. Today, just 55 percent of adults are members of a church or synagogue, while just 42 to 44 percent attend religious service at least monthly.
- In the early 1970s, 98 percent of adults had been raised in a religion, and just 5 percent reported no religious preference. Today, however, the share of adults who report having been raised in a religion is down to 91 percent, and 18 to 22 percent of adults report no religious preference.
- In 1973, two-thirds of adults had "quite a lot" or "a great deal" of confidence in "the church or organized religion," and in another survey the same year, 36 percent reported "a great deal" of confidence in organized religion. By 2016, those numbers had fallen to 41 percent and 20 percent, respectively.

Community: Less time with neighbors, no less time with friends, less racial segregation, more class segregation, less trust generally and in institutions but no less trust in friends or local government, no less volunteering, less voting, mixed trends on political engagement

- Between 1974 and 2016, the percent of adults who said they spend a social evening with a neighbor at least several times a week fell from 30 percent to 19 percent.
- Between 1970 and the early 2010s, the share of families in large metropolitan areas who lived in middle-income neighborhoods declined from 65 percent to 40 percent. Over that same time period the share of families living in poor

neighborhoods rose from 19 percent to 30 percent, and those living in affluent neighborhoods rose from 17 percent to 30 percent.

- Between 1972 and 2016, the share of adults who thought most people could be trusted declined from 46 percent to 31 percent. Between 1974 and 2016, the number of Americans expressing a great deal or fair amount of trust in the judgement of the American people "under our democratic system about the issues facing our country" fell from 83 percent to 56 percent.

- Between 1974 and 2015, the share of adults that did any volunteering who reported volunteering for at least 100 hours increased from 28 percent to 34 percent.
- Between 1972 and 2012, the share of the voting-age population that was registered to vote fell from 72 percent to 65 percent, and the trend was similar for the nonpresidential election years of 1974 and 2014. Correspondingly, between 1972 and 2012, voting rates fell from 63 percent to 57 percent (and fell from 1974 to 2014).
- Between 1972 and 2008, the share of people saying they follow "what's going on in government and public affairs" declined from 36 percent to 26 percent.
- Between 1972 and 2012, the share of Americans who tried to persuade someone else to vote a particular way increased from 32 percent to 40 percent.

Work: Less time with coworkers off the job, little change in commuting time, more work among women, less work among men, more "alternative work arrangements," part-time or part-year work no more common, longer job tenure, less union membership, more occupational licensing

- Between the mid-1970s and 2012, the average amount of time Americans between the ages of 25 and 54 spent with their coworkers outside the workplace fell from about two-and-a-half hours to just under one hour.
- The share of workers living and working in different counties was 26 percent in 1970 and 27 percent in the second half of the 2000s, and commuting time has risen only modestly since 1980.
- Between the mid-1970s and 2012, among 25- to 54-year-olds, time at work rose 4 percent. The story was very different for men and women though. Hours at work rose 27 percent among women. Among men, hours at work fell by 9 percent between the mid-1970s and 2012.
- Work has become rarer, in particular, among men with less education. From the mid-1970s to 2012, hours at work fell by just 2 percent among men with a college degree or an advanced degree, compared with 14 percent among those with no more than a high school education.
- Between 1995 and 2015, workers in "alternative work arrangements" (e.g., temp jobs, independent contracting, etc.) grew from 9 percent to 16 percent of the workforce.

- Since 2004, median job tenure has been higher than its 1973 level, indicating that workers are staying in their jobs *longer* than in the past.
- Between 1970 and 2015, union membership declined from about 27 percent to 11 percent of all wage and salary workers.

We conclude that rising affluence has made associational life less necessary for purposes of gaining material benefits, but that we have lost much by doing less together.

WHAT WE DO TOGETHER: THE STATE OF ASSOCIATIONAL LIFE IN AMERICA

In modern political thought, two terms have until recently tended to dominate discourse: the individual and the nation-state. This can hardly be surprising, since both these terms (and their underlying realities) are modern arrivals on the stage of history. But these two terms apply, as it were, only to the two extremes of social life, excluding the "thickest" parts of social living in between.[1]

– Michael Novak

The quest for community will not be denied, for it springs from some of the powerful needs of human nature—needs for a clear sense of cultural purpose, membership, status, and continuity. Without these, no amount of mere material welfare will serve to arrest the developing sense of alienation in our society, and the mounting preoccupation with the imperatives of community.[2]

– Robert Nisbet

Americans are living through a period of transition to a post-industrial society based on knowledge and services, one that has wrought immense social changes.[3] Past changes of similar scale—first from the long pre-agricultural past to rural farming life, followed by our tumultuous transition to an industrial economy—have been accompanied by social dislocation and subsequent adaptation.[4] But today we are struggling to constructively orient our politics in a forward-looking way; instead, much of our politics and discourse is oriented around nostalgia for a time that is never returning.[5]

To be sure, much is going well in America. Relative to many other countries, we hold an enviable position. Having emerged from the Great Recession, the nation enjoys relatively low unemployment and incomes that, while growing too slowly, are as high as they have ever been across the board.[6] Educational attainment continues to increase; a higher share of Americans than ever before have a college degree.[7] Most workers enjoy longer retirements, and overall life expectancy is at an all-time high.[8] The internet and advances in mobile communications technology have made possible unprecedented and inexpensive access to the world's knowledge. By these standards, it has never been a better time to be alive in America.

And yet, despite this real progress, there is a disorienting sense that our social fabric is frayed. We are wealthier in material terms than ever before, but leading thinkers have issued warnings that we are increasingly "bowling alone,"[9] "coming apart,"[10] and inhabiting a "fractured republic."[11] At the heart of those warnings, to one degree or another, is the view that what happens in the middle layers of our society—what we do together in the space between the individual and the state—is vital to sustaining a free, prosperous, democratic, and pluralistic country. It is in that space where we are formed, where we learn to solve problems together, where we learn the "art of association"—a space held together by extended networks of cooperation and social support, norms of reciprocity and mutual obligation, trust, and social cohesion. As Yuval Levin puts it, the middle layers

> *begin in loving family attachments. They spread outward to interpersonal relationships in neighborhoods, schools, workplaces, religious communities, fraternal bodies, civic associations, economic enterprises, activist groups, and the work of local governments. They reach further outward toward broader social, political, and professional affiliations, state institutions, and regional affinities. And they conclude in a national identity that among its foremost attributes is dedicated to the principle of the equality of the entire human race.*[12]

While much is going well in America on a comparative and historical basis, our associational life today appears unhealthy in many ways. For example, between 1960 and 2015, the proportion of children under 18 living with only one or neither parent increased dramatically, from 12 percent to 31 percent.[13] In 2015, over a third of parents—and half of fathers—said they spent too little time with their children.[14] Work relationships, civic engagement, and religious communities have also been important elements of building and maintaining our social fabric. Yet, a steadily increasing share of prime-age males (ages 25 to 54) have dropped out of the labor force altogether.[15] There have been uneven but decades-long declines in civic and community participation, especially of the face-to-face variety.[16] Many measures of religious vitality have also slowly but steadily declined over the last several decades.[17]

We also appear to be losing faith in national institutions. The government, the press, and both organized labor and corporate leaders lack the confidence of the people, as reflected in several long-running surveys. For example, between 1958 and 2015, the Pew Research Center shows that public trust in the federal government fell from about 73 percent to about 19 percent.[18] Gallup reports that Americans have very low confidence in many major institutions; less than 40 percent of respondents said they had a combined "great deal" or "quite a lot" of confidence in the medical system (39 percent), the presidency (36 percent), the U.S. Supreme Court (36 percent), the public schools (30 percent), banks (27 percent), organized labor (23 percent), the criminal justice system (23 percent), television news (21 percent), newspapers (20 percent), big business (18 percent), and Congress (6 percent). In most cases, current levels of confidence reflect a marked decline over the last several decades. These institutions that have so much influence over our lives appear sclerotic, unresponsive to modern needs, and opaque and inaccessible to many.

There are innumerable factors that have contributed to the challenges Americans face in this new era and to the anxiety stemming from the resistance of those

challenges, thus far, to ready solutions. All are important, including the discrete economic issues Washington policymakers and pundits are most familiar with and therefore most comfortable discussing—taxes and spending, welfare, trade, employment, wages, and growth.

The Social Capital Project is a multi-year research project to investigate an equally important factor that is too often overlooked—the evolving nature, quality, and importance of our associational life. In other words, *what we do together*.

Through a series of reports and hearings, it will study the state of the relationships that weave together the social fabric enabling our country—our laws, our institutions, our markets, and our democracy—to function so well in the first place.

Why does the health of America's associational life feel so compromised? Where *is* it compromised? What consequences have followed from declining social capital? Why do some communities have more robust civil society than others? What can be done—or can stop being done—to grow Americans' stock of social capital? What will enable us to live better together?

The pages that follow first seek to define "associational life," "social capital," and related concepts, providing a brief intellectual history of these ideas. A broad overview of trends in the state of associational life follows. Our analyses will be organized by considering four domains of associational life—family, religion, community, and work—and we focus specifically on painting a picture of changes in what we do together. Finally, we preview some of the issues and topics we will be studying in the years ahead.

WHAT IS "ASSOCIATIONAL LIFE"?

Many people in many eras have defined and described the importance of social relationships for sustaining a free, democratic, and prosperous society—using a variety of terms such as "civil society," "mediating institutions," "intermediate associations," and the more recently popular "social capital."[19]

There is little consensus about what exactly these terms include. For instance, some writers have included market relationships in their definition of associational life, while others have explicitly excluded them. Many have disagreed about the inclusion of family or politics under the umbrella of civil society. Some even distinguish between face-to-face interaction and those relationships not mediated by face-to-face contact (e.g., large, impersonal national membership organizations). Despite these important differences, the Social Capital Project will take a big-tent approach to these issues. We use "associational life" as shorthand for the web of social relationships through which we pursue joint endeavors—namely, our families, our communities, our workplaces, and our religious congregations.

Doing justice to the breadth of scholarship on civil society is beyond the scope of this paper, but we review briefly the contributions of a few key thinkers in order to provide historical context and to establish its contemporary relevance.

The foremost chronicler of what Americans do together was Alexis de Tocqueville, whose nine-month trip to the United States in the early nineteenth century resulted in his two-volume treatise *Democracy in America*.[20] Tocqueville was particularly interested in the ways in which Americans spontaneously organized themselves in the service of self-governance, thereby establishing widespread norms and habits of association. He observed that what gave the United States its unique character and strength was our proclivity to form associations of all kinds, and in so doing to see our interests in the shared interests of others. As Don Eberly puts it,

> *Tocqueville was amazed at the almost limitless sweep of this activity. Civil society captured nearly all forms of human endeavors—intellectual, moral, social, religious, and as some insist, economic. Civic functions overlapped sometimes with political, and even those purely civic activities served to cultivate democratic habits and skills. In the truest sense, they were laboratories of democracy. Local civic associations put democracy within people's reach, inculcating the customs and many uses of democratic process, tempering self-interest and isolation.*[21]

In the middle of the twentieth century, sociologist and intellectual historian Robert Nisbet wrote powerfully about the role of "intermediate associations" in a free society. By intermediate associations, Nisbet simply meant the social relationships and groups that play some functional role in our lives. In his 1953 book, *The Quest for Community*, he notes that the human need for associational life "will not be denied, for it springs from some of the powerful needs of human nature—needs for a clear sense of cultural purpose, membership, status, and continuity."[22] Nisbet was particularly worried that if people did not find belonging and purpose in human-scale intermediate associations of family, religion, and other forms of communal life, they would find it elsewhere—a grave prospect in the context of World War II, communism, and fascism.

In the late 1970s, the idea of the middle social layers was given attention by a group of writers and thinkers at the American Enterprise Institute.[23] The "mediating structures project,"[24] as it came to be known, sought to think through how we might use local social organizations to provide social services such as welfare, education, housing, and so on. The participants in that project, spanning much of the ideological spectrum, vehemently disagreed about the relationship between the state and mediating institutions, but the project helped carry the idea to a new generation.[25]

Others have added to this long tradition by attempting to conceptualize and measure the causes, consequences, and importance of what we do together under the broad umbrella of "social capital." The earliest known use of the term comes from 1916, when L. J. Hanifan first used it to describe "tangible substances [that] count for most in the daily lives of a people, namely goodwill, fellowship, mutual sympathy and social intercourse."[26] Urbanist Jane Jacobs described social capital as neighborhood networks of mutual assistance and self-governance.[27] Sociologist James S. Coleman defined social capital as something realized in social networks that facilitated productive cooperation.[28] In short, these early definitions described social capital as a resource for solving collective action problems.

More recently, Robert Putnam revived the notion of social capital in his 1993 book *Making Democracy Work*.[29] In an article summarizing that book, he defined social capital as "features of social organization, such as networks, norms, and trust, that facilitate coordination and cooperation for mutual benefit."[30] He later elaborated on the idea of social capital in his bestselling book *Bowling Alone*, in which he defined social capital in similar terms as "connections among individuals—social networks and the norms of reciprocity and trustworthiness that arise from them."[31] Widely lauded at the time, *Bowling Alone* took a broad view of the health of American life, showing general (though not unqualified) declines in various measures of associational life including political participation, community and civic involvement, religious participation, informal social connections, volunteering, and trust.

In his book *Trust*, Francis Fukuyama argued for the importance to societies of non-familial sources of trust and cooperation, borrowing from James Coleman's definition of social capital as "the ability of people to work together for common purposes in groups and organizations."[32] In a related 1995 book, *The Great Disruption*, he makes the case that the transition from an industrial economy to one based on knowledge weakened our social capital, which he defined as "a set of informal values or norms shared among members of a group that permits cooperation among them."[33] Nevertheless, he argued, "social order, once disrupted, tends to get remade again," because "human beings are by nature social creatures, whose most basic drives and instincts lead them to create moral rules that bind themselves together into communities."[34]

Since the mid-1990s, research about social capital has dramatically increased.[35] It has become a topic of interest to researchers around the world, precipitating extensive projects at the World Bank and the Organisation for Economic Cooperation and Development (OECD).[36] Nobel Laureate economist Elinor Ostrom has advocated the concept as "an essential complement to the concepts of natural, physical, and human capital."[37] Many researchers have applied a variety of methods to understand aspects of social capital and the importance of related concepts to such topics as political life, social cohesion, volunteerism, work, civic participation, health, and happiness.[38]

However, progress in the research has been slow due to a number of significant challenges. There are bright spots in the literature, but it generally suffers from challenges in definition, conceptualization, and measurement. As a recent National Academy of Sciences report notes,

> *Because the terms "social capital," "civic engagement," and "social cohesion" refer to broad and malleably-defined concepts that take on different meanings depending on the context, they are not amenable to direct statistical measurement. However, dimensions of these broad constructs—the behaviors, attitudes, social ties, and experiences—can be more narrowly and tangibly defined and are thus more feasibly measured.*[39, 40]

"Social capital" has emerged as the most widely used and familiar shorthand for the concepts discussed here, but it remains a slippery term. It is not always clear, for instance, whether the dimensions associated with it constitute the thing "social capital," are products that flow from social capital, or are lubricants that facilitate the development of social capital. We will not attempt to resolve these ambiguities.

Instead, the project will use more or less precise terms as needed while, above all, emphasizing the importance of formal and informal social networks and associations that inhabit the space between the individual and large public and private institutions.

WHY IS ASSOCIATIONAL LIFE IMPORTANT?

In the intellectual tradition of studying associational life and its cousins, there emerge three key reasons why it is important.

First, the middle social layers are implicated in nearly every aspect of our lives, and therefore are critically important formative structures in which human development occurs. What we do together affects our character, capacities, deepest held moral commitments, and any number of other aspects of who we are.

Second, mediating institutions provide an important role in giving meaning and purpose to individual lives. “Meaning” and “purpose” are words that give hives to empirically minded social scientists, but nonetheless deserve our attention. Jointly pursuing common goals—prosaic or profound—draws people out of themselves, gives them a reason to get up in the morning, and to be responsive to the needs of others. When people lack the meaning and purpose derived from strong bonds and routine social attachments, they are more prone to alienation and atomization.[41] Along these lines, David Brooks has argued, “The great challenge of our moment is the crisis of isolation and fragmentation, the need to rebind the fabric of a society that has been torn by selfishness, cynicism, distrust, and autonomy.”[42]

The third reason our middle social layers are so important, especially today, is that they provide a useful means for discovering solutions to problems. The large institutions of our modern society, polity, and economy are often ill-equipped to address needs that are unique to the particular “circumstances of time and place.”[43] They are sometimes too far removed from local sources of knowledge and networks of trust, and they can be slow to adapt as problems evolve. Some can be out of touch with the values of specific places, breeding resentment and fueling regional polarization. As many analysts have concluded, decentralizing authority and decision-making capacity to our middle layers might go a long way to increasing America’s ability to address challenges incrementally through trial and error in ways that are much closer to the people and their varied situations.[44]

An emphasis on the middle layers of our social life is no panacea for the many challenges and opportunities we face. But in an era where many of our conversations seem to revolve around the individual and large institutions, an emphasis on the space between them could bring many benefits. The rest of this report examines trends in various aspects of associational life. It will intermittently return to the basic question of why associational life matters.

HOW HAS ASSOCIATIONAL LIFE CHANGED?

It is impossible for a report of this length to adequately survey the evidence on all the consequential ways that associational life has changed over the years. Instead, we have chosen to focus on available indicators fulfilling two requirements. First, we are interested in describing relatively long-term changes over some constant period of time. After reviewing the available evidence, we chose to focus on trends between the early 1970s and the 2010s—roughly the past 45 years. Second, we have chosen to focus as much as possible on indicators that illustrate what we do together, rather than look at any number of social or economic problems that might be presumed to reflect the state of associational life.

To organize the discussion, we assess changes in four domains of associational life, drawing on the work of previous scholars. Specifically, we take in turn changes in families, religious congregations, secular communities, and workplaces.

Families Together

We come into the world met with the joyous smiles of family, and we leave it with family mourning the loss. In between, if we are fortunate, we forge our strongest social connections with children, spouses, parents, siblings, and other relatives—with family. All subsequent social capital investment begins with the bonds between parents and children. These bonds provide purpose to parents' lives, happiness, and a connection to previous and future generations. Through parents, children receive physical sustenance and emotional support, acquire language and other skills and dispositions, and form values, beliefs, and aspirations. The development of secure connections with parents facilitates the formation of secure attachments to other people—including future partners and children, in whom parents' stock of social capital is reinvested. Social capital obtained and created within the family is practically a necessity for all other forms of associational life.

So much of what we do together occurs in families into which we are born or that we choose to create in adulthood. The institution of marriage has weakened significantly in recent decades, but vast majorities of young Americans still hope to get married someday.[45] We also derive benefits from a range of other family relationships—not just with our children, spouses, and parents, but our brothers, sisters, grandparents, grandchildren, in-laws, cousins, aunts, and uncles. In many communities, these relationships assume special importance, as with the strong role grandparents often play in black communities or the deep extended family connections in Latino families. The happiness our family relationships impart is the most vivid illustration of the importance of healthy associational life.

Married couples, for example, report higher life satisfaction than single adults.[46] While people predisposed to be happy are presumably likelier to get married in the first place, evidence suggests that marriage has a positive causal effect on life satisfaction. Around the world, the well-known midlife dip in life satisfaction is moderated by being married.[47]

Indeed, vast bodies of research find that married couples and their children tend to have better outcomes than single people and the children of single parents. Unfortunately, methodological problems render most—though not all—of these studies unpersuasive.[48] However, if we stipulate uncontroversially that *happy* marriages provide at least some of the beneficial outcomes to adults and children that the research claims is produced by "marriage," we can avoid, for now, divisive debates over what public policy should or should not do to promote marriage. And the research is clear that on average, marriage is associated with innumerable positive outcomes.[49]

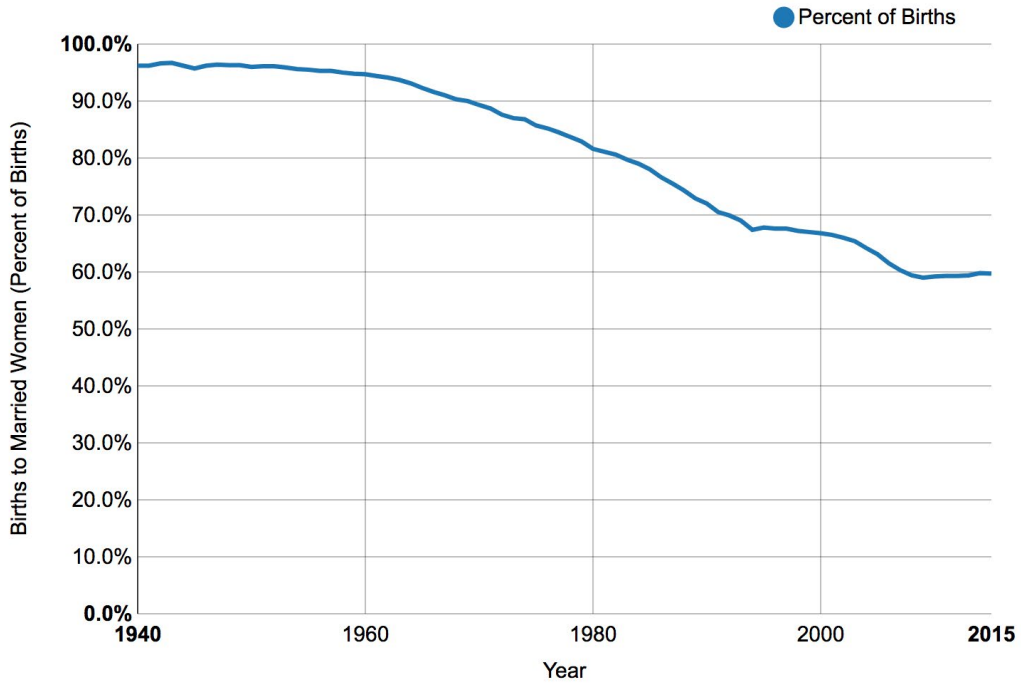
Research on extended family's effects suffer from similar analytical challenges but also accord with the intuition that healthy family relationships impart benefits.[50] It requires little insight to note that adult children provide help to their aging parents, and parents provide support to their adult children in the form of financial help, advice, and child care.

Trends in Family Associational Life: Closeness of Family Connections

Americans do not appear less likely to live near their parents in adulthood than in the past. A useful indicator is the share of adults living in their birth state. Research has shown that living in one's childhood state in adulthood is strongly correlated with living near a parent.[51] Between 1970 and 2015, the percentage of native-born Americans age 25 to 54 who lived in their birth state (and who thus tended to live near their parents) stayed about the same, rising from 63 percent to 64 percent.[52] The share of prime-age adults with children living near the children's grandparents was flat at 64 percent.

According to the General Social Survey, 38 percent of adults in 1974 said they spent a social evening with relatives several times a week or more, while 39 percent did in 2016.[53] It is clearly the case that children are less likely to be cared for during the workweek by a parent. For example, between 1975 and 2011, the share of three- and four-year-olds cared for by a parent during the day declined from 80 percent to somewhere between 24 and 48 percent.[54] This profound change reflects the increase in work among mothers in recent decades.

Percent of Births Occurring to Married Women, 1940-2015



Source: 1940-2006 are from Solomon-Fears (2008), Table A-1; 2007 from Martin et al. (2010a), Table 18; 2008 from Martin et al. (2010b), Table 15; 2009 from Martin et al. (2011), Table 15; 2010-2013 from Solomon-Fears (2014), Table 1; 2014 from Hamilton et al. (2015), Table 15; 2015 from Martin et al. (2017), Table 15.

However, evidence from time-use surveys suggests that both mothers and fathers are nonetheless spending more time with their children than in the past.[55] Even though more mothers are working, school-age children are not around during the day anyway during the school year. Parents appear to have otherwise compensated for any additional time they spend at the workplace versus the past.[56]

Evidence does indicate, however, that parents and children are less likely today to participate with each other in activities at home than they were in the past.[57] Claude Fischer speculates that this circle can be squared if parents are spending more time with children outside the home, such as at restaurants and stores, play dates, and extracurricular activities.[58]

Family Formation and Dissolution

Another indication of diminished family connections is that the number of adults living in families has declined over the past 45 years. Between 1973 and 2016, the percentage of Americans age 18-64 who lived with a relative declined from 92 percent to 79 percent.[59] The decline was driven by a dramatic 21-point drop in the percentage who were living with a spouse, from 71 percent to 50 percent. Adults who would have been married in the early 1970s were instead cohabiting (possibly

as a parent, up from less than one percent to 9 percent); living alone (up from 6 to 11 percent); living with other relatives (possibly just their own child, up from 8 to 12 percent); living with roommates (up from under 2 to 4 percent); or living in a parent's household (slightly up from 13 to 14 percent). Between 1973 and 2016, among 25- to 34-year-olds, the share who were living with a spouse dropped from 78 percent to 41 percent, and the drop among women 18-24 was from 44 percent to 9 percent.[60]

Marriage rates have plummeted over the past several decades. In 1970, there were 76.5 marriages per 1,000 unmarried women aged 15 and older. As of 2015, that rate had declined by more than half to 32 per thousand.[61] Americans are getting married later, and more of us are not marrying at all. In 1970, the median age at first marriage was 21 among women and 23 among men. By 2016, those medians were 27.5 and 29.5—both higher by six and a half years.[62] Between 1970 and 2015, the share of Americans aged 50 to 54 who had never married rose from 6 percent to 14.5 percent.[63]

These trends have numerous causes, including rising educational and employment opportunities for women, increasing affluence, and the sexual revolution. Marriage is simply not viewed as being as necessary as it once was. Increasingly, long-term romantic relationships involve couples who are unmarried but living together. Among women aged 19 to 44 who married between 1965 and 1974, just 11 percent had cohabited with their husband prior to marriage. That was true of 66 percent of women 19-44 who married between 2005 and 2009.[64]

An important reason for rising cohabitation is the increasing fragility of marriage, which has led more couples to "try out" relationships with each other before committing to an institution that has seen rising failure rates over time. The divorce rate was 15 per 1,000 married women in 1970. It rose throughout the 1970s, as no-fault divorce spread throughout the country, then fell thereafter to about 18 per 1,000 in 2010, still higher than in 1970.

However, this decline was in part a product of baby boomers aging out of high-divorce life stages into low-divorce ones. If the distribution of married women across ages had been the same in 1970 as it was in 2010, the divorce rate would have risen steadily, from about 10 per 1,000 in 1970 to 18 per 1,000 in 2010.[65]

These trends can also be interpreted in terms of Americans perceiving marriage as less necessary. The spread of no-fault divorce reflected demand for easier exits from marriage; between 1973 and 2016, the share of adults saying divorce should be easier to obtain rose from 32 percent to 38 percent.[66] We might expect that as rising divorce removed unhappy couples from the stock of married families, the remaining husbands and wives would be more satisfied with their marriages. However, between 1973 and 2016, the share of them reporting being in a "very happy" marriage actually fell from 67 percent to 60 percent.[67]

In contrast to the non-elderly population, living arrangements were much more stable among Americans aged 65 and older. In 1973, 71 percent lived with a relative, and 70 percent did in 2016.[68] Elderly women became more likely to live with a spouse and less likely to live with another relative, while elderly men became more likely to live alone and less likely to live with a spouse or other relative. These changes reflect longer lifespans. Since women tend to marry older men, greater longevity results in more marriage for women (who do not become widowed as early as in the past), more living alone for men (who are more likely to outlive their younger wives than in the past), and less reliance on other family members.

Fertility

Along with delayed and declining marriage has come delayed and declining childbearing. Between 1970 and 2015, the average age at which women first give birth increased from about 21 years to about 26 years.[69] In 1970, 56 percent of American families included at least one child, but by 2016 just 42 percent did.[70] The average family with children had 2.3 children in 1970 but just 1.9 in 2016. Among all families—with or without children—the average number of children per family has dropped from 1.3 to 0.8.[71]

The decline in fertility appears to reflect a diminished interest in having children. Between 1972 and 2016, the share of adults with four or more children fell from 25 percent to 15 percent. The share who said the ideal number of children was four or more fell from 28 percent to 15 percent.[72]

Family Instability

The subject of family breakdown—the declining share of children living with two biological parents—has generated controversy for much of the past 50 years. The crux of the debate turns on a number of questions. Do the typically better outcomes of children with two parents reflect the importance of having two parents or simply the more advantageous attributes and circumstances of those with intact marriages? Would the children of single parents do better if their actual parents—not hypothetical ones—stayed together? What are the chances that the trend in single parenthood can be reversed? Are the benefits of promoting two-parent families worth the cost in the form of possible stigmatization of single parents and their children?

These are questions the Social Capital Project will be exploring in future papers. For present purposes, we assert only a proposition that we take to be uncontroversial: healthy family relationships are valuable and constitute the most fundamental sphere of associational life. The fact that so many children today grow up in disrupted families is a cause for great concern to the extent that we can imagine a world in which many more children are raised by two happily married biological parents. Progressives and conservatives may disagree about what it would take to produce more healthy marriages—more economic

opportunity? public campaigns to promote marriage?—but the goal of doing so need not be ideological or controversial.

Between 1970 and 2016, the share of children being raised by a single parent (or by neither parent) rose from 15 percent to 31 percent.[73] Over half of the children of high school graduates with no postsecondary education live with a single parent, and three in five children of parents without a high school diploma.[74] In part because of this educational disadvantage, more than three in five African American children live with a single parent, though single parenthood has increased sharply among non-Hispanic whites and Hispanics as well.[75] These estimates assess living arrangements at a point in time, but a majority of American children can expect to live with a single parent at some point before reaching the age of sixteen.[76]

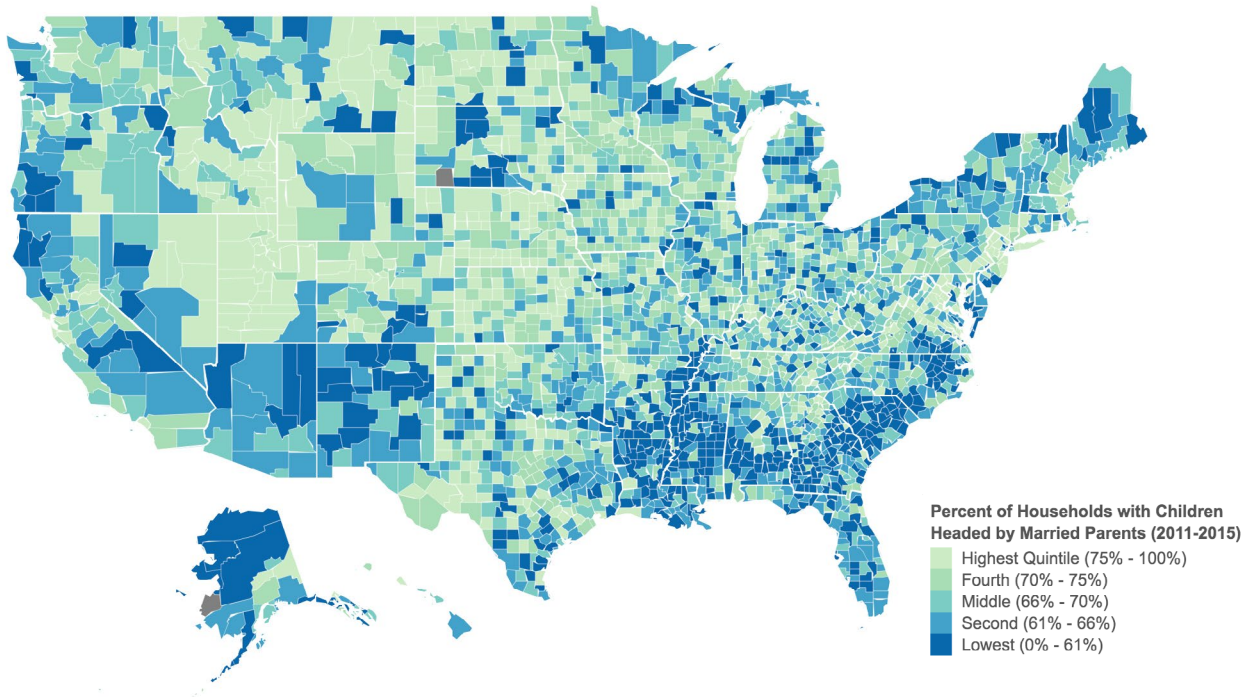
Single parenthood has risen both because of an increase in divorce and due to a rise in unwed childbearing. Between 1970 and 2015, births to single mothers as a share of all births rose from 11 percent to 40 percent.[77]

Much of the increase in unwed childbearing is due to rising cohabitation. Fifty-eight percent of unmarried mothers are cohabiting at the time of their child's birth.[78] However, cohabiting relationships tend to be much less stable than marriages. Half of children born to cohabiting parents will see their mother's relationship to one or more men break up by their third birthday, compared to just 13 percent of children in married-parent families.[79]

From a number of perspectives, then, families seem to associate together no less than in the past. They spend comparable time with their families, despite the increase in work among mothers, and appear to live as close to family members as before. But Americans spend less time in families today, reflecting the decline in marriage. They also have fewer children, which seems to reflect falling demand for them. Instead, Americans are marrying and having children later than in the past and cohabiting more. These trends reflect increasing individualism and pursuit of non-familial ends. While we may be no worse off individually for marrying and having children later, these trends may have reduced social cooperation to the extent that family life promotes community engagement.

More to the point, the decline in marriage partly reflects the weakness of the institution, as marriages have been increasingly likely to dissolve over time and the remaining marriages appear to be less happy than in the past. And these trends have almost certainly not been benign for children. Many single parents do as good a job or better as many married parents at investing in their children. But it is hard not to conclude that if we had managed to shore up marriage these past decades, children today—to say nothing of parents—would be much better connected to valuable family ties. Increasing family disconnection is of particular concern considering the role that family plays as the foundation for all other relationships.

Percent of Households with Children Headed by Married Parents by County, 2011-2015



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

WORSHIPING TOGETHER

The state of religion in America is a topic that may be approached from many different perspectives. The Social Capital Project's interest in religion is a specific one: historically, religious institutions have been of primary importance in creating and maintaining extra-familial social ties and dense community networks. That is to say, religious institutions may be considered purely as highly effective incubators of social capital without regard to specific religious doctrines. From Tocqueville to Nisbet to Putnam, many observers of society have remarked on the importance of religion in drawing people out of their private lives and into associational life.

As Putnam put it in *Bowling Alone*

> *Faith communities in which people worship together are arguably the single most important repository of social capital in America....As a rough rule of thumb, our evidence shows, nearly half of all associational memberships in America are church related, half of all personal philanthropy is religious in character, and half of all volunteering occurs in a religious context.*[80]

Religious institutions that convene people under the banner of shared beliefs have powerful community-promoting advantages as compared with secular institutions. They provide a vehicle for like-minded people to associate, through regular attendance at religious services and other events and charitable activities they sponsor. Religious institutions are highly effective at enforcing commitment to shared principles and norms of behavior, passed down over generations.

These commitments are often themselves pro-social and other-regarding. Churches and other places of worship encourage coreligionists to bond in the context of denominational activities. But they also facilitate associational life among adherents outside religious activities and thereby produce wide-ranging benefits. People who live in communities where their coreligionists are more numerous have higher household incomes, greater educational attainment, higher marriage rates and lower divorce rates, and there is reason to believe these associations reflect the effects of living with coreligionists rather than being incidental.[81]

Further, religious institutions encourage investment in social ties outside the denomination. Putnam reports that people committed to religion

> *are much more likely than other people to visit friends, to entertain at home, to attend club meetings, and to belong to sports groups; professional and academic societies; school service groups; youth groups; service clubs; hobby or garden clubs; literary, art, discussion, and study groups; school fraternities and sororities; farm organizations; political clubs; nationality groups; and other miscellaneous groups.*[82]

Religious membership is also strongly correlated with "voting, jury service, community projects, talking with neighbors, and giving to charity."[83] Putnam and David Campbell surveyed Americans and found that 91 percent of those volunteering for a religious group also volunteered for a secular group.[84] Further, only one-third of adults who did not volunteer for a religious group volunteered for a secular one. "Regular churchgoers," say Putnam and Campbell, "are more likely to give to secular causes than nonchurchgoers," and the religious give more of their money to such causes when they donate.[85]

Based on surveys in 2004 and 2006, frequent churchgoers were more likely than other Americans to engage in nine specific pro-social and altruistic behaviors, and they were no less likely to engage in five other ones. Putnam and Campbell found these relationships still held after taking into account a variety of demographic and economic variables. Religious Americans are also more trusting of people than other Americans are, and they are generally trusted more as well.[86]

Most importantly for the purposes of this project, it appears that religious membership is associated with participation in community life specifically because of the social capital it creates between religious adherents. Holding

constant a person's general connectedness, the connectedness that comes through interacting with other congregants strongly predicts a range of indicators related to social capital. As Putnam and Campbell put it, "It is religious belonging that matters for neighborliness, not religious believing."[87]

It is certainly possible that a healthy associational life and rich networks of interdependency can develop and sustain themselves organically, powered by the utilitarian ends they fulfill. But it may be that community requires the support of mediating institutions in order to thrive. Social capital, like physical capital, requires investment and reinvestment. That need for replenishment is costly, requiring time, cooperation, compromise, patience, and social discomfort. Mediating institutions may be uniquely able to enforce commitment among members of a community to sustain associational life, thereby promoting opportunity and happiness. Few domains in the secular world—the Armed Forces serving as an exception—are able to generate such commitment.

Consider a recent profile of Utah by columnist Megan McArdle, exploring the reasons for its high rates of economic mobility.[88] McArdle's depiction of the Church of Jesus Christ of Latter-day Saints highlights the remarkable degree to which it has institutionalized mutual responsibility, cooperation, and service:

> *The volunteering starts in the church wards, where bishops keep a close eye on what's going on in the congregation, and tap members as needed to help each other. If you're out of work, they may reach out to small business people to find out who's hiring. If your marriage is in trouble, they'll find a couple who went through a hard time themselves to offer advice.*
>
> *But it does not stop with informal networks. Mormon youth are encouraged to go on missions. Many of them evangelize, of course, but others end up doing work for the church....Every Mormon is expected to skip two meals a month, and to donate at least the value of the food they would have bought (and preferably more) to help the needy. They're also encouraged to volunteer for the church.*

It is difficult to imagine how such social capital can be maintained in the absence of the kind of commitment that organized religion marshals (or that military institutions demand of those who choose to serve). A central concern of the Social Capital Project will be how to promote commitment to healthy associational life—within families, neighborhoods, workplaces, schools, polities, and the nation as a whole.

TRENDS IN RELIGIOUS ASSOCIATIONAL LIFE

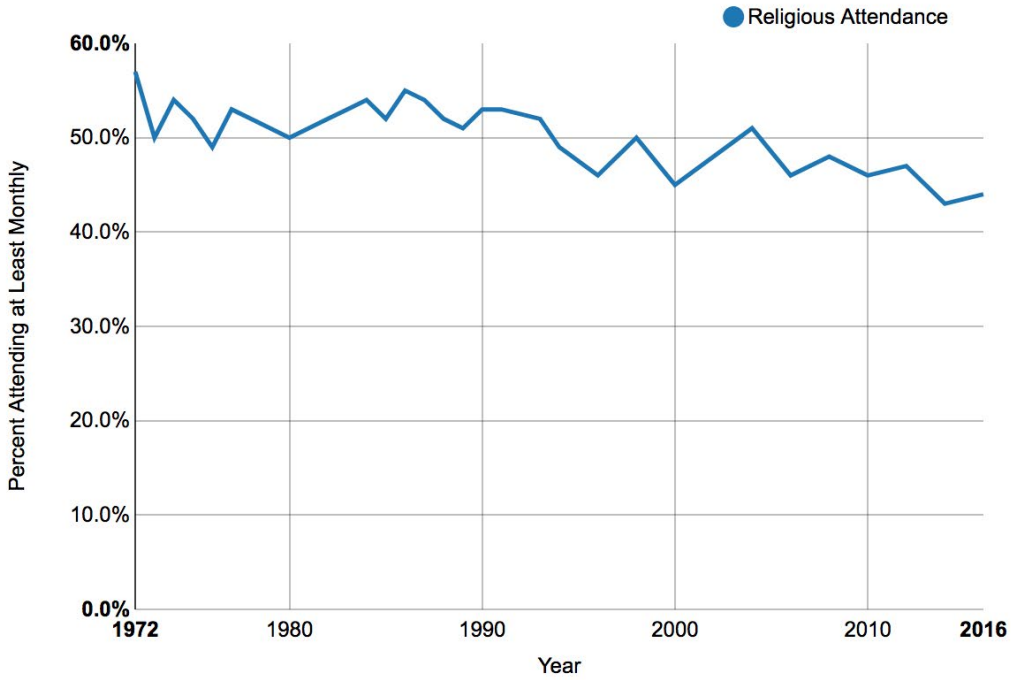
What has happened to associational life in the domain of religion? The story is discouraging, which raises deeper concerns about the health of our associational life more broadly. By the early 1970s, Americans were already worshiping together less than they had in the 1950s and early 1960s. As Yuval Levin notes, "the 'me' decade" ushered in an era characterized "by an ethic of individualism and atomism" in religious life and beyond.[89]

The result was, in the words of Wade Clark Roof and William McKinney, a

> *tendency toward highly individualized religious psychology without the benefits of strong supportive attachments to believing communities.... In this climate of expressive individualism, religion tends to become "privatized," or more anchored in the personal realms.*[90]

That said, in the early 1970s, nearly seven in ten adults in America were still members of a church or synagogue.[91] While fewer Americans attended religious service regularly, 50 to 57 percent did so at least once per month.[92] Today, just 55 percent of adults are members of a church or synagogue, while just 42 to 44 percent attend religious service at least monthly.[93]

Percent of Adults Attending Religious Services at Least Once a Month, 1972-2016



Source: General Social Survey, 1972-2016. https://gssdataexplorer.norc.org/projects/27817/variables/294/vshow.

The evidence on religious adherence—including church membership but also other forms of engagement with a denomination—is less reliable, but our analyses indicate a similar decline.[94] Even among religious adherents, the influence of the largest mainline churches has eroded sharply over time, giving way to a "more decentralized, personalized, evangelical Christianity."[95] The new Christian denominations are more individualist and comprise a more diffuse structure, features that are less amenable to social capital investment.

The declines in church attendance and religious affiliation appear to have occurred primarily among Americans who were only loosely attached to congregations to begin with.[96] A disproportionate share of these marginal adherents were poor or working class.[97]

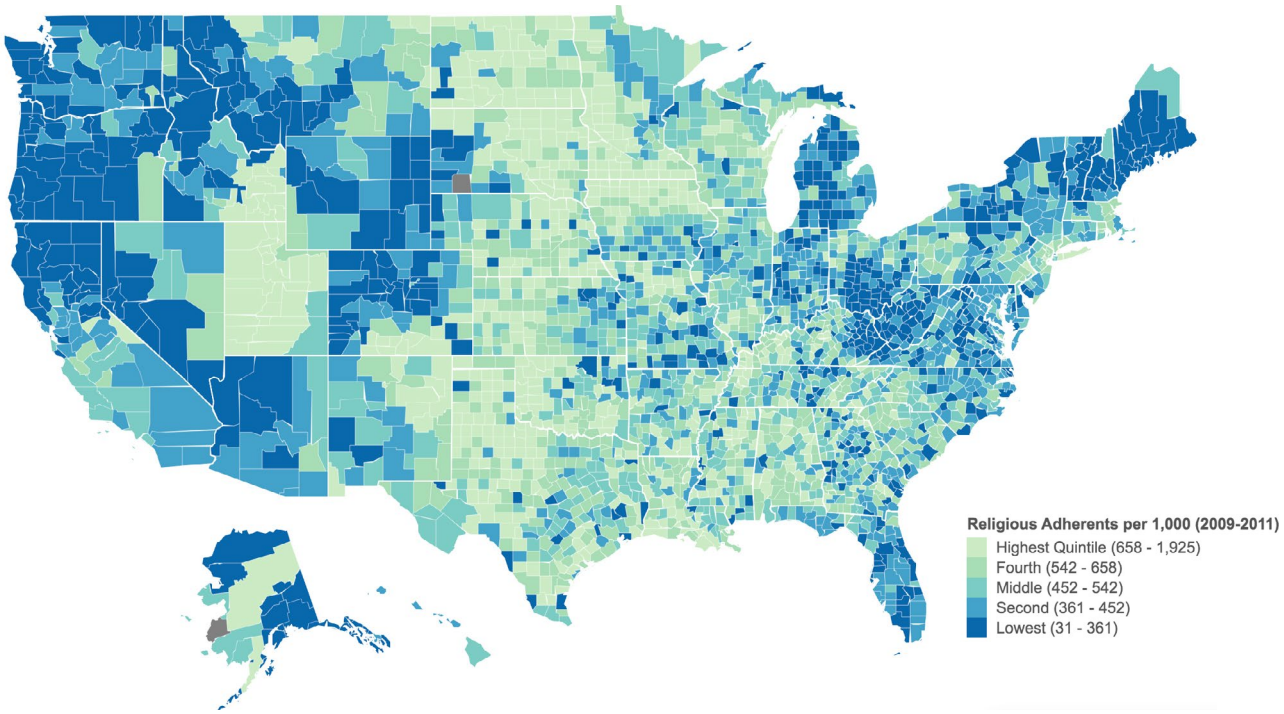
The decline in religious association was partly due to a decline in religiosity, though it must be the case that each affected the other. In the early 1970s, 98 percent of adults had been raised in a religion, and just 5 percent reported no religious preference. Today, however, the share of adults who report having been raised in a religion is down to 91 percent, and 18 to 22 percent of adults report no religious preference.[98]

Declining trust in religious institutions also likely has played an important role in weakening religious associational life. In 1973, two-thirds of adults had "quite a lot" or "a great deal" of confidence in "the church or organized religion," and in another survey the same year, 36 percent reported "a great deal" of confidence in organized religion. By 2016, those numbers had fallen to 41 percent and 20 percent, respectively.[99]

More generally, the decline in religious participation may signal that mediating institutions are simply losing the battle against aspects of individualism that make commitment to community norms and standards burdensome. Personal freedom in matters of sexuality and gender identity, for example, has become a more important value since the mid-twentieth century. Though not their primary purpose, religious organizations— like mediating institutions generally—bind us together for human betterment. But norms and practices that define intentional communities can become viewed as unproductive and illegitimate over time. The one broadly anti-social trait that Putnam and Campbell found to be more common among religious adherents than among other Americans was stronger intolerance of the groups and practices that each are inclined to disfavor. (It should be noted, though, that tolerance has been rising among religious adherents.)[100]

Any revival of associational life will have to grapple with the tension between the good that comes from binding people through mediating institutions and the alienation that can arise from *bounding* community in rigid ways. But if membership in a religious community improves outcomes for congregants, and if those lower down the socioeconomic ladder are especially at risk of becoming religiously disconnected, we might worry about the erosion of congregational religious life.

Religious Adherents per Thousand People, by County, 2009-2011



Source: U.S. Religion Census: Religious Congregations and Membership Study, 2010 (County File), The Association of Religion Data Archives.
Note: Some counties have adherence rates above 1,000, indicating more adherents in the county than residents. In those cases, it is likely that people in neighboring counties commute in.

LIVING TOGETHER IN COMMUNITIES

"Americans of all ages, all conditions, all minds," Tocqueville wrote,

> *constantly unite. Not only do they have commercial and industrial associations in which all take part, but they also have a thousand other kinds: religious, moral, grave, futile, very general and very particular, immense and very small....*[101]

What we do together outside our families, workplaces, and houses of worship encompasses a wide variety of important social activity—everyday informal interaction with friends and neighbors, involvement with schools, participation in civic associations, and other voluntary cooperative pursuits. The relationships we forge within these activities are vital sources of companionship, social support, mutual aid, information, and self-governance. The communities to which we belong develop the civic skills and social norms that reinforce reciprocity, trust, and cooperation.

In turn, these elements of social capital strengthen community. For example, high levels of civic engagement are associated with better public governance.[102] An atomized society with limited capacity for cooperation is no society at all. It

will face economic stagnation or decline relative to others in which members work together.

At the same time, communities are defined by who they include, or conversely, who they exclude. The dark side of community is that it sometimes comes with costs for those left out.[103] Moreover, even in-group members are likely worse off to the extent that distinct communities do not overlap or interact. Community builds internal social ties—"bonding social capital"—but it can impede investment in "bridging social capital" that connects groups to each other.[104]

Neighborhoods, which provide a natural setting for community networks to thrive, clearly illustrate this tension. Neighborhoods with a healthy associational life provide untold benefits to their residents. Research has shown that communities with higher levels of trust and where people are more inclined to confront community problems also experience lower crime.[105] Communities where people help and look out for each other are also more likely to pool common resources when necessary, for example, in the aftermath of a natural disaster.[106] In addition, neighborhoods with a healthy associational life appear to provide children with more opportunities. Economists Raj Chetty and Nathaniel Hendren found that counties with high social capital tend to have high rates of upward mobility, and most of this correlation reflects a causal impact.[107]

These benefits aside, however, because of residential segregation by income, race, and other attributes, neighborhood advantages enjoyed by families in the communities richest in social capital are often mirrored in disadvantages faced by residents of other neighborhoods. When those families with fewer financial and personal assets are left behind, the result can be a deficit of social capital—of "monitoring, socializing, mentoring, and organizing"—that leaves the vulnerable even more disadvantaged.[108] Indeed, Chetty and Hendren find that high levels of segregation impede upward mobility.

Similarly, schools provide another important source of community for parents and children but also reflect segregation between communities. Research suggests that parental involvement in schools promotes higher school quality and better child outcomes.[109] But given there is wide variation in the effectiveness of schools from one district to the next, the neighborhood in which one lives can be of great consequence. Concerns about school quality have driven an increase in residential segregation by income, as more affluent families increasingly cluster in the best school districts.[110]

At the national level, we have seen a growing rift between—to put it in terms that are too broad—cosmopolitan urban metropolises and traditional rural communities. This essentially regional segregation has bred antipathy, borne of a deficit of bridging social capital. As the scope of the federal government has grown and Washington has taken away more discretion from state and local governments, the stakes of our national politics have become higher. Traditionalists and cosmopolitans, threatened with ceding authority to people with divergent values on the other side, have reacted with mutual hostility.

One open question is the impact that technology will have on our associational life. From email to text messaging to social networks to video chats, communications innovations have led to some dramatic shifts in the way we interact with each other. Some behaviors on the internet may be isolating, while others enable greater frequency of connection and larger breadth of connections with others. With virtual reality breakthroughs just over the horizon, it also remains to be seen whether the home entertainment revolution that has encompassed on-demand TV, streaming services, apps, and video gaming will ultimately promote or retard investment in social capital.

Trends in Community Life: Being Social

The data are not entirely consistent, but it appears that the time we spend interacting with others socially has changed less than many earlier observers believed. A decade ago, media reports widely publicized a study that the number of Americans who have no one with whom to discuss an important issue had risen dramatically over the prior 30 years.[111] However, after reanalyses of the data and new evidence, the consensus today appears to be that it has risen only modestly if at all.[112]

Entertaining friends in one's home has become less common since the early 1970s, but apparently Americans are making up for it by doing more with friends outside the home.[113] The percent of adults who say they spend a social evening with "friends outside the neighborhood" at least several times a week was stable between 1974 and 2016, at about 19 to 24 percent.[114] Reinforcing these findings, time-use surveys suggest that the combined time adults spend engaged in social activities at home, visiting the homes of others, going to parties, or attending events has not changed much between the early 1970s and today. Nor has the time spent engaged in any activities (these or other ones) with friends.[115]

The biggest change in informal social life outside the home and workplace is that socializing has become rarer between neighbors. Between 1974 and 2016, the percent of adults who say they spend a social evening with a neighbor at least several times a week fell from 30 percent to 19 percent.[116] In part, this is likely a consequence of suburbanization and declining population density.[117] Relatedly, Americans are less reliant on public spaces and amenities and more so on private ones than in the past. For instance, we increasingly rely on private gyms and swimming pools, and we are less likely to use public transit or to carpool.[118] The movement into the workforce of married women and mothers is another important factor behind declining neighborliness. When more mothers were homemakers, social interaction was more centered around the neighborhood and its children.

The rise of the internet and the technology that connects us to it has also likely reduced interaction with neighbors. We can now connect more with those we care most about through email, text messaging, video chats, and social

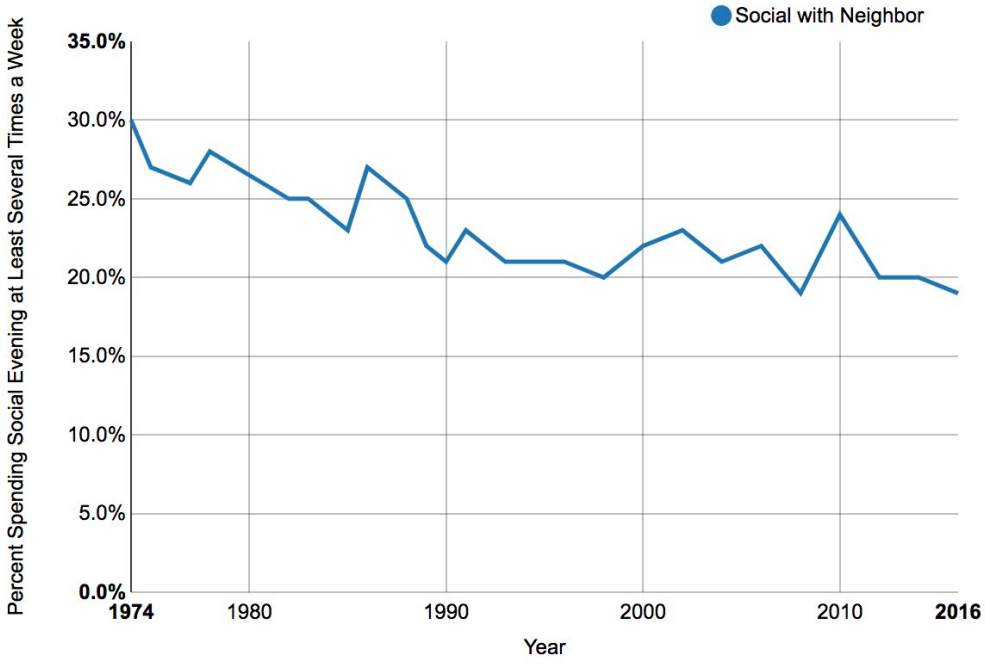
media, while face-to-face interactions with neighbors with whom we have less in common are increasingly unnecessary.[119]

Suburbanization, expanded economic options for women, and communications technological development all reflect rising affluence. As our society has grown richer, the impetus to interact with our neighbors—reflecting their proximity rather than our commonalities—has diminished. In response, we have retreated into more private lives shared with those with whom we connect most easily, regardless of whether they live next door or across the country. In a sense, this shift mirrors the rise of romantic love and personal similarity as criteria for mate selection over traditional pragmatic economic concerns and geographic convenience.

Social Segregation

From an even broader perspective, and a more problematic one, technology has also allowed us to interact less—either in-person or online—with anyone whose values or opinions are different than our own.[120] That has likely contributed to a breakdown in bridging social capital confined not just to our neighbors but to our fellow citizens generally. And while we may be interacting less with our neighbors than in the past, on a number of dimensions we seem to care more who our neighbors are than we used to.

Percent of Adults Spending a Social Evening with a Neighbor at Least Several Times a Week, 1974-2016



Source: General Social Survey. Authors' tabulations using GSS Data Explorer. https://gssdataexplorer.norc.org/projects/27817/variables/522/vshow.

On the one hand, residential segregation by race has declined since 1970 (especially between blacks and whites, where it has always been highest) or held stable.[121] On the other hand, income segregation has risen sharply since 1970, particularly during the 1980s and 2000s.[122] Between 1970 and the early 2010s, the share of families in large metropolitan areas who lived in middle-income neighborhoods declined from 65 percent to 40 percent. Over that same time period the share of families living in poor neighborhoods rose from 19 percent to 30 percent, and those living in affluent neighborhoods rose from 17 percent to 30 percent. Economic segregation also grew in smaller metropolitan areas.[123]

Trust

If Americans are less social with those outside their circle of friends and family, and if they are more socially and physically segregated from them, then they are also less trusting of them. Between 1972 and 2016, the share of adults who thought most people could be trusted declined from 46 percent to 31 percent.[124] Similarly, between 1974 and 2016, the number of Americans expressing a great deal or fair amount of trust in the judgment of the American people "under our democratic system about the issues facing our country" fell from 83 percent to 56 percent.[125]

Americans have also become less trusting of many institutions. Between 1972 and 2012, the share of adults who said they trusted "the government in Washington to do what is right" most or all of the time declined from 53 percent to 22 percent.[126] Over the same period, trust in public office holders and candidates for office fell; the same was true of state government and of all three branches of the federal government. Trust in the federal government to handle both domestic and international policy also fell.[127]

The breakdown in trust and confidence was not confined to government. Trust in the mass media's reporting of the news also fell; between 1972 and 2016, the share of Americans saying they trusted the media a great deal or a fair amount declined from 68 percent to 32 percent.[128] Confidence in banks fell, as did confidence in newspapers, organized religion, public schools, organized labor, big business, and the medical system.[129]

Despite this dramatic deterioration, there are signs that closer to home, Americans remain trusting of local institutions, and their interpersonal relationships are healthier. Trust in local government, for instance, actually rose over these years.[130] And Americans are very satisfied with their friendships. In a 2003 Gallup poll, Americans were more satisfied with their friendships than their religion and spirituality, romantic lives, health, career, money, and personal growth. They were more satisfied with their friends than with where they lived or with the recreational aspect of their lives. Only their family elicited more satisfaction.[131]

Civic Engagement

Civic engagement encompasses a vast array of activities, though there are few good data sources providing national data extending back to the early 1970s. The share of adults who said they had done any volunteering in the previous year is no lower today than it was in the early 1970s. One in four indicated they had volunteered in 1974 and in 2015.[132] Among those who did any volunteering, though, Americans devoted more time in 2015. Between 1974 and 2015, the share reporting volunteering for at least 100 hours increased from 28 percent to 34 percent.[133] Putnam finds an increase in volunteerism between the mid-1970s and the late 1990s, driven entirely by adults under 25 and (especially) ages 60 and higher.[134] We found the increase occurred among men younger than 25 and older than 44 years old.[135]

Participation in voluntary organizations, in contrast, appears to have declined. Between 1974 and 2004, the share of Americans who participated in one of sixteen kinds of voluntary associations fell from 75 percent to 62 percent.[136] Harvard political scientist Theda Skocpol has argued persuasively that

> *professionally managed advocacy groups and institutions have moved to the fore, while representatively governed, nation-spanning voluntary membership federations—especially those with popular or cross-class memberships—have lost clout in national public affairs and faded from the everyday lives of most Americans.*[137]

Although these more professionalized advocacy groups and organizations have found ways to sustain themselves financially, it is clear they are a less participatory form of association. Large and remote private associations, Robert Nisbet noted,

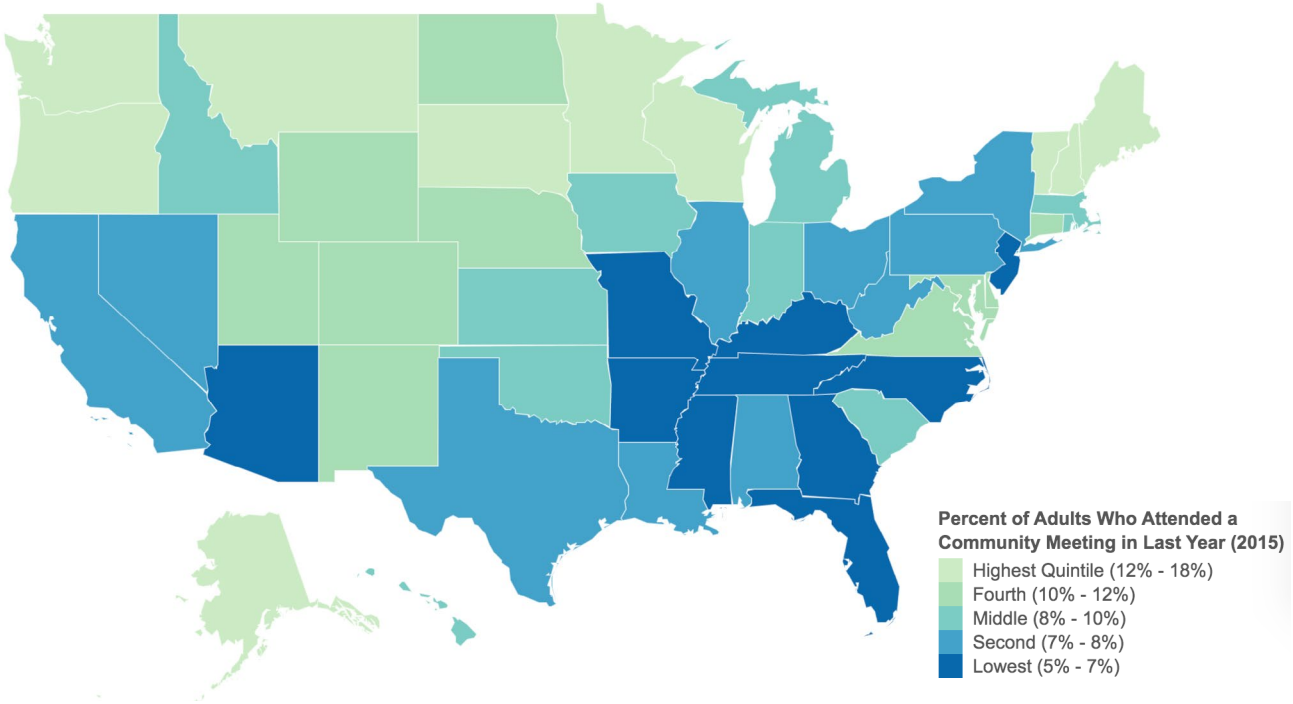
> *will become as centralized and as remote as the national State itself unless these great organizations are rooted in the smaller relationships which give meaning to the ends of the large associations.*[138]

Political engagement, too, has diminished over time. According to federal surveys, between 1972 and 2012, the share of the voting-age population that was registered to vote fell from 72 percent to 65 percent, and the trend was similar for the nonpresidential election years of 1974 and 2014. Correspondingly, between 1972 and 2012, voting rates fell from 63 percent to 57 percent (and fell from 1974 to 2014).[139]

Fewer people attended a political meeting or rally over time as well, and fewer worked for a political party or candidate, although these activities were uncommon even in 1972.[140] Between 1972 and 2008, the share of people saying they follow "what's going on in government and public affairs" declined from 36 percent to 26 percent.[141] That said, between 1972 and 2012, the share of Americans who tried to persuade someone else to vote a particular way increased from 32 percent to 40 percent.[142]

All in all, then, the domain of "community" appears to have shrunk over time. We spend less time with neighbors and in groups, both of which can involve social interaction with people we do not know well or with whom we share little in common. It is therefore unsurprising that we trust those outside our immediate circle of family and friends less than in the past, whether people in general or individuals represented by large institutions. Of course, these are exactly the relationships needed to collectively develop community, the feeling of being connected to each other and of being part of something bigger than our close personal network.

Percent of Adults Who Attended a Community Meeting in the Last Year, by State, 2015



Source: Bureau of Labor Statistics, Current Population Survey, September 2015 Volunteer Supplement

WORKING TOGETHER

The centrality of work in America means that it is for many people the focus of associational life. Whether in the carpool lane, offsite at lunch, in the break room, at the holiday party, behind the counter during down times, out on business trips, or post-work at the bar or on the softball field, a significant part of our social lives is spent with our coworkers.

For some, work is simply a means to an end, but to many others it is also a source of meaning and purpose, belonging, pride, friendship, and community.[143] In 2006, over one in four workers affirmed that their "main satisfaction in life comes from

work."[144] The General Social Survey asks respondents, "If you were to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work or would you stop working?" In 2016, seven in ten workers—no fewer than in 1973—said they would keep working.[145] Similarly, 70 percent agreed that they would "enjoy having a paying job even if I did not need that money."[146]

Observers such as Ross Douthat have pointed out that the social features of work impart important benefits not confined to the career-minded:

> *Even a grinding job tends to be an important source of social capital, providing everyday structure for people who live alone, a place to meet friends and kindle romances for people who lack other forms of community, a path away from crime and prison for young men, an example for children and a source of self-respect for parents.*[147]

Conversely, unemployment is associated with lower levels of subjective wellbeing.[148]

Work is inherently a cooperative and associational activity. Like family, community, and religion, work in its best form draws us out of ourselves toward the service of others and society. It depends on social norms of trust, trustworthiness, and cooperation that allow modern societies to flourish.[149] Workplaces rich in social capital will tend to be more effective. As Don Cohen and Laurence Prusak write:

> *Social capital makes an organization, or any cooperative group, more than a collection of individuals intent on achieving their own private purposes. Social capital bridges the space between people. Its characteristic elements and indicators include high levels of trust, robust personal networks and vibrant communities, shared understandings, and a sense of equitable participation in a joint enterprise—all things that draw individuals together into a group. This kind of connection supports collaboration, commitment, ready access to knowledge and talent, and coherent organizational behavior.*[150]

One open question is whether workplace social ties are qualitatively or quantitatively sufficient to make up for lost social ties outside of work. Putnam, for example, concludes from his evaluation of workplace connections that "the balance of evidence speaks against the hopeful hypothesis that American social capital has not disappeared but simply moved into the workplace."[151] For him and others, work activity is inherently utilitarian and self-interested, involving as it does customers and profit-seeking firms, bosses and employees. Many also believe, like Putnam, that job instability and insecurity has risen, undermining the creation of strong social connections on the job.

Trends in Work-Related Associational Life: Time Spent with Coworkers off the Job

There is little data available on social interaction with coworkers, on or off the job. However, time use data indicate that we are spending less time with our coworkers off the job than in the past. Between the mid-1970s (1975-76) and 2012, the average amount of time Americans between the ages of 25 and 54 spent with their coworkers outside the workplace fell from about two-and-a-half hours per week to just under one hour.[152]

Time Devoted to Work and Participation in the Workforce

Time at work (or getting to work) has implications for social capital on the job and for associational life outside of work. Trend data on what we do together at work is generally unavailable, so we focus on how time spent working affects the other domains of associational life.

Median commuting times have risen, but only modestly (from 22 to 25 minutes between 1980 and 2015).[153] It is possible, too, that longer commutes reflect a tradeoff against benefits from living further away from work, such as time with family. As a share of trips or miles driven, commutes declined in importance between 1969 and 2009.[154] The share of workers living and working in different counties was 26 percent in 1970 and 27 percent in the second half of the 2000s (2006 to 2010).[155]

American adults spent the same amount of time at work in 2012 as in the mid-1970s (1975-76).[156] This stability, however, masks a more complicated story. More adults are either in school or retired than 45 years ago. Among 25- to 54-year-olds, time at work rose 4 percent. The story was very different for men and women though.

Between the mid-1970s and 2012, hours at work rose 27 percent among women 25-54 years old.[157] In part that was because the share of women with any hours of work on a given day increased from 36 percent to 42 percent, but working women also spent 10 percent more time at work than they used to.

These trends reflect the final 20 years of the "quiet revolution"—the dramatic increase in work among women (particularly married women).[158] Just one-third of women between the ages of 25 and 54 (35 percent) were in the labor force in 1948, but that figure rose steadily through the mid-1990s.[159] In 2015, 74 percent of prime-working-age women were in the labor force.

A long overdue advance toward equality, the quiet revolution unavoidably shifted the mix of social relationships from the home and neighborhood to the workplace, requiring greater reliance on markets for child care. One consequence for associational life was that volunteer and community-based work previously done outside of the workforce shifted to professionalized (and paid) work in the formal economy or disappeared altogether.[160] One need not look longingly back

on the era to recognize that the traditional breadwinner-homemaker family underlying society until recent decades did have the advantage of creating a significant and thriving sphere for associational life outside the world of commerce and production. Women outside the paid workforce were not only homemakers, they were community-makers.

The quiet revolution did not have to be so consequential for associational life. The shift of more women spending more time in the workforce might have been met with a corresponding flow of men from paid employment into the roles of family caregiver and civic-minded neighbor. But while men have grown increasingly disconnected from work in recent decades, no such cultural shift has occurred to shore up community life. Men and women have, together and in the aggregate, prioritized individualist goals and professional pursuits over the sustenance of yesteryear's robust associational life. Between 1976 and 2015, the share of married parents with two workers rose from 54 percent to 65 percent, and the share in which both husband and wife worked full-time year-round rose from 15 percent to 36 percent.[161]

The decline in male labor force participation constitutes a second major economic shift with implications for associational life. Between 1970 and 2016, labor force participation for prime-working-age men declined from 96 percent to 89 percent.[162] Among men between the ages of 25 and 54, hours at work fell by 9 percent between the mid-1970s and 2012.[163] *Employed* men spent 10 percent more time at work in 2012—the same increase as among women. But while 68 percent of working-age men spent time at work on a given day in the mid-1970s, just 56 percent did in 2012. (Note that these daily averages include weekends, which lowers them considerably.)[164]

Work has become rarer, in particular, among men with less education. From the mid-1970s to 2012, hours at work fell by just 2 percent among men with a college degree or an advanced degree, compared with 14 percent among those with no more than a high school education.[165] (Even though far fewer men had, at most, a high school diploma or GED in 2012—9 percent of prime-working-age men versus 23 percent in 1975—comparing the lowest-educated 9 percent of men in both years still produces a comparably large drop in hours at work.)[166]

For many of these men, work has disappeared as a source of social connection. A rising share of men receive disability benefits, which strongly discourage subsequent reentry into the workforce.[167] Between 1970 and 2010, male Social Security disability recipients (all of whom previously worked) doubled as a share of adult men.[168] Changes in health status associated with the aging of the population explain less than half that increase, and other changes in the workplace, health care, and health status would have predicted declines in disability receipt.[169]

The rise in incarceration (in the wake of increasing violent crime rates) has also isolated many former offenders.[170] They and others passing through the criminal

justice system face barriers to work on account of their criminal records. The White House Council of Economic Advisers recently noted that, in 2008, an estimated 6.4 to 7.2 percent of the prime-age male population was formerly incarcerated, and "a potentially large fraction of this group is not participating in the workforce as a result of their incarceration."[171]

It would be less worrisome if able-bodied, non-incarcerated men out of the labor force were spending their time engaged in other kinds of constructive activity. But convergent pieces of evidence suggest a much less optimistic picture of these "men without work."[172] Nicholas Eberstadt, relying on time-use data from the Bureau of Labor Statistics and other sources, points out that "[t]heir routine, instead, typically centers on watching—watching TV, DVDs, Internet, hand-held devices, etc.—and indeed watching for an average of 2,000 hours a year, as if it were a full-time job."[173] A recent working paper by Mark Aguiar, Mark Bils, Kerwin Charles, and Erik Hurst suggests that among young men (age 21-30) the recent decline in their work hours has been matched by an increase in leisure, about three-quarters of which is taken up by video games.[174]

The concern is that, in Eberstadt's words,

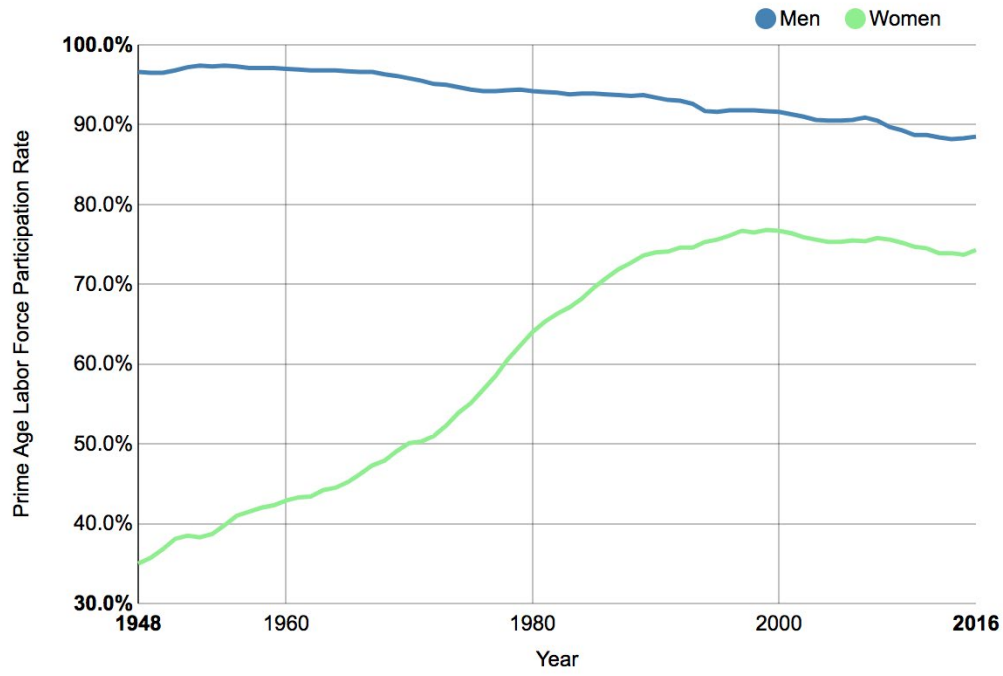
> *The death of work has ushered in additional costs at the personal and social levels that may be difficult to quantify but are easy to describe. These include the corrosive effects of prolonged idleness on personality and behavior, the loss of self-esteem and the respect of others that may attend a man's voluntary loss of economic independence, and the loss of meaning and fulfillment that work demonstrably brings to so many...*[175]

Given the exploding opioid crisis gripping the nation, Eberstadt's fears seem especially relevant.[176] The research of economist Alan Krueger, for instance, indicates that nearly one out of three prime-age men out of the labor force report having taken prescription pain medication on the previous day.[177]

Job Instability

Putnam advances the conventional view that the labor market has changed dramatically over time and is characterized by heightened job insecurity and instability.[178] These changes are claimed to have limited the development of on-the-job social capital, since fewer workers are at the same workplace for extended periods of time and they are anxious while there. "Alternative work arrangements"—temp jobs, independent contracting, the "gig economy," and the like—have become more common, for example. Reliable data are unavailable back to the 1970s, but between 1995 and 2015, workers in these arrangements grew from 9 percent to 16 percent of the workforce.[179] Between the mid-1970s and 2012, the percentage of employed Americans who worked from home on a typical day and spent no time at the workplace increased from 3 percent to 7 percent.[180]

Labor Force Participation Rate, Men and Women Age 25-54, 1948-2016



Source: Bureau of Labor Statistics, Current Population Survey. Authors' tabulations using the data tools at http://www.bls.gov/cps/.

But on a number of other dimensions, the labor market has changed less than is generally believed or has changed in ways that have increased time at work.[181] Part-time work, for instance, remains near its 1970 level, not substantially higher. Between that year and 2015, the share of employed men usually working part-time rose from 9 percent to just 12 percent, and the share of working women doing so fell from 26 percent to 25 percent.[182] Meanwhile, the share of the employed working year-round actually rose from 69 to 81 percent among men and from 49 to 76 percent among women.[183] Since 2004, median job tenure has been higher than its 1973 level, indicating that workers are staying in their jobs longer than in the past.[184] Even the drop in prime-working-age male labor force participation primarily reflects an increase in men who tell federal surveyors they do not want a job.[185]

Organized Labor

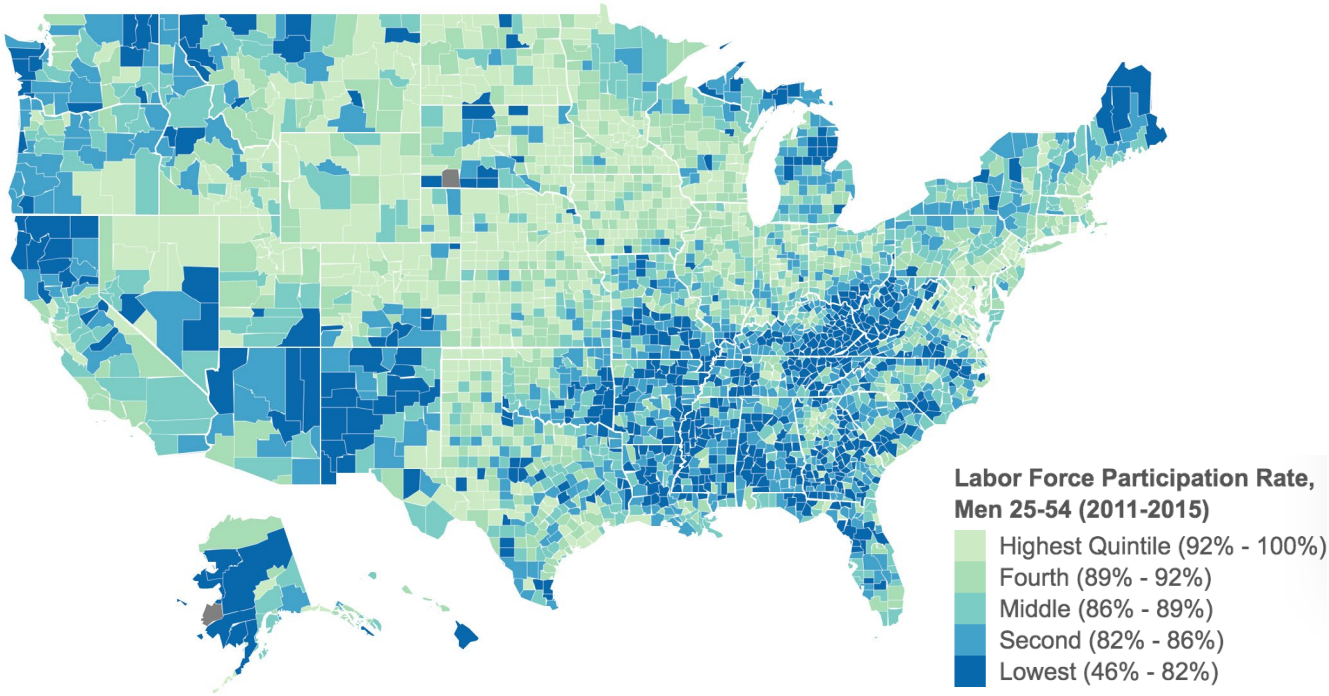
Labor unions were once a primary source of association in work life—a focal point for community, camaraderie, and civic participation during the twentieth century.[186] But between 1970 and 2015, union membership declined from about 27 percent to 11 percent of all wage and salary workers.[187] There is little agreement about why this decline occurred, but consistent with falling participation in a range of voluntary associations, one study concluded that a large part of the

drop in union membership between 1977 and 1991 reflected declining interest in joining.[188]

It is noteworthy that at the same time that union membership has declined, formal occupational licensing rules have been steadily on the rise.[189] Between 1965 and 2010, the percent of the workforce with some form of license or formal certification increased from less than 10 percent to nearly 25 percent.[190] While formalized licensing and certification regimes may substitute (for good and ill) for many of the benefits to specific workers previously achieved through unionization, it does so in a much less associative way.

While data on associational life in the workplace is hard to come by, it appears that we spend less time off the job with our coworkers than in the past. There has been a surprising amount of stability over the past 45 years in features of the workforce and the economy that would be expected to affect social capital. The giant exception involves the changes in labor force participation among men and women, between whom the longer-term trends move in opposite directions. These shifts have profoundly affected what we do together, outside of work and presumably inside the workplace too.

Prime-Age Male Labor Force Participation Rate, by County, 2011-2015



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates

CONCLUSION

Our review of changes in associational life over the past several decades suggests that in many—but not all—ways, what we do together has become more circumscribed than it used to be.

The Social Capital Project will explore some of these worrisome trends in the years to come, as well as seek to understand geographic variation in the health of associational life, such as that displayed in the maps embedded in this report. We also intend to analyze what promotes or impedes social capital formation (e.g., cultural values, economic changes, or segregation), as well as the possible effects of a healthy associational life (e.g., on economic mobility). The project will assess some of the day's most important policy issues that are related to the presence or absence of social capital, including declining male labor force participation, family formation, and rising "deaths of despair."[191] And we will highlight other trends and patterns that are underappreciated and relevant for policy.

As for this report, a few big-picture conclusions regarding trends in associational life are in order. To the extent that there was a golden age of associational life in the mid-twentieth century, the sense of loss we feel seems inextricably linked to the growth of two-worker families on the one hand and single-parent families on the other.

The typical child today will not make it to 16 without experiencing single parenthood. Less acknowledged in policy debates, the adults in fragile families also suffer when their relationship deteriorates. With fewer children in intact families, fewer adults in stable long-term relationships, and less-happy marriages than in the past, it is no wonder that Americans are nostalgic for a time—perhaps idealized—when family life was healthier.

Meanwhile, the increase in dual-income families has sometimes strained family life (even as it has improved purchasing power), and it has depleted the social capital of neighborhoods and communities. Working families today often complain of a "time crunch"—a generally unavoidable conflict between the demands of work life and of family. But the increasingly central pursuit of material ends and professional goals has crowded out the demands of a robust community life no less than those of family life.

This is not to say that the shift to two-worker families has not come with benefits. In addition to the higher material standard of living it has brought, women now enjoy more economic freedom than they did in years past. It may be that for most people, the benefits of this fundamental shift outweigh the costs. Nor should we conclude that working women are to blame for declines in social capital; there is no reason that men could not have replenished the lost investment in family and community life that resulted from the "quiet revolution." We should acknowledge, however, that spending more time on work and giving more attention to career has come with tradeoffs.

Importantly, the increases in dual-income and single-parent families reflect the rising affluence of our nation, not growing hardship. Sending a second earner into the workforce entails costs—less time available for home maintenance, childrearing, and meal preparation, and expenses for work-related needs such as childcare or a second car. Technological innovation reduced the amount of time it took to maintain homes and prepare meals, and rising incomes allowed families to incur work-related expenses. The increase in work among married women was steady, and its start predated by two decades the stagnation in men's pay that began in the 1970s.[192] It was a phenomenon common to developed nations around the world and co-occurred with rising educational attainment among women, delayed marriage, and reduced and delayed fertility.[193]

Even the growth in single parenthood reflects rising affluence. More women are able to support children on their own (with or without child support) than in the past, due to their increased earnings. So too, the public safety net for single parents, while by no means allowing a lavish existence, is sufficiently generous to facilitate single parenthood. Whatever one's feelings about the proper size of the safety net, it is clearly more extensive than it was 50 years ago.

And despite common claims that the increase in single motherhood lower down the income ladder reflects a decline in "marriageable men," men's pay—properly measured—has stagnated at historical highs or even risen a bit, not declined.[194] What has changed is that the gap between what men and women earn has narrowed greatly.[195] Indeed, the causality may run in the other direction—men may be less attached to the labor force because we expect them to contribute less to raising children than in the past.

More generally, rising affluence has made social capital investment less necessary than in the past. In the same way that single parents need a spouse less than they would have 50 years ago, we are rich enough that we need less material support from our extended families and neighbors. Investing in social capital always entailed costs—favors owed, personal awkwardness tolerated, privacy lost. As we have grown richer, we have turned increasingly to formal market transactions to meet our various needs. Instead of calling on the neighborhood handyman, we hire a contractor.

Similarly, our willingness to endure the constraints imposed by organized religion has also eroded with affluence. (A profound irony of our affluent society's diminished need for constraining commitments to associational life is that it is among the best-off segments of society where these commitments remain strongest. Religious adherence and family stability, for instance, have deteriorated less among upper-educated Americans than among the lower-educated.)

As a consequence of rising affluence, our associational life has contracted. We are increasingly focused on work and professional goals and on our circles of family and friends. Technology allows us to maintain stronger ties with the people most important to us, whether they be near or far, than with the couple who lives across the hall of our apartment building.

But our turn toward the private has come with costs. We no longer relate to each other so easily beyond our inner circles.[196] The connective tissue that facilitates cooperation has eroded, leaving us less equipped to solve problems together within our communities. So, too, are we less able to collaborate across communities. Instead of solving problems locally, we increasingly turn to the federal government—an approach that puts problem-solving in the hands of policymakers with little local knowledge of community problems and that leads to polarized (and polarizing) laws that offend the values of large swaths of the populace.

We may be materially richer than in the past. But with atrophied social capabilities, with a diminished sense of belonging to something greater than ourselves, and with less security in our family life, we are much poorer for doing less together.

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9. Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000).
10. Charles Murray, *Coming Apart: The State of White America, 1960-2010* (New York: Crown Forum, 2012).
11. Levin, *The Fractured Republic*.
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Pew Research Center, December 17, 2015, accessed May 1, 2017, http://www.pewsocialtrends.org/files/2015/12/2015-12-17_parenting-in-america_FINAL.pdf, 35.

15. Eleanor Krause and Isabel Sawhill, "What we know—and don't know—about the declining labor force participation rate," *Social Mobility Memos*, The Brookings Institution, February 3, 2017, accessed May 1, 2017, https://www.brookings.edu/blog/social-mobility-memos/2017/02/03/what-we-know-and-dont-know-about-the-declining-labor-force-participation-rate/.

16. Robert Putnam, Bowling Alone. Also, as Harvard political scientist Theda Skocpol argues, our civic life has undergone an enormous shift from "doing with" to "doing for," in which "[p]rofessionally managed, top-down civic endeavors simultaneously limit the mobilization of most citizens into public life and encourage a fragmentation of social identities and trivial polarizations in public debates." See Theda Skocpol, *Diminished Democracy: From Membership to Management in American Life* (Norman: University of Oklahoma Press, 2003), 232.

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22. Nisbet, *The Quest for Community*, 64.

23. Peter L. Berger and Richard John Neuhaus, *To Empower People: From State to Civil Society*, ed. Michael Novak (Washington, DC: The AEI Press, 1996), accessed May 1, 2017, https://www.aei.org/wp-content/uploads/2014/07/-to-empower-people_140638228440.pdf.

24. Unfortunately for our project, "mediating structures" is today not as wildly popular a term as Peter Berger believed it to be. He stated, perhaps overzealously, "Soon, the term itself, mediating structures, became a household word, frequently cited without quotation marks and without reference to our little book. We did not complain, indeed, felt flattered. It is, after all, gratifying if a word one has coined comes into usage as a common noun—like *coke*, or *xeroxing*, or *fridge*." See Berger and Neuhaus, To *Empower People*, 148.

25. For some history and background on the project, see Peter L. Berger, "In Praise of Particularity: The Concept of Mediating Structures," The Review of Politics 38, no. 3 (1976): 399–410; William Schambra, "Conservatism and the Quest for Community," *National Affairs*, Summer 2010, accessed May 1, 2017, https://www.nationalaffairs.com/publications/detail/conservatism-and-the-quest-for-community; Wilfred M. McClay, "Mediating Institutions," *First Things*, April 2009, accessed, May 1, 2017, https://www.firstthings.com/article/2009/04/002-mediating-institutions.

26. L. J. Hanifan, "The Rural School Community Center," *The Annals of the American Academy of Political and Social Science* 67 (1916), 130.

27. Jane Jacobs, *The Death and Life of Great American Cities* (New York: Vintage, 1961), 138.

28. James S. Coleman, "Social Capital in the Creation of Human Capital," *American Journal of Sociology* 94 (1988): S95-120.

29. Robert Putnam, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton: Princeton University Press, 1993).

30. Robert Putnam, "The Prosperous Community," *The American Prospect*, Spring 1993, accessed May 1, 2017, http://prospect.org/article/prosperous-community-social-capital-and-public-life.

31. Putnam, *Bowling Alone*, 19.

32. Francis Fukuyama, *Trust: The Social Virtues and the Creation of Prosperity* (New York: Simon & Schuster, Inc., 1995), 10.

33. Fukuyama, *The Great Disruption*, 16.

34. Fukuyama, *The Great Disruption*, 6.

35. For a sense of the breadth of social capital research, see, for example, Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology* 24 (1998): 1–24; Edward L. Glaeser, David Laibson, and Bruce Sacerdote, "An Economic Approach to Social Capital," *The Economic Journa*l 112, no. 483 (2002): F437–58; Stephen Knack, "Social Capital and the Quality of Government: Evidence from the States," *American Journal of Political Science* 46, no. 4 (2002): 772–85; Michael Woolcock, "Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework," *Theory and Society* 27, no. 2 (1998): 151–208.

36. Partha Dasgupta and Ismail Serageldin, ed., Social Capital: A Multifaceted Perspective (Washington, DC: The World Bank, 1999); Christian Grootaert and Thierry van Bastelaer, ed., *Understanding and Measuring Social Capital: A Multidisciplinary Tool for Practitioners* (Washington, DC: The World Bank, 2002); Katherine Scrivens and Conal Smith, "Four Interpretations of Social Capital: An Agenda for Measurement" (Working Paper No. 55, OECD Statistics, 2013), accessed May 2, 2017, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/DOC(2013)6&docLanguage=En.

37. Elinor Ostrom, "Social Capital: A Fad or a Fundamental Concept?" in *Social Capital: a multifaceted perspective*, ed. P. Dasgupta and I. Seraeldin (Washington, DC: World Bank, 1999).

38. See, for example, Dora L. Costa and Matthew E. Kahn, "Understanding the Decline in Social Capital, 1952-1998," (Working Paper No. 8295 , National Bureau of Economic Research, 2001), accessed May 1, 2017, http://www.nber.org/papers/w8295; Edward L. Glaeser and Charles Redlick, "Social Capital and Urban Growth," (Working Paper No. 14374, National Bureau of Economic Research , 2008), accessed May 1, 2017, http://www.nber.org/papers/w14374; Mark Granovetter, "The Impact of Social Structure on Economic Outcomes," *The Journal of Economic Perspectives* 19, no. 1 (2005): 33–50; John F. Helliwell and Haifang Huang, "How's the Job? Well-Being and Social Capital in the Workplace," *Industrial and Labor Relations Review* 63, no. 2 (2010): 205–27; John F. Helliwell and Robert D. Putnam, "The Social Context of Well-Being," *Philosophical Transactions: Biological Sciences* 359 (2004): 1435–46; Pamela Paxton, "Social Capital and Democracy: An Interdependent Relationship," *American Sociological Review* 67, no. 2 (2002): 254–77; Pamela Paxton, "Is Social Capital Declining in the United States? A Multiple Indicator Assessment," *American Journal of Sociology* 105, no. 1 (1999): 88–127; Alejandro Portes and Erik Vickstrom, "Diversity, Social Capital, and Cohesion," *Annual Review of Sociology* 37 (2011): 461–79; Wendy M. Rahn and John E. Transue, "Social Trust and Value Change: The Decline of Social Capital in American Youth, 1976-1995," *Political Psychology* 19, no. 3 (1998): 545–65.

39. Kenneth Prewitt, Christopher D. Mackie, and Hermann Habermann, eds., *Civic Engagement and Social Cohesion: Measuring Dimensions of Social Capital to Inform Policy* (Washington, DC: The National Academies Press, 2014).

40. For sympathetic but critical reviews of the idea of "social capital," see, for example: Samuel Bowles and Herbert Gintis, "Social Capital and Community Governance," *The Economic Journal* 112, no. 483 (2002): F419–36; Steven N. Durlauf, "On the Empirics of Social Capital," *The Economic Journa*l 112, no. 483 (2002): F459–79; Steven N. Durlauf and Marcel Fafchamps, "Social Capital" (Working Paper No. 10485, National Bureau of Economic Research, 2004), accessed May 1, 2017, http://www.nber.org/papers/w10485; Michael W. Foley and Bob Edwards, "Is It Time to Disinvest in Social Capital?" *Journal of Public Policy* 19, no. 2 (1999): 141–73; Alejandro Portes, "Social Capital: Its Origins and Applications in Modern Sociology," *Annual Review of Sociology* 24 (1998): 1–24.; Scrivens and Smith, "Four Interpretations of Social Capital"; Joel Sobel, "Can We Trust Social Capital?" *Journal of Economic Literature* 40 (2002): 139–54.

41. John T. Cacioppo and William Patrick, *Loneliness: Human Nature and the Need for Social Connection* (New York: W.W. Norton & Company, Inc., 2008).

42. David Brooks, "The Death of Idealism," *New York Times*, September 30, 2016, A27, accessed May 1, 2017, https://www.nytimes.com/2016/09/30/opinion/the-death-of-idealism.html.

43. F.A. Hayek, "The Use of Knowledge in Society," *The American Economic Review* 35, no. 4 (1945), 519-530.

44. For an excellent recent treatment of this way of thinking, see Jim Manzi, *Uncontrolled: The Surprising Payoff of Trial-and-Error for Business, Politics, and Society* (New York: Basic Books, 2012).

45. Only 5 percent of adults have never been married and do not want to marry. See Frank Newport and Joy Wilke, "Most in U.S. Want Marriage, but Its Importance Has Dropped," *Gallup*, August 2, 2013, accessed May 1, 2017, http://www.gallup.com/poll/163802/marriage-importance-dropped.aspx. Nearly 85 percent of teen girls and 77 percent of teen boys say they expect to get married according to "Social Indicators of Marital Health & Well-Being: Teen Attitudes about Marriage and Family," in *The State of Our Unions: Marriage in America* 2012, ed. Elizabeth Marquardt et al., (Charlottesville: The National Marriage Project and the Institute for American Values, 2012), 97, accessed May 1, 2017, http://stateofourunions.org/2012/SOOU2012.pdf.

46. Shawn Grover and John F. Helliwell, "How's Life at Home? New Evidence on Marriage and the Set Point for Happiness," (Working Paper No. 20794, National Bureau of Economic Research, 2014), accessed May 1, 2017, http://www.nber.org/papers/w20794.

47. Ibid.

48. There are two fundamental challenges that are rarely adequately addressed in the literature. First, researchers must account for alternative potential factors that may affect outcomes and that differ between married and single adults. Perhaps depressed people are less likely to marry, so the fact that married people are happier might just reflect the fact that they would have been happier than those who stayed single regardless of who did and did not marry. Second, researchers must account for self-selection into marital status. Studies rarely assess, for instance, the effect of divorce on children after holding constant levels of couple hostility with each other. Doing so might reveal that children of low-hostility couples do better if their parents stay married, while children of high-hostility couples do better if their parents divorce. So "marriage" would be beneficial for the former but harmful for the latter. Even more problematic, if most couples with high hostility toward each other divorce, while most couples with low hostility do not, then it is unclear how to even compare the children of married and divorced parents (holding constant levels of hostility) given a survey that includes both. An apples-to-apples comparison may not be possible.

49. W. Bradford Wilcox et al., *Why Marriage Matters*, *Third Edition: Thirty Conclusions from the Social Sciences* (New York: Institute for American Values, 2011), accessed May 2, 2017, http://www.americanvalues.org/search/item.php?id=81; Sara McLanahan, Laura Tach, and Daniel Schneider, "The Causal Effects of Father Absence," *Annual Review of Sociology* 39, no. 1 (2013): 399-427; Janice K. Kiecolt-Glaser and Tamara L. Newton, "Marriage and Health: His and Hers," *Psychological Bulletin* 127, no. 4 (2001): 472-503.

50. Linda Datcher Loury, "All in the Extended Family: Effects of Grandparents, Aunts, and Uncles on Educational Attainment," *American Economic Review*, 96, no. 2 (2006): 275-278.

51. Janice Compton and Robert A. Pollak, "Family proximity, childcare, and women's labor force attachment," *Journal of Urban Economics* 79(2013), 72-90, find that 90 percent of household heads in 1988 who lived in the state where they "grew up" had a mother living in the same state. Moreover, a majority of adults living in their childhood state lived within ten miles of their mother, and 85 percent lived within 100 miles. In contrast, barely a quarter of household heads who did not live in the state where they grew up lived in the same state as their mother, and 70 percent lived more than 100 miles from their mother.

52. These estimates come from the 1% metro sample of the 1970 decennial census and from the 2015 American Community Survey, both accessed via the IPUMS-USA website. See Steven Ruggles, et al., *Integrated Public Use Microdata Series: Version 6.0* [Machine-readable database], (Minneapolis: University of Minnesota, 2015), accessed May 1, 2017, http://doi.org/10.18128/D010.V6.0.; Scott Winship finds that the share of native-born Americans age 30 to 39 who lived in their birth state peaked in the 1930s or 1940s and was stable from 1970 to 2010 in "When Moving Matters: Residential and Economic Mobility Trends in America, 1880-2010," economics21 Policy Report No. 2, November 2015, Figure 41, accessed May 1, 2017, https://www.manhattan-institute.org/html/when-moving-matters-residential-and-economic-mobility-trends-america-1880-2010-8048.html.

53. "Spend evening with relatives," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/521/vshow.

54. The 1975 figure is from the U.S. Census Bureau, "Current Population Survey, February 1975,"Arrangements Made for the Daytime Care of Children 3 to 6 Years Old by Race, Age of Child, and Labor Force Status of Mother: February 1975, table 2, accessed May 1, 2017, https://www2.census.gov/library/publications/1976/demo/p20-298/tab-02.pdf. The 2011 upper bound is from the U.S. Census Bureau, "Who's Minding the Kids? Child Care Arrangements: 2011 – Detailed Tables," Employment Status of Mother and Selected Characteristics, table 1B, accessed May 1, 2017, https://www.census.gov/data/tables/2008/demo/2011-tables.html. It is an upper bound because respondents to the survey could indicate more than one child care arrangement. The estimate divides the sum of (1) children of employed mothers cared for by her or the other parent, (2) children of non-employed mothers cared for by her or the other parent, and (3) children of non-employed mothers with no child care arrangements who are not in school or in self-care by the number of three- and four-year-olds. The 2011 lower bound is from the National Center for Education Statistics, "National Household Education Surveys Program," Percentage of children from birth through age 5 and not yet in kindergarten participating in various weekly nonparental care arrangements, by child and family characteristics: 2012, accessed May 1, 2017, https://nces.ed.gov/nhes/tables/nonrelative_care.asp. It represents the share of children ages three to five (and not in kindergarten) who have no non-parental arrangement in which they receive child care at least once a week.

55. Giulia M. Dotti Sani and Judith Treas, "Educational Gradients in Parents' Child-Care Time Across Countries, 1965-2012," *Journal of Marriage and Family*, 78 no. 4 (2016); Suzanne M. Bianchi, John P. Robinson, and Melissa A. Milkie, *Changing Rhythms of American Family Life* (New York: Russell Sage Foundation, 2006).

56. Our review of a variety of American time-use surveys stretching back to the 1960s suggested that the earlier surveys that predated the federal American Time Use Survey (which has run since 2003) do not provide comparable estimates of time spent with family. Most of the

estimates show a sizable and anomalous discontinuity between 1998 and 2003 that suggests methodological or survey quality differences. However the sources cited in the previous note find rising parental time to have occurred across a number of developed countries.

57. Claude S. Fischer, *Still Connected: Family and Friends in America Since 1970* (New York: Russell Sage Foundation, 2011); Putnam, *Bowling Alone*.

58. Ibid.

59. U.S. Census Bureau, "Living Arrangements of Adults 18 and Over, 1967 to Present," Historical Living Arrangements of Adults Table AD-3, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/adults.html; U.S. Census Bureau, "Unmarried Couples of the Opposite Sex, by Presence of Children: 1960 to present," Historical Living Arrangements of Adults Table UC-1, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/adults.html. These estimates add the share living with a spouse, with a parent, or with other relatives from table AD-3. They then apply the percentage of cohabiters with children (from table UC-1) to the share of adults living with a cohabiter (from table AD-3) and add that in as well.

60. Ibid.

61. Paul Hemez, "Marriage Rate in the U.S.: Geographic Variation, 2015," *Family Profiles*, FP-16-22, National Center for Family & Marriage Research, accessed May 1, 2017, http://www.bgsu.edu/ncfmr/resources/data/family-profiles/hemez-marriage-rate-us-geo-2015-fp-16-22.html.

62. U.S. Census Bureau, "Estimated Median Age at First Marriage, by Sex: 1890 to the Present," Historical Marital Status Tables Table MS-1, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/marital.html. Technically, median age at first marriage is, given an assumption about the share who will ever get married, the age at which half of them are assumed to have done so. These assumptions are based on cross-sectional data, using the peak age for ever having married in a given calendar year as the presumed share who will ever get married and the age in the calendar year when the ever-married rate was half that as the age at which half are assumed to have married.

63. Estimates are from the 1970 decennial census and the 2015 American Community Survey, analyzed using Steven Ruggles, et al., *Integrated Public Use Microdata Series*: Version 6.0.

64. Wendy Manning, "Trends in Cohabitation: Over Twenty Years of Change, 1987-2010," *Family Profiles*, FP-13-12, National Center for Family & Marriage Research, accessed May 1, 2017, http://www.bgsu.edu/content/dam/BGSU/college-of-arts-and-sciences/NCFMR/documents/FP/FP-13-12.pdf.

65. Sheela Kennedy and Steven Ruggles, "Breaking Up Is Hard to Count: The Rise of Divorce in the United States, 1980-2010,"*Demography* 51, no. 2(2014): 587-598, Figure 3.

66. "Should divorce be easier/more difficult to obtain," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/trends/Gender%20&%20Marriage?measure=divlaw.

67. "Happiness of marriage," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/trends/Gender%20&%20Marriage?measure=hapmar.

68. U.S. Census Bureau, "Living arrangements of adults 18 and over, 1967 to present," Historical Living Arrangements of Adults Table AD-3, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/adults.html. These estimates add the share living with a spouse, with a cohabiting partner, or with other relatives from Tables AD-3.

69. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Vital Statistics of the United States*: 1980-2003, "Mean Age of Mother by Live-birth Order, According to Race and Hispanic Origin of Mother: United States, 1968-2003," Table 1-6, accessed May 1, 2017, https://www.cdc.gov/nchs/data/statab/natfinal2003.annvol1_06.pdf; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, Births: Final Data for

2015 *National Vital Statistics Reports* 66(1), by Joyce A. Martin et al., January 5, 2017, "Mean age of mother, by live-birth order and race and Hispanic origin of mother: United States, 1980-2015," Table I-1, accessed May 1, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_01_tables.pdf.

70. U.S. Census Bureau, "Families by Presence of Own Children Under 18: 1950 to Present," Historical Families Tables Table FM-1 accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/families.html.
71. U.S. Census Bureau, "Average Number of Own Children Under 18 Per Family, By Type of Family: 1955 to Present," Historical Families Tables Table FM-3, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/families.html.
72. "Ideal number of children," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/619/vshow and "Number of children," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/52/vshow.
73. U.S. Census Bureau, "Living Arrangements of Children Under 18 Years Old: 1960 to Present," Historical Living Arrangements of Children Table CH-1, accessed May 1, 2017, https://www.census.gov/data/tables/time-series/demo/families/children.html.
74. Pew Research Center, "Parenting in America."
75. Gregory Acs et al., "The Moynihan Report Revisited," Urban Institute, June 13, 2013, accessed May 2, 2017, http://www.urban.org/research/publication/moynihan-report-revisited.
76. Larry L. Bumpass, "Children and Marital Disruption: A Replication and Update," *Demography* 21, no. 1 (1984): 71-82; James A. Sweet and Larry L. Bumpass, *American Families and Households* (New York: Russell Sage Foundation, 1987); Arthur J. Norton and Paul C. Glick, "One Parent Families: A Social and Economic Profile," *Family Relations* 35, no. 1 (1986): 9-17.
77. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Nonmarital Childbearing in the United States*, 1940-99 *National Vital Statistics Reports* 48, by Stephanie J. Ventura and Christine A. Bacharach, "Number, rate, and percent of births to unmarried women and birth rate for married women: United States, 1940-99, October 18, 2000, "Number, rate, and percent of births to unmarried women and birth rate for married women: United States, 1940–99," Table 1, accessed May 1, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr48/nvs48_16.pdf; U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics *Births: Final Data for 2015*, "Births and birth rates for unmarried women, by age and race and Hispanic origin of mother: United States, 2015," Table 15, accessed May 1, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_01.pdf.
78. Sally C. Curtin, Stephanie J. Ventura, and Gladys M. Martinez, "Recent Declines in Nonmarital Childbearing in the United States," *Data Brief* No. 162, Centers for Disease Control and Prevention, August 2014, accessed May 1, 2017, https://www.cdc.gov/nchs/data/databriefs/db162.pdf.
79. Cynthia Osborn and Sara McLanahan, "Partnership Instability and Child Well-Being," *Journal of Marriage and Family* 69, no. 4 (2007), 1065-1083.
80. Putnam, *Bowling Alone*, 66.
81. Jonathan Gruber, "Religious Market Structure, Religious Participation, and Outcomes: Is Religion Good for You?" *Advances in Economic Analysis and Policy* 5, no. 1(2005).
82. Putnam, *Bowling Alone*, 67.
83. Ibid.
84. Robert D. Putnam and David E. Campbell, *American Grace: How Religion Divides and Unites Us* (New York: Simon and Schuster, 2010).

85. Ibid., 448.

86. Ibid. The 2004 and 2006 survey is the General Social Survey.

87. Ibid., 472.

88. Megan McArdle, "How Utah Keeps the American Dream Alive," *Bloomberg View*, March 28, 2017, accessed May 1, 2017, https://www.bloomberg.com/view/articles/2017-03-28/how-utah-keeps-the-american-dream-alive.

89. Levin, *Fractured Republic*, 64-65.

90. Wade Clark Roof and William McKinney, *American Mainline Religion: Its Changing Shape and Future* (New Brunswick, NJ: Rutgers University Press, 1987), cited in Putnam, *Bowling Alone*, 73-74.

91. The estimate (71 percent) is from 1975 and taken from the U.S. Census Bureau, "Statistical Abstract of the United States: 1994," Religious Preference, Church Membership, and Attendance: 1957 to 1991, table 85, 70, accessed May 1, 2017, https://www2.census.gov/library/publications/1994/compendia/statab/114ed/1994-02.pdf.

92. In the General Social Survey, 57 percent of adults indicated they did so in 1972 ("How often r attends religious services," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/294/vshow). In the American National Election Studies, 50 percent indicated the same that year (American National Election Studies, "Church Attendance (2), 5 categories 1970-2012," *The ANES Guide to Public Opinion and Electoral Behavior*, accessed May 1, 2017, http://www.electionstudies.org/nesguide/toptable/tab1b_5b.htm).

93. The membership estimate is for 2016 and from Gallup (see "Religion," Gallup, In Depth: Topics A to Z, accessed May 1, 2017, http://www.gallup.com/poll/1690/religion.aspx). Attendance figures are from the General Social Survey (44 percent in 2016) and the American National Election Studies (42 percent in 2012). See the previous note for sources.
Using the estimates presented in Lyman Stone, "The Beginning for the American Church," *In a State of Migration*, Medium, April 21, 2017, accessed May 1, 2017, https://medium.com/migration-issues/the-beginning-for-the-american-church-6bb5654a91fc, and dividing by population estimates indicates a drop in religious membership from 66 percent in 1973 to 60 percent in 2015. Stone adjusts data from the Association of Religion Data Archives using various sources and interpolations.

94. Roughly, religious adherence, as reported by churches and congregations, declined from around 60 percent to around 50 percent between the early 1970s and 2010 (compared with a drop in church membership from 71 to 61 percent in the Gallup data from 1975 to 2010).
The religious adherence data were downloaded from "Churches and Church Membership in the United States, 1971 (States)," Association of Religion Data Archives, accessed May 1, 2017, http://www.thearda.com/Archive/Files/Descriptions/CMS71ST.asp, and "U.S. Religion Census: Religious Congregations and Membership Study, 2010 (State File)," Association of Religious Data Archives, accessed May 1, 2017, http://www.thearda.com/Archive/Files/Descriptions/RCMSST10.asp. Data for 1971-73 were originally collected by Glenmary Research Center in Washington, DC. (D.W. Johnson, P. Picard, and Bernard Quinn, "Churches and Church Membership in the United States," *Glenmary Research Center*, 1974.) Data for 2009-11 are from a survey administered by the Association of Statisticians of American Religious Bodies, with the data collection carried out by the Church of the Nazarene Global Ministry Center in Lenexa, Kansas. (Grammich et al., "2010 U.S. Religion Census: Religious Congregations & Membership Study," *Association of Statisticians of American Religious Bodies*, 2012.)
In the 1971-73 data, each denomination defined "total adherents" and "communicant, confirmed or full members" as they saw fit. Where adherents were not reported, Glenmary Research Center multiplied communicants by the ratio of the county population to the county population over age 13. In the 2009-11 data, denominations were instructed to identify adherents as "all members, including full members, their children and the estimated number

of other participants who are not considered members; for example, the 'baptized,' 'those not confirmed,' 'those not eligible for Communion,' 'those regularly attending services,' and the like." Some denominations provided membership estimates and suggestions for converting to adherents. In other cases, ASARB converted them using the same approach used by Glenmary Research Center.
The 2009-11 survey was more inclusive than past efforts, including special efforts to reach out to "independent or non-denominational churches, Jewish synagogues, historically African American churches, Hindus, Buddhists, and Muslims." In order to produce comparable estimates for 1971-73 and 2009-11, therefore, it was necessary to restrict the denominations included in the two surveys so that any trend would not reflect more complete data collection in the more recent wave. Otherwise, the adherence trend estimated would be biased upward. At the same time, restricting the trend analysis to denominations present in both waves would result in the exclusion of churches and congregations formed after the early 1970s and would tend to bias the trend downward.
The strategy we used was to first exclude Washington, DC adherents from the 2009-11 data, as they were not included in 1971-73. Next, we identified all denominations with adherents in both waves. We then added any denomination with adherents that existed in 1971-73 but was consistently absent from waves in 1980, 1990, 2000, and 2010, under the assumption that such denominations either were folded into other ones or ceased to exist. Next, we added adherents from any denomination that (1) existed in 2009-11, (2) was present in a preceding wave, but if so (3) was present continuously in all waves while it was in any of them. The assumption here is that these were denominations that originated after 1971-73. This strategy excluded denominations appearing in the 2010 wave for the first time, some of which may have formed between 2000 and 2010.
We also added a number of Mennonite, Amish, and Friends denominations from 2009-11 that had no match in 1971-73 because they appear to just reflect a finer grouping of the same kind of adherents as were recorded in the past. Finally, we added adherents from "non-denominational Christian Churches," which were included in the data for the first time in 2009-11. Their omission from earlier waves may bias the trend in adherence upward, but excluding them risked missing a quickly growing segment of the religious landscape. Unfortunately, there were no estimates of Jewish, Muslim, Buddhist, or Hindu adherents in the 1971-73 data, so we exclude them from the 2009-11 data as well. Further, there are no estimates for the major African American churches in 1971-73, so they too are excluded from 2009-11. (The 2009-11 figures for black churches are badly under-estimated regardless.) We then adjusted the denominators in our rate estimates to exclude African Americans and Jews, which changed the 50-percent-to-44-percent decline to a 58-percent-to-52-percent decline. There is little reason to think that the trend in adherence would differ if adherents from the excluded denominations were available.

95. Levin, Fractured Republic, 66; Ross Douthat, "Save the Mainline," *New York Times*, April 15, 2017, accessed May 1, 2017 https://www.nytimes.com/2017/04/15/opinion/sunday/save-the-mainline.html.

96. Levin, *Fractured Republic*; Murray, *Coming Apart*; Putnam, *Bowling Alone*.

97. W. Bradford Wilcox et al., "No Money, No Honey, No Church: The Deinstitutionalization of Religious Life Among the White Working Class," in Religion, Work and Inequality, ed. Lisa A. Keister, John Mccarthy, and Roger Finke, vol. 23 of *Research in the Sociology of Work* (Emerald Group Publishing Limited, 2012), 227-250; Murray, *Coming Apart*.

98. The shares having been raised in a religion are from 1973 and 2016 and taken from the General Social Survey ("Religion in which raised," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/341/vshow). The shares reporting no religious preference are from the 1972 and 2016 GSS ("Rs religious preference," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/287/vshow), indicating a rise from 5 percent to 22 percent, and from Gallup polls in 1972 and 2016 ("Religion," Gallup, In Depth: Topics A to Z, accessed May 2, 2017, http://www.gallup.com/poll/1690/religion.aspx), indicating a rise from 5 percent to 18 percent.

99. The 65-to-41 percent drop is from Gallup ("Religion," In Depth: Topics A to Z). The 36-to-20 percent drop is from the General Social Survey ("Confidence in organized religion," General Social Survey, accessed May 1, 2017, https://gssdataexplorer.norc.org/variables/450/vshow).

100. Putnam and Campbell, *American Grace*.

101. Tocqueville, *Democracy in America*, 489.

102. Scrivens and Smith, "Four Interpretations."

103. See, for example, Alejandro Portes, "Downsides of social capital," *Proceedings of the National Academy of Sciences* 111, no. 52 (2014): 18407-18408.

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Full Report (PDF), Source Data (XLSX)

The Geography of Social Capital in America

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Social capital is almost surely an important factor driving many of our nation's greatest successes and most serious challenges. Indeed, the withering of associational life is itself one of those challenges. Public policy solutions to such challenges are inherently elusive. But at present, policymakers and researchers lack the high-quality contemporary measures of social capital available at the state and local levels to even try proposing solutions that are attuned to associational life.

This report describes a new social capital index created to rectify this problem. It details the construction of the index, presents maps summarizing the geographic distribution of social capital, and establishes that the index is consistently—and often strongly—related to a range of economic, social, and demographic indicators. The report also presents the geographic distribution of several subcomponents of social capital, including family unity, family interaction, social support, community health, institutional health, collective efficacy, and philanthropic health.

The Social Capital Project is concurrently providing the state and county data underlying each index, as well as the indices and subindices themselves. It is our hope that the availability of the index will inspire researchers to focus more on social capital and its relationship to other features of economic and social life. And we hope it will aid policymakers as they seek to address the country's needs.

Among the findings:

- The top fifth of states, in terms of social capital scores, are home to just nine percent of Americans, while 29 percent live in bottom-fifth states.
- We have social capital scores for 2,992 of 3,142 counties, containing 99.7 percent of the American population. Just eight percent of Americans live in the top fifth of these counties, while 39 percent of the population lives in the bottom fifth of counties. Nearly six in ten (59 percent) of Americans live in the bottom two fifths of counties, compared with 24 percent living in the top two fifths.
- The 12 states with the highest social capital scores are distributed across two continuous blocs: nine states running from Utah, through Wyoming and Colorado, across the Dakotas and Nebraska, and over to Iowa, Minnesota, and Wisconsin; and the three Northern New England states of Maine, New Hampshire, and Vermont. These states tend to rank highly across all seven subindices as well. Utah has the highest social capital score, followed by Minnesota and Wisconsin.
- Of the 11 states with the lowest levels of social capital, ten of them fall within a contiguous bloc of states running from Nevada, across the Southwest and South over to Georgia and Florida. New York is the only state in the bottom 11 that is outside this group. Louisiana has the lowest social capital score, followed by Nevada, Arizona, and New Mexico.

- Of the nine states ranked just above this bottom group, seven border and extend the southern bloc, filling out most of the rest of the South. The 17 southern states in the bottom 20 are home to 45 percent of Americans and 74 percent of Americans in bottom-fifth counties. Six in ten (59 percent) of people in the 17 states live in bottom-fifth counties. Only 17 of 1,338 counties in these states are in the top fifth.
- Our indices are not dominated by any single subindex, and our state and county indices appear to be approximating social capital in the same general way.
- Among the component variables underlying the state index, the strongest associations with the index itself across states were for the volunteer rate (0.86), heavy television watching by children (-0.81), the share of adults who made charitable contributions (0.80), the share with emotional and social support (0.80), heavy usage of electronics among children (-0.77), the share of adults that are married (0.75), the share of children living with a single parent (-0.72), and the share of births that were to unwed mothers (-0.71).
- At the county level, the highest correlates of social capital were violent crime (-0.73), the share of children with a single parent (-0.71), the share of adults currently married (0.69), voting rates (0.59), and nonprofits plus congregations (0.57).
- Despite the outsized role that religious communities have played in social capital investment, indicators of religious adherence and commitment were generally weakly (or even negatively) correlated with our social capital scores, both at the state and county levels. This may suggest that social capital organized around religion may be displaced by secular sources of social capital, that the availability of resources provided by secular social capital weakens religious commitment, or that people in distressed places turn to religious communities for the support that is missing in other parts of their lives. This question is a subject for future Social Capital Project research.
- Our social capital indices correlate strongly with earlier social capital indices across states and counties, and with other indices such as the Family Prosperity Institute's Family Prosperity Index, Opportunity Nation's Opportunity Index, and the Economic Innovation Group's Distressed Communities Index.
- We show the correlations of our indices and subindices with 59 state-level and 50 county-level benchmarks reflecting a range of economic, social, demographic, educational, health, and other outcomes.
- Our index is a clear improvement on the Penn State index, based on this benchmarking, but remarkably, Robert Putnam's state index from *Bowling Alone*, published nearly two decades ago, has slightly higher benchmark correlations than ours. Because our index captures the health of family life, and because it is based on up-to-date and freely available data (including at the county level), we still prefer it to the Putnam measure. The fact that the correlation between the two state-level indices is 0.81 reassuringly suggests that very different approaches to social capital measurement capture the same essential construct.

INTRODUCTION: WHY BUILD A SOCIAL CAPITAL INDEX?

Discussions about American society, to the extent they involve facts, revolve around problems reflected in economic, demographic, and political *measures*. What gets defined as a problem, which causes attract interest, what consequences are deemed worrisome, and how effective are attempted remedies—all of these depend on having reasonable measurements of the things under study.

The result is that our understanding of the world is framed by measureable problems, causes, and consequences, and is less attuned to those that are more difficult to measure. For example, the development of gross domestic product (GDP) is one of the great successes in the history of measurement.[1] But today's debates are often hindered by the imbalance between well-measured economic variables such as GDP and less well-measured social, cultural, and psychological ones.

Social capital—the aspects of our relationships that produce benefits for us—falls into this second group. Economic factors and outcomes are important, but if we neglect the health of our associational life, we will misdiagnose the causes of many problems and tend to focus on economic priorities over social ones. Measuring "social capital," however, is no simple matter. Different people—different researchers—use the phrase to mean different things. And many aspects of what gets lumped under "social capital" that are quantifiable are infrequently included in household surveys or administrative data.

Yet, the various attributes and resources to which "social capital" refers are likely to be important. It is incumbent on researchers to develop high-quality measurements of social capital, as well as the more specific things to which it refers. Absent these measures, policymakers will never have a complete picture of how the nation is faring.

This report introduces a new index of social capital and describes its construction. It presents state- and county-level estimates of social capital and its subcomponents. Finally, it assesses the extent to which these measures correlate with a range of social, economic, demographic, and other benchmarks. We are providing the data behind our indices and subindices; it is our hope that they will be used by other researchers and policymakers to gain a more complete and accurate picture of the nation's challenges.

WHAT IS "SOCIAL CAPITAL"?

As discussed in our flagship report, "What We Do Together," the basic idea of social capital as something important that is related to social relationships, social networks, and civil society has a long history.[2] The reference to capital suggests that key to the concept is the conjecture that aspects of our associational life are productive for us.[3] Some scholars have described social capital as inhering in our social networks, as an attribute of collectives.[4] Communities may be said to have more or less productive social capital, or social capital that is differentially productive for the particular ends valued by community members. Others have put the focus on the individual, so that a person's social capital may be characterized as more or less productive for them.[5] These different emphases may be reconciled by positing social capital as a feature of individual *relationships*, so that an individual's social capital is typified by the aggregation of her relationships, and community-wide social capital is the aggregation of all the relationships across members.

But what actually constitutes social capital is not consistently defined across researchers. For example, consider "trust." Is trust an element of social capital—a characteristic intrinsic to relationships that is productive—or is it the consequence of a community having productive social capital (something that social capital produces)? Depending on the researcher, social capital may or may not include the content of relationships, the structure of relationships, or the number of relationships.

It is also likely that different elements of social capital—networks or shared values, for instance—have different causes and effects. And different forms of associational life—families, communities—may be more or less important as incubators of social capital. Different aspects of social capital may even be in tension with each other; social-capital-building within families can come at the expense of social capital investment in neighbors, for instance.

We take a pragmatic approach to these issues. In our understanding of social capital, close and nurturing relationships with other people almost self-evidently provide benefits. Therefore social capital is likely to be "greater" or more productive in families, communities, and organizations with an abundance of close, supportive relationships. Social capital is also likely to be reflected in cooperative activities. These activities may be informal (e.g. conversing or working together with neighbors), or formal (e.g. membership in groups or service on a committee). Some cooperative activities may be formalized in institutions (e.g. governments, schools, news media, corporations), including nonprofit organizations specifically meant to deliver benefits or to represent interests. Social capital is also reflected in trust in other people, confidence in institutions, mutual generosity, high collective efficacy, and low social disorganization.

In our view, places where these features of social life come together have "high," or "more," or more productive social capital—features of social life that provide benefits to community and family members. Places with a dearth of these features

have “low,” or “less,” or less productive social capital. We try to minimize the extent to which “social capital” reflects value judgements; what is productive social capital for some—criminal networks, for instance—may appear to others to be deeply problematic. Many of the indicators that go into our index are about the extent to which people do things together, without regard to what they are doing.

Nevertheless, there is no getting around the fact that any specific way of measuring social capital will involve normative considerations as to what to include or exclude. And other ambiguities are unavoidable. Our index takes a high violent crime rate as reflecting low social capital—a diminished ability to maintain social order—but it could also reflect tight and effective social networks taking the form of gangs.

Our conceptualization of social capital keeps associational life central. Two implications follow from this focus. First, our index affords greater importance than is often given to family relationships. The family is ultimately the most intimate form of social life, and the bedrock for other social capital investment. Second, while our index includes various measures of “civic engagement,” it excludes those indicators of civic engagement that do not involve associational life. For example, we ignore measures of civic or political knowledge, as well as those that emphasize following current events or news. In this way, we try to draw intuitive boundaries around the concept of social capital.

PAST EFFORTS TO DEVELOP A SOCIAL CAPITAL INDEX

Ours is not the first effort to construct an index of social capital. Robert Putnam’s foundational 2000 book *Bowling Alone* featured a state-level index.[6] It included 14 indicators in five categories: community organizational life, engagement in public affairs, community volunteerism, informal sociability, and social trust. Putnam’s index was a simple average of the 14 scores (after standardizing them to put them on a common scale). These measures covered the second half of the 1970s, the 1980s, and the first half of the 1990s, but generally not the same years.

The surveys that Putnam consulted for these data were not always designed to be representative of every state, however. That is to say, some surveys are designed so that the participants are broadly representative only of the American population. Those surveys will include many people from many states, but for any given state, it is not necessarily the case that the participants represent the state’s population well. Further, the measures are out of date, since *Bowling Alone* was published in 2000, and updating the index would require purchasing data that is not otherwise publicly available.

In a 2000 paper, economists Alberto Alesina and Eliana La Ferrara included a state-level map displaying social capital index levels, divided into four unequally-sized categories.[7] They used measures of group participation, trust, and presidential election voting rates, all from the General Social Survey (GSS). Unfortunately, the

GSS is not designed to be representative of each U.S. state; it is representative of the nation as a whole.

In a 2006 paper, Daniel Kim and several coauthors updated Putnam's work and created two state-level social capital indices from 10 of Putnam's indicators.[8] This smaller group still represented all five of Putnam's original categories. One index included community volunteerism, informal sociability, and social trust, and the other included engagement in public affairs. Both indices included community organizational life. As was the case in *Bowling Alone*, some of the data comes from surveys that were not designed to represent every state. In a subsequent paper, Kim and Chul-Joo Lee created another state-level index, using the Annenberg National Health Communication Survey (covering 2005-2008).[9] The index indicated the average number of formal and informal groups, out of 15 different types, in which adults participated. However, this survey, like the GSS, was not designed to be representative of each state.

Also in 2006, the National Conference on Citizenship, in association with the Center for Information and Research on Civic Learning and Engagement and the Saguaro Seminar, introduced a "Civic Health Index.™"[10] It was comprised of 40 indicators, grouped into nine categories. Most of these categories are clearly related to social capital: "connecting to civic and religious groups," "trusting other people," "giving and volunteering," "connecting to others through family and friends," "participating in politics," and "trusting and feeling connected to major institutions." Others, however, while reasonable in an index of civic health, reflect social capital much less directly, including "staying informed," "understanding civics and politics," and "expressing political views."

The Civic Health Index™ generally weights all of the indicators within a category equally and then weights the category scores equally to compute the index. Index values were estimated at the national level from 1975 to 2004. The index declined by over seven percent from 1975 to 1995, then made up over half of that decline by 2003. No state or county estimates are available.

The Legatum Prosperity Index™ has been assessing nations around the world since 2007, and beginning in 2008, social capital has been represented via a social capital subindex.[11] This subindex has changed over time, but among the indicators included have been donations, volunteering, membership in groups, trust, helping strangers, marital status, importance of religion and friends, having reliable friends, voter turnout, voicing opinions, and being treated with respect. The most recent index compares 149 countries, but no data are available at the state or county level. The social capital subindex relies on Gallup data, which must be purchased.

The most influential social capital index in recent years has been one originally produced by Anil Rupasingha, Stephan Goetz, and David Freshwater and subsequently updated by Penn State University's Northeast Regional Center for Rural Development.[12] This index is available at the county level—the first available

at this level of disaggregation. The most recent version incorporates data on presidential voting rates in the 2012 election, mail-in response rates for the 2010 decennial census, domestically-oriented non-profit organizations per capita, and group membership organizations and recreational establishments ("associations") per capita. We discuss some shortcomings of this index in detail in the next section.

The Need for a New Social Capital Index

This brief review highlights the shortcomings of these previous sources of social capital estimates. Several indices rely on data that is out of date. A number of them either include a limited range of social capital indicators or include indicators that are less obviously about social capital. In particular, the health of family life is under-examined by the earlier measures. And some depend on data sources that are not freely available.

Several of the indices do not provide estimates below the national level. Of the indices available at the state level, all rely at least in part on surveys that cannot be assumed to represent state populations well.

Only the Penn State index provides county-level estimates. But after researching the index, we were dissatisfied. The Penn State indicators tap a limited range of the concepts invoked by "social capital." The index includes nothing on family health, volunteerism, charitable giving, informal community engagement, social support, or collective efficacy. Presidential voting and census mail-in rates are tenuous indicators of social capital, as they relate people primarily to federal, rather than local institutions.

With only four indicators, problems in any one of them can seriously affect the resulting index. Several of the indicators suffer from interpretive or data issues. For instance, places with many nonprofit organizations may have high civic engagement, but that might also simply reflect that they have a lot of problems to address. In addition, to the extent that nonprofit organizations are professionally run, they may actually crowd out informal volunteerism and a sense of obligation to fellow community members. Further, the data used by Penn State are from IRS registrations, and a large number of religious nonprofits are not required to register. (Nor are the smallest nonprofits.)[13] Some faith communities, such as the Church of Jesus Christ of Latter-day Saints (also known as the "LDS" or "Mormon" Church), deliberately oppose registration.[14] One study of Indiana found that registered nonprofits in the IRS data included only 60 percent of nonprofits they were able to identify from other sources.[15]

The establishment data only counts places with paid employees and an Employer Identification Number (EIN). The distinction between an "establishment" and an organization relying on voluntary service is potentially a profound problem. For example, in the 2015 establishment data, Utah has just 658 religious

establishments. But data on religious congregations (described below) indicates that in 2010 there were over 5,500 congregations in the state.[16] The reason for the discrepancy may be that the organization of the Mormon Church relies on volunteers rather than on employees. Or it may be that because religious organizations often are not required to register with the IRS, many do not have EINs. The distinction between an "establishment" and an organization relying on voluntary service also likely affects non-religious nonprofit organizations, such as parent-teacher organizations and civic membership groups.

Finally, the establishments measure constructed by the Penn State researchers includes a variety of athletic and recreational establishments, including golf courses, fitness centers, and bowling alleys. While those kind of inherently social establishments reflect social capital, they are very different than the membership organizations otherwise counted in their establishment measure (including labor unions, political organizations, civic organizations, and the like). Further, what the researchers have included and excluded seems arbitrary. Left out are movie theaters, theater and dance companies, racetracks, zoos, theme parks, arcades, casinos, skiing facilities, museums, libraries, bars, and dance clubs.

When we compared the Penn State index to a variety of benchmark indicators, it was only moderately or weakly related to them. The correlation of the most recent version of the index with county poverty rates is -0.34, for instance (where -1.00 would indicate, roughly, that variation in social capital completely explains variation in poverty rates). As we will see below, our index is more strongly correlated than the Penn State index is with most of our benchmarks, often much more strongly.

We confirmed we could replicate the Penn State index independently, which revealed that census response rates were actually negatively correlated with the Penn State social capital score.[17] That was another red flag, since the hypothesized relationship—the reason for its inclusion in the index—was that higher response rates indicate greater social capital (i.e., stronger norms regarding the responsibilities of citizenship, or greater confidence and trust in the federal government).

We also estimated a corresponding state-level index using Penn State's approach, and this time all four indicators were positively correlated with the index.[18] The state-level correlations with our benchmarks were stronger than the county-level ones, but still lower than what we expected. In particular, when we looked at how the state we know best, Utah, was ranked along the Penn State index and its components, we saw large discrepancies with other research. For instance, Utah is ranked first on the Family Prosperity Initiative's Family Prosperity Index.[19] According to the U.S. Religion Census, administered by the Association of Statisticians of American Religious Bodies, Utah has the highest rate of religious adherence in the country, and it is ranked 7th in terms of congregations per capita.[20] Similarly, research using the Current Population

Survey (CPS) indicates that Utah has the highest rate of religious volunteerism, but it also ranks the state 15th in terms of secular volunteerism.[21] Putnam's index from Bowling Alone ranks it at 14th in terms of social capital, and it is in Alesina and La Ferrara's top group of nine states.

Yet, the Penn State index ranks Utah 20th in terms of census response rates, 45th in terms of presidential voting rates, second worst in terms of nonprofits, and worst in terms of associations. Given these rankings, Utah ranks worst overall on the Penn State index.[22] The establishment data that is the basis for one of the four inputs into the Penn State index ranks Utah last in the nation in terms of religious organizations per capita.

With such large state-level discrepancies, it is hard to imagine that the county-level Penn State index is reliable for all but the most disparate comparisons. Our conclusion was that a better social capital index was needed than those currently available.

CONSTRUCTING A NEW STATE SOCIAL CAPITAL INDEX

For the better part of the past year, the Social Capital Project has been gathering county- and state-level data on a range of social, economic, demographic, health, religious, and other indicators. Broadly speaking, we looked for indicators related to family structure and stability, family interaction and investment, civil society, trust and confidence in institutions, community cohesion, institutions, volunteerism, and social organization. There are not many surveys that provide such variables using samples designed to represent every state or county. Nor are there many censuses or administrative data sources that capture the entire population of interest in all states or counties. The limited availability of data was a fundamental constraint that removed much of the hard work that otherwise might have gone into choosing among many dozen possible indicators.

Starting from around 20 county-level measures and an additional 50 state-level indicators, we eventually settled on seven at the county level and 25 at the state level. These indicators are from data collected by various sources between 2006 and 2016, primarily from 2013 forward. The details of how we selected these variables can be found in the Appendix. Table 1 provides an overview of the indicators and their derivation. Appendix Table A1 displays the full range of variables we considered and gives their sources.

Our state social capital index includes seven dimensions, represented by five subindices and two stand-alone indicators. These dimensions were chosen partly out of data constraints, but we also considered the ways in which past researchers had theorized about social capital and associational life.[23] We then combined these seven component variables to create an index score for each state.

Table 1. State-Level Social Capital Index Indicators

Indicator	Data Source	Notes
Family Unity Subindex		
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates; 2007-2011, 5-year estimates for 27 counties in eight states	American FactFinder Table S1301
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Family Interaction Subindex		
Share who report child spends at least 4 hours per weekday in front of a TV	National Survey of Children's Health, 2016	includes watching TV, videos, or video games
Share who report child spends at least 4 hours per weekday on electronic device, excluding homework	National Survey of Children's Health, 2016	includes computers, cell phones, handheld video games, and other electronic devices
Share who report someone in the family read to child every day in past week	National Survey of Children's Health, 2016	restricted to parents with child 0-5 years old
Social Support Subindex		
Share saying they get the emotional support they need only sometimes, rarely, or never	Behavioral Risk Factor Surveillance System	analysis of BFRSS microdata, 2006 & 2010 estimates averaged to get pre- and post-recession estimates
Average number of close friends reported by adults	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share of adults reporting they and their neighbors do favors for each other at least 1x/month	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting they can trust all or most of their neighbors	Volunteer Supplement to the November 2013 Current Population Survey	
Community Health Subindex		
Share of adults who report having volunteered for a group in the past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having attended a public meeting re. community affairs in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having worked with neighbors to fix/improve something in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share of adults who served on a committee or as an officer of a group	Volunteer Supplement to the November 2013 Current Population Survey	
Share who attended a meeting where political issues were discussed in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who took part in march/rally/protest/demonstration in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Membership organizations per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Registered non-religious non-profits plus religious congregations per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage); U.S. Religion Census: Religious Congregations and Membership Study, 2010	IRS data via National Center for Charitable Statistics & American FactFinder Table PEPANNRES; congregation data obtained via Association of Religious Data Archives, census conducted 2009-11
Institutional Health Subindex		
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey	U.S. Election Assistance Commission; rates based on citizen estimates from 2010 decennial census and ACS
Mail-back response rates for 2010 census	Census Bureau	
Share of adults reporting some or great confidence in corporations to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting some or great confidence in the media to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Share of adults reporting some or great confidence in public schools to do what is right	Volunteer Supplement to the November 2013 Current Population Survey	
Collective Efficacy		
Violent crimes per 100,000	FBI, Uniform Crime Reporting Statistics, 2014	
Philanthropic Health		
Share who report having made a donation of >$25 to a charitable group in past year	Volunteer Supplement to the September 2015 Current Population Survey	

Source: Social Capital Project.

Subindices

We transformed the original values of each indicator to "standard scores," by subtracting the mean value and dividing by the standard deviation of the indicator's distribution (a measure of variation). The mean of each standard score is zero, and the standard deviation is one. Standardizing the scores puts them on a comparable scale, allowing us to combine multiple indicators despite their initially having different distributions (including different minimum and maximum values). We reversed the polarity of certain measures, such as the share of births to single mothers, so that a larger positive standard score always corresponded with "more" social capital.

Each subindex is comprised of a weighted sum of standard scores. Simply adding multiple standard scores gives them equal weight in contributing to the subindex, but we wanted indicators to be weighted more or less depending on how well they reflected the concept embodied in the subindex. The weights are selected through a statistical technique called "principal components analysis" (PCA). Specifically, the weights are estimated so that the resulting subindex accounts for the maximum possible "variance," or variability, across the original scores. Some information in the original set of indicators is lost by using this "first principal component score" as the subindex, but the loss is minimized versus any other set of weights. It is analogous to finding the best angle from which to photograph a three-dimensional object so that the two-dimensional rendering retains the most information.

In the domain of family health, we created a "family unity" subindex and a "family interaction" subindex. The family unity subindex combines state-level data from the American Community Survey (2012-2016) on the share of births that are to unwed mothers (weight of 0.57), the percentage of children living in families headed by a single parent (0.60), and the percentage of women ages 35-44 who are married (and not separated) (0.57). (The weights could, in theory, range between -1.0 and 1.0, and they reflect the extent to which an indicator is correlated with the subindex itself. Ideally, the weights should be sizable and should all have the same sign.)[24] The subindex accounts for 91 percent of the variability across the original three variables of which it is comprised.

The family interaction subindex combines data from the 2016 National Survey of Children's Health on the share of children ages 0-5 read to every day by a family member (weight of 0.47), the share of children who watch television or videos or play video games at least four hours a day (0.65), and the percentage of children who use computers, cell phones, and other electronic devices for purposes other than schoolwork at least four hours a day (0.60). Our family interaction subindex accounts for 68 percent of the variability across the original three variables.

We created a social support subindex, comprised of several indicators from multiple sources. It includes the share of adults who sometimes, rarely, or never "get the social and emotional support [they] need," taken from 2006 and 2010

Behavioral Risk Factor Surveillance System data (weight of 0.50). It also includes, from the 2013 Civic Engagement Supplement to the CPS, the share of adults who do favors for neighbors at least once a month (0.49) and the share who trust most or all of their neighbors (0.54). The last indicator is the average number of "close" friends that adults report having in the 2008 Civic Engagement Supplement to the CPS (0.47). The resulting index accounts for 70 percent of the original variability across the four variables that comprise it.

Our community health subindex incorporates information on the share of adults who reported volunteering for an organization in the past year (weight of 0.33), the share who attended a public meeting to discuss community affairs (0.38), and the share who worked with neighbors to improve the community (0.39), all from the 2015 Volunteer Supplement to the CPS. It also includes the share of adults who served on a committee or as an officer of a group in the past year, from the 2013 Civic Engagement Supplement to the CPS (0.38). From the 2008 Civic Engagement Supplement to the CPS, we include the share who attended a public meeting where political issues were discussed (0.39) and the share who participated in a march, protest, rally, or demonstration (0.29). Our community health subindex accounts for 65 percent of the variability across eight indicators.

Further, we estimate, from 2015 County Business Pattern data on establishments, membership organizations per capita (weight of 0.30). Finally, we include a measure of non-profit organizations per capita (weight of 0.36). This was created by summing registered non-religious not-for-profit organizations per capita and religious congregations per capita. The former is from the December 2015 Internal Revenue Service Business Master File (accessed through the Urban Institute's National Center for Charitable Statistics). Most faith-based organizations, excepting colleges and health care organizations, are not required to register with the IRS. Only half of religious congregations do so, and the share varies by congregation.[25] We therefore added congregations per capita from the 2010 Religious Congregations and Membership Study, conducted by the Association of Statisticians of American Religious Bodies and accessed through the Association of Religion Data Archives.

Finally, we created an institutional health subindex. This subindex combines the rate at which citizen adults of voting age cast ballots in the 2012 and 2016 presidential elections (averaged over the two years, weight of 0.38), the rate at which residents returned the 2010 decennial census questionnaire through the mail (0.44), and the share of adults with "great" or "some" confidence in corporations (0.49), the media (0.38), and public schools (0.53) to do what is right. The voting data is from the U.S. Election Assistance Commission annual reports, the census response rates are from the Census Bureau, and the confidence measures are from the 2013 Civic Engagement Supplement to the CPS. The institutional health subindex accounts for 48 percent of the variability across the original five indicators. The lower proportion that it explains relative to the other subindices may reflect the weaknesses in the presidential voting and census response indicators discussed above.

Stand-Alone Indicators

We included in our state-level social capital index two stand-alone indicators to represent two other dimensions of associational life. The violent crime rate was included to reflect the level of "collective efficacy" (or conversely, of social disorganization). The idea is that communities high in social capital are better positioned to informally police their own community and enforce pro-social norms, and their residents are less likely to do harm to one another.[26] Violent crimes are better reported than crimes generally, which is why we do not use a broader measure. The source for this measure was the Federal Bureau of Investigation's Uniform Crime Reporting Program.

The second stand-alone indicator reflects philanthropic health—the share of adults who gave more than $25 in the past year to "charitable or religious organizations." By setting the threshold for giving low, this measure ensures that cross-state differences are not driven by income concentration at the top, where charitable giving is also somewhat concentrated.[27] This measure comes from the 2015 Volunteer Supplement to the CPS.

Combining the Dimensions of Social Capital

The final step was to create the index itself. We standardized the five subindex scores and the two stand-alone indicators to put them all on a common scale. We then ran principal components analysis on these seven variables to create weights for each of them: family unity (0.38), family interaction (0.41), social support (0.45), community health (0.33), institutional health (0.36), collective efficacy (0.28), and philanthropic health (0.40).

Each state's social capital index score was computed by taking the weighted sum of the seven standard scores and then standardizing this weighted sum. Index scores range from -2.2 to 2.1; a score of, say, 1.5 means that a state lies one-and-a-half standard deviations above the mean index score across states. Roughly, its social capital levels are higher than the average state's social capital by an amount 1.5 times the typical gap between a state and the average.

There is an unavoidable element of arbitrariness in creating a one-dimensional index to reflect a concept as complex and diffuse as "social capital." The usefulness of our index depends on its ability to represent a potentially important factor affecting a range of social, economic, and health outcomes. The index represents a "noisy" measure of a fuzzy concept. But it reflects those aspects of its constituent indicators that all measure the same "thing," and lets them contribute to the measure insofar as they reflect that thing. Our social capital index accounts for 56 percent of the variability across the two stand-alone indicators and the five subindices (each of which accounts for 48 to 91 percent of the variability across its constituent indicators).

CONSTRUCTING A NEW COUNTY-LEVEL SOCIAL CAPITAL INDEX

While the state index includes seven dimensions of social capital, our county index includes only four because fewer variables are available at the county level. These include three subindices—two of which contain their own subindex—and one stand-alone indicator. The construction of the county-level index is more complicated than for the state-level index. Table 2 shows the variables that go into the index. (See Appendix Table A1 for the full list of county-level variables we considered.)

Table 2. County-Level Social Capital Index Indicators

Indicator	Data Source	Notes
Family Unity Subindex		
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S1301
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Community Health Subindex		
Registered non-religious non-profits per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage)	via National Center for Charitable Statistics & American FactFinder Table PEPANNRES
Religious congregations per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010	via Association of Religious Data Archives, census conducted 2009-11
Informal Civil Society Sub-Index	various state-level sources (see Table 1)	combination of share who volunteered, who attended a public meeting, who report having worked with neighbors to fix/improve something, who served on a committee or as an officer, who attended a meeting where politics was discussed, and who took part in a demonstration in the past year (see text for details)
Institutional Health Subindex		
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey; ACS, 2012-2016, 5-year estimates	U.S. Election Assistance Commission; EAVS voting combined with American FactFinder Table B05003 estimates of citizens 18+; votes unavailable for Alaska counties, which we assign the statewide voting rate
Mail-back response rates for 2010 census	Census Bureau	via University of Michigan Population Studies Center, Institute for Social Research
Confidence in Institutions Sub-Index	Volunteer Supplement to the November 2013 Current Population Survey	combination of share reporting at least some confidence in corporations, in the media, and in public schools (see text for details)
Collective Efficacy		
Violent crimes per 100,000	FBI, Uniform Crime Reporting Statistics, 2008-14	via County Health Rankings, various editions: 2017 (2012-14 UCR data), 2015 (2010-12), 2014 (2009-11), and 2013 (2008-10)

Source: Social Capital Project.

Subindices

As when we created the state index, we transformed all original values to standard scores, though this time the mean and standard deviation applied to the distribution of values across counties rather than across states. As with the state-level subindices, our county-level subindices are weighted sums of standard scores, with the weights determined through PCA. These weights need not be the same as those produced from state-level data, where it is variation across states that is being analyzed.

We created the same family unity subindex as we did at the state level. The subindex combines county-level data from the American Community Survey (2007-2011[28] and 2012-2016) on the share of births that are to unwed mothers (weight of 0.52), the percentage of children living in families headed by a single parent (weight=0.62), and the percentage of women ages 35-44 who are married (and not separated) (weight=0.59). Reassuringly, these weights are very similar to those produced in the state-level analyses, suggesting that the state- and county-level subindices are measuring the same underlying construct. It does explain less of the variability in the original three variables than the state-level subindex does—73 percent instead of 91 percent.

We also created a community health subindex, though due to data availability issues, the county subindex incorporates less information than the corresponding state-level one. We were concerned that the available county-level indicators of community health did not fully capture the underlying concept. In particular, we lacked the CPS indicators of informal civil society and activities requiring a time commitment that were available at the state level—working together with neighbors, attending public meetings, serving on committees or as officers, volunteering, attending political meetings, and participating in demonstrations. We worried about this omission, in particular, because professionalized services offered through membership organizations and other nonprofit groups might be expected to crowd out informal and time-intensive volunteer activities, potentially leaving the stock of social capital thinner than it might have been. Inherently, formal organizations that serve members' or clients' interests allow people to "farm out" social capital activities. To include only a measure of the health of formal organizations would penalize places where community involvement is more informal.

To resolve this concern, we first went back to the state data and created a new subindex of "informal civil society" for each state. The subindex score was the first principal component score combining the six CPS variables above.[29] We then assigned this subindex score to every county within a state. In other words, the only variation in the subindex score is between states, and all counties within a state get the same score.

Next, back in the county data, we created five different candidate subindices, using different combinations of the informal civil society subindex score, membership organizations per capita, non-religious non-profit organizations per capita, congregations per capita, and the combination of non-religious non-profits and congregations. We computed, for each candidate subindex, the population-weighted average subindex score across a state's counties. Then we correlated each of these state averages with the state-level community health subindex. We selected the subindex out of the five candidates that produced the strongest correlation.

The final county-level community health index combines non-religious non-profits per capita (weight of 0.70), congregations per capita (0.48), and the informal civil society subindex (0.53). The population-weighted average of this subindex across a state's counties correlated at 0.97 with the state-level community health subindex. For context, the correlation of the state-level subindex with the version of the county community health subindex we favored prior to adding in the informal civil society subindex was 0.75. The county-level community health subindex accounts for 55 percent of the variability in the three original variables that go into it.

Finally, we included an institutional health subindex. As with the community health subindex, we were concerned about the incomplete data we had at the county level. In this case, we lacked information about confidence in institutions. We took the same approach as for community health. In the state data, we created a confidence subindex that included the three institutional confidence variables.[30] We assigned every county in a state the state's subindex score. Then we created three versions of a county-level institutional health index, using different combinations of presidential voting rates, census response rates, and the confidence subindex.

As before, we created population-weighted state averages across a state's counties and compared them to the state-level institutional health index. The version that correlated most strongly included presidential voting rates (weight of 0.63), census response rates (0.41), and the confidence subindex (0.66), accounting for 44 percent of the variability in those three measures.[31] The correlation of the population-weighted state average across counties with the state-level institutional health subindex was 0.98.

We did not attempt to create subindices at the county level for family interaction or social support, lacking data.[32]

Stand-Alone Indicator

The county-level social capital index includes one stand-alone indicator. As for the state-level index, the violent crime rate was included to reflect the level of

collective efficacy in a county. It comes from the Federal Bureau of Investigation's Uniform Crime Reporting Program.

The charitable giving measure from the CPS is not available at the county level, so it is not included as a stand-alone indicator.

Combining the Dimensions of Social Capital

Computing the county-level index was also a bit more involved than for the state index. We standardized the three subindex scores and the collective efficacy stand-alone indicator to put them all on a common scale. We then ran PCA on these four variables. The weights were 0.53 for family unity, 0.47 for community health, 0.49 for institutional health, and 0.51 for collective efficacy. We took the weighted sum of the four standard scores to get the first iteration of the index, which accounted for 51 percent of the variability in the original four constituent measures.

However, information on violent crime rates was missing for 178 counties (out of 3,142). We were able to compute scores for 103 of these counties by creating an alternative index that left out violent crime. (The weights were 0.55 for family unity, 0.56 for community health, and 0.62 for institutional health. The subindex accounted for 56 percent of the variability in the three original variables.) Where a county lacked a score using the original index, we gave it the score on the alternative index. These two indices were correlated with each other at 0.94, so where states ranked on one was largely where they ranked on the other.

The final county-level index scores range from -4.3 to 2.9, indicating greater dispersion than exists across states.

To assess how the county-level and state-level indices might differ from one another, we created another state-level index using only the three subindices and the stand-alone violent crime indicator that are in the county index. This index correlated with the fuller state-level index at 0.96.[33] We also computed for each state the population-weighted average across counties of the county-level social capital index. The correlation between it and the state-level social capital index was 0.95, and the correlation between it and the state-level index based on the county-level methods was 0.98. Thus, the thinner county-level index likely ranks counties very similarly to the way in which the fuller state-level index would rank them.

In sum, our state index captures a fuller set of social capital indicators than any previous effort. We could not find a reliable measure of generalized trust at the state or county levels, but we believe we have covered most of the essential domains discussed by past social capital theorists. We considered including measures of segregation by race and income in our indices. The idea is that places

where different types of people largely live apart are likely to be missing out on some benefits of social capital. However, research suggests that more diversity actually tends to reduce levels of social capital.[34] Intuitively, it is more difficult to engage with people when they are not "like" us. In the end, we decided not to incorporate segregation into our indices. We view segregation as having an indeterminate effect on *levels* of the many dimensions of social capital. It seems more likely that segregation affects the distribution of social capital within a state or county.[35]

FINDINGS

Table 3a lists the state social capital index ranks and the rankings on the individual subindices of the index. Table 3b lists the county social capital index and subindices as national percentiles. Figure 1 displays the state social capital scores in a map, and Figure 2 displays the county-level data. We have social capital scores for 2,992 of 3,142 counties, containing 99.7 percent of the American population. Before examining the places with the highest and lowest social capital scores, we provide some initial details about the distribution of social capital in America.

Table 3a. State Rankings on Social Capital and its Subindices

State	FIPS Code	Overall State SCI	Family Unity Subindex	Family Interaction Subindex	Social Support Subindex	Community Health Subindex	Institutional Health Subindex	Collective Efficacy Subindex	Philanthropic Health Subindex
Alabama	01	42	44	41	38	42	29	39	45
Alaska	02	20	17	18	18	3	25	50	24
Arizona	04	47	41	47	43	48	49	35	37
Arkansas	05	46	36	50	42	46	39	42	47
California	06	40	23	28	50	40	41	34	42
Colorado	08	6	6	5	12	17	12	23	4
Connecticut	09	19	22	11	30	19	16	12	5
Delaware	10	34	42	39	33	30	32	43	28
District of Columbia	11	37	51	12	44	1	28	51	22
Florida	12	48	46	42	48	51	27	46	51
Georgia	13	41	43	40	45	41	34	31	38
Hawaii	15	31	21	43	37	36	26	13	34
Idaho	16	16	2	23	15	22	19	7	21
Illinois	17	28	25	27	25	34	38	30	27
Indiana	18	23	29	21	21	25	14	29	26
Iowa	19	9	10	14	7	13	3	16	15
Kansas	20	18	9	36	17	20	5	28	12
Kentucky	21	35	28	45	32	39	36	6	43
Louisiana	22	51	49	51	47	49	48	45	50
Maine	23	7	26	2	6	9	22	2	23
Maryland	24	26	32	22	36	21	23	41	18
Massachusetts	25	21	18	17	22	24	7	33	29

Michigan	26	27	34	35	27	27	9	38	32
Minnesota	27	2	5	10	2	11	1	10	2
Mississippi	28	45	50	48	31	38	40	17	46
Missouri	29	25	27	31	19	32	13	40	30
Montana	30	14	12	7	13	4	47	25	7
Nebraska	31	8	7	13	9	15	4	18	11
Nevada	32	50	40	49	51	50	50	49	16
New Hampshire	33	4	11	3	11	5	6	4	6
New Jersey	34	30	14	46	41	45	18	14	20
New Mexico	35	49	48	34	35	23	51	47	44
New York	36	43	35	25	49	44	46	32	48
North Carolina	37	33	37	29	34	37	35	27	36
North Dakota	38	11	3	16	8	16	8	15	19
Ohio	39	29	39	37	23	31	31	19	33
Oklahoma	40	39	30	38	39	29	45	37	39
Oregon	41	13	20	15	10	6	37	11	10
Pennsylvania	42	24	31	33	28	28	33	24	14
Rhode Island	44	22	45	6	24	26	17	9	17
South Carolina	45	36	47	32	40	35	20	44	31
South Dakota	46	10	19	20	4	8	11	26	9
Tennessee	47	38	38	26	29	43	44	48	35
Texas	48	44	24	44	46	47	43	36	41
Utah	49	1	1	8	1	10	30	8	1
Vermont	50	5	15	1	5	2	21	1	40
Virginia	51	17	13	24	26	18	10	5	8
Washington	53	15	8	19	20	12	15	20	13
West Virginia	54	32	33	30	14	33	42	22	49
Wisconsin	55	3	16	9	3	7	2	21	3
Wyoming	56	12	4	4	16	14	24	3	25

Source: Social Capital Project, Download Data (xlsx)

Table 3b. County-Level Index and Subindices as National Percentiles

County	FIPS Code	Overall County SCI	Family Unity Subindex	Community Health Subindex	Institutional Health Subindex	Collective Efficacy Subindex
Autauga County, Alabama	01001	51	71	10	69	35
Baldwin County, Alabama	01003	51	67	11	62	46
Barbour County, Alabama	01005	12	5	32	34	25
Bibb County, Alabama	01007	45	65	30	18	65
Blount County, Alabama	01009	58	75	13	68	47
Bullock County, Alabama	01011			59	17	29

Source: Social Capital Project, Download Data (xlsx)

The maps in Figures 1 and 2 display states and counties broken out into five (roughly) equally-sized groups—ten states per group and 598 counties.[36] These groups do not contain the same number of people, however. The states with the lowest social capital include 29 percent of the nation's population, while the top grouping is home to just nine percent of Americans. Over half the population (56 percent) is in the lowest two groups of states, while 21 percent is in the top two groups. At the county level, 39 percent of the population in non-missing counties lives in the bottom fifth, while just eight percent lives in the top fifth. Nearly six in ten (59 percent) of Americans live in the bottom two fifths of counties, compared with 24 percent living in the top two fifths.

Across states, the social capital scores are strongly correlated with each subindex. The correlations are 0.89 for social support subindex scores, 0.82 for family interaction, 0.80 for philanthropic health, 0.76 for family unity, 0.72 for institutional health, 0.65 for community health, and 0.55 for collective efficacy. The 21 correlations between the seven subindices are all positive, except that community health and collective efficacy, surprisingly, are correlated at -0.11. Otherwise, the correlations range from 0.17 (family unity and community health) to 0.74 (family interaction and community health).

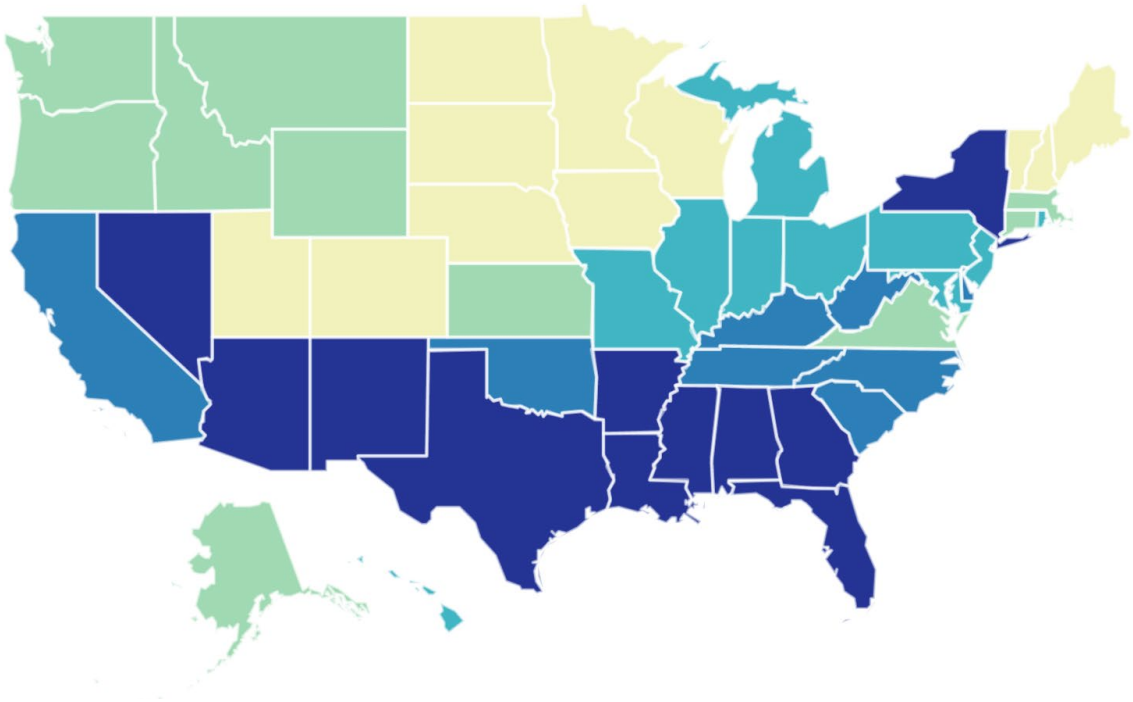
At the county level, social capital scores are also strongly correlated with all four subindex scores. The correlations are 0.76 for the family unity subindex, 0.73 for collective efficacy, 0.71 for institutional health, and 0.65 for community health. The fact that these correlations are all fairly strong means that our state and county indices do not simply reflect a single dimension driving the results. The correlations between the four subindices range from 0.24 (family unity and community health) to 0.47 (family unity and collective efficacy).

Diving deeper into the components of the indices at the state level, the indicators with the strongest correlation to social capital were the volunteer rate (0.86), heavy television watching by children (-0.81), the share of adults who made charitable contributions (0.80), the share with emotional and social support (0.80), heavy usage of electronics among children (-0.77), the share married (0.75), the share of children living with a single parent (-0.72), and the share of births that were to unwed mothers (-0.71). While not included in the index, the share who trust most of their neighbors was correlated at 0.86 with it. At the county level, the highest correlates of social capital were violent crime (-0.73), the share of children with a single parent (-0.71), the share of adults currently married (0.69), voting rates (0.59), and nonprofits plus congregations (0.57). The importance of the absence of many of the key state-level variables at the county level is evident.

A few state-level indicators had low correlations with the index, including membership organizations per capita (0.07), confidence in the media to do what is right (0.20), having participated in a march or demonstration (0.21), and non-religious non-profits and congregations per capita (0.29). Three of these indicators go into the community health subindex, which may explain why it is less strongly

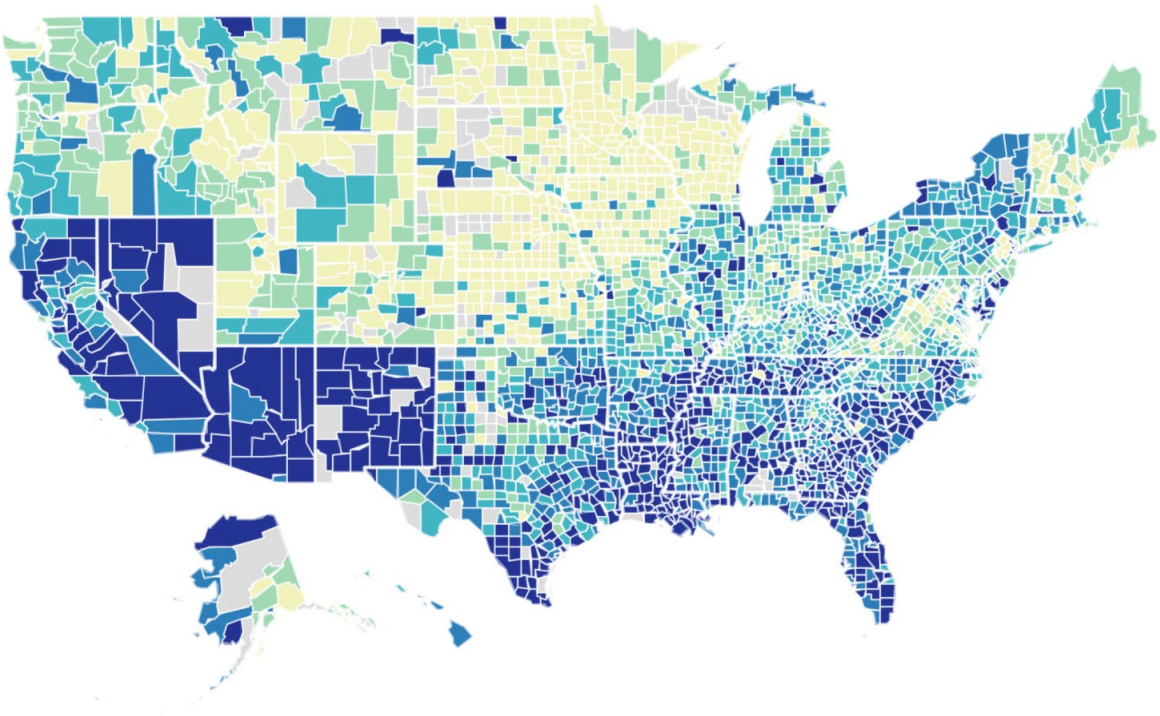
correlated with social capital scores than most of the other subindices. Relatedly, the Penn State social capital index relies on variants of the membership organization and non-profits indicators. Our replication of the Penn State index correlates only at 0.37 with our index, as we will see below. At the county level, census response rates—one of the four Penn State components—was correlated with our index at only 0.26, but the correlation between the 2014 Penn State index and our county index was 0.56. We view this as evidence that the relatively thin county-level indices do not measure social capital as strongly as our richer state-level index does.

Figure 1. Social Capital Index and Subindex Scores by State



Source: Social Capital Project. Download Data (xlsx)

Figure 2. Social Capital Index and Subindex Scores by County



Source: Social Capital Project. Download Data (xlsx)

Of interest for future work on social capital measurement, there were other state-level variables not included in our index that had relatively low correlations with the index: discussing politics with family and friends was negatively correlated (-0.20), and there were low positive correlations for voting in local elections (0.10), routinely eating dinner with one's family (0.31), and supporting a political candidate (through time, money, or endorsement, 0.32). Most surprisingly, despite the outsized role that religious communities have played in social capital investment,[37] several religious indicators were unrelated to our social capital index, including religious adherence rates (-0.02), congregations per capita (0.08), frequent church attendance (-0.34), and participation in a religious group (0.22). This absence of correlation—if not the negative correlations—recurred at the county level, where the correlation between religious adherence and our social capital index was only 0.17 and the correlation between congregations per capita and our index was 0.24. The relationship between religion and social capital will be a subject of future Social Capital Project research.[38]

The Appendix displays state maps where the social capital measure is the version used at the county level (Appendix Figure A1) and where it is the population-weighted average county social capital score (Appendix Figure A2). Fifteen states move from one quintile to an adjacent one, comparing Figure 1 to Appendix Figure

A1, and eleven states move (again, to an adjacent quintile) comparing Figure 1 to Appendix Figure A2. These results offer some reassurance that the thinner county-level index is approximating social capital in the same way as the richer state-level index. Appendix Figures A3-A9 display maps presenting each of the seven state subindices, and Appendix Figures A10-A13 map the four county subindices.

We now consider where social capital is prevalent, and where it is relatively scarce.

The Good: The Mid-Continent North and Northern New England

The twelve states with the highest social capital scores are distributed across two continuous blocs. The larger bloc—call it the Mid-Continent North—includes nine states running from Utah (ranked first in the nation), through Wyoming and Colorado, across the Dakotas and Nebraska, and over to Iowa, Minnesota (ranked second), and Wisconsin (third). This bloc is mostly rural, with few cities having more than 200,000 residents. While just eight percent of Americans live in the Mid-Continent North, it includes 51 percent of Americans living in a top-fifth county (and 63 percent of top-fifth counties). Just over half (51 percent) of the population in the nine states lives in a top-fifth county, and only four percent lives in a bottom-fifth county.

The counties in the Mid-Continent North that include the largest cities generally have social capital scores in the top fifth of counties (Provo, Utah; suburban Denver; and Madison, Wisconsin), the next-highest fifth (suburban Denver; Minneapolis and St. Paul; and Lincoln, Nebraska), or the middle fifth (suburban Denver again; Omaha, Nebraska; Colorado Springs; Salt Lake City). Only the counties of Denver, Des Moines, and Milwaukee (home to the cities of the same names) have social capital scores below the middle fifth; Milwaukee's is in the bottom fifth.

Just four other counties in the Mid-Continent North have social capital scores in the bottom fifth; with Milwaukee, they comprise one percent of this bloc's counties. All three are thinly populated. Crowley County, Colorado—population around 5,500—has the distinction of being the county with the highest share of residents who are incarcerated (thanks to a state prison there). Rolette County, North Dakota has a poverty rate exceeding 30 percent, and three-quarters of its 15,000 residents are Native American. Buffalo County, South Dakota has only 2,000 residents, is home to the Crow Creek Indian Reservation, and has a poverty rate approaching 40 percent. Only seven counties in America have a higher concentration of Native Americans than these two. One of them is Oglala Lakota County, also in South Dakota, and also in the bottom fifth of social capital. Oglala Lakota County is home to the Pine Ridge Indian Reservation and 91 percent of its 15,000 residents is Native American (highest in the nation). It has a 54 percent poverty rate.

Aside from the Mid-Continent North, the other three states with social capital scores putting them in the top twelve are in Northern New England: Maine, New Hampshire, and Vermont. This bloc is also very rural, with only one city having more than 100,000 people (Manchester, New Hampshire). No county in Northern New England has social capital levels below the middle fifth. In contrast, 40 percent of the counties are in the top fifth of social capital (containing 43 percent of the region's top-fifth-county population). The counties including Burlington, Vermont; Portsmouth, New Hampshire; and Portland, Maine are all in the top fifth of counties, while Manchester is in the second-highest fifth. The three states include five percent of Americans living in top-fifth counties (and three percent of top-fifth counties), despite being home to just one percent of the US population.

Together, these two regions comprise nine percent of the American population and 19 percent of counties, but 56 percent of Americans living in top-fifth counties and 66 percent of top-fifth counties.

The top twelve states tend to rank highly on all of the dimensions of social capital. There are a total of 84 state subindex scores in the group (seven subindices multiplied by 12 states). Of these scores, 55 are ranked in the top 12 for the subindex (65 percent). For each subindex, the top 12 includes between six and eight states that are in the top 12 for the overall social capital index, except that the top 12 states by the social support subindex include the top 11 states ranked on overall social capital (and the 12th state in the overall ranking is 16th in terms of social support).

Utah ranks first in terms of family unity, social support, and philanthropic health, and Minnesota ranks first in terms of institutional health. Minnesota and New Hampshire are in the top 12 on all seven dimensions, and Utah is for all but institutional health where it is only ranked 30th. Vermont is top ranked in terms of family interaction and collective efficacy. Washington, D.C.—ranked 37th on the overall index—comes in at the top in terms of community health, a function of the high concentration of non-profit organizations and the high informal civic engagement (both related to its being the nation's capital). Maine manages to place 6th on the strength of its family interaction and collective efficacy, despite mediocre scores on family unity, institutional health, and philanthropic health.

The Bad: The Far South and New York

Of the 11 states with the lowest levels of social capital, 10 of them are included in a contiguous bloc of states running from Nevada (ranked 2nd worst), Arizona, and New Mexico, across Texas to Louisiana (ranked worst) and Arkansas, then over to Mississippi, Alabama, Georgia, and Florida. These states—comprising a region we dub the Far South—contain the entire southern border of the United States, save California's border with Mexico. They include states with generally low levels of social capital—such as Louisiana, Nevada, Arizona, and New Mexico—as well as some with counties that have somewhat higher levels.

The Far South includes a number of the most populous counties in the nation. Nearly all of these large counties have social capital scores that put them in the bottom fifth of counties. They encompass the cities of Las Vegas and Reno, Nevada; Phoenix and Tucson in Arizona; Albuquerque, New Mexico; Texas cities Dallas, Fort Worth, San Antonio, Houston, El Paso, and McAllen; New Orleans; Birmingham, Alabama; Jackson, Mississippi; Atlanta; and, in Florida, Miami, Fort Lauderdale, Fort Myers, St. Petersburg, Orlando, Daytona Beach and Jacksonville. The only counties of the largest ones that are not in the bottom fifth are those home to Austin and its suburbs and counties partly encompassing suburban Houston, Dallas, and Atlanta.

Exactly 10 counties in these 10 states have a social capital score that puts them in the top fifth of counties (six in Texas); they account for one-half of one percent of the counties in the Far South with non-missing scores. They share relative high scores on the family unity subindex, but are not otherwise easily characterized.

The counties in the bottom fifth are home to 67 percent of the bloc's population. They also include 46 percent of the American population living in bottom-fifth counties, comprising 62 percent of those counties.

The only state outside this group in the bottom 11 is New York. Social capital levels are low in a number of the largest Empire State counties, including the five boroughs of New York City and the counties that are home to Buffalo and Niagara Falls. The counties including Rochester and Syracuse fare only slightly better.

All told, the Far South and New York include one-third of Americans but 54 percent of Americans living in the bottom fifth of counties (and 64 percent of bottom-fifth counties).

These eleven states tend to rank poorly on all of the dimensions of social capital. Of the 77 state subindex scores in the group, 50 are ranked in the bottom 11 for the subindex (65 percent). The only subindex not heavily dominated by bottom-eleven states is the collective efficacy dimension (violent crime), where just five of the states are in the bottom 11 on the subindex. But even on that dimension, five states fall in the next-worst 10 states in terms of overall social capital.

The bottom four states—Louisiana, Nevada, New Mexico, and Florida—include the states that scored worst on family interaction, social support, community health, institutional health, and philanthropic health. Louisiana stands alone in having subindex scores in the bottom seven states for all seven subindices. Nevada is in the bottom three states for five of the seven subindices.

The Rest

Three distinct tiers emerge between these 23 states at the top and bottom of the social capital distribution.

The Second Tier: The Northwest, Southern New England, Kansas, and Virginia

Below the top group are ten states, five of which are in the Northwest and three of which are in Southern New England. Montana, Idaho, Oregon, and Washington connect to the Mid-Continent North to extend the bloc of relatively-high-social-capital states (with Alaska also in the Northwest). Only five percent of the American population lives in Northwestern states, and only six percent of counties are in the bloc. There are few major cities in the Northwest; the counties that are home to Portland, Seattle and its northern suburbs, Tacoma, Spokane, Boise, and Anchorage all fall in the middle three-fifths of counties.

Of the bloc's 179 counties with a social capital score, just four lie in the bottom fifth of counties. In all four, American Indians and Alaska Natives constitute between 52 and 68 percent of the population. Combining the 14 states of the Northwest and the Mid-Continent North, the group has only nine counties in the bottom fifth of social capital. Seven of them are majority-Native American, one has a prison that makes up a fifth of the population, and the other is Milwaukee.

In contrast, 27 percent of Northwestern counties are in the top fifth, though because they are rural they account for only four percent of the bloc's population and for only two percent of the nation's population living in top counties.

The Southern New England states are home to four percent of the American population but 10 percent of the population living in top-fifth counties. The six counties that are in the top fifth include relatively affluent areas outside New York City, New Haven, Providence, and Boston. Two counties in the bloc are in the bottom fifth—those including Boston and Springfield, Massachusetts. The counties containing Bridgeport, New Haven, and Hartford, in Connecticut; Providence, Rhode Island, and most of suburban Boston all fall between the top and bottom fifth.

Two other states are included in this second tier. Kansas borders the contiguous Northwest/Mid-Continent North grouping. Its generally high-social-capital counties are offset by Wichita's below-average score. No county in Kansas falls in the bottom fifth. Virginia includes 10 percent of the American population living in top-fifth counties, many of them in suburban Washington, D.C. The state has seven counties or independent cities in the bottom fifth, including the cities of Richmond, Norfolk, and Portsmouth.

One in five people in the aggregated second tier live in a top-fifth county. The tier includes 14 percent of American counties, 23 percent of top-fifth counties, and just two percent of bottom-fifth counties. It is home to 12 percent of the nation's

population, 27 percent of the population in top-fifth counties, and two percent of the population in bottom-fifth counties. The 22 states in the first and second tier of social capital include four out of five people living in top-fifth counties.

The Middle: The Midwest and Mid-Atlantic, and Hawaii

A middle tier of nine states includes eight that are contiguous—the Midwestern and Mid-Atlantic states stretching from Missouri through Illinois and Indiana, up to Michigan and across Ohio and Pennsylvania, over to New Jersey, and down to Maryland. This bloc has 23 percent of the national population, but only 15 percent of the American population living in top-fifth counties, and 15 percent of the population living in bottom-fifth counties. Within the bloc, bottom-fifth counties contain much more of the population (26 percent) than top-fifth blocs (5 percent).

In fact, nearly all of the largest cities in this bloc are in counties that rank in the bottom fifth, including Kansas City, St. Louis, Chicago, Indianapolis, Detroit, Cleveland, Toledo, Philadelphia, Baltimore, and Newark. Other large counties also rank in the bottom fifth—Prince George's County, Maryland, outside Washington D.C., and the New Jersey counties containing Jersey City, Paterson, and Camden. Only one large county—Morris County in northern New Jersey—has a social capital score in the top fifth. Other large counties tend to fall in the middle of the social capital distribution. These include suburbs of St. Louis, Chicago, Detroit, Philadelphia, Washington D.C., Baltimore, and New York City. They also include the counties containing Gary, Indiana; Grand Rapids, Michigan; Columbus, Cincinnati, Akron, and Dayton in Ohio; and Pittsburgh and the New Jersey counties of Bergen, Middlesex, Union, Ocean, and Monmouth.

Rounding out the middle tier is Hawaii. When it is added to the Midwestern/ Mid-Atlantic bloc, the middle tier includes 24 percent of Americans, 15 percent of Americans living in top-fifth counties, and 15 percent of Americans living in bottom-fifth counties.

The Fourth Tier: The Near South, Delaware, and the District of Columbia

Moving further down the social capital continuum, we arrive at a group of nine states that fare better than those in the bottom tier. However, seven of the nine border those worse-off states, extending the zone of low social capital northward but leaving it largely southeastern and southwestern. California, Oklahoma, Tennessee, Kentucky, West Virginia, North Carolina, and South Carolina are included in what we term the Near South.

The Near South is home to 22 percent of the American population, and it includes 28 percent of Americans living in the bottom fifth of counties. In contrast, it contains just one percent of those living in the top fifth. Fully half the counties in the Near South are in the bottom fifth of social capital, while just seven—less than one half of one percent of them—are in the top fifth. What is more, these seven are generally rural areas, with the exception of one including suburban Nashville. Not a single county in California or North Carolina is in the top fifth. California

accounts for 63 percent of the people in bottom-fifth counties in the Near South (versus 55 percent of all people in the Near South).

Several major Near South cities are in counties that are among the bottom fifth: in California, Los Angeles, San Bernardino, Oakland, Sacramento, Fresno, Bakersfield, Stockton, and Modesto; in Oklahoma, Oklahoma City and Tulsa; and in Tennessee, Nashville and Memphis. Faring better were the California counties San Diego, Orange (Anaheim, Irvine), Riverside, Santa Clara (San Jose), Contra Costa, Ventura, San Mateo, and Sonoma; as well as North Carolina counties Guilford (Greensboro), Mecklenburg (Charlotte), and Wake (Raleigh), and South Carolina counties Greenville and Charleston.

The 17 states of the Far South and Near South include 45 percent of Americans but 74 percent of Americans in bottom-fifth counties (and just three percent of those in top-fifth counties). Six in 10 (59 percent) of people in these 17 states live in bottom-fifth counties. Less than one-half of one percent live in top-fifth counties. Indeed, only 17 of 1,338 counties in these states are in the top fifth.

The other two states in this second-to-worst tier are Delaware and the District of Columbia (technically not a state, of course). With New York, they are the only states in the bottom 20 that are not part of the southwestern-southeastern axis. The District of Columbia is in the bottom fifth of counties, while the county that is home to Wilmington, Delaware fares a bit better. The tier as a whole includes 23 percent of Americans, 29 percent of Americans in bottom-fifth counties, and one percent of those in top-fifth counties.

VALIDATING THE SOCIAL CAPITAL INDICES

The importance of these new findings on the geographic distribution of social capital depends on the extent to which our state and county indices accurately measure something corresponding with the health of associational life or the "stock" of social capital in different places. Some reassurance is provided by several results already mentioned. The subindices are all fairly strongly correlated with the indices. At the state level, the correlations of the seven subindices with the index range from 0.55 to 0.89. At the county level, the index correlations with the four subindices range from 0.65 to 0.76. Further, the states with the highest and lowest social capital scores also generally have subindex scores that rank them highly or lowly.

The results also align with previous research on social capital. The 15 best states on our index are also the 15 best states on Robert Putnam's from *Bowling Alone*, despite the measures being different and Putnam's being based on older data. Our top five states are ranked 14th (Utah), 4th (Minnesota), 11th (Wisconsin), 8th (New Hampshire), and 3rd (Vermont). There is less of a correspondence at the lower end of the social capital distribution. Of our bottom 15 states, nine are in Putnam's

bottom 15. Our lowest five states are ranked 8th from the bottom (Louisiana), 4th from the bottom (Nevada), 19th from the bottom (New Mexico), 16th from the bottom (Florida), and 31st from the bottom. Overall, however, the correlation between Putnam's index and ours is very high—0.81.

Alesina and La Ferrara (2000) display a map of social capital that ranks nine states in the topmost category. Those states are all in the top 13 on our list. Their bottom category includes 19 states, and those 19 states contain all of the states in our bottom 20 except for Nevada and New Mexico (where Alesina and La Ferrara report no estimate) and California (which they rank in the second-to-worst tier). Of the states in their bottom tier, only Maryland and Rhode Island are outside our bottom twenty.

At the county level, the correlation between our index and Penn State's 2014 index was 0.56. To assess the validity of our indices further, and to determine whether they are, in fact, better than the available alternatives, we compiled state- and county-level benchmarking data on a wide range of variables related to demographics, economics, health, education, policy, and even climate and geography. We estimated simple bivariate correlations between, on the one hand, our social capital indices and those of others against, on the other hand, these benchmarks. We emphasize that establishing causal connections between social capital and these benchmarks is a more complicated task and beyond the scope of this report.

State Validation

Table 4 displays the bivariate correlations comparing various indices and subindices to 59 different state-level benchmarks. It includes (across the columns of the table) our state-level social capital index, our (constructed) state-level version of Penn State's index, Putnam's index from *Bowling Alone*, and our seven subindices.[39] The benchmarks are loosely organized into groups of indicators. See Appendix Table A2 for the sources behind the benchmarks and detailed descriptions.

Table 4. Benchmarking the State Social Capital Index (Bivariate Correlations)

	Social Capital Index	Penn State Index	Putnam Index	Subindices						
				Family Unity	Family Interaction	Social Support	Community Health	Institutional Health	Collective Efficacy	Philanthropic Health
Putnam social capital score	0.81	0.66		0.70	0.72	0.75	0.84	0.53	0.55	0.60
Alesina social capital groups (four)	0.81	0.56	0.82	0.74	0.59	0.77	0.73	0.56	0.38	0.72
Family Prosperity Index (Family Prosperity Institute)	0.65	0.19	0.57	0.84	0.37	0.53	0.39	0.50	0.39	0.62
Unemployment rate	-0.63	-0.21	-0.76	-0.65	-0.40	-0.67	-0.26	-0.44	-0.52	-0.34
Prime-age male labor force participation	0.70	0.29	0.68	0.63	0.56	0.42	0.45	0.60	0.22	0.75
Teen idleness	-0.75	-0.27	-0.68	-0.55	-0.67	-0.58	-0.30	-0.69	-0.55	-0.60
Percent of adults incarcerated	-0.58	-0.41	-0.59	-0.31	-0.67	-0.40	-0.55	-0.43	-0.18	-0.48
Median household income	0.36	0.16	0.35	0.29	0.36	0.07	0.40	0.35	-0.05	0.48
Percent poor	-0.72	-0.14	-0.64	-0.68	-0.58	-0.46	-0.39	-0.62	-0.38	-0.68
Percent with debt in collections	-0.82	-0.35	-0.87	-0.66	-0.68	-0.63	-0.55	-0.61	-0.45	-0.68
Percent w/ housing costs exceeding income by 35%+	-0.30	-0.23	-0.29	-0.27	-0.08	-0.53	-0.11	-0.23	-0.19	-0.14
Pct of children in hh's with means-tested benefits	-0.71	-0.02	-0.63	-0.84	-0.46	-0.49	-0.21	-0.55	-0.50	-0.65
Population in distressed ZIP codes (EIG)	-0.76	-0.22	-0.85	-0.75	-0.62	-0.59	-0.52	-0.50	-0.40	-0.61
Pct poor in the block group of average poor person	-0.66	-0.16	-0.68	-0.64	-0.55	-0.42	-0.49	-0.47	-0.24	-0.61
Pct rich in the block group of average rich person	0.06	0.03	0.01	0.05	0.10	-0.24	0.15	0.19	-0.21	0.28
Ratio of 80th percentile of hh income to 20th	-0.53	0.26	-0.58	-0.74	-0.24	-0.53	0.00	-0.31	-0.54	-0.42
Gini coefficient, household income	-0.60	0.08	-0.58	-0.68	-0.35	-0.62	-0.23	-0.34	-0.48	-0.46
Share of hh income received by top 5 percent	-0.46	0.05	-0.38	-0.47	-0.26	-0.50	-0.23	-0.23	-0.40	-0.32
Opportunity score (Opportunity Nation)	0.76	0.41	0.74	0.53	0.67	0.52	0.55	0.72	0.34	0.63
Relative immobility (Chetty et al., 2014)	-0.45	0.00	-0.61	-0.59	-0.44	-0.32	-0.39	-0.05	-0.17	-0.39
Absolute mobility (Chetty et al., 2016)	0.14	0.56	0.41	-0.13	0.13	0.19	0.31	0.16	-0.13	0.13
Percent of adults that graduated from high school	0.84	0.49	0.83	0.59	0.70	0.71	0.70	0.62	0.28	0.72
Percent of adults that obtained a bachelor's degree	0.32	0.44	0.39	0.02	0.46	0.06	0.57	0.31	-0.23	0.42
Rate of on-time high school graduation	0.37	-0.03	0.22	0.42	0.20	0.34	-0.13	0.47	0.53	0.14
Percent of adults with fair or poor health	-0.76	-0.43	-0.79	-0.50	-0.71	-0.54	-0.69	-0.56	-0.18	-0.72
Age-adjusted premature mortality	-0.58	0.02	-0.60	-0.59	-0.52	-0.30	-0.28	-0.40	-0.36	-0.58
Mortality rate from "deaths of despair"	-0.07	-0.13	-0.12	-0.02	0.04	0.12	0.02	-0.43	-0.01	-0.14
Percent of adults disabled	-0.37	-0.06	-0.44	-0.39	-0.29	-0.08	-0.22	-0.36	-0.04	-0.53
Percent diabetic	-0.73	-0.23	-0.75	-0.64	-0.66	-0.49	-0.52	-0.46	-0.30	-0.71
Percent obese	-0.32	-0.11	-0.40	-0.26	-0.43	-0.06	-0.39	-0.09	0.03	-0.44
Percent who smoke	-0.28	0.14	-0.27	-0.34	-0.28	-0.04	-0.19	-0.10	-0.05	-0.43
Percent of babies with low birth weight	-0.67	-0.04	-0.79	-0.72	-0.54	-0.50	-0.39	-0.40	-0.39	-0.54
Percent without health insurance	-0.47	-0.46	-0.50	-0.14	-0.45	-0.36	-0.42	-0.54	-0.18	-0.36
Median age	0.04	0.05	0.03	-0.11	0.20	-0.02	-0.08	0.10	0.33	-0.14
Percent of population under age 18	0.03	-0.47	-0.08	0.39	-0.29	0.16	-0.27	-0.10	0.14	0.12
Percent of population ages 65+	-0.10	-0.02	0.05	-0.14	0.00	-0.04	-0.21	-0.05	0.28	-0.27

Percent non-Hispanic white	0.64	0.28	0.59	0.48	0.51	0.72	0.28	0.47	0.55	0.33
Percent non-Hispanic black	-0.55	0.19	-0.69	-0.76	-0.42	-0.52	-0.13	-0.13	-0.57	-0.35
Percent Hispanic	-0.38	-0.46	-0.22	-0.08	-0.25	-0.45	-0.30	-0.52	-0.23	-0.17
Percent American Indian or Alaska Native	0.04	0.04	0.35	0.09	0.08	0.15	0.25	-0.26	-0.17	0.04
Percent Asian	-0.10	-0.25	-0.14	0.09	-0.17	-0.28	-0.14	-0.01	0.02	0.00
Percent Native Hawaiian or Other Pacific Islander	-0.03	-0.18	0.02	0.12	-0.14	-0.07	-0.05	-0.02	0.06	0.00
Percent other	-0.21	-0.11	-0.25	-0.28	-0.01	-0.34	-0.13	-0.03	-0.18	-0.09
Percent multiracial	-0.02	-0.14	0.12	0.12	-0.11	-0.09	0.02	-0.01	0.01	0.01
Black-white segregation	-0.40	0.03	-0.39	-0.47	-0.32	-0.44	-0.27	0.01	-0.42	-0.18
Percent foreign-born	-0.30	-0.35	-0.22	-0.07	-0.19	-0.55	-0.25	-0.19	-0.21	-0.08
Population size	-0.34	-0.38	-0.29	-0.08	-0.23	-0.46	-0.43	-0.15	-0.06	-0.33
Population density	-0.12	0.66	-0.17	-0.50	0.09	-0.18	0.52	0.02	-0.69	0.04
Percent in rural areas	0.22	0.23	0.20	0.08	0.23	0.42	0.17	0.10	0.35	-0.15
Mean travel time to work	-0.37	-0.22	-0.51	-0.36	-0.20	-0.53	-0.25	-0.14	-0.22	-0.23
Percent of housing owner-occupied	0.36	-0.16	0.26	0.38	0.17	0.53	-0.10	0.24	0.58	0.10
Median age of housing	-0.20	-0.51	-0.30	0.11	-0.33	-0.10	-0.34	-0.30	0.06	-0.15
Percent with internet subscription	0.55	-0.02	0.47	0.55	0.50	0.25	0.32	0.42	0.25	0.59
State and local government spending per capita	0.08	0.51	0.33	-0.15	0.29	-0.03	0.56	0.05	-0.44	0.08
Net migration	-0.09	-0.20	-0.15	-0.03	-0.10	-0.08	-0.08	-0.16	-0.10	0.06
Mean elevation	0.20	-0.21	0.22	0.45	0.14	0.21	0.09	-0.27	0.12	0.29
Mean temperature	-0.73	-0.28	-0.66	-0.58	-0.71	-0.58	-0.55	-0.37	-0.42	-0.64
Latitude	0.63	0.35	0.76	0.44	0.60	0.55	0.59	0.36	0.16	0.53
Longitude	-0.04	0.23	-0.19	-0.32	0.13	-0.05	-0.05	0.19	0.04	-0.12

Source: Social Capital Project. Download Data (xlsx)

The first group of indicators includes three indices of social capital. Our index is highly correlated with the Putnam and Alesina/La Ferrara indices, as well as the Family Prosperity Institute's Family Prosperity Index. It is more strongly related to these than the Penn State index is. It has essentially the same strength of relationship with the Alesina/La Ferrara index as does Putnam's index, and because Putnam's index does not incorporate family unity, our index is more strongly related to the Family Prosperity Index than Putnam's is.

The next set of indicators relates to employment. For all four benchmarks, the correlation with our index is greater than 0.5 (or less than -0.5), and for all four the correlation with our index is larger than the correlation with the Penn State index. Two of the four benchmarks are more strongly associated with our index than with Putnam's.

The five benchmarks in the next group are indicators of income and poverty. Three of five correlations with our index are below -0.5 or above 0.5. For each benchmark, the correlation with our index is stronger than the correlation with the Penn State index, and that is true of the correlation with the Putnam index for four out of five benchmarks.

Next, we show nine benchmarks related to segregation by income, inequality, and economic mobility. For five of these benchmarks, the correlation is above 0.5 (in absolute value), including the share of the state's population in ZIP codes deemed "economically distressed" by the Economic Innovation Group, and the opportunity score assigned to a state by Opportunity Nation. States with more inequality have lower social capital scores. States with more social capital have lower relative intergenerational immobility—the relative positions of children are more scrambled in adulthood given where they started. However, absolute mobility (exceeding one's parents' income) is only slightly higher in states with higher social capital scores. States where poor residents are concentrated have less social capital, but concentration of rich people is not related to social capital.

The correlations between inequality benchmarks and the Penn State index have the opposite sign as those for our and Putnam's indices. Only for absolute mobility is the Penn State correlation stronger than the correlation using our index. The Putnam index is related to all nine benchmarks in the same way that our index is. In fact, it more strongly correlates with five of the nine measures than our index does (though the difference is sizable for only three benchmarks).

The next three benchmarks are related to education. Our index is strongly correlated with the share of a state's population that graduated from high school, but less strongly correlated with obtaining a bachelor's degree or with on-time high school graduation rates. Both the Putnam and the Penn State indices are more strongly correlated with graduating from college than is our index, but the Penn State index is much less strongly correlated than ours is with graduating from high school.

We show nine benchmarks related to health. Our index is strongly correlated with being in only fair or poor health, dying prematurely, having diabetes, and giving birth to a low-birthweight baby. Mortality from "deaths of despair"—involving alcoholism, drug overdoses, or suicide—has no relationship with our index. Our index is more strongly correlated in the expected direction with six of the nine health benchmarks than is the Penn State index, and the Penn State index has the opposite sign we would expect for premature mortality and smoking. Putnam's index generally has somewhat higher correlations with health outcomes than ours.

The next group of benchmarks reveals that age has little to do with social capital. The exception is that states with fewer children have higher Penn State social capital scores, which is counter to the near-zero correlations shown by our index and Putnam's.

In the next grouping, we cross the Census Bureau's racial categories with its Hispanic ethnicity question. States with more non-Hispanic whites have higher social capital, and states with more African Americans and Hispanics have lower social capital. The Putnam correlations are generally consistent with ours and are

stronger for four of the eight groups. The Penn State index has the opposite sign relative to our and Putnam's indices for the share of the population that is African American.

Of note, in preliminary research, we also found that states with a large share of residents who identified their ancestry as "American" also have substantially lower social capital scores (on par with the correlation between social capital scores and the Hispanic share). Self-identified Americans are overwhelmingly comprised of southern whites.[40]

The reasons for correlations between ethnic shares and social capital are surely complicated. Historical oppression and ongoing discrimination could weaken social capital investment and institutions, particularly to the extent that it leaves a group with high poverty rates and concentrated residentially. Immigrants may bring to the United States a mix of values that reflects the history and culture of their countries of origin or that reflects the unique values of the self-selected group of people that left their homeland for a new life—values that might strengthen or weaken social capital. Alternatively, communities with many newcomers to the country might be in a state of flux, as those newcomers assimilate and as institutions such as schools and churches experience shifts in composition. That could weaken social capital. Indeed, diversity itself may weaken some dimensions of social capital, as some research suggests, simply by creating barriers to easy social cooperation.

That places with larger black populations have lower social capital may reflect the deleterious consequences of racial segregation. The next grouping in Table 4 shows that states with greater segregation between blacks and non-Hispanic whites have lower social capital. Similarly, the lower social capital in states with bigger Hispanic populations may reflect the unique challenges of immigrant communities. The share of the population comprised of foreign-born residents is associated with lower state social capital levels.[41] Our social capital index reflects these correlations somewhat more strongly than do the other two indices, except that the Penn State index indicates a stronger correlation for the share foreign born.

The final grouping is a grab bag of 13 indicators. More social capital is strongly associated with more internet subscribers (counter to the notion that technology hurts social capital), lower average temperatures, and being further from the equator. The latter two are obviously related, and they are unsurprising given the pattern of northern states having high social capital levels and southern states having low levels.

The other correlations are weaker, but social capital is higher in states that are less dense, more rural, and higher above sea level, and in states with more homeowners, newer housing, and shorter commutes. It is mostly unrelated to greater state and local government spending (counter to the notion that greater independence from the federal government yields greater social capital) or to

net migration (counter the notion that more-rooted communities have stronger social capital). For eight of the 13 indicators, the correlations are stronger using the Putnam index than ours. For six of the 13, the correlations using the Penn State index are stronger than using ours. For another five, the Penn State correlations are in the opposite direction versus our and Putnam's indices. Of the 59 benchmarks in Table 4, the correlation with our social capital index was over 0.5 for 25 of them. That was also true of 24 correlations of benchmarks with our family unity subindex, and the social support subindex was close behind at 22. The correlation was over 0.5 for 20 of the 59 benchmarks when comparing them with the philanthropic health subindex, and that was true in 18 cases looking at the family interaction subindex.

Of the 25 benchmark correlations with our index that were over 0.5 (or below -0.5), 12 were stronger using the index than using any of the seven subindices. Eight times, the family unity subindex is more strongly correlated with a benchmark than the index, and that is true three times for the social support subindex, two times for the philanthropic health and collective efficacy subindices, one time for the family interaction and community health subindices, and never for the institutional health subindex. The fact that the index usually appears to provide more predictive power than the individual subindices is another indication that the index measures something corresponding with social capital in a way that is an improvement on the individual subindices. It is also reassuring that the correlations of the index with benchmarks do not appear to be driven by one or two of the subindices.

Of the 18 benchmarks where the correlation with the Penn State index is greater than 0.30 (or less than -0.30), our index has a stronger correlation with the benchmark in nine instances. Of the 18 benchmarks where the correlation with the Putnam index is greater than 0.60 (or less than -0.60), our index has a stronger correlation in just seven instances. Our index appears to improve on the Penn State methodology, but if the association with benchmark variables is the sole criterion, our index is not an obvious improvement on the Putnam index.

However, we prefer our index for several reasons. First, substantively, our index, unlike the *Bowling Alone* index, reflects the health of family life—a dimension of social capital that has been overlooked in past research on social capital *per se*. We equate high levels of social capital with the health of our associational life—our "middle layers" between the individual and the state. As Yuval Levin has described, the middle layers begin in loving family attachments. They spread outward to interpersonal relationships in neighborhoods, schools, workplaces, religious communities, fraternal bodies, civic associations, economic enterprises, activist groups, and the work of local governments. They reach further outward toward broader social, political, and professional affiliations, state institutions, and regional affinities. And they conclude in a national identity that among its foremost attributes is dedicated to the principle of the equality of the entire human race.[42]

Whatever social capital is, it is difficult to justify leaving out the part that exists and is maintained in families. Practically, our index is also based on up-to-date data that is freely available (and, therefore, readily updateable). All this said, it is striking that Putnam's landmark attempt nearly two decades ago to measure social capital holds up so well that it correlates with contemporary benchmarks at least as well as our measure does, and often better. And the fact that our and Putnam's different approaches to measuring social capital produced similar results—the correlation between the two measures is 0.81—is reassuring; both indices apparently capture the same underlying construct.

Unfortunately, the Penn State county-level index does not appear so robust.

County Validation

In Table 5, we show bivariate correlations for county-level variables, comparing our index, the Penn State index, and our subindices to 50 different benchmarks. The Penn State index is the 2014 version of the index available on the website of the Northeast Regional Center for Rural Development.[43]

The first row shows the correlation of our index and subindices with the Penn State index. The correlation of the two indices is 0.56, and our community health index has the strongest association with the Penn State index. That reflects the fact that both are built, in part, on IRS data on nonprofit organizations. Similarly, there is a moderate correlation between our institutional health subindex and the Penn State index, since both are partly built on presidential voting rates and census response rates. The family unity and collective efficacy subindices are only weakly related to the Penn State index, since the latter does not attempt to measure those dimensions of social capital.

Table 5. Benchmarking the County Social Capital Index (Bivariate Correlations)

	Social Capital Index	Penn State Index	Subindices			
			Family Unity	Community Health	Institutional Health	Collective Efficacy
Penn State social capital score	0.56		0.22	0.79	0.43	0.23
Unemployment rate	-0.57	-0.40	-0.53	-0.38	-0.32	-0.34
Prime-age male labor force participation	0.44	0.26	0.40	0.22	0.47	0.16
Teen idleness	-0.55	-0.30	-0.45	-0.30	-0.45	-0.36
Median household income	0.41	0.09	0.50	0.01	0.41	0.16
Percent poor	-0.63	-0.34	-0.65	-0.26	-0.51	-0.33
Percent with debt in collections	-0.77	-0.49	-0.61	-0.52	-0.63	-0.43
Percent w/ housing costs exceeding income by 35%+	-0.43	-0.26	-0.37	-0.33	-0.13	-0.36

Pct of children in hh's receiving means-tested benefits	-0.71	-0.16		-0.79	-0.15	-0.49	-0.47
Population in distressed ZIP codes (EIG)	-0.50	-0.25		-0.50	-0.22	-0.41	-0.26
Percent poor in the block group of average poor person	-0.62	-0.29		-0.62	-0.26	-0.46	-0.38
Percent rich in the block group of average rich person	0.09	-0.08		0.26	-0.21	0.24	-0.09
Ratio of 80th percentile of hh income to 20th percentile	-0.51	-0.20		-0.50	-0.21	-0.36	-0.33
Gini coefficient, household income	-0.44	-0.11		-0.43	-0.15	-0.28	-0.32
Share of hh income received by top 5 percent	-0.19	0.03		-0.20	-0.02	-0.08	-0.19
Opportunity Score (Opportunity Nation)	0.66	0.45		0.55	0.38	0.60	0.34
Relative immobility (Chetty et al., 2014)	-0.46	-0.18		-0.51	-0.30	-0.20	-0.29
Percent of adults that graduated from high school	0.54	0.40		0.41	0.36	0.54	0.22
Percent of adults that obtained a bachelor's degree	0.25	0.15		0.28	0.07	0.35	0.01
Rate of on-time high school graduation	0.31	0.03		0.35	0.05	0.13	0.30
Percent of adults with fair or poor health	-0.68	-0.44		-0.60	-0.37	-0.59	-0.34
Age-adjusted premature mortality	-0.55	-0.29		-0.53	-0.20	-0.48	-0.28
Mortality rate from "deaths of despair"	-0.25	-0.10		-0.26	0.10	-0.40	-0.07
Percent of adults disabled	-0.39	-0.27		-0.37	-0.19	-0.42	-0.13
Percent diabetic	-0.39	-0.19		-0.46	-0.22	-0.24	-0.16
Percent obese	-0.26	-0.15		-0.34	-0.14	-0.11	-0.13
Percent who smoke	-0.45	-0.32		-0.48	-0.21	-0.36	-0.21
Percent of babies with low birth weight	-0.57	-0.24		-0.57	-0.27	-0.34	-0.36
Percent without health insurance	-0.44	-0.27		-0.35	-0.15	-0.50	-0.20
Median age	0.32	0.41		0.09	0.40	0.21	0.26
Percent of population under age 18	-0.13	-0.28		0.02	-0.24	-0.12	-0.08
Percent of population ages 65+	0.22	0.41		0.01	0.39	0.08	0.21
Percent non-Hispanic white	0.61	0.30		0.54	0.30	0.39	0.47
Percent non-Hispanic black	-0.55	-0.16		-0.63	-0.29	-0.14	-0.46
Percent Hispanic	-0.25	-0.19		-0.03	-0.17	-0.34	-0.15
Percent American Indian or Alaska Native	-0.10	-0.08		-0.20	0.11	-0.17	-0.02
Percent Asian	-0.04	-0.11		0.08	-0.14	0.06	-0.14
Percent Native Hawaiian or Other Pacific Islander	-0.02	-0.05		0.02	-0.01	-0.04	-0.04
Percent other	-0.13	-0.09		-0.07	-0.12	-0.06	-0.12
Percent multiracial	-0.07	-0.07		-0.02	0.00	-0.10	-0.12
Black-white segregation	-0.30	-0.25		-0.22	-0.34	-0.13	-0.23
Percent foreign-born	-0.15	-0.18		0.06	-0.22	-0.11	-0.18
Population size	-0.15	-0.14		-0.02	-0.20	0.00	-0.22
Population density	-0.10	-0.05		-0.05	-0.07	-0.01	-0.16
Percent in rural areas	0.27	0.25		0.07	0.40	0.00	0.34
Mean travel time to work	-0.12	-0.22		-0.02	-0.21	-0.13	0.03

Mean travel time to work	-0.12	-0.22		-0.02	-0.21	-0.13	0.03
Percent of housing owner-occupied	0.42	0.16		0.36	0.14	0.21	0.43
Median age of housing	-0.30	-0.47		-0.07	-0.50	-0.24	-0.10
Net migration	0.00	-0.08		0.02	-0.10	-0.02	0.08
Mean temperature	-0.54	-0.32		-0.33	-0.46	-0.40	-0.32

Source: Social Capital Project. Download Data (xlsx)

The correlation of our index with the benchmarks is greater than 0.5 (or less than -0.5) for 17 of the 50 benchmarks, while the Penn State correlations are never above that threshold. For 38 of the benchmarks, our index has a stronger correlation than the Penn State index. The Penn State correlations are stronger for nine benchmarks, and the two indices' correlations are signed in opposite directions for three benchmarks. Of the 12 benchmarks that are correlated with the Penn State index at a level greater than 0.30 (or less than -0.30), the correlation of the benchmark with our index is stronger in nine instances.

Our social capital index is more strongly correlated with all three of our employment benchmarks than is the Penn State index and with all five of our income and poverty benchmarks. For five of the eight, the correlation with our index is greater than 0.5 (or less than -0.5).

Next, Table 5 shows eight benchmarks related to segregation by income, inequality, and economic mobility. The correlation between our index and the benchmarks is below -0.5 for four of the eight. There is little relationship between the extent to which a county's rich residents are concentrated together and its social capital score. The three education benchmarks are all correlated with our index in the expected direction, and the association with high school graduate shares is particularly large.

Three of nine health benchmarks are correlated with our index at less than -0.5. All nine correlations are in the expected direction. As in our state validation analyses, our county index is not strongly correlated with age. However, the Penn State index is moderately correlated with the three age benchmarks.

The race/ethnicity correlations are uniformly consistent with the state-level validation results, as are the black-white segregation and foreign-born correlations. The eight "grab-bag" benchmarks all show similar correlations with our county index as they do with our state index.

Across the 50 county-level benchmarks, the correlations with our subindices were generally lower than was the case at the state level, possibly reflecting the relative dearth of county-level measures available related to social capital. The family unity subindex was correlated with 16 benchmarks at a level of more than 0.50 (or less

than -0.50). Just five correlations were that strong using the institutional health subindex, only two using the community health subindex, and none using the collective efficacy subindex.

Looking at the 17 benchmarks where the correlation with our social capital index is above 0.5 (or below -0.5), our social capital index is more strongly correlated with the benchmark than any of the four subindices are for 11 of them. For six benchmarks, at least one subindex correlates more strongly than does our overall index. In five instances, it is the family unity subindex that is more strongly correlated. The community health subindex is more strongly correlated with one benchmark than the overall index is. Once again, the index appears to provide more predictive power than the individual subindices.

To sum up, while our county-level social capital index is an unambiguous improvement on the Penn State index, it does seem to measure social capital levels less well than our state-level index does. It would be better to have more county-level data related to social capital than currently exists.

CONCLUSION

Despite the theoretical importance of social capital for understanding our national challenges and for crafting effective public policies, past efforts to measure the concept have suffered from a number of problems. These range from overly narrow or broad conceptualizations of "social capital," to data unavailability at the state or county levels, to out-of-date data, to the inaccessibility of non-public data. Our state and county social capital indices rectify these problems to a large degree. It is our hope that by making our data publicly available, researchers may be inspired to relate social capital to any number of other aspects of American life and to policy-relevant outcomes.

Social capital is markedly unequally distributed across the United States. A clear "north-south" divide is apparent, and the clustering of states into similar contiguous blocs suggests that geographic differences may have deep-seated roots in historical immigration and internal migration patterns, regional culture, and perhaps even features of climate and topography.

While our county-level index is a clear improvement on the only other county measure available, from Penn State University, the evidence we have accumulated suggests that a lack of data at the county level on indicators related to social capital reduces the accuracy of local estimates. Adding more social capital measures to surveys such as the American Community Survey or the Current Population Survey could greatly improve county estimates.

Nevertheless, we are reassured by a number of findings detailed in this report. When we mimicked the county-level approach at the state level, the resulting state index and our preferred state index were correlated at 0.96. When we averaged county-level scores in each state, weighting by the county population, the resulting state averages correlated with our preferred state index at 0.95, and the correlation between the state estimates mimicking the county approach and the state averages of county estimates was 0.98. The fact that Robert Putnam obtained similar results nearly 20 years ago using very different data and measures also suggests that it is possible to measure something meaningful that corresponds with social capital

Having constructed these indices, the Social Capital Project, in future work, will attempt to explain the geographic patterns identified here and to explore in greater depth the relationship between social capital and a variety of outcomes. There is clearly much to learn, and just as clearly, the regional inequalities we have uncovered demand that policymakers and researchers better understand the distribution of social capital in America.

APPENDIX

In this appendix, we provide greater detail about the process used to select the measures that go into our social capital indices and subindices. Our objective is to be as transparent as possible about the process. We also detail the source data for our benchmarks. Finally, we provide additional maps of social capital and its components at the state and county levels.

State Analyses

We began with the list of indicators shown in Appendix Table A1, below. We standardized all variables and reversed the polarity (multiplying by -1) for 21 of them so that higher standard scores always indicated more "social capital."

We started with some initial analyses estimating Cronbach's alpha and using principal components analysis, using both county- and state-level analyses. These gave us a general sense of the domains of social capital that appeared using inductive methods. We then attempted to determine how to best measure the underlying concept reflected in these domains.

Family Health

We constructed four measures of "adverse childhood experiences,"[44] from the National Survey of Children's Health (NSCH).[45] One indicated the average number out of nine items experienced by a child, one dropped three items not related to experiences in a child's household and indicated the average number of the remaining six experienced, one measured the share experiencing at least one of the six experiences, and a fourth measured the average number of items from four related to parental behavioral problems. They all correlated with each other at above 0.90. We retained the one including just four problems, which excludes parental divorce (already addressed in other variables), parental death, poverty (only indirectly about family interactions), neighborhood violence, and discrimination (both involving outside-the-home experiences).

The share of families with children with a single parent and the share of children in families headed by a single parent, both from the Census Bureau's American Community Survey (ACS), were correlated at 0.99.[46] We dropped the former.

Looking at the percent of births to unwed mothers, percent of women married, and percent of children in single-parent families, all from the ACS, the alpha was 0.95. Adding the percent of women never married (ACS) and the percent of children experiencing divorce (NSCH) lowered it to 0.88. Adding only the percent never married lowered it to 0.93. Adding both plus the share eating dinner with their family (from the September 2013 Volunteer Supplement to the Current Population Survey[47]) lowered it to 0.84. Adding only the nonmarital fertility rate (from the ACS) lowered it to 0.87.

Looking at the percent of births to unwed mothers, the nonmarital fertility rate, and the percent of children in single-parent families, the alpha was 0.83. It rose to 0.85 if the percent of children experiencing divorce was added. It rose to 0.87 if percent married was added instead. It fell if the percent in one-person households, percent never married, or having dinner with one's family was added. It rose to 0.95 if the nonmarital fertility rate was dropped. The percent of births that were to unmarried women correlated much more strongly with other family indicators than the nonmarital fertility rate.

Appendix Table A1a. Social Capital Indicators Considered (State and County-Level)

Indicator	Data Source	Notes
Share of births in past year to women who were unmarried	American Community Survey, 2012-2016, 5-year estimates; 2007-2011, 5-year estimates for 27 counties in 8 states	American FactFinder Table S1301
Unmarried women 15-50 with birth in past year per 1,000 unmarried women 15-50	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Share of households with just one person	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S2501
Share of women ages 35-44 who are currently married (and not separated)	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of women ages 45-54 who have never married	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B12002
Share of families with children headed by a single parent	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Tables B11003 & B11014
Share of own children living in a single-parent family	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B09002
Religious adherents per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010, County and State files	data obtained via Association of Religious Data Archives, census conducted 2009-2011
Congregations per 1,000	U.S. Religion Census: Religious Congregations and Membership Study, 2010, County and State files	data obtained via Association of Religious Data Archives, census conducted 2009-2011
Membership organizations per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Recreation and leisure establishments per 1,000	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
"Associations" per 1,000 using the Penn State definition	County Business Patterns, 2015; ACS population estimates, 7/2015 (2015 vintage)	American FactFinder Tables CB1500A11 & PEPANNRES
Registered non-religious non-profit organizations per 1,000	IRS, Business Master File, 12/2015; ACS population estimates, 7/2015 (2015 vintage)	via National Center for Charitable Statistics & American FactFinder Table PEPANNRES
Registered non-religious non-profits plus religious congregations per 1,000	Same, plus U.S. Religion Census: Religious Congregations and Membership Study, 2010	same, congregation data obtained via Association of Religious Data Archives
Average (over 2012 and 2016) of votes in the presidential election per citizen age 18+	Election Administration and Voting Survey; ACS, 2012-2016, 5-year estimates	U.S. Election Assistance Commission; counties: EAVS voting combined with American FactFinder Table B05003 estimates of citizens 18+; votes unavailable for Alaska counties, which we assign the statewide voting rate; states: EAC rates based on citizen estimates from 2010 decennial census and ACS
Mail-back response rates for 2010 census	Census Bureau	County estimates via University of Michigan Population Studies Center, Institute for Social Research
Share saying they get the emotional support they need only sometimes, rarely, or never	Behavioral Risk Factor Surveillance System	Counties via County Health Rankings (2014 edition), based on 2005-10 BRFSS data; county samples not necessarily representative; states: from analysis of BFRSS microdata, 2006 & 2010

Source: Social Capital Project.

Appendix Table A1b. Social Capital Indicators Considered (State-Level Only)

Indicator	Data Source	Notes
Share of adults saying they attend religious services at least once a week	Pew Religious Landscape Study, 2014	Pew Research Center
Share saying they participate in prayer, scripture study or religious education groups at least 1x/week	Pew Religious Landscape Study, 2014	Pew Research Center
Share of children whose parents reported they experienced divorce	National Survey of Children's Health, 2016	
Share whose parents reported they experienced the death of a parent	National Survey of Children's Health, 2016	
Share whose parents reported they experienced parental incarceration	National Survey of Children's Health, 2016	
Share whose parents reported they experienced domestic violence	National Survey of Children's Health, 2016	
Share whose parents reported they lived with someone with a mental health issue	National Survey of Children's Health, 2016	
Share whose parents reported they lived with alcohol or drug abuser	National Survey of Children's Health, 2016	
Share whose parents reported they witnessed neighborhood violence	National Survey of Children's Health, 2016	
Average number of adverse childhood experiences parents report their children experienced (of 4)	National Survey of Children's Health, 2016	experiencing alcohol/drug abuse, domestic violence, parental incarceration, & mental health issues
Average number of adverse childhood experiences parents report their children experienced (of 6)	National Survey of Children's Health, 2016	adds experiencing parental death or divorce
Average number of adverse childhood experiences parents report their children experienced (of 9)	National Survey of Children's Health, 2016	adds experiencing poverty, discrimination, or neighborhood violence
Share of children whose parents report they experienced at least 2 of 6 ACEs	National Survey of Children's Health, 2016	
Share of parents who say they can share ideas or talk about things that really matter with kids "very well"	National Survey of Children's Health, 2016	restricted to parents with child 6-17 years old
Share who report someone in the family read to child every day in past week	National Survey of Children's Health, 2016	restricted to parents with child 0-5 years old
Share who report all members of household ate a meal together every day in past week	National Survey of Children's Health, 2016	
Share who report child spends at least 4 hours per weekday in front of a TV	National Survey of Children's Health, 2016	includes watching TV, videos, or video games
Share who report child spends at least 4 hours per weekday on electronic device, excluding homework	National Survey of Children's Health, 2016	includes computers, cell phones, handheld video games, and other electronic devices
Share who report family demonstrates 4 ways of being resilient "all or most of the time" when having problem	National Survey of Children's Health, 2016	
Share who report having someone to turn to for emotional support re. children/parenting	National Survey of Children's Health, 2016	over past 12 months
Share of adults who report having 5 or more close friends	Civic Engagement Supplement to the November 2008 Current Population Survey	
Average number of close friends reported by adults	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share of adults who report having volunteered for a group in the past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having attended a public meeting re. community affairs in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having worked with neighbors to fix/improve something in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who report having made a donation of >$25 to a charitable group in past year	Volunteer Supplement to the September 2015 Current Population Survey	
Share who volunteered, attended a public meeting, worked with neighbors, or made donation	Volunteer Supplement to the September 2015 Current Population Survey	

Share of adults who always vote in local elections	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who always vote in local elections, self-respondents only	Volunteer Supplement to the September 2013 Current Population Survey	excludes adults for whom someone else gave an answer
Share of adults who participated in a group in the past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a group other than a sport/recreation organization	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a non-religious group other than a sport/rec org	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who participated in a religious group in the past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who served on a committee or as an officer of a group	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who ate dinner with at least one household member "basically every day"	Volunteer Supplement to the September 2013 Current Population Survey	in a typical month over the past year
Share of adults who were in contact with family and friends "basically every day" past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults who talked with a neighbor at least several times/week in past year	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting they and their neighbors do favors for each other at least 1x/month	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting they can trust all or most of their neighbors	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in corporations to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in the media to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults reporting some or great confidence in public schools to do what is right	Volunteer Supplement to the September 2013 Current Population Survey	
Share of adults saying people can be trusted most or all of the time	2012 and 2016 American National Election Study, internet samples	states with fewer than 75 observations were coded as missing
Share who communicated with family/friends via email/Internet "basically every day"	Civic Engagement Supplement to the November 2008 Current Population Survey	in typical month over past year, also available in 2009, 2010, 2011 supplements
Share who discussed politics with family/friends "basically every day"	Civic Engagement Supplement to the November 2008 Current Population Survey	in typical month over past year, also available in 2009, 2010, 2011, 2013
Share who contacted/visited public official in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	also available in 2009, 2010, 2011, 2013 supplements
Share who bought or boycotted product or service due to company values in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	also available in 2009, 2010, 2011, 2013 supplements
Share who attended a meeting where political issues were discussed in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who took part in march/rally/protest/demonstration in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who participated in at least one of the four activities above in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	
Share who showed support for a political candidate/party in past year	Civic Engagement Supplement to the November 2008 Current Population Survey	

Source: Social Capital Project.

Dinner with family was correlated with percent married and percent never married, but not with other family indicators. A second indicator involving eating meals with family (from the NSCH) also was not well correlated with other variables and was often signed the wrong way.

Looking at adverse childhood experiences, reading to children every day (NSCH), heavy exposure to TV/videos/video games (NSCH), heavy exposure to electronic

devices (NSCH), and dinner with family, the alpha was only 0.61. Dropping adverse childhood experiences and reading, the alpha rose to 0.71. The alpha using only reading, TV, and electronic devices was 0.76.

Ultimately, we decided to create a family unity index from the percent of births to unmarried women, the percent of children in single-parent families, and the percent of women who were married (alpha=0.95). These variables are all available at the county level. We also created a second family unity index using the weights on the three variables produced in the county-level principal components analysis. These weights were very similar to those using PCA at the state level, and the two indices correlated at 0.9999.

We also created a "family interaction" index including reading to children, TV viewing, and electronic device viewing. These variables are not available at the county level.

We considered including adverse childhood experiences as its own index, but it was less strongly correlated with the other subindices, and it is unavailable at the county level.

Social Support

The average number of friends variable from the 2008 Civic Engagement Supplement to the Current Population Survey[48] was correlated at 0.91 with the variable indicating the share with at least five friends (from the same survey), and it was more strongly correlated than the latter with the share having daily contact with family and friends (from the September 2013 Volunteer Supplement). We dropped the variable giving the share with at least five friends. The share of adults with emotional support (from the 2006 and 2010 Behavioral Risk Factor Surveillance System data)[49] and the parenting support measure in the NSCH were correlated at 0.62. We dropped the latter.

Looking at emotional support, trust in neighbors, talking to neighbors, doing favors for neighbors, average number of friends, and contact with family and friends, the alpha was 0.83.[50] Adding working with neighbors, from the September 2015 Volunteer Supplement, raised it to 0.84.[51] Adding dinner with family members lowered it to 0.82, while adding both left it at 0.83. Adding both plus the violent crime rate (from the Federal Bureau of Investigation Uniform Crime Reports)[52] raised it only to 0.84. Dropping average number of friends, doing favors for neighbors, or trusting neighbors lowered it below 0.80. Adding the percent of women married raised the alpha to 0.84. Further adding the percent of women never married did not change it. Adding the percent in one-person households lowered it.

Looking at emotional support, trust in neighbors, talking to neighbors, doing favors for neighbors, average number of friends, and contact with family and friends, the alpha was 0.83. It rose to 0.85 if talking to neighbors and contact with family and friends were dropped.

We created a social support index including emotional support, trust in neighbors, doing favors for neighbors, and average number of friends (alpha=0.85). Only emotional support is available at the county level, but it is missing for several hundred counties, and it comes from a survey that is not necessarily representative of every county.

Community Health, Religious Health, Civic Engagement

We created four variables related to participation in groups, using the September 2013 Supplement to the Current Population Survey. They ended up highly correlated with one another. We dropped the measure that excluded participation in recreation groups like golf and tennis clubs. Instead of using the separate variables we created for participation in religious groups and in nonreligious (and non-recreation) groups, we decided to use the variable for participation in all groups.

Church attendance and participation in prayer groups, both from the 2014 Pew Religious Landscape Study, were highly correlated (0.92).[53] We dropped participation in prayer groups. Church attendance, religious adherence rates (from the 2010 U.S. Religion Census: Religious Congregations and Membership Study)[54], and participation in religious groups were all correlated at above 0.50 with each other, but only participation in religious groups had any moderate positive correlation with other civic engagement variables. Looking at participation in religious organizations, church attendance, and religious adherence rates, the alpha was 0.79, and it fell if any of the three were excluded. These findings will be the subject of future Social Capital Project analyses. We used none of these measures in the end.

We looked at the Penn State measure of associations per capita, but we also created two of our own, splitting recreation and leisure establishments (like bowling centers and golf clubs) from membership organizations. (All from the Census Bureau's 2015 County Business Patterns data.[55]) All three of these measures were correlated with the non-religious civic engagement measures. The Penn State measure and our measure for membership organizations correlated at 0.90.

The civic engagement measures from the Current Population Survey supplements were all strongly correlated with each other, and the registered non-religious nonprofit measure (from IRS data) also correlated well with the other non-religious civic engagement measures.[56] The measure adding

congregations to non-religious nonprofits generally was a bit more strongly correlated with these other measures, so we used that measure instead. Using that measure also tended to produce larger alphas with other variables than using non-religious nonprofits and congregations separately.

Looking at group participation, membership organizations per capita, recreation and leisure establishments per capita, non-religious nonprofits and congregations, serving on a committee or as an officer, attending a public meeting, volunteering, and working with neighbors on a project, the alpha was 0.91. Dropping recreation and leisure establishments, the alpha remained at 0.91. Swapping in the Penn St. measure for our membership organization measure (or for both it and our recreation and leisure establishment measure) also left the alpha unchanged. Adding voting in local elections (from the September 2013 Voting Supplement) lowered the alpha. Dropping group participation slightly lowered the alpha.

Adding measures of political participation to other civic engagement variables did not alter the alpha much. Of the six measures we considered (from the November 2008 Civic Engagement Supplement), we retained two—attending political meetings and participating in a demonstration—because of the degree of engagement involved. We dropped discussing politics (less obviously related to civic engagement and more related to interests and knowledge), boycotting companies (too private an act), and supporting a candidate (too imprecisely defined to include low-investment and –involvement "support").

The share making charitable contributions of at least $25 (from the 2015 Volunteer Supplement) was negatively correlated with two IRS measures on charitable contributions (from 2014 IRS Statistics of Income data).[57] The Current Population Survey measure was positively correlated with non-religious civic engagement variables; the IRS measures were negatively correlated. We dropped the IRS measures. Adding the Current Population Survey measure to the other community health indicators left the alpha unchanged, however.

We created a community health index that included membership organizations per capita, nonreligious not-for-profits and congregations per capita, serving on a committee or as an officer, attending a public meeting, volunteering, working with neighbors on a project, attending a political meeting, and participating in a demonstration (alpha=0.92). We excluded voting in local elections and charitable contributions, in part, because they are unavailable at the county level. We excluded group participation because it did not increase the alpha by much.

Institutional Health

Voting in local elections was negatively correlated with voting in presidential elections (from the Election Administration and Voting Survey) and census response rates (from the Census Bureau).[58] It also correlated less strongly with other variables in our database and is unavailable at the county level. We dropped it.

The generalized trust variable from the American National Election Study (ANES) was correlated with the CPS variable relating to trust in neighbors at only 0.33.[59] It has very small correlations with the CPS confidence in institutions variables (and two of them are negative). Since the ANES variable is only available (with sufficient sample sizes) for half the states, and since it is unavailable at the county level, we dropped it from consideration.

Presidential voting rates, census response rates, and our three confidence-in-institutions measures (from the September 2013 Volunteer Supplement) were all positively correlated. Looking at them together, the alpha was 0.72. Adding the three religion variables lowered it to 0.64. Dropping the confidence variables lowered it to 0.66.

We created an institutional health index from presidential voting rates, census response rates, and the three institutional confidence variables (alpha=0.72). The alpha using the two variables available at the county level was 0.66, and the two subindices are correlated at 0.73, but unfortunately at the county level, census response rates and voting rates are not strongly correlated, so we did not use the two-variable subindex.

Social Capital Index

We computed the preferred index from family unity, family interaction, community health, institutional health, social support, collective efficacy (violent crime rate), and philanthropic health (percent giving at least $25 to charity). The alpha was 0.86.

We also computed an index using the methodology used for the county level. This version correlated with the state index at 0.96.

County Analyses

We began with the list of indicators shown in Appendix Table A1, above. The county-level data required cleaning before it could be analyzed. One problem was that a small number of county definitions changed over the time period covered by our measures.[60] A second was that some counties had one or more extreme values, often for smaller counties where an extreme value can reflect small samples. We inspected the distributions of each variable and recoded extreme values on a case-by-case basis. For some variables, we either bottom-coded or top-coded (often at the 99.75 percentile) the values. For others, we dropped percentages equal to 0 or to 100. For two variables, we recoded some rates that should not have exceeded 100 percent to 100 percent. Values of 0 or 100 were recoded to missing if a county had four or more variables at one of those extreme values.

After this cleaning, we standardized all variables and reversed the polarity (multiplying by -1) for eight of them so that higher standard scores always indicated more "social capital."

Family Health

The share of families with children with a single parent and the share of children in families headed by a single parent—both from the same ACS data used at the state level—were correlated at 0.95. We dropped the former.

Looking at the percent of births to unwed mothers, percent of women married, and percent of children in single-parent families, the alpha was 0.81. Adding the percent never married raised it, but only to 0.82. Adding only the nonmarital fertility rate lowered it to 0.78. (All of these variables were from the ACS.)

Looking at the percent of births to unwed mothers, the nonmarital fertility rate, and the percent of children in single-parent families, the alpha was 0.75. It rose to 0.78 if the percent of women married was also added. It fell if the percent in one-person households or the percent of women never married was added. It fell to 0.73 if the nonmarital fertility rate was dropped. The percent of births that were to unmarried women correlated more strongly with other family indicators than the nonmarital fertility rate.

In the end, we created the same family unity subindex as at the state level, using percent of births to unwed mothers, the percent of women married, and percent of children in single-parent households (alpha=0.81). We created two versions, one that used the weights from

PCA analyses at the county level, and one that used the weights from PCA analyses at the state level. They correlated with each other at 0.9997; the weights on the three variables were very similar at the state and county levels.

There were no family interaction variables available at the county level, so we were unable to create a subindex for this dimension.

Social Support

The only social support variable available at the county level is having emotional support,[61] but it is missing for several hundred counties, and it comes from a survey that is not necessarily representative of every county. We chose not to use it, and to thereby forego having a county-level social support subindex.

Community Health, Religious Health, Civic Engagement

Our two variables related to charitable contributions, from IRS data,[62] generally had low or negative correlations with the other indicators. For this reason, and because they were dropped from the state index, we dropped them here too. The Penn State social capital measure and our measure for membership organizations correlated at 0.95.[63] We dropped the Penn State measure.

We had six remaining variables related to community health: non-religious non-profit organizations (IRS), non-religious non-profit organizations plus religious congregations, religious congregations, religious adherence (both from the 2010 U.S. Religion Census: Religious Congregations and Membership Study), membership organizations, and recreation and leisure establishments (both from County Business Patterns data).[64] However, we were concerned that we lacked any indicators of informal civil society and activities requiring a time commitment. At the state level, several such measures are available from the Current Population Survey and included in our community health subindex—working together with neighbors, attending public meetings, serving on committees or as officers, volunteering, attending political meetings, and participating in demonstrations.

To resolve this concern, we first went back to the state data and created a new subindex of "informal civil society" for each state. The subindex score was the first principal component score combining the six CPS variables above. We then assigned this subindex score to every county within a state. In other words, the only variation in the subindex score is between states, and all counties within a state get the same score.

Next, back in the county data, we created five different candidate subindices, using different combinations of the informal civil society subindex score, membership organizations per capita, non-religious non-profit organizations per capita, congregations per capita, and the combination of non-religious non-profits and congregations. (Religious adherence was not strongly correlated with the others, and because of our concerns about the establishment data—noted in the report—we were wary of including recreation and leisure establishments when we already were using membership organizations.) These subindices were estimated using PCA.

Next, we computed, for each of the five candidate subindices, the population-weighted average subindex score across a state's counties. Then we correlated each of these state averages with the state-level community health subindex. We selected the subindex, out of the five candidates, that produced the strongest correlation.

The final county-level community health index combines non-religious non-profits per capita, congregations per capita, and the informal civil society subindex.

Institutional Health

Looking at voting rates in presidential elections (2012 and 2016 Election Administration and Voting Surveys), 2010 census response rates (from the Census Bureau), and religious adherence, none were strongly correlated with one another, and the alphas were very low using any combination of the three. Census response rates generally correlated poorly with the other social capital indicators.[65]

As with the community health subindex, we were concerned about the incomplete data we had at the county level. In this case, we lacked information about confidence in institutions. We took the same approach as for community health. In the state data, we created a confidence subindex that included the three institutional confidence variables. We assigned every county in a state the state's subindex score. Then we created three versions of a county-level institutional health index, using different combinations of presidential voting rates, census response rates, and the confidence subindex.

As before, we created population-weighted state averages across a state's counties and compared them to the state-level institutional health index. The version that correlated most strongly included presidential voting rates, census response rates, and the confidence subindex.

Social Capital Index

We computed an initial index from family unity, community health, institutional health, and collective efficacy (violent crime rate).[66] The alpha was 0.66. We also computed an alternative index, dropping violent crime, which was missing for 178 counties (out of 3,142). We were able to compute scores for 103 of these counties by creating an alternative index that left out violent crime. The alpha fell to 0.58, but it correlated at 0.94 with the initial index. Finally, we modified the (standardized) initial index by replacing any missing values on the index with values from the (standardized) alternative index. This is our final county social capital index.

Benchmarking Data

Appendix Tables A2a and A2b provide information on the benchmarks against which we compare our social capital indices and subindices.

Appendix Table A2a. Benchmark Indicators (State and County-Level)

Indicator	Data Source	Notes
Unemployment rate	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Prime-age male labor force participation	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B23001; share of men 25-54 who worked at some point over the previous 12 months
Teen idleness	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S0902; share of teens 16-19 not in school & not in labor force
Median household income	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Percent poor	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03; share of families and people whose income past 12 months is below the poverty level
Percent with debt in collections	Urban Institute estimates using 2016 credit bureau data	share of people with a credit bureau record that have debt in collections
Percent w/ housing costs exceeding income by 35%+	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP04
Percent of children in hh's receiving means-tested benefits	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S0901; share of children under 18 in households receiving cash public assistance, SSI, or SNAP
Population in distressed ZIP codes (EIG)	Economic Innovation Group, 2016 Distressed Communities Index data	Distressed ZIP codes are in the bottom fifth of Distressed Communities Index scores, which take into account seven factors related to education, housing, employment, and income
Percent poor in the block group of average poor person	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Percent rich in the block group of average rich person	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Ratio of 80th percentile of hh income to 20th percentile	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19080
Gini coefficient, household income	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19083
Share of hh income received by top 5 percent	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B19082

Opportunity Score	Opportunity Nation, 2017 Opportunity Index	Range from 0 to 100. Based on subindices related to the economy, education, health, and community. These subindices are based on a variety of indicators.
Relative immobility	Chetty et al. (2014), using IRS data	rank-rank slope, which gives the expected number of income percentiles in adulthood separating the richest and poorest children
Percent of adults that graduated from high school	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02; includes those with a GED
Percent of adults that obtained a bachelor's degree	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Rate of on-time high school graduation	U.S. Department of Education EDFacts Data Files, 2014-15 school year	via 2018 County Health Rankings data
Percent of adults with fair or poor health	Behavioral Risk Factor Surveillance System, 2015	via 2017 County Health Rankings data, age adjusted, self-reported
Age-adjusted premature mortality	National Center for Health Statistics - Mortality files	via 2017 County Health Rankings data
Mortality rate from "deaths of despair"	Centers for Disease Control and Prevention, Multiple Cause of Death Data, 2015	analyses using CDC WONDER; Deaths of despair include fatalities from alcohol abuse, drug overdose, and suicide. See Case and Deaton (2017).
Percent of adults disabled	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S1810; universe is civilian noninstitutionalized population
Percent diabetic	Centers for Disease Control and Prevention, Diabetes Interactive Atlas, 2013	via 2017 County Health Rankings data
Percent obese	Centers for Disease Control and Prevention, Diabetes Interactive Atlas, 2013	via 2017 County Health Rankings data; share with BMI of 30 or more
Percent who smoke	Behavioral Risk Factor Surveillance System, 2015	via 2017 County Health Rankings data
Percent of babies with low birth weight	National Center for Health Statistics - Natality files	county via 2017 County Health Rankings data; state via KIDS COUNT data center; share of live births <2500 grams
Percent without health insurance	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table S2701; universe is civilian noninstitutionalized population
Median age	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent of population under age 18	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B27001; universe is civilian noninstitutionalized population
Percent of population ages 65+	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B27001; universe is civilian noninstitutionalized population
Percent non-Hispanic white	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic black	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent Hispanic	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic American Indian or Alaska Native	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic Asian	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent non-Hispanic Native Hawaiian or Other Pacific Islander	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent other	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Percent multiracial	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Black-white segregation	American Community Survey, 2011-2015, 5-year estimates	Microdata obtained from DataFerrett
Percent foreign-born	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP02
Population size	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP05; universe is civilian noninstitutionalized population
Population density	American Community Survey, 2012-2016, 5-year estimates & 2010 Census Summary File 1	American FactFinder Tables DP05 & GCT-PH1; universe is civilian noninstitutionalized population

Percent in rural areas	2010 Census Population Estimates	county: via 2017 County Health Rankings data; state: 2010 Census Urban List; population outside "urbanized areas" and "urban clusters"
Mean travel time to work	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP03
Percent of housing owner-occupied	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table DP04
Median age of housing	American Community Survey, 2012-2016, 5-year estimates	American FactFinder Table B25035
Net migration	IRS Statistics of Income Migration data, 2015-2016	
Mean temperature	North America Land Data Assimilation System, 2011	via CDC WONDER, Centers for Disease Control and Prevention

Source: Social Capital Project.

Appendix Table A2b. Benchmark Indicators (State-Level Only)

Indicator	Data Source	Notes
Percent of adults incarcerated	Bureau of Justice Statistics, 2014, Correctional Populations In The United States Series	Number in prison or jail at the end of 2014 per 100,000 residents age 18+
Absolute mobility	Chetty et al. (2016), using decennial census, Current Population Survey, and IRS data	Online Data Table 2, 1980 cohort
Percent with internet subscription	American Community Survey, 2016, 1-year estimates	American FactFinder Table S2801
State and local government spending per capita	Census Bureau, 2015 Annual Surveys of State and Local Government Finances	
Mean elevation	Census Bureau, Statistical Abstract of the United States: 2004-2005	Table 351
Latitude	Ink Plant, LLC	
Longitude	Ink Plant, LLC	

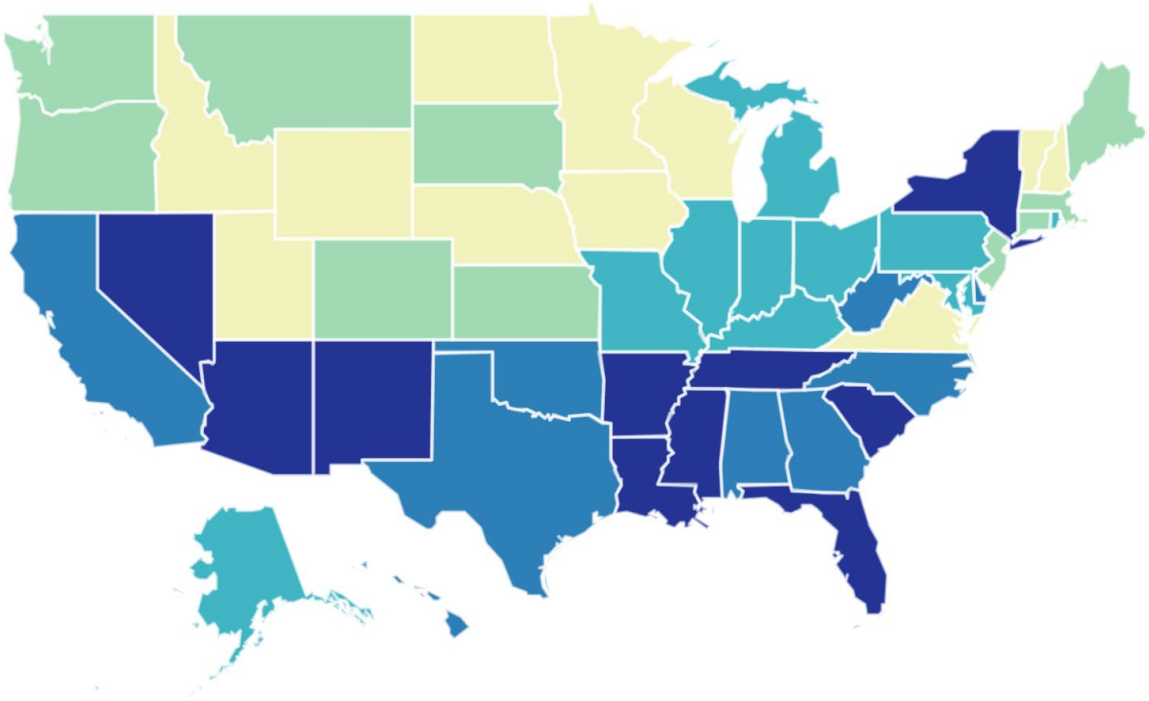
Source: Social Capital Project.

Additional Maps

In Appendix Figures A1 and A2, we provide state-level social capital maps using alternative (inferior) estimates. In Appendix Figure A1, we show the results when we construct state-level indices that mimic the approach to constructing county-level indices. In Appendix Figure A2, the state estimates are population-weighted average county social capital scores.

Appendix Figures A3-A9 display present each of the seven state subindices. Appendix Figures A10-A13 map the four county subindices.

Figure A1. State-Level Social Capital Index (County-Level Method)



Source: Social Capital Project. Maps powered by Leaflet.

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4. See, for example, Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000); Samuel Bowles and Herbert Gintis, “Social Capital and Community Governance,” *The Economic Journal* 112 (2002): F419–36.

5. See, for example, James S. Coleman, “Social Capital in the Creation of Human Capital,” *American Journal of Sociology* 94 (1988): S95-120; Joel M. Podolny and James N. Baron, “Resources and Relationships: Social Networks and Mobility in the Workplace,” *American Sociological Review* 62, no. 5 (October 1997): 673-693; and Ronald S. Burt, “Structural Holes and Good Ideas,” *American Journal of Sociology* 110, no. 2 (September, 2004): 349-399.

6. Robert D. Putnam, *Bowling Alone*.

7. Alberto Alesina and Eliana La Ferrara, "Participation in Heterogeneous Communities," *The Quarterly Journal of Economics* 115, no. 3 (2000): 847–904.

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18. We used the 2014 version of the Penn State data. State-level estimates for associations and nonprofits were created by multiplying associations per capita and nonprofits per capita by the 2014 population included in the data. We computed statewide census response rates by taking the 2014-population-weighted average of county response rates within a state. We computed statewide presidential voting rates by a similar population-weighted average, except that we used county estimates of the civilian population at least 18 years old from the 5-year 2016 American Community Survey data (covering 2012-2016, Table B05003).

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22. It finishes third to worst if the principal components analysis is conducted excluding Washington, D.C.

23. See, especially, Kenneth Prewitt, Christopher D. Mackie, and Hermann Habermann, eds., *Civic Engagement and Social Cohesion: Measuring Dimensions of Social Capital to Inform Policy* (Washington, DC: The National Academies Press, 2014); Katherine Scrivens and Conal Smith, "Four Interpretations of Social Capital: An Agenda for Measurement" (Working Paper No. 55, OECD Statistics, 2013), accessed March 7, 2018, http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=STD/DOC(2013)6&docLanguage=En; and Robert D. Putnam, *Bowling Alone*.

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25. See "Frequently Asked Questions," National Center for Charitable Statistics, accessed March 6, 2018, http://nccs.urban.org/frequently-asked-questions.

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27. "Who Gives Most to Charity," Philanthropy Roundtable, The Almanac of American Philanthropy, accessed March 7, 2018, http://www.philanthropyroundtable.org/almanac/who_gives_most_to_charity/.

28. After realizing that the counties including Austin and Dallas, Texas—two of the nation's largest cities—was missing for this ACS variable, we attempted to pull estimates from earlier releases of ACS 5-year averages. Unfortunately, the 2011 data—averaging 2007 to 2011—was the most recent release that included data for the counties. We used this data to fill in missing data for Austin and Dallas but also for 25 other counties in and outside Texas.

29. Weights were as follows: volunteering, 0.39; attending public meetings, 0.44; working with neighbors, 0.45; serving on a committee or as an officer, 0.41; attending political meetings, 0.42; and participating in demonstrations, 0.31. The subindex accounted for 71 percent of the variability in the original six variables.

30. The weights were 0.59 for corporations, 0.53 for media, and 0.62 for schools. The subindex accounted for 65 percent of the variability in the original three variables.

31. County-level presidential voting rates were computed by taking votes from the U.S. Election Assistance Commission and dividing them by ACS estimates of the civilian population aged 18 or older. We do this for 2012 and 2016 (in both cases using the 5-year 2012-2016 population in the denominator), and then average them. Alaska votes are unavailable, so each county is assigned the statewide voting rate in each year.

32. Measures of emotional support at the county level are available through County Health Rankings (taken from multiple years of the Behavioral Risk Factor Surveillance System survey). However, this survey was never designed to be representative at the county level.

33. The thinner state-level index explained 62 percent of the variance across the four variables, higher than the 56 percent of variance across seven variables explained by the fuller index.

34. Tom van der Meer and Jochem Tolsma, "Ethnic Diversity and Its Effects on Social Cohesion," *Annual Review of Sociology* 40 (2014), 459-478.

35. Segregation is clearly related to "bridging social capital"—social capital that allows groups to work together or that develops from such cooperation.

36. The highest social capital grouping has eleven states, and the two lowest social capital groupings have 599 counties. There are 150 counties for which we could not compute social capital scores.

37. Robert D. Putnam, Bowling Alone; Robert D. Putnam and David E. Campbell, *American Grace: How Religion Divides and Unites Us* (New York: Simon and Schuster, 2010).

38. We have developed some initial hypotheses to explain the low correlations. First, it may be that people who live in communities that have low social capital and substantial social and economic problems are drawn to religion as a source of support and a way of making sense of the world. Second, it may be that communities that are low in social capital for historical or demographic reasons may also be more religious for historical or demographic reasons. For instance, the institution of slavery may have had a lasting effect on the social capital levels and religiosity of African Americans. Third, secular social capital may "crowd out" religious social capital, so that places with robust community life that does not revolve around religious institutions find religious participation less valuable. Fourth, it may be that religious adherents are withdrawing from the broader civil society as it becomes more secularized (though it seems less likely that they would withdraw from their own families). Fifth, it may be that within a state or county, places with high religiosity and with low social capital are largely separate. That separateness might get obscured in aggregating up to the state or county level. Sixth, perhaps in some low-social-capital communities there is high religiosity within faith traditions that emphasize a personal relationship with God rather and that do not produce institutions of civil society to as great an extent.

39. See the discussion in the "Past Efforts to Develop a Social Capital Index" section for how we constructed the state-level version of the Penn State index. Putnam's index scores are available at http://bowlingalone.com/?page_id=7.

40. U.S. Census Bureau, *Ancestry: 2000, Census 2000 Brief*, by Angela Brittingham and G. Patricia de la Cruz, June 2004, "Large Ancestry: 2000," Figure 3, accessed March 27, 2018, https://www.census.gov/prod/2004pubs/c2kbr-35.pdf; Anthony Daniel Perez and Charles Hirschman, "The Changing Racial and Ethnic Composition of the US Population: Emerging American Identities," *Population and Development Review* 35, no. 1(March 2009), 1-51, Table 5, accessed March 27, 2018, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2882688/.

41. Reinforcing this hypothesis, in preliminary research on ancestry we have conducted, states and counties with many people of Chinese and Asian Indian descent also have lower social capital, despite those groups having average household incomes that are 30 percent and 78 percent above the overall American average (according to the American Community Survey).

42. Yuval Levin, *The Fractured Republic: Renewing America's Social Contract in the Age of Individualism* (New York: Basic Books, 2016).

43. Anil Rupasingha, Stephan J. Goetz, and David Freshwater, "The Production of Social Capital in US Counties."

44. See, for example, Vincent J. Felitti et al., "Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. The Adverse Childhood Experiences (ACE) Study," *American Journal of Preventive Medicine* 14, no. 4 (May 1998): 245-58, accessed March 27, 2018, https://www.ncbi.nlm.nih.gov/pubmed/9635069.

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46. U.S. Census Bureau, *American Community Survey*, accessed March 27, 2018, https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml.

47. See U.S. Census Bureau, *Current Population Survey*, September 2013: Volunteer Supplement, accessed March 27, 2018, https://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/36035#.

48. See Sarah Flood, et al., *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0*. [dataset], (Minneapolis: University of Minnesota, 2017), accessed March 27, 2018, https://doi.org/10.18128/D030.V5.0.

49. See U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, *Behavioral Risk Factor Surveillance System*, accessed March 27, 2018, https://www.cdc.gov/brfss/annual_data/annual_data.htm.

50. The variables related to neighbors and contact with family and friends are from the September 2013 Volunteer Supplement.

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52. See U.S. Department of Justice, Federal Bureau of Investigation, *Uniform Crime Reporting Statistics*, accessed March 27, 2018, https://www.ucrdatatool.gov/Search/Crime/State/TrendsInOneVar.cfm.

53. "Attendance at religious services by state," Pew Research Center, 2014, accessed March 27, 2018, http://www.pewforum.org/religious-landscape-study/compare/attendance-at-religious-services/by/state/; "Frequency of participation in prayer, scripture study or religious education groups by state," Pew Research Center, 2014, accessed March 27, 2018, http://www.pewforum.org/religious-landscape-study/compare/frequency-of-participation-in-prayer-scripture-study-or-religious-education-groups/by/state/.

54. See Association of Religion Data Archives, *U.S. Religion Census: Religious Congregations and Membership Study*, 2010 (State File), accessed March 27, 2018, http://www.thearda.com/Archive/Files/Descriptions/RCMSST10.asp.

55. See U.S. Census Bureau, *American Community Survey*.

56. The IRS data is available at The Urban Institute, *NCCS Data Archive*, accessed March 27, 2018, http://nccs-data.urban.org/data.php?ds=bmf. The CPS civic engagement variables are from the September 2013 and 2015 Volunteer Supplements.

57. See Internal Revenue Service, *SOI Tax Stats County Data 2014*, accessed March 27, 2018, https://www.irs.gov/statistics/soi-tax-stats-county-data-2014.

58. For voting rates, see U.S. Election Assistance Commission, *2012 Election Administration and Voting Survey: A Summary of Key Findings*, September 2013, "Turnout rates for voter participation using different bases," Table 29, accessed March 27, 2018, https://www.eac.gov/assets/1/6/2012ElectionAdministrationandVoterSurvey.pdf; U.S. Election Assistance Commission, *The Election Administration and Voting Survey: 2016 Comprehensive Report*, "Voter Turnout," Overview Table 1, accessed March 27, 2018, https://www.eac.gov/assets/1/6/2016_EAVS_Comprehensive_Report.pdf. For census response rates, see U.S. Census Bureau, "2010 Census Response Rates for the 25 Most Populous Cities" April 26, 2010, accessed March 27, 2018, https://www.census.gov/2010census/news/xls/mail_part_rate_4-27-10.xls.

59. The data is available at ANES, *2012 Time Series Study*, accessed March 27, 2018, http://www.electionstudies.org/studypages/anes_timeseries_2012/anes_timeseries_2012.htm and ANES, 2016 Time Series Study, http://www.electionstudies.org/studypages/anes_timeseries_2016/anes_timeseries_2016.htm, March 27, 2018. We used only the web samples, which are intended to be representative at the state level.

60. In 2007, the Skagway-Hoonah-Angoon Census Area was split into Skagway Municipality and the Honnah-Angoon Census Area. In 2008, the Wrangell-Petersburg Census Area and the Prince of Wales-Outer Ketchikan Census Area were divided into Wrangell City and Borough, Petersburg Census Area, and the Prince of Wales-Hyder Census Area, with part of Prince of Wales-Outer Ketchikan annexed by Ketchikan Gateway Borough. Subsequently, in 2013, part of the Petersburg Census Area and part of the Hoonah-Angoon Census Area were combined into Petersburg Borough, and the rest of the Petersburg Census Area was added to the Prince of Wales-Hyder Census Area. We dropped any data for Prince of Wales-Outer Ketchikan, Skagway-Hoonah-Angoon, or Wrangell-Petersburg. In 2015, the Wade Hampton Census Area became the Kusilvak Census Area and got a new FIPS code.

    Outside Alaska, Shannon County, South Dakota became Oglala Lakota County in 2015 and got a new FIPS code. In 2013, the independent city of Bedford,

Virginia was added to Bedford County. We added the totals for these two FIPS codes for variables measured in years before 2013.

61. See Robert Wood Johnson Foundation, *County Health Rankings and Roadmaps*, accessed March 27, 2018, http://www.countyhealthrankings.org/sites/default/files/2014%20County%20Health%20Rankings%20Data%20-%20v6.xls.

62. See Internal Revenue Service, *SOI Tax Stats County Data 2014*.

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The Wealth of Strong Families, Communities, and Congregations:

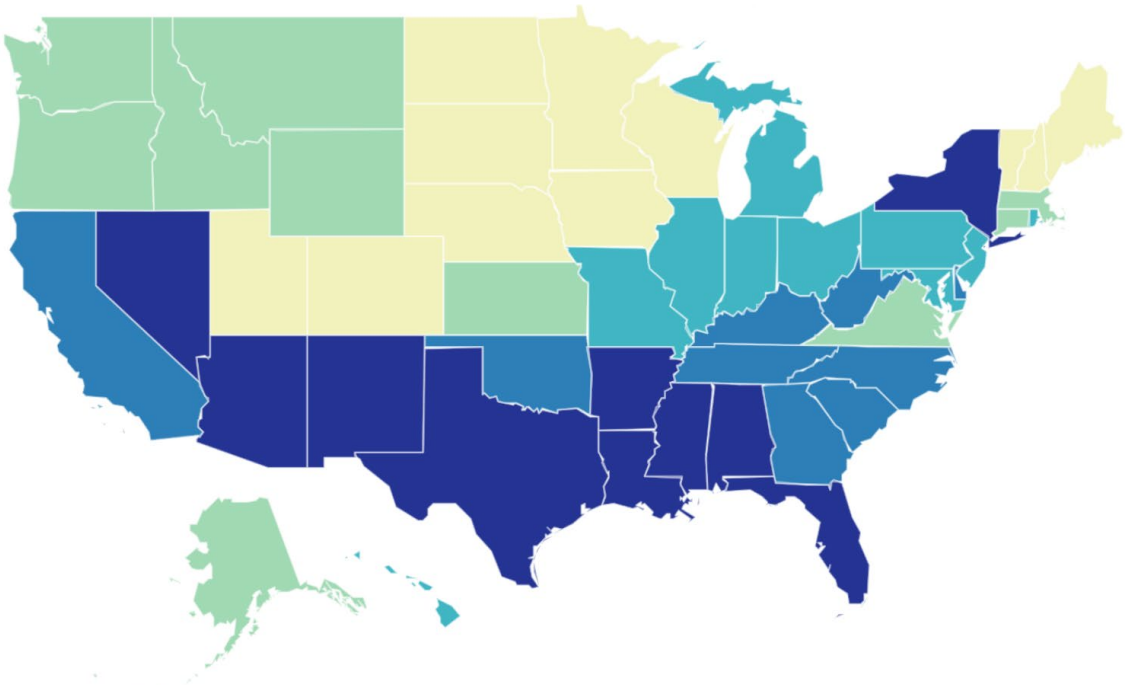
Utah as a Case Study in Social Capital

SCP BRIEF | FEBRUARY 2019

Last year, the Social Capital Project released its Social Capital Index, a tool that measures the health of associational life across the United States. As explained in our earlier report, What We Do Together: The State of Associational Life in America, we define associational life as the "web of social relationships through which we pursue joint endeavors—namely, our families, our communities, our workplaces, and our religious congregations."[1] Overall, Utah ranks as the state with the highest social capital among the 50 states and Washington, D.C. Utah's robust associational life is likely connected to the history of many of its people, whose ancestors pioneered to the Salt Lake Valley in the mid-1800s to seek religious freedom and build a united, religious community.

The Index utilizes several categories of variables to measure social capital at the state level: family unity, family interaction, social support, community health, institutional health, collective efficacy, and philanthropic health.[2] Utah ranked number one on three of these categories—family unity, social support, and philanthropic health. It ranked within the top ten on three others—family interaction, collective efficacy, and community health. However, on institutional health it ranked all the way down at number 30.

SOCIAL CAPITAL PROJECT SOCIAL CAPITAL INDEX, BY STATE



Source: Social Capital Project, https://www.lee.senate.gov/public/_cache/files/9935863c-a25e-44c5-8295-4ddf1c96e538/figure-1.-new-window.html.

Utah is a unique state in that over half (55 percent) of its population is made up of members of the Church of Jesus Christ of Latter-day Saints, a religious minority in the rest of the United States.[3] Thus, an analysis of Utah will by nature require an analysis of the Church. That such a large portion of the state's population belongs to the same religion most certainly contributes to the strong connectedness of Utahns to each other, as does the fact that many share a heritage of pioneer ancestry. The Church's teachings and practices also promote social connectedness on many levels, including in the family as well as in the community.

FAMILY UNITY (#1) & FAMILY INTERACTION (#8)

Family Unity

The Index measured "family unity" using three variables:

- percent of births in the past year to unmarried women;
- percent of adult women who are married;
- percent of children living in a single-parent family.

Utah has the lowest rate of unwed childbearing, the lowest percent of children living in single-parent homes, and the highest percent of married women.

Utah's high overall ranking on family unity is likely due to a few factors. Utah has a relatively highly-educated population, ranking 13th highest on percent of adults 25 years and older with a bachelor's degree or more.[4] Highly-educated adults in the United States are far less likely to have children outside of marriage, and they are also more likely to be married.[5] Furthermore, Utah's population is largely made up of non-Hispanic whites (78.5 percent), who are less likely to have children outside of marriage compared to blacks and Hispanics.[6] Among all races, those with higher education are less likely to have children outside of marriage, but racial differences in unwed births still persist across education levels.[7]

Utah's rates of unwed childbearing and percent of children in single-parent households are much lower than those of any other state. These differences are also likely due to the large population of Latter-day Saints. Like most religions, Latter-day Saint doctrine teaches that sex and childbearing should take place only within marriage. Their doctrine also teaches that marriage and family relationships are eternal and thus should be built to endure. In a 2014 study using a nationally representative sample of adults ages 18-60, researchers found that Latter-day Saints were by far the least likely among all religious groups and non-religious groups to report having engaged in premarital sex, and also the least likely to agree that "cohabitation is a good idea for couples considering marriage."[8] Additionally, a 2018 Pew Research Center report found that Latter-day Saints are the most likely of all religious groups and non-religious groups to be

married.[9] Furthermore, a 2012 Pew Research Center survey found that Latter-day Saints are far more likely than the general public to say that being a good parent is one of the most important things in life (81 percent of Latter-day Saints, compared to 50 percent of the general public) or that having a good marriage is one of the most important things in life (73 percent of Latter-day Saints, compared to 34 percent of the general public).[10]

Family Interaction

We measured family interaction using three variables:

- the percent of children who spend four hours or more per weekday watching TV;
- the percent of children who spend four hours or more per weekday on an electronic device (excluding homework);
- the percent of young children who have a family member reading to them every day.

Utah ranks number nine on children's TV watching, meaning the ninth lowest on the percentage of children watching four or more hours of TV per weekday, and number five on children's time spent on electronic devices. But it ranks below average on the percent of young children who have a family member reading to them daily, at number 29.

Children in homes headed by college-educated parents on average spend less time watching TV and on electronic devices, compared to children in non-college-educated homes, potentially explaining part of the reason why Utah ranks relatively low on children's screen time.[11] There is also a significant difference in screen time by race, with white children spending much less time watching TV or on computers compared to black and Hispanic children.[12] The Church also places emphasis on family interaction, with members encouraged to set aside one night a week for "Family Home Evening," for example.

The fact that Utah ranks below the middle on the percent of young children with an adult family member who reads to them daily is somewhat surprising, considering children in college-educated households are more likely to be read to every day, as are children who are non-Hispanic white.[13] Children in married-parent homes are more likely to be read to every day as well, compared to children in single-parent households.[14]

SOCIAL SUPPORT (#1)

The Index uses four variables to measure social support: percent of adults who say they get the social support they need, the average number of close friends adults report, the percent of neighbors who say they do favors for each other, and the percent of adults who say they can trust all or most of their neighbors.

Utah ranks first on three of these areas, and ranks second on the fourth area, the percent of people who say they get the social support they need.

Utah's strong social support is likely a function of the religious make-up of the state as well. Latter-day Saint congregations (called "wards") are structured geographically, with those living closest to each other generally being members of the same congregation. Thus, Utahns are often not only neighbors with those living around them, but they frequently are fellow congregants with many of their neighbors as well. Thus, it is unsurprising that Utahns have a high level of trust among neighbors and that neighbors are likely to provide favors for each other. Besides the overlapping nature of neighborhoods with wards, the Church also promotes service among ward members by assigning each member of the ward to look after specific individuals or families within their ward.

PHILANTHROPIC HEALTH (#1)

Another area where Utah ranks number one is on philanthropic health. This is measured by a single variable: the share of people who say they have made a contribution of $25 or more to a charitable group in the past year.

Utah's philanthropic strength is also likely connected to its large share of Latter-day Saints, as other researchers have noted.[15] Members of the Church are asked to contribute a tenth (a tithe) of their annual earnings to the Church. Nearly 80 percent of Latter-day Saints in the United States say they pay a full tithing, according to the Pew Research Center.[16] Latter-day Saints are also encouraged to help the poor through fasting once a month and then contributing at least the amount they would have spent on the foregone meals to offerings that fund the Church's welfare programs. The Church's welfare system includes food assistance that is provided through "Bishop's storehouses"—grocery distribution centers for those in need—thrift stores, social services, job training, and so forth.[17]

COLLECTIVE EFFICACY (#8)

Collective efficacy is measured by the number of violent crimes among every 100,000 people. Utah ranks among the lowest 10 states on violent crime, at number eight, with 215.6 violent crimes per 100,000 people in 2014.

COMMUNITY HEALTH (#10)

The Social Capital Index's measure of community health includes eight measures:

- percent of adults who have volunteered for a group in the past year;
- percent of adults who have attended a public meeting in the past year;

- percent of adults who have worked with neighbors in the past year to fix or improve something;
- percent of adults who have served on a committee as an officer of a group;
- percent of adults who have attended a meeting in the past year where political issues were discussed;
- percent of adults who took part in a march, rally, protest, or demonstration in the past year;
- membership organizations per 1,000 people;
- number of registered non-religious non-profits, including religious congregations, per 1,000 people.

Utah ranked high or at least above average on some of these factors: it ranked number one (the highest) on percent of adults who had volunteered for a group in the past year, number three on percent of adults who had worked with neighbors to improve or fix something, number four on the percent of adults who had served as an officer on a committee, number 11 on percent of adults who had attended a political meeting in the past year, and number 14 on percent of adults who had attended a public meeting in the past year. Religiosity in general is correlated with many of these elements of community involvement; thus, Utah's religiosity is also likely correlated with its relatively high ranking on several of these areas.[18]

However, Utah ranked poorly on several other community health factors, particularly on the number of membership organizations per 1,000 people, where they ranked last, as well as on the number of non-religious non-profits plus religious congregations per 1,000 people, where they ranked number 43. The state ranked in the middle (number 26) on the percent who had attended a march, rally, protest, or demonstration in the past year.

Volunteering is more common among those who are married, those who have children, college-educated adults, and non-Hispanic whites, all demographic factors common or relatively common in Utah.[19] The state's high level of volunteering is also likely due to the large amount of volunteering that takes place within the Church. The Church functions entirely with a lay ministry, and most active Latter-day Saints volunteer in their wards. A 2012 University of Pennsylvania study of about 2,700 active Latter-day Saints found that they report volunteering an average of 240 hours per year.[20] This is compared to an average of 52 hours annually among active volunteers in the United States.[21]

Surprisingly, Utah ranked relatively low in terms of having a small number of membership organizations as well as a small total number of (combined) non-religious non-profits plus religious congregations. This might also be a byproduct of the state's large population of Latter-day Saints. Other membership organizations or non-profits outside of the Church may not be as necessary because so much of social, charitable, and community life happens within the Church. Fewer membership organizations and non-profits may simply reflect the

centrality of the Church for many Utahns, rather than their lack of associational life. However, it could also mean that those inside the Church are not connecting with those outside of the Church. For example, the Pew Research Center found that nearly three-quarters of Latter-day Saints in Utah say that all or most of their close friends are also Latter-day Saints.[22]

However, it is also possible that the poor performance of Utah on these measures reflect bad data. The County Business Patterns data on which the membership organization figures are based implausibly suggest that Utah ranks lowest in the nation in terms of religious membership organizations. For example, the data indicate that Utah has only 196 religious establishments across Salt Lake, Utah, and Davis counties. However, these counties have 414 Latter-day Saint "stakes" (a stake consists of multiple wards) combined.[23] The reason for the discrepancy may be because organizations are only counted if they have paid employees, and because Latter-day Saint congregations are operated solely by volunteers, they would not be counted.

INSTITUTIONAL HEALTH (#30)

Utah ranks below average on institutional health at number 30. Institutional health is measured by five factors:

- voter participation in the 2012 and 2016 elections;
- mail-back response rates for the 2010 census;
- percent of adults who have confidence in corporations to do what's right;
- percent of adults who have confidence in the media to do what's right;
- percent of adults who have confidence in public schools to do what's right.

While Utah scored high on confidence in corporations (ranking third), and ranked relatively high on the Census mail-back rate (at number 15), the state scored low on voter participation (at number 38), and scored the absolute lowest of all states and Washington, D.C. on confidence in the media (at number 51). Utahns' confidence in public schools ranked roughly in the middle (at number 23).

It is somewhat surprising that Utah has such low voter turnout, given that in the 2012 election Mitt Romney, a fellow Latter-day Saint, was the Republican presidential candidate. Furthermore, Latter-day Saints are encouraged to vote by church leaders at the highest level.[24] However, Utahns might be less motivated to vote given the state's political homogeneity— it has nearly the largest Republican voter demographic in the nation—and thus many political races are non-competitive.[25] The state's strong distrust in the media may also be linked to Utah's large Republican population, as Republicans are far less likely to trust the media compared to Democrats.[26] We would like to have had state-level measures of confidence in local institutions, where Utah might exhibit more confidence than other states.

Overall, Utah is a state that is rich in social capital. Families are strong, individuals are socially connected and trust their neighbors, charitable contributions are high, violent crime is low, and people are volunteering in their communities and helping their neighbors. Its thriving associational life appears to be embedded into the culture of its people, a culture that is the lasting legacy of the original Latter-day Saint pioneers who settled the state back in the nineteenth century.

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Love, Marriage, and the Baby Carriage:

The Rise in Unwed Childbearing

SCP REPORT NO. 4-17 | DECEMBER 2017

EXECUTIVE SUMMARY

The most intimate and central form of associational life is the family—an institution with primary responsibility for nurturing children and transmitting values, knowledge, aspirations, and skills to subsequent generations. A healthy family life is the foundation for a healthy associational life. Children can overcome the negative consequences of being raised in unhappy or unstable families, but many start out the game of life already behind in crucial ways. More profoundly, weakened family life portends a diminished ability of a people to promote and nurture the civil society and pro-social norms that facilitate happiness and prosperity.

One important way in which family life has weakened in America is reflected in the increasing share of births that occur to unmarried couples. This trend has left fewer children in families mutually planned by parents with the intention of permanence, and more children in the care of parents unconstrained by the commitments of marriage. The share of births to unwed mothers stands at 40 percent—up from 5 percent in 1960. We estimate that nearly half of births start as an unwed pregnancy, including two-thirds of first births to women under 30.

This report explores the rise in unwed childbearing over the past 60 years, examining trends that have interacted to accelerate the unwed share of births. While many changes have played a role, we find that the most important have been the increase in the pool of never-married women (expanding the number of potential unwed mothers) and the decline in post-conception, pre-birth marriage ("shotgun marriage"). These two trends appear much more consequential than increases in nonmarital sexual activity, declines in marital fertility, or changes in the likelihood of obtaining an abortion.

Nonmarital sexual activity has risen substantially since the mid-twentieth century. The share of teen-age women who are sexually active, for example, is 2.5 times higher today than in the early 1960s. Increasing use of reliable contraception has mitigated the effect on unwed childbearing. Over the same period, the share of women having used contraception the first time they had sex outside marriage more than doubled. But while marital pregnancy rates have fallen in half as a result of the contraceptive revolution, because of higher rates of sexual activity, improper contraceptive use, and the increasing acceptability of unwed childbearing, nonmarital pregnancy rates are over one-third higher than in the early 1960s.

As for abortion, pregnant women—married or single—are less likely to obtain an abortion than they were before the Roe v Wade decision. That decline also reflects the declining stigma around unwed childbearing and a drop in unintended

pregnancy. Since at least the early 1980s, a rising share of births from nonmarital pregnancies are from pregnancies that were intentional; today, half of births from nonmarital pregnancies are intended.

Three times as many births today are from unwed pregnancies than in the early 1960s, and only 9 percent of these pregnancies are followed by a shotgun marriage—down from 43 percent in the early 1960s.

We trace these trends to the rising affluence of the mid-twentieth century, when a greater prioritization of nonmaterial needs (especially among women, who saw greatly expanded opportunities) met a rising ability to fulfill them. The effect of affluence was felt in the discovery of penicillin (which dramatically reduced the incidence of syphilis); the introduction of the pill (which expanded women's opportunities by allowing them to control their fertility); the development and increasing affordability of labor-saving home appliances, processed food, and paid child care (which gave women the opportunity to work longer hours outside the home, raising the opportunity cost of childbearing); and the nation's expansion of a safety net for single mothers (facilitating childbearing without marriage among more disadvantaged women). Rising affluence is an undeniably beneficial development that we should not want to reverse, but it has also led to less stable family circumstances for an increasing number of children. We must find ways to channel future affluence in service of healthier families and a more healthy associational life.

INTRODUCTION

Of all the social relationships that shape people throughout our lives, none is so formative and consequential as the one children have with their parents. For most of us, it is primarily the nuclear family that socializes us into the adult world, develops in us secure attachment and emotional maturation, and transfers to us the values and skills that shape the rest of our lives. No source of social capital matters more—whether for individuals or for society as a whole.

It is no denigration to parents or children in other types of family arrangements to recognize that the married-parent family is unsurpassed as an institution for child development. Statistical comparisons tell a very consistent story: on average, children raised outside of married-parent families generally have poorer outcomes compared to their peers raised in married-parent families. They have worse relationships with their parents, on average, particularly with their fathers.[1] They are also far more likely to experience physical, emotional or sexual abuse.[2] They have poorer health, display more aggression, are more likely to engage in delinquent behavior, have lower levels of educational achievement, and earn less as adults.[3] They are also far more likely to live in poverty.[4]

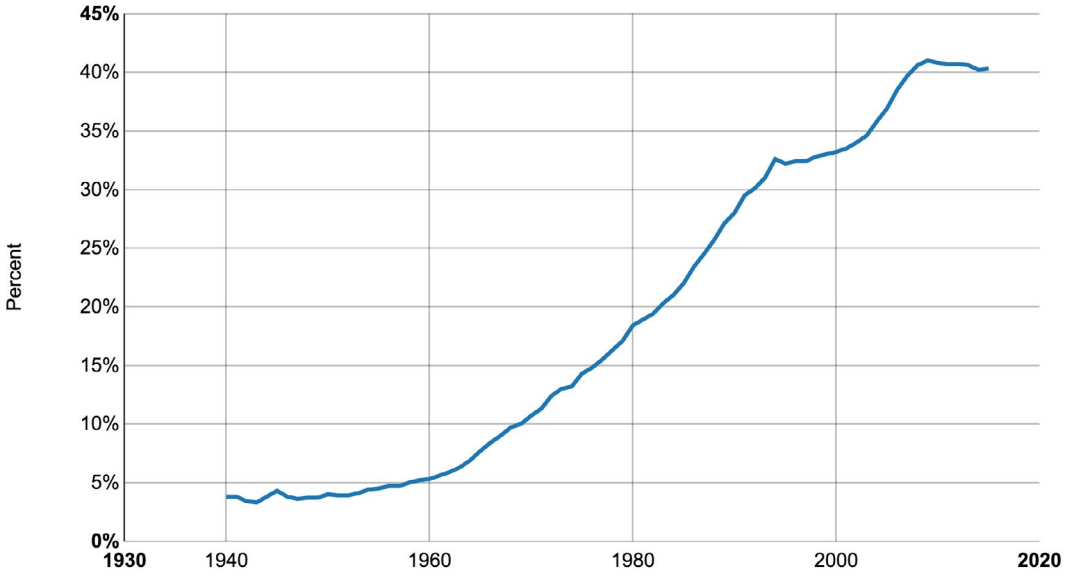
Statistical tendencies cannot tell us what is best for individual children in specific circumstances.[5] But they reinforce what common sense suggests: that children are likelier to be happy and successful when their parents intend to conceive a child together and subsequently maintain a healthy marriage.[6] While children

intentionally born into married families can subsequently experience divorce, unwed childbearing is particularly worrisome because it often signals both unintended pregnancy and an unstable parental relationship. Children born outside of marriage are more likely to experience a series of parental relationships and to have fathers whose resources are split between multiple families.[7]

This report examines the rise in unwed childbearing as an indicator of declining social capital. Historically, unwed childbearing was rare in the United States, but the share of births to unmarried women began climbing in the mid-twentieth century and has increased dramatically (Figure 1). While just 5.3 percent of births were to unwed women in 1960, over 40 percent have been since 2008.[8] Today, nearly six in ten first births to women under the age of 30 take place outside of marriage, and two in three first births are from nonmarital conceptions.[9]

This state of affairs reflects several developments that came to a head in the 1960s and that reflect affluence even as they have weakened the social circumstances into which children are born. Americans, on the whole, have embraced these societal changes, appreciating the personal freedom and opportunities they have brought. But the downside has been reduced family stability, affecting children into adulthood and eroding no less than the social foundations of modern society.

Figure 1. Share of Births that Occur to Unmarried Women, 1940-2015



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, various National Vital Statistics Reports. See Source Notes at the end of the paper for details.

Trends Contributing to Unwed Childbearing

The rise in unwed births shown in Figure 1 could reflect any number of trends related to marriage and childbearing. In particular, any of the following changes would have pressured the unwed birth share up:

1. Changes among single people that increase unwed births:
    - Increased sexual activity,
    - Declining use or effectiveness of birth control methods among sexually active single people,
    - Fewer pregnant single women choosing an abortion, and
    - Fewer "shotgun marriages" to pregnant single women.

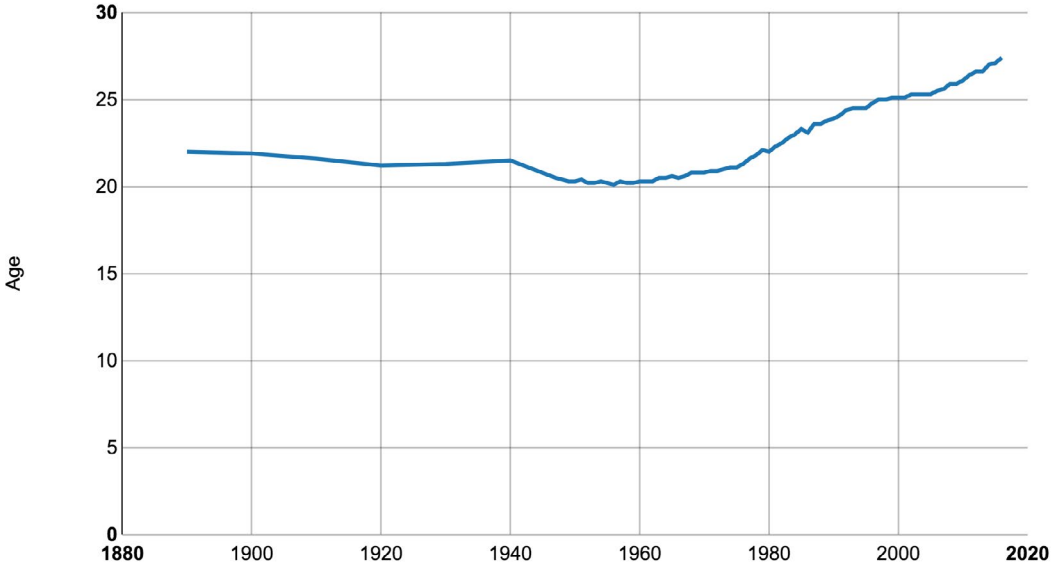
2. Changes among married people that reduce marital births:
    - Reduced sexual activity,
    - Increasing use or effectiveness of birth control among sexually active married couples, and
    - More pregnant married women choosing an abortion.

3. Increasingly delayed marriage and/or rising divorce, which increases the number of single women and thereby increases the number of unwed pregnancies.

CHANGES IN MARRIAGE AND DIVORCE

Taking these possibilities in reverse order, adults are less likely to be married today than in the past. Median age at first marriage began to rise after 1956, increasing modestly for the next 20 years (Figure 2). After 1975, however, the increase accelerated. Today, the median age at which a woman first marries is 27, up from 20 in 1956.

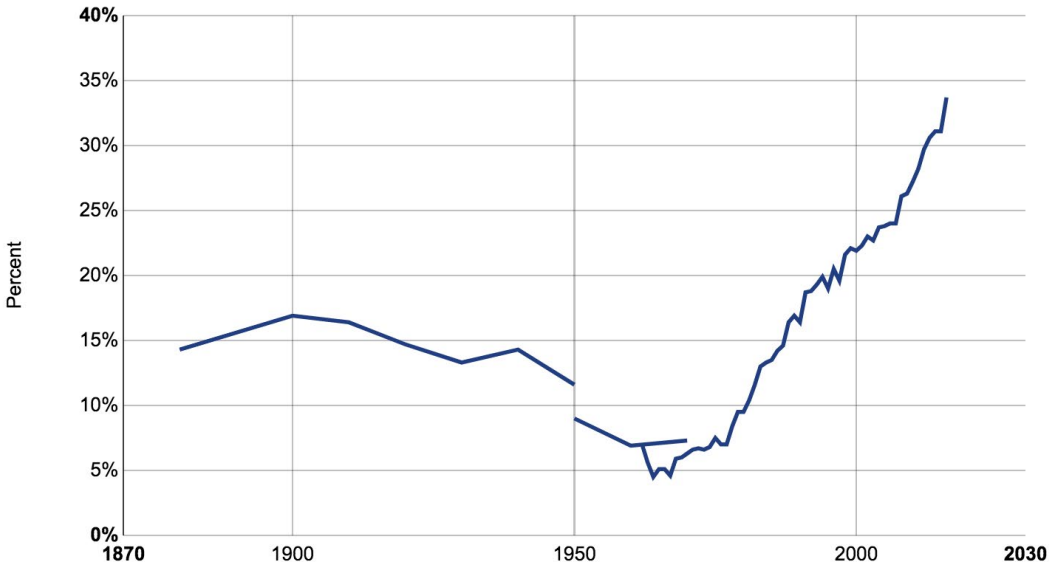
Figure 2. Median Age at First Marriage among Women, 1890-2016



Source: US Bureau of the Census, Historical Marital Status Tables, Table MS-2, https://www2.census.gov/programs-surveys/demo/tables/families/time-series/marital/ms2.xls.

Trends in the share of women never marrying show a similar pattern. (As we will see, many trends related to family and fertility appear to change around 1960.) In 1964, after a long period of rising marriage rates dating to the turn of the century, fewer than five percent of women between the ages of 30 and 34 had never been married (Figure 3). By 2016, however, the proportion of women in their early thirties having never married was up to an all-time high of one in three.

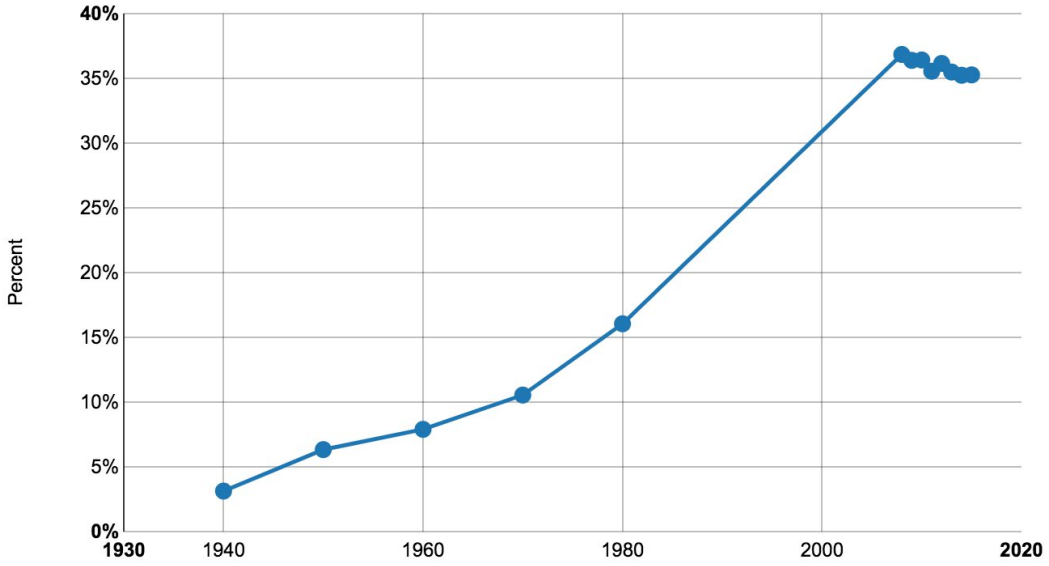
Figure 3. Percentage of Women Ages 30-34 Never Married, 1880-2016



Source: Social Capital Project analyses of decennial census and Current Population Survey data. See Source Notes at the end of the paper for details.

Marriages are also much less stable than in the past. The divorce rate (divorces per 1,000 married women) rose sharply between 1958 and 1979. It has fallen since, but it remains above 1970 levels.[10] Since married women face these high divorce rates year after year, the share of ever-married women ages 50-54 with a marriage that ended in divorce has climbed more dramatically, from below 10 percent during the mid-twentieth century to 35 percent today (Figure 4).

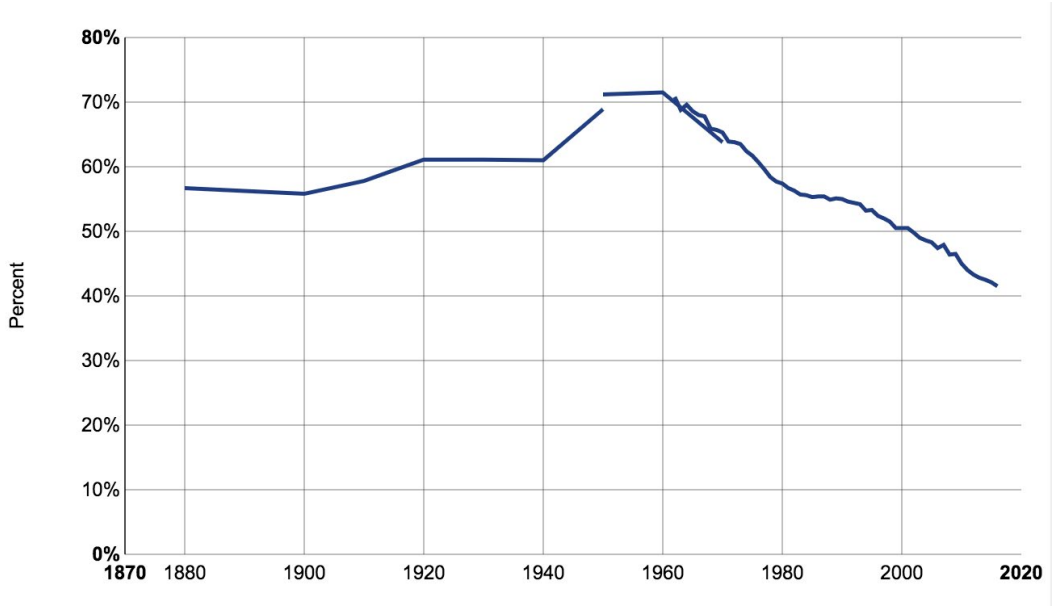
Figure 4. Percentage of Ever-Married Women Ages 50-54 Who Ever Divorced, 1940-2015



Source: Social Capital Project analyses of Integrated Public Use Microdata Series microdata from the decennial census and American Community Survey. See Source Notes at the end of the paper for more details.

The decline of marriage means there are more single women who potentially might get pregnant. While 71.5 percent of women ages 15-44 were married in 1960, just 41.5 percent were in 2016 (Figure 5). All else equal, this change would increase the share of births that occur to unmarried women.

Figure 5. Percentage of Women Ages 15-44 Who are Married, 1880-2016

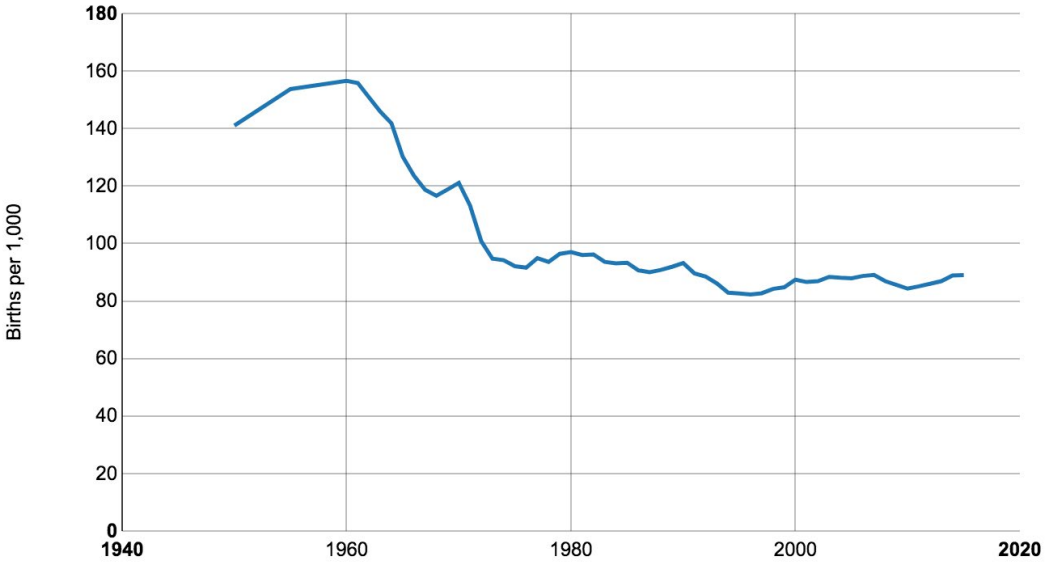


Source: Social Capital Project analyses of decennial census and Current Population Survey data. See Source Notes at the end of the paper for more details.

CHANGES IN BEHAVIOR AMONG MARRIED COUPLES

Not only are fewer adults choosing to enter into marriage or stay married; when they marry, fewer married couples choose to have children (and they choose to have fewer children if they do start a family). Between 1960 and 1996, the number of births to married couples per 1,000 married women fell nearly in half, and it remained low thereafter (Figure 6). Since the share of births to unwed mothers is affected by the number of marital births, the decline in marital fertility has increased the relative prevalence of unwed childbearing.

Figure 6. Births to Married Couples per 1,000 Married Women, 1950-2015



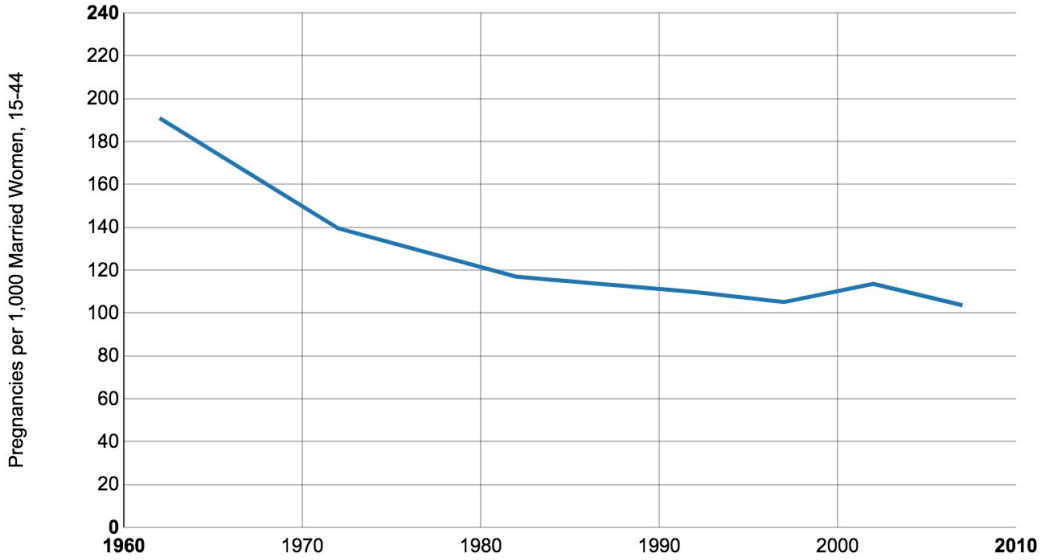
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, various National Vital Statistics Reports. See the Source Notes at the end of the paper for more details.

Why did the marital birth rate decline? Understanding the drop requires distinguishing three kinds of pregnancy outcomes: marital conceptions that end in marital births, nonmarital conceptions that end in marital births (after a "shotgun marriage"), and abortions obtained by married women.

The first point to grasp is that pregnancies per married woman have declined over time (Figure 7). This drop reversed a trend of rising marital pregnancy that probably extended back at least to the early 1930s.[11] Compiling these trends is surprisingly difficult. Past research has counted marital pregnancies as the sum of births to married women and abortions obtained by married women. But because of shotgun marriage, some women who are married when they deliver were single when they became pregnant.

The fact that pregnancies declined hints that abortion may be a negligible part of the explanation for falling marital birth rates. Abortions were relatively difficult to obtain prior to *Roe v. Wade*, but that is when the largest decline in marital birth rates occurred. And, in fact, abortion is rarer today among pregnant married women than it was before Roe.[12]

Figure 7. Pregnancy Rates among Married Women, 1960-64 to 2005-09



Source: Social Capital Project analyses. See the Source Notes at the end of the paper for more details.

It is also unlikely that married couples are having less sex today (or were having less sex in the mid-1970s) than in the early 1960s, when the relative absence of effective birth control regulated sexual activity. Though long-term trends are difficult to find for married women, contraception became more common over time among those engaging in premarital sex, as we will see below, as did use of the pill. Married women had much greater access to the pill than unmarried women prior to the early 1970s. Between the early 1980s and early 2010s, contraceptive use among married women specifically rose and then fell but was largely flat.[13]

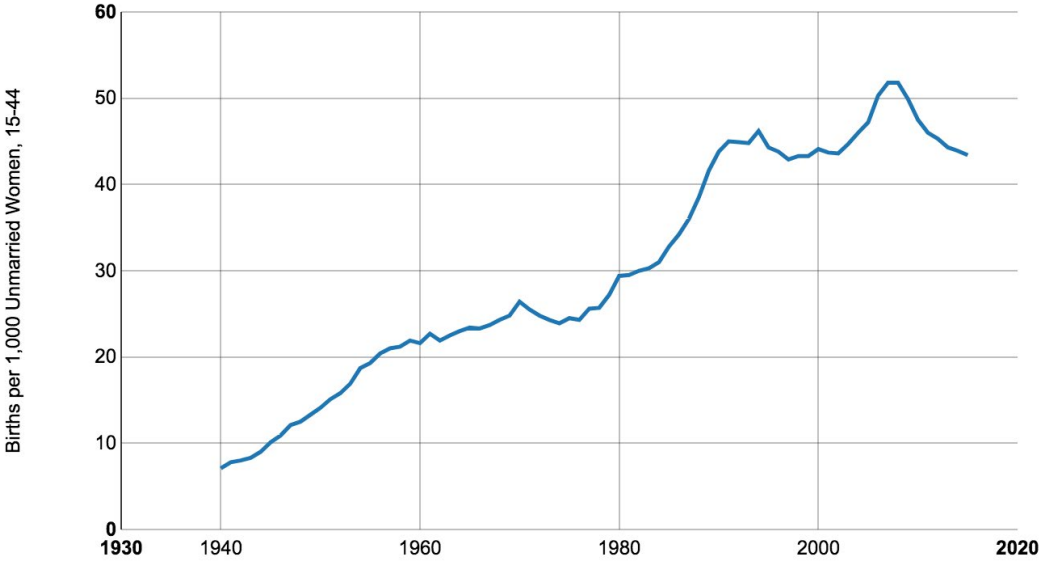
CHANGES IN BEHAVIOR AMONG SINGLE ADULTS

Different people may have varying levels of concern about the long-term declines in marrying and having children after getting married. Much ought to hinge on the extent to which these trends reflect the preferences of men and women. The decline in *staying* married is more worrisome, especially to the extent children are affected. But the last set of changes affecting the share of unwed births is perhaps the most concerning: the increased rate at which children are born to couples who share no marital bond.

It should be noted that many "single" women—and many more than in the past—are cohabiting with a partner to whom they are not married. Indeed, more than half (58 percent) of unmarried women live with the father of their child at the time of the child's birth.[14] However, cohabiting relationships are far less stable than marriage. For example, about half of children born to cohabiting parents experience at least one maternal breakup by the time they turn three years old, compared to only 13 percent of children born to married parents.[15]

As shown in Figure 8, single women have grown far more likely to give birth over time. (The estimates in this chart compare single-mother births to the number of single women, while those in Figure 1 compare single-mother births to the number of total births.) Compared with 1940, single women were over seven times as likely to give birth in 2007. The rate declined temporarily in the early 1970s and in the 1990s, and it has fallen back to 1990s levels since the onset of the Great Recession. But the upward march has been otherwise relentless.

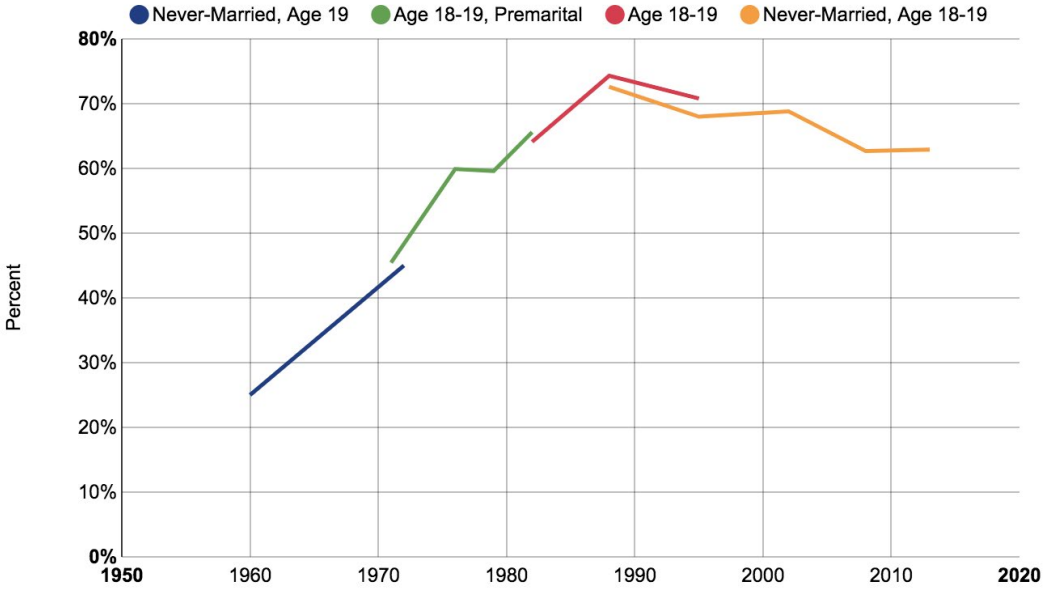
Figure 8. Births to Single Mothers per 1,000 Single Women, 1940-2015



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, various National Vital Statistics Reports. See the Source Notes at the end of the paper for more details.

Why did more and more single women give birth over time? For starters, sexual activity among single women increased. Data are most readily available for teenagers, though the increase seems to have been larger for older women. The share of never-married 19-year-old women who were sexually experienced began rising around 1960, when roughly one in four reported they had ever had sex. The figure was 45 percent by 1972 (see Figure 9). From 1972 to 1982, the share of 18- to 19-year-old women ever having had premarital sex rose from 45 percent to 66 percent. Teenage sexual activity peaked in 1988 before it began to steadily decline. Today, teen sex is probably near or below its early 1980s levels, though still much higher than levels in the 1960s and early 1970s.[16] In 2013, 43 percent of 15- to 19-year-olds had already had sex, and 63 percent of never-married 18- to 19-year-olds had.[17]

Figure 9. Percent of Teenage Women Who Have Ever Had Sex, 1960-2015



Source: Various previously published estimates. See the Source Notes at the end of the paper for more details. "Never-Married, Age 19" refers to never-married 19-year-olds and "Never-Married, Age 18-19" refers to never-married 18- and 19-year-olds. "Age 18-19, Premarital" and "Age 18-19" refer to 18- and 19-year-olds regardless of marital status. "Age 18-19, Premarital" refers only to premarital sex, unlike the other estimates.

Long-term trends in the share of single adults *of all ages* who are sexually active are elusive. Federal data on sexually transmitted diseases indicate that they were over twice as common in 1990 as in 1960 and nearly three times as common in 2015.[18] Survey estimates show that the share of unmarried women between the ages of 15 and 44 having had sex with three or more partners in the past year has risen since the late 1980s.[19] The share of unmarried women between the ages of 15 and 44 who were using contraception rose from 19 percent in 1982 to 33 percent in the early 2010s.[20] All of these trends suggest that sexual activity among unmarried women generally has continued to rise even as it has fallen among teens. (The share of unmarried women ages 15-44 having had any sex in the past year shows no clear trend since the late 1980s, but no obvious decline.[21])

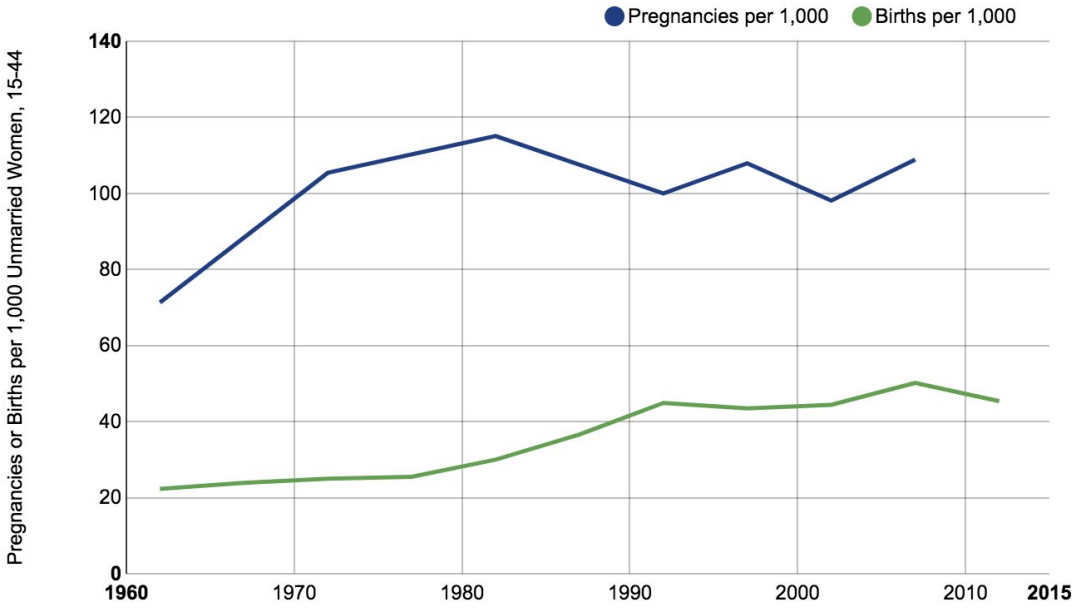
Further evidence comes from changes in sexual attitudes. In 1969, according to Gallup, 68 percent of American adults agreed that pre-marital sexual relations were wrong. Just four years later in 1973, that number had dropped to 47 percent, a decline of nearly one-third,[22] and as of 2016, only 33 percent agreed that sex between an unmarried man and woman is wrong.[23] Similarly, General Social Survey data shows that in 1972, just 27 percent of adults said that having sex before marriage is "not wrong at all," compared to 60 percent in 2016 who said that sex before marriage is "not wrong at all."[24]

Unwed birth rates could also have risen if unmarried women who were sexually active became less likely to use effective contraception over time. But that did not happen. In the early 1960s, about 40 percent of women having had premarital sex

used contraception the first time they did so, a figure which rose to 65 percent by the mid-1980s and which is above 80 percent today. The share using the pill rose from 4 percent to 12 percent and then to about 20 percent.[25] Another study looked at unmarried women "at risk" of pregnancy (meaning women contracepting or not contracepting but sexually active in the past three months). In 1982, 80 percent of these women were using contraception, and 86 percent were in the late 2000s.[26] Finally, there is no evidence that women are choosing less effective contraception methods over time. The share of contracepting unmarried women using a hormonal method such as the pill or an intrauterine device was constant at around 50 percent over the period.[27]

Though single women were using contraception more and using more effective methods, because more of them were having sex, more became pregnant. As shown in the upper line of Figure 10, unwed pregnancy rates rose through the early 1980s. The good news is that the rate then flattened or even declined, reversing a trend that dated at least to the early 1930s.[28] This reversal could reflect the impact of the HIV epidemic, which may have scared many people into having less sex (see the teen trend in Figure 9) or using condoms more consistently. The bad news is that unwed pregnancy stabilized at roughly the 1970 rate, significantly higher than the rates that prevailed through most of the 1960s and earlier. Once pregnancy rates leveled off, birth rates eventually decelerated. However, the lower line of Figure 10 (showing five-year averages of the data in Figure 8) shows that unwed births rose during the 1980s while pregnancy rates fell.

Figure 10. Pregnancy and Birth Rates among Unmarried Women, 1960-64 to 2010-14



Source: The top series shows unwed pregnancy rates. The bottom series shows unwed birth rates. See the Source Notes at the end of the paper for more details.

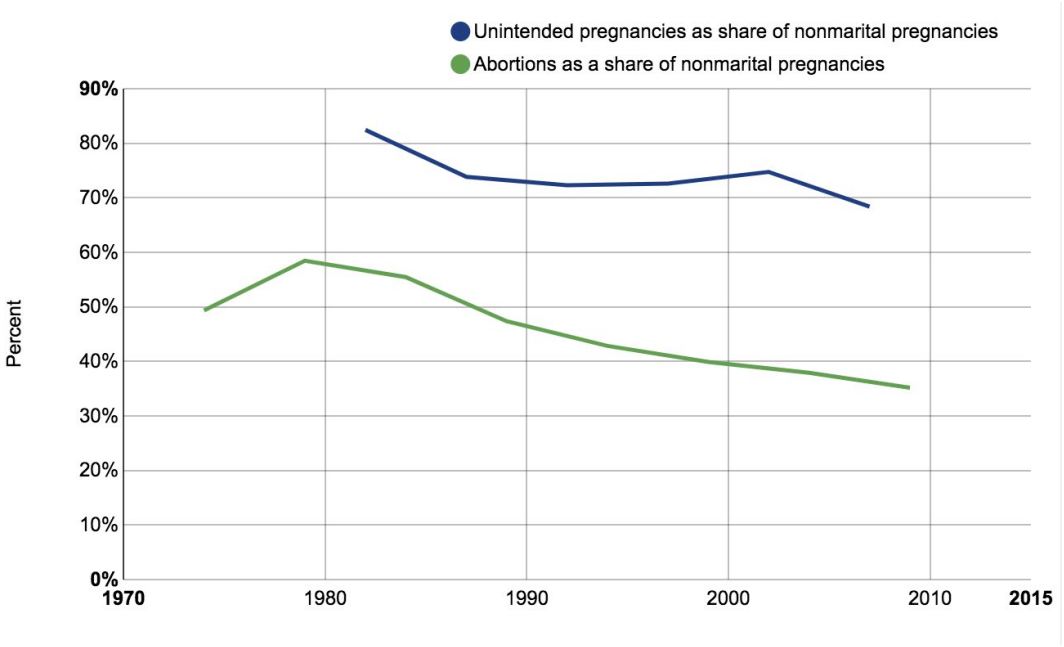
Changes in the Frequency of Abortion

What explains the divergence between the unwed pregnancy and birth rates? The answer is that unwed pregnancies do not always end in a birth or an unwed birth, and both abortion and shotgun marriage have grown much rarer over time. The fact that unwed pregnancies increased much more than unwed births in the late 1960s and 1970s partly reflects the rising rate of abortion. The ratio of abortions to births among women unmarried at conception appears to have peaked in the late 1970s and then to have fallen steadily.[29] Today, single women who become pregnant are roughly one-third less likely to obtain an abortion than their counterparts at the time Roe was decided.[30]

What is behind the drop in abortion? The number of abortion providers appears to have fallen by about the same amount as the number of abortions performed; if it had fallen by more, that might indicate that declining access was behind the drop in abortions.[31] Public opinion regarding abortion has been remarkably steady over time, so it is also unlikely that changing views about the acceptability of abortion have been behind the decline.[32]

The drop in abortion partly reflects a decline in unintended pregnancies, however among unmarried women, the latter was not as steep as the former (Figure 11). The other change that appears to have reduced abortion is that having a baby while unmarried has become more acceptable. In 1988, 61 percent of adults ages 18 to 44 (and 54 percent of single parents) agreed that "People who want children ought to get married."[33] Only 20 percent disagreed (and only 26 percent of single parents). By 2012, however, just 50 percent of adults (and just 38 percent of single parents) agreed that marriage was a prerequisite to having children (26 percent and 32 percent disagreeing, respectively).

Figure 11. Unintended Pregnancies and Abortions as a Share of Pregnancies among Unmarried Women, 1974-2009



Source: Social Capital Project analyses of data from the National Survey of Family Growth, the Current Population Survey, and the Guttmacher Institute. See the Source Notes at the end of the paper for more details.

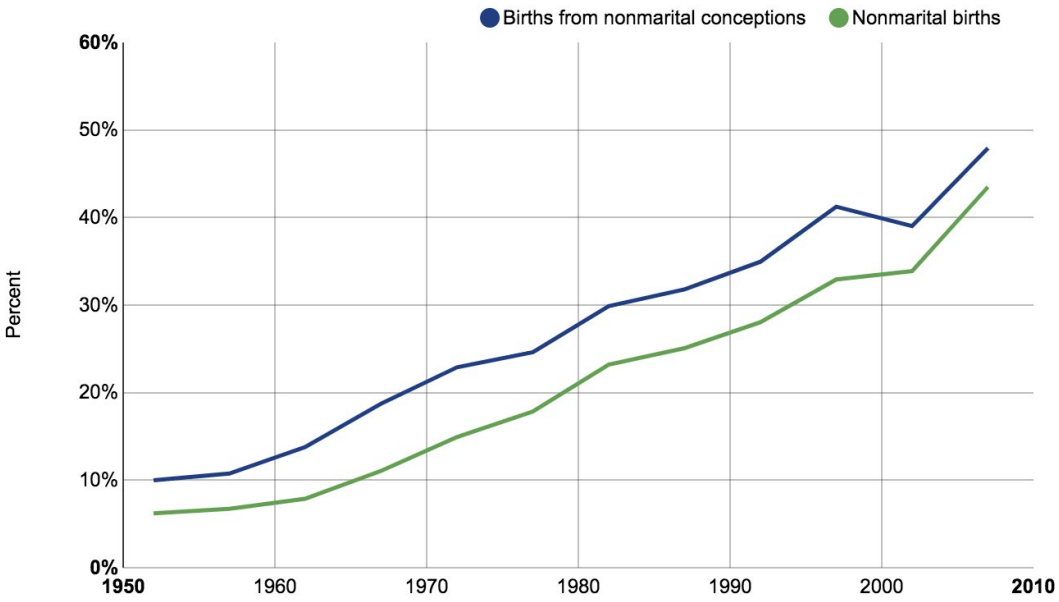
Despite the fact that unintended pregnancies are more likely to end in a birth today than in the 1970s, unintended births are a smaller share of all births from nonmarital conceptions. That is to say, a rising share of births from nonmarital conceptions are intended. Today, half of births to unmarried women ages 15-44 from nonmarital conceptions are from intended pregnancies.[34]

Changes in Shotgun Marriage

Even when carried to term, an unwed pregnancy does not necessarily lead to an unwed birth. In the past, it was common for an unwed couple to marry if they became pregnant, or colloquially, to have a "shotgun marriage." Today, this response to an unwed pregnancy has all but disappeared. The decline in shotgun marriage has played a major role in the rise of unwed births.

As we have seen, marital pregnancy is less common and nonmarital pregnancy more common than in the past. The top line of Figure 12 conveys the consequence—that more and more births arose from unwed pregnancies. Between the early 1950s and the late 2000s, the share of births resulting from unwed pregnancies rose from 10 percent to nearly 50 percent. (The low point likely occurred in the early 1940s.)[35] At the end of the 2000s, two in three births to previously-childless women under age 30 were to women who were not married when they became pregnant (not shown).[36]

Figure 12. Percent of Births to Women that Began as Unwed Pregnancies and Percent of Unwed Births, 1950-54 to 2005-09

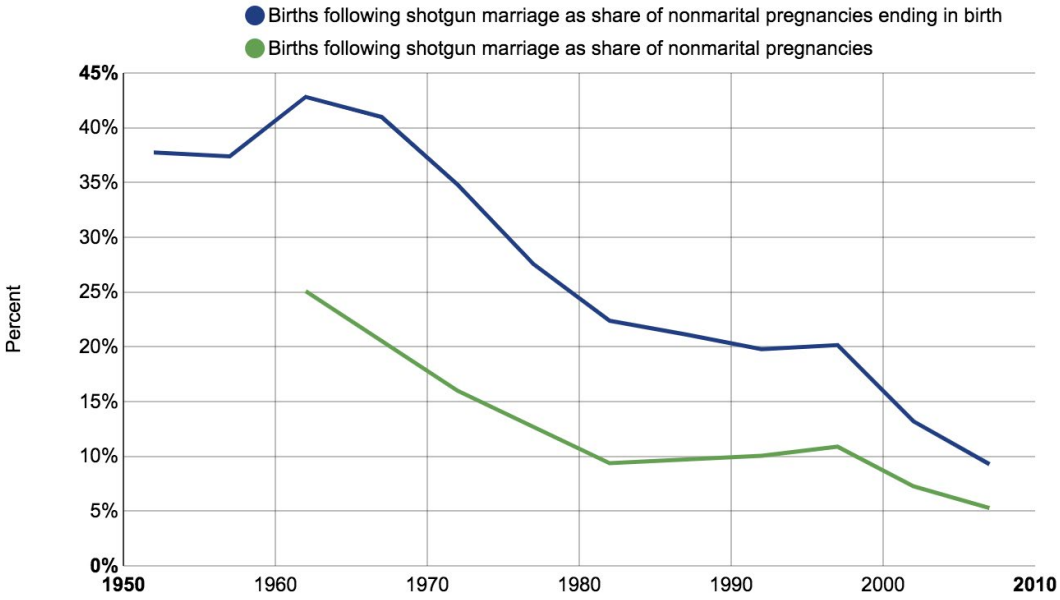


Source: Social Capital Project analyses. See the Source Notes at the end of the paper for more details.

The bottom line of Figure 12 shows the percentage of births that were to a woman unmarried when she delivered. Because both lines involve births, the gap between them is unaffected by changes in abortion; the difference reflects the rate of shotgun marriage. In the 1950s and 1960s, many unwed pregnancies were followed by a shotgun marriage, and so they ended in a marital birth. That was much less true in the late 2000s.

The decline in the shotgun marriage rate is shown in Figure 13. In the early 1960s, 43 percent of births from nonmarital conceptions occurred to women who married before delivering. That rate fell to 9 percent in the late 2000s. Among previously childless women under 30 who became pregnant while single, the shotgun marriage rate fell from 60 percent to 11 percent (not shown).[37] The lower line in Figure 13 shows the trend is similar if births following a shotgun marriage are compared to all unwed pregnancies (not just those resulting in births).

Figure 13. Shotgun Marriage Rate, 1950-54 to 2005-09



Source: Social Capital Project analyses. See the Source Notes at the end of the paper for more details.

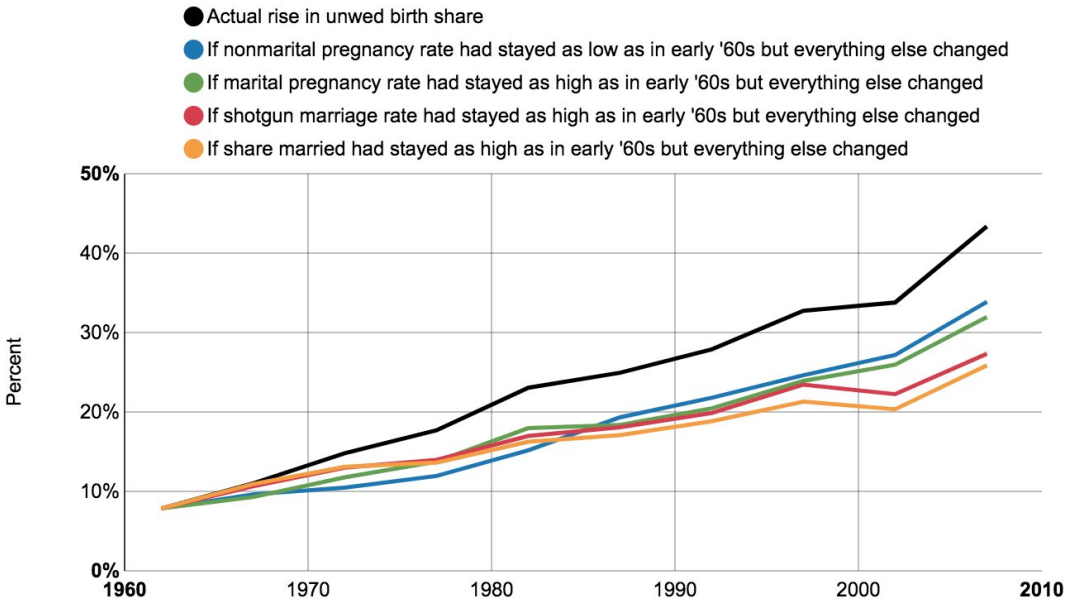
WHICH CHANGES HAVE MOST AFFECTED THE SHARE OF BIRTHS TO UNWED WOMEN?

To review, the past 60 years have seen more unmarried women and more of them engaged in sexual activity, leading more of them to become pregnant, even as fewer married women today get pregnant or give birth. Shotgun marriage has declined, and over the past 40 years declining rates of unintended pregnancy among unmarried women and rising acceptability of unwed childbearing have led to fewer abortions. Rising unwed pregnancies, declining shotgun marriage, and falling abortion produced more unwed births. All of those trends increased the share of births to unmarried women.

How important were each of these changes in raising the share of births that occur to unmarried women? We can roughly simulate counterfactual scenarios in which some factors changed as they actually did while others are kept at their early 1960s levels. In Figure 14, the top line shows the estimated increase in the share of births that were to unwed mothers from the early 1960s to the late 2000s, an increase from 8 percent to 43 percent. Many people might be inclined to see this rise and attribute it to an increase in pregnancy among single women. But the next line down indicates that this factor is a minor one. It shows that the share of births to unwed mothers would still have risen to 36 percent if the nonmarital pregnancy rate had stayed as low as it was in the early 1960s while everything else changed—the share of women who were married, marital pregnancy rates, marital abortion rates, nonmarital abortion rates, and shotgun marriage rates. (In all these analyses,

for simplicity, we hold rates at which pregnancies end in miscarriages or stillbirths constant. The results are not meaningfully affected. See the note to Figure 14 in the Source Notes at the end of the paper.)

Figure 14. Increase in the Share of Births to Unwed Mothers, and Counterfactual Scenarios, 1960-64 to 2005-09



Source: Social Capital Project analyses. See the Source Notes at the end of the paper for more details.

In fact, the fall in the *marital* pregnancy rate appears to be a more important factor; if that rate had remained at its high early-1960s level while everything else changed (including the nonmarital pregnancy rate), the share of births to unwed mothers would have risen only to 32 percent. (See the third line from the top in Figure 14.) Holding both marital and nonmarital pregnancy rates at their initial levels, the unwed share of births would have risen to only 26 percent—half the actual rise (not shown).

Changes in either marital or nonmarital abortion explain none of the rise in the share of births to unwed mothers, so Figure 14 omits those counterfactuals.[38] There are two reasons for this absent effect. First, marital abortions, relative to marital births, were as rare in the late 2000s as in the 1960s, when abortion was illegal in most cases. We estimate that 7 percent of pregnancies (excluding miscarriages and stillbirths) ended in abortion in both periods. Nonmarital abortions were more frequent in the late 2000s than in the 1960s, but it appears not by much. While we have less confidence in our early 1960s estimate, we find the share of pregnancies ending in abortion rose from 33 percent to 35 percent. In sensitivity analyses, we

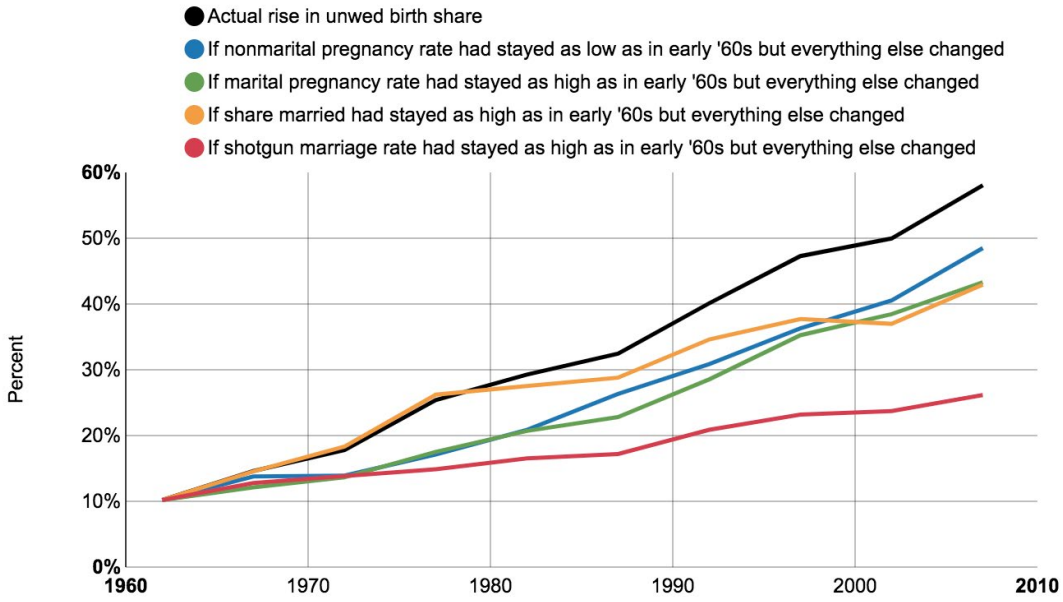
find that the rise may actually have been from as low as 23 percent. Regardless, holding nonmarital abortion at its early 1960s level then would make the share of unwed births rise, not fall.[39]

The decline in shotgun marriage has been a bigger factor than changes in either nonmarital or marital pregnancy rates taken individually (and about as important as changes in both taken together). The fourth line in Figure 14 indicates that the unwed birth share would have risen only to 27 percent if shotgun marriage rates had stayed as high as in the early 1960s while everything else changed.

The biggest single factor in raising the share of births that were to unwed mothers seems to be the decline in marriage, which has expanded the pool of potential unwed mothers. Had the share of women ages 15-44 who were married stayed at its early-1960s level while everything else changed, just 24 percent of births would have been to single mothers in the late 2000s. The decline in marriage primarily reflects an increase in never-married women rather than divorced or widowed women (not shown).

When the analyses are confined to previously childless women between the ages of 15 and 29, the picture changes. Figure 15 reveals the decline in shotgun marriage to be the single most important factor driving up the share of births to unwed mothers for this age group. The estimates rise from 10 percent in the early 1960s to 58 percent in the late 2000s, but holding shotgun marriage at its early 1960s level, the increase is only to 26 percent—just one third as large.

Figure 15. Increase in the Share of Births That Are to Unwed Mothers, and Counterfactual Scenarios, Previously Childless Women 15-29, 1960-64 to 2005-09



Source: Social Capital Project analyses. See the Source Notes at the end of the paper for more details.

WEAKENED FAMILY STABILITY: A DOWNSIDE OF AFFLUENCE

A review of the charts displayed in this paper reveals that many trends related to childbearing reversed or accelerated during the 1960s. The rise in the share of births that occurred to unwed mothers steepened during that decade. Median age at first marriage began to rise around 1960. The share of 30- to 34-year-old women who had yet to marry started to increase in the late 1960s. The year 1960 is a rough inflection point at which the increase in the share of older women who have been divorced accelerates. The share of women who are married and the marital birth and pregnancy rates all began falling around 1960. Teen-age sex began rising around the same time, and shotgun-marriage rates began to fall.

The timing of these changes suggests that much of the rise in the share of births that are to unwed mothers reflects the interaction of two developments that came to a head in the 1960s: an increase in the weight given to the fulfillment of nonmaterial needs (especially among women, whose opportunities were harshly constrained relative to those of men) and an increasing ability to fulfill those needs. Both of these developments, in turn, are rooted in rising affluence.

The effect of affluence on unwed childbearing is reflected in a variety of ways. Fundamentally, it was affluence that allowed Americans to devote less attention to basic needs like food, shelter, and safety and more attention to higher-order needs like esteem, status, recognition, personal gratification, and self-actualization.[40] Men and women alike came to place greater value on such goods as higher learning, professional success, fulfilling romantic relationships, and sexual gratification. The demand for better professional opportunities was particularly strong among women, whose plight during the mid-twentieth century as second-class citizens is vividly captured in cultural references ranging from *The Feminine Mystique* to *Mad Men*.

Affluence brought a proliferation of novel ways to enjoy leisure time and fed a growing pay-off to enrolling in higher education. Marrying early, having children early, staying in unfulfilling marriages, and having large families became more costly relative to the available alternative ways to achieve fulfillment, whether through pursuit of a humanities Ph.D. or sexual gratification.[41] The result was an increase in the pool of single people and a decline in marital birth rates.

At the same time that women began to demand more educational and economic opportunities, rising affluence facilitated the expansion of the two-earner family. The introduction of more and more labor-saving home appliances and types of processed food reduced the amount of time necessary for housework. As family incomes rose, more and more couples could afford paid child care, meals outside the home, and other services that replaced the considerable work housewives had traditionally undertaken.

Rising affluence also was responsible for the development of reliable contraception. The pill, in particular, allowed women to control their own fertility

and facilitated family planning around career considerations. This new ability greatly increased the appeal to women of professional pursuits.[42]

Affluence and technological development facilitated the decoupling of sex and marriage, which increased nonmarital sexual activity and elevated unwed pregnancy rates. Penicillin brought an end to the syphilis crisis that regulated sexual activity through much of the first half of the twentieth century.[43] The pill provided a way to dramatically reduce the chance of an unintended pregnancy. And abortion became safer, fueling rising demand for legal abortion services that culminated in the *Roe* decision.

As nonmarital sex became safer and its consequences less severe, more single men and women became sexually active. This trend became self-reinforcing. Normative regulation of sexual activity among single men and women loosened. In 1969, 68 percent of American adults agreed that pre-marital sexual relations were wrong. Just four years later in 1973, that number had dropped to 47 percent, a decline of nearly one-third, and as of 2016, only 33 percent agreed that sex between an unmarried man and woman is wrong.[44] What is more, pressure increased on ambivalent single women to engage in sex in order to win and maintain the affection of romantic partners and potential husbands.[45]

As we have seen, despite advances in birth control (or, paradoxically, because of those advances), more sexual activity led to higher rates of unwed pregnancy. While wider use of more effective birth control might have been expected to reduce pregnancy rates, it may be that the greater availability of contraception itself increased sexual activity. Regardless of the reasons behind this increase, not all sexually active couples used effective methods of birth control or used them consistently. Many couples, in the pre-pill past, would have been poor contraceptors but were not sexually active. But as nonmarital sex became more common, their reproductive fates became more tied to their ability to prevent sexual intercourse from leading to pregnancy.[46] In this regard, relatively disadvantaged women suffered disproportionate consequences from the more general changes in societal norms around nonmarital sex.

The availability of the pill and legal abortion also affected shotgun marriage, which further contributed to the rise in unwed childbearing. Previously, single women could expect a promise of marriage from their boyfriends in the event of pregnancy. Men, after all, generally would have to make a promise of marriage in any other relationship. But over the course of the 1960s and 1970s, given the diminished risk of unintended pregnancy, more and more single women were open to sex without a marriage promise. That weakened the bargaining power of single women who preferred not to engage in sex without the promise of marriage in the event of pregnancy. Some of these women subsequently became pregnant and were willing to become single mothers. Further, the availability of effective contraception and abortion may have led many men (and their friends and family) to reason that since women have a degree of control over whether they get pregnant or choose to carry a pregnancy to term, a man who impregnates a single woman is not obliged to marry her.[47]

The decline of shotgun marriage, too, became self-reinforcing. As unwed childbearing became more common, the societal ideal that childbearing should only take place within marriage fell away. In earlier decades, a child born outside of marriage was a sign that moral norms had been violated. Thus, it was expected that a couple would wed in the case of an unwed pregnancy. As sexual behaviors changed, having a child outside of marriage became less stigmatized.[48]

The increase in nonmarital sexual activity and decline of shotgun marriage particularly affected disadvantaged women. The opportunity cost of becoming pregnant—the foregone alternatives—was much lower for such women. Absent the imperative of remaining childless in pursuit of educational and professional goals, they were relatively less likely to avoid pregnancy at all costs.

Finally, affluence also made it more affordable to be a single mother relative to the era before World War II. Socioeconomically advantaged women could better afford to raise children on one income, sometimes with child support from their former partner. Disadvantaged women could draw on an expanded federal safety net that reflected the rising wealth of American taxpayers. That safety net afforded a fairly meager lifestyle on its own, but in combination with their own earnings and assistance from family, friends, and partners, women could increasingly make it work (especially if they had only known an impoverished living standard themselves growing up).

However, the particular way that American safety nets were designed often disincentivized women from marrying or staying married, since benefits were generally even less generous to two-parent families. That led to increases in unwed childbearing too.[49] (There is some evidence to suggest that the state and federal welfare reforms of the 1990s—in conjunction with an expansion of work supports—were behind the flattening out of unwed birth rates after the 1980s seen in Figure 8.)[50]

WHAT ABOUT MARRIAGEABILITY?

The idea that affluence is behind the rising share of births to unwed mothers may sound strange to those who hold a more negative view of the American economy. The prevailing wisdom is that unwed childbearing has been driven by the deteriorating position of male workers.[51] Poor, working- and middle-class men, it is claimed, have seen lower pay over time, reflecting globalization, deindustrialization, and automation. The weak labor market has driven an increasing number of men out of the labor force entirely. Thus, some reason that the reduction in the share of potential male partners who women consider "marriageable," combined with a persisting value placed on motherhood, explains why women have increasingly chosen to have children without getting married.

There are a number of problems with this position, however. For starters, most of the trends discussed above that have contributed to a rising unwed birth share began

or began to accelerate in the 1960s. Nonmarital birth rates were rising in the 1940s and 1950s, and perhaps earlier. The increase in the unwed birth share itself started in the 1950s and accelerated beginning in the 1960s. In other words, these trends generally extend back at least to the "Golden Age" of twentieth-century America—when productivity and wage growth were much stronger than after the 1960s, and when household incomes were rising faster in the bottom half of the income distribution than above it.[52]

Second, rather than seeing declines in pay, men have generally seen flat or modestly rising compensation since the 1960s.[53] That certainly has been a disappointment compared with the strong wage growth of the 1950s and 1960s, but it remains the case that men are mostly doing at least as well as their 1960s counterparts, and so it is unclear why they should seem less marriageable than in the past. A rising share of working-age men have left the labor force, but most of them tell federal surveyors that they do not want a job.[54] Their inclusion in hourly compensation data would dampen the trend in pay to some extent, but only modestly.[55] Meanwhile, as a future Social Capital Project blog post will show, the share of births that are from unwed pregnancies has risen even for women with a four-year college degree, and it has risen for whites and blacks, Hispanics and non-Hispanics. Similarly, the shotgun marriage rate has declined for all of these groups.

Third, to the extent that men's labor market outcomes have worsened, this could reflect the increase in unwed childbearing rather than the former causing the latter. Research finds that married men have better labor market outcomes than single men, even accounting for the fact that they may be more marriageable.[56] If partners, families, and society writ large have come to accept single parenthood, it is likely that their expectations of nonresident fathers have diminished as well, which could have reduced the effort those men put into optimizing their economic status. This may be particularly true in disadvantaged communities where single parenthood is common. Alternatively, the legal or moral obligation to pay child support may lead some absent fathers to avoid the formal labor market and rely on family, friends, informal work, and the underground economy.

Even the "marriageable man" hypothesis ultimately presumes a baseline level of affluence that, historically speaking, is a recent phenomenon. The argument that because men are less marriageable, women are delaying or foregoing marriage but still choosing to have children presumes that many women are able to afford single motherhood. If not for increased female earnings potential relative to the past or a more generous government safety net, it would matter little if men became less marriageable. Women would be unable to afford single motherhood, and rather than seeing rising unwed childbearing we would simply see reduced childbearing.

CONCLUSION

Social phenomena are complicated and have multiple causes, but our read of the evidence—and we are by no means alone—is that negative economic trends explain little of the overall rise in unwed childbearing.[57] Instead, we think it is more likely that, as with other worsening aspects of our associational life, rising family instability primarily reflects societal affluence, which reduced marriage and marital childbearing, increased divorce and nonmarital sexual activity and pregnancy, and reduced shotgun marriage.

This does not mean we should lament rising affluence. There is no reason we must choose between having healthier families and communities or having stronger economic growth. Indeed, it is possible to imagine a future in which rising affluence will allow more women and men alike to work less and less and spend more time with children, families, friends, neighbors, and fellow congregants.
But to date, we have tended to spend additional wealth to pursue individual and personal priorities. That has eroded our associational life—including the stability of our families, especially among disadvantaged families who have enjoyed the fruits of rising affluence less than others have. Continuing to make the same choices with our ever-higher purchasing power threatens to diminish the quality of life for rich and poor alike.

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SOURCE NOTES

Note that in all analyses, “unmarried” includes women cohabiting with a romantic partner who is not her husband. “Married” includes couples in which one spouse is absent from the home and (except where noted) separated couples.

Figure 1. Share of Births that Occur to Unmarried Women, 1940-2015

1940-1999 estimates are from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Nonmarital Childbearing in the United States, 1940-99, National Vital Statistics Reports* 48(16), by Stephanie J. Ventura and Christine A. Bacharach, October 18, 2000 “Number, rate, and percent of births to unmarried women and birth rate for married women: United States, 1940-99,” Table 1, accessed December 5, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr48/nvs48_16.pdf.

2000-2014 estimates are from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Births: Final Data for 2014, National Vital Statistics Reports* 64(12), by Brady E. Hamilton et al., December 23, 2015, “Births and birth rates for unmarried and married women: United States, 1980, 1985, 1990, 1995, and 2000–2014” Table B, accessed December 4, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf.

2015 estimate is from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Births: Final Data for 2015, National Vital Statistics Reports* 66(1), by Joyce A. Martin, Brady E. Hamilton, Michelle J.K. Osterman, Anne K. Driscoll, and T.J. Mathews, January 5, 2017, "Births and birth rates for unmarried women, by age and race and Hispanic origin of mother: United States, 2015," Table 15, accessed December 5, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr66/nvsr66_01.pdf.

Figure 2. Median Age at First Marriage among Women, 1890-2016

U.S. Census Bureau, Historical Marital Status Tables, "Estimated Median Age at First Marriage: 1890 to present," accessed December 5, 2017, https://www2.census.gov/programs-surveys/demo/tables/families/time-series/marital/ms2.xls.

Figure 3. Percentage of Women Ages 30-34 Never Married, 1880-2016

1880-1970 estimates are from Social Capital Project analyses of decennial census data, using the Integrated Public Use Microdata Series Online Data Analysis System, accessed December 5, 2017, http://sda.usa.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_usa_samples. (Steven Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek, *Integrated Public Use Microdata Series: Version 7.0* [dataset], [Minneapolis: University of Minnesota, 2017], accessed December 5, 2017, https://doi.org/10.18128/D010.V7.0.)

The 1850-1950 trend includes women who are separated, as it is not possible to distinguish them from never-married women prior to 1950. The 1950-1970 trend excludes separated women.

1962-2016 estimates are from Social Capital Project analyses of data from the Annual Social and Economic Supplement to the Current Population Survey, using the Integrated Public Use Microdata Series Online Data Analysis System, https://sda.cps.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_march_samples. (Sarah Flood, Miriam King, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 5.0* [dataset], [Minneapolis: University of Minnesota, 2017], accessed December 5, 2017, https://doi.org/10.18128/D030.V5.0.) Separated women are excluded.

Figure 4. Percentage of Ever-Married Women Ages 50-54 Who Ever Divorced, 1940-2015

1940-1980 estimates are from Social Capital Project analyses of data from the decennial census and the American Community Survey, using the Integrated Public Use Microdata Series Online Data Analysis System, http://sda.usa.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_usa_samples. (Ruggles et al., 2017.) It is not possible to distinguish previously widowed from previously divorced women, unless either occurred after the most recent marriage (in which case their marital status at the time of the survey indicates divorced or widowed). We assume the ratio of ever divorced to ever widowed women among those with two or more marriages to be the same in each year as the ratio of currently divorced to currently widowed women 50-54. This approach misses some widows who also have been divorced and thereby undercounts ever-divorced women (if our assumption is otherwise correct). Estimates are unavailable in the 1990 and 2000 decennial censuses or in the American Community Survey prior to 2008.

Figure 5. Percentage of Women Ages 15-44 Who are Married, 1880-2016

1880-1970 estimates are from Social Capital Project analyses of decennial census data, using the Integrated Public Use Microdata Series Online Data Analysis System, http://sda.usa.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_usa_samples. (Ruggles et al., 2017.)

The 1850-1950 trend excludes women who are separated, as they are combined with never-married women in the data prior to 1950. The 1950-1970 trend includes separated women.

1962-2016 estimates are from Social Capital Project analyses of data from the Annual Social and Economic Supplement to the Current Population Survey, using the Integrated Public Use Microdata Series Online Data Analysis System, https://sda.cps.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_march_samples. (Flood et al., Integrated Public Use Microdata Series, Current Population Survey: Version 5.0, 2017.) Separated women are included.

Figure 6. Births to Married Couples per 1,000 Married Women, 1950-2015

1950-1989 estimates are from Ventura et al., *Nonmarital Childbearing in the United States*, 1940-99, Table 1.

1990-2000 estimates are from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Revised Birth and Fertility Rates for the 1990s and New Rates for Hispanic Populations, 2000 and 2001: United States*, *National*

Vital Statistics Reports 51(12), by Brady E. Hamilton, Paul D. Sutton, and Stephanie J. Ventura, August 4, 2003, "Birth rates for married women, by age, race, and Hispanic origin of mother: United States, 1990–2001," Table 8, accessed December 5, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_12.pdf.

2001-2014 estimates are from U.S. Department of Health and Human Services, 2015 "Births and birth rates for unmarried and married women: United States, 1980, 1985, 1990, 1995, and 2000–2014," Table B.

2015 estimate is U.S. Department of Health and Human Services, 2017, "Trends in marital and nonmarital birth rates: United States, 2005–2015," Figure 4.

Figure 7. Pregnancy Rates among Married Women, 1960-64 to 2005-09

These rates combine estimates of births from marital conceptions, abortions obtained by married women, and miscarriages and still births experienced by married women. Births from marital conceptions are from our analyses of the 1980 and 1995 Fertility and Marital History Supplements to the June Current Population Survey (CPS) and of various cycles of the National Survey of Family Growth (NSFG). We pool births from five-year intervals (e.g., 1960-1964 and 2005-2009) but show data points in the chart at years ending in "2" and "7" (e.g., 1962 and 2007).

The 1960-1964 estimate relies on the 1980 CPS data, the 1970-1974 estimate is an average from both the 1980 and 1995 CPS, the 1980-1984 estimate is an average from the 1995 CPS and the 1988 NSFG, the 1990-1994 estimate is an average from the 1995 CPS and 1995 NSFG, the 1995-1999 estimate is from the 2002 NSFG, the 2000-2004 estimate is from the 2006-2010 NSFG, and the 2005-2009 estimate is an average from the 2011-2013 and 2013-2015 NSFG.

These specific surveys were selected for specific birth cohorts because they are representative of women who were between the ages of 15 and 44 at the time of their child's birth (or reasonably close to representative). The 1980 CPS supplement included women as old as 75, which means that birth cohorts from as recently as 1979 are represented, as are cohorts from 1949 (when 75-year-old women taking the survey would have been 44 years old). The 1995 CPS supplement included women as old as 65, meaning it covers birth cohorts from 1974 to 1994. We chose to analyze the 1960-1974 cohorts using the 1980 CPS and the 1970-1994 cohorts using the 1995 CPS. (For the 1970 cohort, the 1995 CPS only captures births to women who were 15-40, for the 1971 cohort only births to women 15-41, and so on up to 15-44 for the 1974 cohort. The results were very similar to the 1970-1974 estimates using the 1980 CPS.)

For the NSFG surveys, which only include women up to age 44, the birth cohorts are somewhat less representative. In the 1988 NSFG, for instance, not all 1988 births to 44-year-old women will have occurred. More problematically, if one would like to capture the 1980 birth cohorts, one will miss 1980 births to women age 37 or higher, because those women were older than 44 in 1988 and thus excluded from the NSFG. The 1984 birth cohort will exclude births to women older than 40 for the same reason.

As a rule of thumb, we used an NSFG survey to represent a five-year birth cohort if births to all women 34 years old or younger were represented in the survey. In 2015, 84 percent of all births occurred to women under 35 years old, and 97 percent occurred to women under 40 years old, while just 56 percent occurred to women under 30 years old. (See U.S. Department of Health and Human Services, 2017.) We arrived at this rule after comparing estimates produced by different NSFG surveys for the same five-year birth cohorts. Estimates from surveys that excluded births to women, say, older than 42 were consistently similar to estimates from surveys excluding births to women, say, older than 36. In addition, estimates of the share of births that were to single mothers consistently were close to estimates from vital statistics data. In contrast, estimates from surveys excluding births to women, say, older than 29 indicated notably fewer births and yielded a higher share of births to single mothers.

The most uncertain of these estimates is the one for 2005-2009, which averages five-year estimates from the most recent two NSFG surveys. The two surveys provided consistent estimates—44 percent and 43 percent of births were to single mothers—but those estimates were somewhat higher than in vital statistics data (39 percent).

The analyses using the CPS modify the approach in an earlier Census Bureau report. (See U.S. Census Bureau, *Trends in Premarital Childbearing: 1930-1994, Current Population Reports*, by Amara Bachu, October 1999, https://www.census.gov/prod/99pubs/p23-197.pdf.) That report compares the timing of first births to that of first marriages for women 15-29. We generalize to all births to women of all ages. For each woman in the data, we compare dates for up to five births to dates of up to three marriages and up to three marriage terminations. For each birth, we characterize it as coming from a nonmarital conception leading to a nonmarital birth (births occurring while a woman was single), a nonmarital conception followed by a shotgun marriage (births occurring less than eight months subsequent to a marriage), or a marital conception (births occurring eight months or more after a marriage).

The NSFG analyses compare reported marital status at the time of conception to marital status at the child's birth. We confirmed that our methodology produced a very similar number of births and distribution of

births by marital status at conception by marital status at birth as in U.S. Census Bureau (1999) for the same birth cohorts.

We use the distribution of births estimated from these samples, averaged across samples as indicated, and divide the number of births (sometimes averaging across samples first) by five so that we can add births to annual estimates of abortion.

To estimate abortions by marital status, we begin with abortion ratios (abortions divided by the sum of abortions plus births) for married and unmarried women age 15-44. For 1974, 1984, 1994, 1999, and 2004, those ratios are from the Guttmacher Institute. (See Stanley K. Henshaw and Kathryn Kost, "Trends in the Characteristics of Women Obtaining Abortion, 1974 to 2004," Guttmacher Institute, August 2008, https://www.guttmacher.org/sites/default/files/report_pdf/trendswomenabortions-wtables.pdf.)

For 2008, we compute the abortion ratios for women age 15-44 from abortion and birth estimates. Abortion estimates are computed by multiplying the number of abortions by the marital and nonmarital share of abortions. (See Rachel K. Jones and Jenna Jerman, "Abortion Incidence and Service Availability in the United States, 2014," *Perspectives on Sexual and Reproductive Health* 49, no. 1[2017], 17-27, Table 1.) Birth estimates are from U.S. Department of Health and Human Services, 2015, Table B and Table 1.

For 1960-1964 and 1965-1969, we begin with an estimate of abortions (legal and illegal) in 1969 from a 1982 study. (See Willard Cates, "Legal Abortion: The Public Health Record," *Science* 215, no. 4540(1982), 1586-1590, Figure 1.) The illegal estimate (700,000) is the midpoint of a wide range estimated for 1955 (200,000-1,200,000). (See Mary S. Calderone, ed., *Abortion in the United States* (New York: Harper and Brothers, 1958.) It is also very close to the number implied by a 1968 study of central, urban North Carolina (698,914), which used an inventive methodology that allowed an estimate of abortions to be obtained from the overall results of those surveyed without any individual in the study having to admit to having one. (See James R. Abernathy, Bernard G. Greenberg, and Daniel G. Horvitz, "Estimates of Induced Abortion in Urban North Carolina," Demography 7, no. 1[1970], 19-29.) Applying this North Carolina study's estimates to the 1967 population of women produced an estimate of around 829,000 abortions. Thus, 700,000 (or 722,000 adding in legal abortions) is likely an underestimate for 1969, and it is likely somewhat of an underestimate for 1960-1964 and 1965-1969.

We then compute the 1969 abortion ratio using birth estimates from U.S. Department of Health and Human Services, 2015. Finally, we distribute these births between married and unmarried women by comparing the overall abortion ratio in 1974 to the marital and nonmarital abortion ratios in 1974 and applying those ratios of ratios to the overall abortion ratio

for 1969. We assume the 1969 abortion ratios for married and unmarried women apply to 1960-1964 and to 1965-1969. As a check against this approach, we re-estimated the marital and nonmarital abortion ratios using 1979 ratios instead of 1974 ones, which produces significantly smaller nonmarital abortion ratios for the 1960s. None of the results discussed in the paper are qualitatively different in any important way using these estimates.

Once we have the abortion ratios for each year, we then apply the ratios by marital status to the number of births by marital status at birth, using the estimates from the CPS and NSFG (births following a shotgun marriage included with marital births). For example, the 1974 abortion ratios are applied to births to married and unmarried women from 1970 to 1974, the 1984 ratio to births from 1980 to 1984, etc.

We add births from marital conceptions to marital abortions and births from nonmarital conceptions to nonmarital abortions. We convert these to rates by dividing by married and unmarried women. These come from our analyses using the Integrated Public Use Microdata Series Online Data Analysis System, using decennial census data for 1960-1964, http://sda.usa.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_usa_samples and data from the Annual Social and Economic Supplement to the Current Population Survey for 1970-2009, https://sda.cps.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_march_samples. (Ruggles et al., 2017; Flood et al., 2017.) For 1960-1964, the estimate is interpolated between census years by multiplying the intercensal population change from 1960 to 1970 by 0.2 (corresponding roughly to a 1962 estimate). The estimates for 1970-2009 are actually five-year averages (1970-74,..., 2005-09). These estimates are adjusted by adding one quarter of births that come from a shotgun marriage to the number of unmarried women and subtracting them from the number of married women. This roughly reflects the fact that in the CPS data from which the 1970-2009 estimates are drawn, the survey takes place primarily in March, and at that point, one quarter of any year's shotgun marriages might be expected to have taken place.

For "fetal death rates" (miscarriages and still births) by marital status, we begin with 1990-2004 estimates of fetal loss rates by marital status from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, "*Estimated Pregnancy Rates by Outcome for the United States, 1990-2004, National Vital Statistics Reports* 56(15), by Stephanie J. Ventura, Joyce C. Abma, William D. Mosher, and Stanley K. Henshaw, April 14, 2008, "Pregnancy, live birth, and induced abortion rates by marital status and race and Hispanic origin: United States, 1990–2004," Table 5, https://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_15.pdf.

We use 2009 fetal loss rate estimates by marital status from U.S. Department of Health and Human Services, Centers for Disease Control

and Prevention, National Center for Health Statistics, *Pregnancy Rates for U.S. Women Continue to Drop, Data Brief* no. 136, by Sally C. Curtin, Joyce C. Abma, Stephanie J. Ventura, and Stanley K. Henshaw, December 2013, "Pregnancy rates, by outcome and marital status: United States, 1990, 2000, and 2009," Figure 5, https://www.cdc.gov/nchs/data/databriefs/db136.pdf.

We compute 1980 rates by subtracting (for each marital status) the live birth rates and the induced abortion rates from the pregnancy rates, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Trends in Pregnancies and Pregnancy Rates by Outcome: Estimates for the United States, 1976-96, Vital Health Statistics* 21(56), by Stephanie J. Ventura, William D. Mosher, Sally C. Curtin, Joyce C. Abma, and Stanley K. Henshaw, January 2000, "Pregnancy, live birth, and induced abortion rates by marital status and race and Hispanic origin: United States, 1980 and 1990–95," Table 6, https://www.cdc.gov/nchs/data/series/sr_21/sr21_056.pdf.

Getting fetal loss rate estimates by marital status for 1960-1964 and 1970-1974 was more difficult. Fetal losses of at least 20 weeks gestation per 1,000 live births or fetal losses for women with "legitimate" and "illegitimate" pregnancies are available for 1945, 1955, and 1960 from U.S. Department of Health, Education, and Welfare, Public Health Service, National Center for Health Statistics, *Vital Statistics Rates in the United States 1940-1960*, by Robert D. Grove and Alice M. Hetzel, 1968, "Fetal mortality ratios by legitimacy status, age of mother, and color: Reporting States, 1945,1966-60," Table 36, https://www.cdc.gov/nchs/data/vsus/vsrates1940_60.pdf. The same source provides the same fetal loss rates for white and black women, which closely match the rates for, respectively, "legitimate" and "illegitimate" pregnancies. This fact is useful because fetal loss rates for whites and blacks are available from this source for 1960, 1970, and 1980 too. Substituting white and black rates for married and unmarried rates per 1,000 live births or fetal losses, and using births per 1,000 married and unmarried women from U.S. Department of Health and Human Services (2000), we computed fetal losses of at least 20 weeks gestation per 1,000 married and unmarried women for 1960, 1970, and 1980. What we need are fetal losses *from pregnancies of any length* per 1,000 married and unmarried women. We compute the ratios of the 1960-to-1980 rates for fetal losses of at least 20 weeks gestation (separately for married and unmarried women) and of the 1970-to-1980 rates. Finally, we apply these ratios to our 1980 fetal loss rates by marital status from above.

Adding fetal loss rates to the pregnancy rates involving live births or abortions yields overall pregnancy rates. We use 1960, 1970, and 1980 fetal loss rates for our 1960-1964, 1970-1974, and 1980-1984 pregnancy rates, and we use 1992, 1997, 2002, and 2009 rates for 1990-1994, 1995-1997, 2000-2004, and 2005-2009.

Figure 8. Births to Single Mothers per 1,000 Single Women, 1940-2015

1940-1989 estimates are from U.S. Department of Health and Human Services, 2000, Table 1.

1990-2000 estimates are from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Revised Birth and Fertility Rates for the 1990s and New Rates for Hispanic Populations, 2000 and 2001: United States, National Vital Statistics Reports* 51(12), by Brady E. Hamilton, Paul D. Sutton, and Stephanie J. Ventura, August 4, 2003, "Birth rates for unmarried women, by age, race, and Hispanic origin of mother: United States, 1990–2001," Table 7, https://www.cdc.gov/nchs/data/nvsr/nvsr51/nvsr51_12.pdf.

2001-2014 estimates are from U.S. Department of Health and Human Services, 2015, Table B.

2015 estimate is from U.S. Department of Health and Human Services, 2017, Table 15.

Figure 9. Percent of Teenage Women Who Have Ever Had Sex, 1960-2015

1960-1972 "Never-Married 19" estimates (never-married women age 19) are taken from Claudia Goldin and Lawrence F. Katz, "The Power of the Pill: Oral Contraceptives and Women's Career and Marriage Decisions," *Journal of Political Economy* 110, no. 4, 730-770. We eyeballed the estimates shown in the "before 19" line in Figure 6. The 1941 birth cohort would have been 19 in 1960, so we use the estimate for that cohort as our "1960" estimate. Similarly, the 1953 cohort would have been 19 in 1972.

1971-1982 "Age 18-19, Premarital" estimates are from Sandra L. Hofferth, Joan R. Kahn, and Wendy Baldwin, "Premarital Sexual Activity Among U.S. Teenage Women Over the Past Three Decades," *Family Planning Perspectives* 19, no. 2(1987), 46-53, Table 2. We calculate the simple average of the 18- and 19-year-old rates. The rates indicate the share of all women 18-19 (married or unmarried) who ever had had *premarital* sex.

1982-1995 "Age 18-19" estimates are from Susheela Singh and Jacqueline E. Darroch, "Trends in Sexual Activity Among Adolescent American Women: 1982-1995," *Family Planning Perspectives* 31, no. 5(1999), 212-219, Table 2, https://www.guttmacher.org/sites/default/files/article_files/3121299.pdf.

1988-2008 "Never-Married 18-19" estimates are from U.S. Department of Health and Human Services, Centers for Disease National Center for Health Statistics, Control and Prevention, National Center for Health Statistics, G. Martinez, C.E. Copen, and J.C. Abma, *Teenagers in the United States: Sexual*

Activity, Contraceptive Use, and Childbearing, 2006–2010 National Survey of Family Growth, Vital Health Statistics 23(31), October 2011, "Never-married females and males aged 15–19 who have ever had sexual intercourse: United States, 1988, 1995, 2002, and 2006–2010," Table 1, https://www.cdc.gov/nchs/data/series/sr_23/sr23_031.pdf.

2013 "Never-Married 18-19" estimate is from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Sexual Activity and Contraceptive Use Among Teenagers in the United States, 2011–2015, National Health Statistics Reports* no. 104, by Joyce C. Abma and Gladys M. Martinez, June 22, 2017, "Percentage of never-married females and males aged 15–19 who have ever had sexual intercourse: United States, 2002, 2006–2010, and 2011–2015," Table 1, https://www.cdc.gov/nchs/data/nhsr/nhsr104.pdf. The estimate is actually a five-year average from 2011-2015.

Figure 10. Pregnancy and Birth Rates among Unmarried Women, 1960-64 to 2010-14

1962-2007 nonmarital pregnancy estimates are from Social Capital Project analyses. See note to Figure 7.

1962-2007 nonmarital birth estimates are five-year averages of the estimates in Figure 8. For example, "1962" is the average of the 1960-1964 rates.

Figure 11. Unintended Pregnancies and Abortions as a Share of Pregnancies among Unmarried Women, 1974-2009

1974-2009 nonmarital abortion estimates are from Social Capital Project analyses. See the note to Figure 7.

1980-1984 to 2005-2009 nonmarital unintended pregnancy estimates are from Social Capital Project analyses. We estimate nonmarital unintended pregnancies ending in a birth using data from the National Survey of Family Growth. We use the 1988 NSFG for the 1980-1984 estimate, the 1995 NSFG for the 1985-1989 and 1990-1994 estimates, the 2002 NSFG for the 1995-1999 estimate, and the 2006-2010 NSFG for the 2000-2004 estimate. We average 2005-2009 estimates from the 2011-2013 and 2013-2015 NSFG. See the note to Figure 7 for our rationale.

To these unintended births, we add estimates of nonmarital abortions among women 15-44. Then we divide by estimates of the number of nonmarital pregnancies among women 15-44. See the note to Figure 7 for details on both of these calculations. Unlike in our other analyses, we use only the NSFG to estimate births when we compute the number of nonmarital pregnancies (ignoring the CPS completely).
These estimates are shown in the chart at 1972, 1977, 1982, 1987, 1992, 1997, 2002, and 2007.

Figure 12. Percent of Births to Women that Began as Unwed Pregnancies and Percent of Unwed Births, 1950-54 to 2005-09

Estimates are from Social Capital Project analyses of CPS and NSFG data. See the note to Figure 7.

Figure 13. Shotgun Marriage Rate, 1950-54 to 2005-09

1950-2009 estimates of the share of unwed births that follow a shotgun marriage are from Social Capital Project analyses of CPS and NSFG data. See the note to Figure 7.

1960-2009 estimates of the share of unwed pregnancies that end in a post-shotgun-marriage birth are from Social Capital Project analyses. The computation begins with the nonmarital pregnancy rates estimated for Figure 7 (see the note to that figure). We multiply the rates by the number of unmarried women (including as unmarried women a number equal to one-fourth of births following a shotgun marriage) to get nonmarital pregnancies (rather than rates). We then divide the number of nonmarital births following a shotgun marriage (see the note to Figure 7) by the number of pregnancies.

Figure 14. Increase in the Share of Births That Are to Unwed Mothers, and Counterfactual Scenarios, 1960-64 to 2005-09

These estimates are based on those computed for Figure 7 (see the note to that figure). We decompose births from nonmarital conceptions in each year as the product of the number of women ages 15-44, the share of women 15-44 who are single, the nonmarital pregnancy rate per 1,000 women 15-44 (but excluding fetal deaths), and the percentage of nonmarital pregnancies (excluding fetal deaths) that do not end in abortion.

We decompose nonmarital births as the product of births from nonmarital conceptions and one minus the shotgun marriage rate. We decompose births from marital conceptions as the product of the number of women ages 15-44, the share of women 15-44 who are married, the marital pregnancy rate (excluding fetal deaths), and the percentage of marital pregnancies (excluding fetal deaths) that do not end in abortion. We decompose marital births as births from marital conceptions plus the product of births from nonmarital conceptions and the shotgun marriage rate.

Finally, we compute the unwed birth share as unwed births divided by the sum of marital and unwed births. This decomposition allows us to hold any of the component variables mentioned above at early 1960s levels while allowing other component variables to change over time. These decompositions resulted in estimated unwed birth shares of 7.9 percent in the early 1960s and 43.4 percent in the late 2000s (compared with 6.0 averaging vital statistics data estimates from 1960 to 1964 and 39.3 percent averaging 2005 to 2009).

These simulations ignore fetal deaths and thereby assume that they are a constant share of pregnancies over the period. Our estimates suggest that, actually, fetal deaths were 13 percent of nonmarital pregnancies in 1960-1964 and 12 percent in 2005-2009, while they were 28 percent of marital pregnancies in 1960-1964 and 22 percent in 2005-2009. (See the notes to Figure 7.) These changes are too small to qualitatively affect our results.

Figure 15. Increase in the Share of Births That Are to Unwed Mothers, and Counterfactual Scenarios, Previously Childless Women 15-29, 1960-64 to 2005-09

These estimates are based on estimates for childless women ages 15-29 that are analogous to the estimates for all women ages 15-44 computed for the analyses in Figure 7. Beginning with births by marital status at conception and at birth, for 1960-1994 we use estimates taken from U.S. Census Bureau (1999) of the number of births and distribution. For 1995-2009, we produce our own estimates using various NSFG surveys. The 1995-1999 estimates are averages from the 2002 and 2006-2010 NSFG, the 2000-2004 estimates are averages from the 2006-2010 and 2011-2013 NSFG, and the 2005-2009 estimates are averages from the 2011-2013 and 2013-2015 NSFG.

We estimate abortions as for all women ages 15-44, except that we have to assume that the abortion ratios (abortions divided by the sum of abortions and births) for unmarried and married childless women ages 15-29 are the same as for all unmarried and married women ages 15-44.

How valid is this assumption? Abortion ratios for married and unmarried women between the ages of 15 and 29 (childless or not) were close to those for married and unmarried women between the ages of 15 and 44 in 1983 and 1987. The ratio for younger married women was about 15 percent lower than for all married women in both years, and the ratio for younger unmarried women was 1 to 2 percentage points lower. This is reassuring in that the difference between the two age groups is always small and is similar in both years. The discrepancies are not enough to qualitatively change our point-in-time 1980s estimates, but if the bias changed over time, that would affect our trends. See Stanley K. Henshaw, "Characteristics of U.S. Women Having Abortions, 1982-1983," *Family Planning Perspectives* 19, no. 1(1987): 5-9, and Stanley K. Henshaw, Lisa M. Koonin, and Jack C. Smith, "Characteristics of U.S. Women Having Abortions, 1987," *Family Planning Perspectives* 23, no. 2(1991), 75-81.

It is not clear whether the ratios for *childless* younger women are similar to the ratios for all women. Childless women account for a declining share of abortions over time—58 percent in 1980 but just 41 percent in 2014—but so do women 15-29 (82 percent versus 72 percent). See Henshaw et al. (1991) and Jenna Jerman, Rachel K. Jones, and Tsuyoshi Onda, "Characteristics of U.S. Abortion Patients in 2014 and Changes Since 2008," Guttmacher

Institute, May 2016, https://www.guttmacher.org/sites/default/files/report_pdf/characteristics-us-abortion-patients-2014.pdf. It is likely, then, that childless women account for a similar share of women 15-29 over time, which suggests that the abortion ratio for women 15-29 is roughly no better or worse a proxy for the ratio among childless women 15-29 over time.

As for the analyses in Figure 7, our estimates for the number of married and unmarried women come from the Integrated Public Use Microdata Series Online Data Analysis System, using decennial census data for 1960-1964 (http://sda.usa.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_usa_samples) and data from the Annual Social and Economic Supplement to the Current Population Survey for 1970-2009 (https://sda.cps.ipums.org/cgi-bin/sdaweb/hsda?harcsda+all_march_samples). (Ruggles et al., 2017; Flood et al., 2017.)

We conduct the counterfactual simulations for the results displayed in Figure 15 in the same way as for Figure 14. As in the Figure 14 analyses, these simulations ignore fetal deaths and thereby assume that they are a constant share of pregnancies over the period.

ENDNOTES

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2. U.S. Department of Health and Human Services, Administration for Children and Families, *Fourth National Incidence Study of Child Abuse and Neglect* (NIS–4), by A.J. Sedlak et al., 2010, accessed December 4, 2017, https://www.acf.hhs.gov/opre/resource/fourth-national-incidence-study-of-child-abuse-and-neglect-nis-4-report-to.

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5. Future work from the Social Capital Project will address the question of the causal effects of growing up with married parents.

6. See Sara McLanahan, Laura Tach, and Daniel Schneider, "The Causal Effects of Father Absence," *Annual Review of Sociology* 39 (2013), 399-427. This paper is a summary of the more sophisticated research that has been conducted since the mid-1990s. For a review of the earlier, less rigorous, literature, see Sara McLanahan and Gary Sandefur, *Growing Up with a Single Parent: What Hurts, What Helps* (Cambridge, MA: Harvard University Press, 1997).

7. Wendy D. Manning and Pamela J. Smock, "New Families and Nonresident Father-Child Visitation," Social Forces 78, no. 1(1999), 87-116; Wendy D. Manning and Pamela J. Smock, "'Swapping' Families: Serial Parenting and Economic Support for Children," *Journal of Marriage and Family* 62, no. 1(2000), 111-122.

8. For detailed methodologies used to produce the charts in this paper, see the Source Notes at the end of the paper.

9. Social Capital Project computations for 2005-2009 using the 2011-2013 and 2013-2015 National Survey of Family Growth. See the note to Figure 7 in the Source Notes at the end of this paper.

10. Sheela Kennedy and Steven Ruggles, "Breaking Up Is Hard to Count: The Rise of Divorce in the United States, 1980-2010," *Demography* 51, no. 2(2014): 587-598, Figure 3, http://users.hist.umn.edu/~ruggles/Articles/breaking_up.pdf. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Advance Report of Final Divorce Statistics, 1989 and 1990, Monthly Vital Statistics Report* 43(8), by Sally C. Clarke, March 22, 1995, "Divorces and Annulments and Rates: United States, 1940-90," Table 1, accessed December 4, 2017, https://www.cdc.gov/nchs/data/mvsr/supp/mv43_09s.pdf.

11. Social Capital Project computations. This conclusion is based on the trend in nonmarital pregnancies among childless women ages 15-29 leading to a first birth. See U.S. Census Bureau, *Trends in Premarital Childbearing: 1930-1994, Current Population Reports*, by Amara Bachu, October 1999, accessed December 4, 2017, https://www.census.gov/prod/99pubs/p23-197.pdf. These estimates ignore miscarriages, stillbirths, and abortions.

    Abortion was relatively rare before the early 1960s, involving perhaps 15 percent of pregnancies ending in birth or abortion by 1960. We estimate that abortions were 17 percent of conceptions that ended in birth or abortion in 1969. Computing this percentage requires estimates of the number of abortions and the number of births for the same group of women.

    We use an estimate of abortions that includes illegal abortions. See Willard Cates, "Legal Abortion: The Public Health Record," *Science* 215, no. 4540(1982), 1586-1590, Table 1. Cates takes as his illegal abortion estimate the midpoint of a range estimated at a 1955 conference sponsored by the Planned

Parenthood Federation of America. See Mary S. Calderone, ed., *Abortion in the United States* (New York: Harper and Brothers, 1958). This estimate is somewhat below the number implied by a 1968 study of central, urban North Carolina. See James R. Abernathy, Bernard G. Greenberg, and Daniel G. Horvitz, "Estimates of Induced Abortion in Urban North Carolina," *Demography* 7, no. 1(1970), 19-29.

We use estimated births from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Births: Final Data for 2014, National Vital Statistics Reports* 64(12), by Brady E. Hamilton et al., December 23, 2015, "Births and birth rates, by race: United States, specified years 1940–1955 and each year, 1960–2014," Table 1, accessed December 4, 2017, https://www.cdc.gov/nchs/data/nvsr/nvsr64/nvsr64_12.pdf. Finally, we divide abortions by the sum of abortions and births.

12. Social Capital Project computations. We use marital abortions and marital conceptions producing a birth for women ages 15-44 (see note to Figure 7 in the Source Notes at the end of this paper). The resulting abortion ratio differs from previously published estimates in that we exclude births following shotgun marriage from marital births. For trends in conventional abortion ratios by marital status, see Stanley K. Henshaw and Kathryn Kost, "Trends in the Characteristics of Women Obtaining Abortion, 1974 to 2004," Guttmacher Institute, August 2008, Table 2, accessed December 4, 2017, https://www.guttmacher.org/sites/default/files/report_pdf/trendswomenabortions-wtables.pdf.

13. Social Capital Project computations. In 1982, 65 percent of married women ages 15-44 were contracepters, a figure that rose to 71 percent by 1995 but that fell to 64 percent by the early 2010s. The number of 1982 contraceptive users is from William D. Mosher, "Contraceptive Practice in the United States, 1982-1988," *Family Planning Perspectives* 22, no. 5 (1990), 198-205, Table 4. The number of 1995 contraceptive users is from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Current contraceptive use in the United States, 2006–2010, and changes in patterns of use since 1995, National Health Statistics Reports* no. 60, by Jo Jones, William Mosher, and Kimberly Daniels, October 18, 2012, "Number of contracepting women aged 15–44 years and percent distribution of method used by age and marital status: United States, 1995 and 2006–2010," Table 4, accessed December 4, 2017, https://www.cdc.gov/nchs/data/nhsr/nhsr060.pdf. The number of early 2010s contraceptive users is for 2011-2013, taken from, U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Current Contraceptive Use and Variation by Selected Characteristics Among Women Aged 15-44: United States, 2011-2013, National Health Statistics Reports* no. 86, by Kimberly Daniels, Jill Daugherty, Jo Jones, and William Mosher, November 10, 2015, "Number of women aged 15–44 currently using a method of contraception during month of interview and percent distribution, by method, according to marital or cohabiting status, parity, and intent to have more children: United States, 2002 and 2011–2013," Table 4, accessed December 4,

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14. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Recent Declines in Nonmarital Childbearing in the United States, Data Brief* no. 162, by Sally C. Curtin, Stephanie J. Ventura, and Gladys M. Martinez, August 2014, accessed December 4, 2017, https://www.cdc.gov/nchs/data/databriefs/db162.pdf.

15. Cynthia Osborn and Sara McLanahan, "Partnership Instability and Child Well-Being," *Journal of Marriage and Family 69,* no. 4(2007), 1065-1083.

16. Among 15-19-year-olds, the share of women (including married teens) ever having had sex rose from 47 percent in 1982 to 53 percent in 1988. At that point, sexual activity among teens began a steady decline. Social Capital Project computations using Guttmacher Institute data on pregnancy rates overall and among the sexually experienced. See Guttmacher Institute, "Among women aged 15-19, rates of pregnancy, birth and abortion ratios; numbers of pregnancies, births, abortions and fetal losses; and population, 1973-2013," Table 1.1, accessed December 4, 2017 https://www.guttmacher.org/sites/default/files/report_downloads/us-adolescent-pregnancy-trends-2013_tables.pdf. We divide pregnancies per 1,000 by pregnancies per 1,000 conditional on having had sex to get the share having had sex.

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18. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of STD Prevention, *Sexually Transmitted Disease*

Surveillance 2015, October 2016, "Sexually Transmitted Diseases — Reported Cases and Rates of Reported Cases per 100,000 Population, United States, 1941–2015," Table 1, " accessed December 4, 2017, https://www.cdc.gov/std/stats15/STD-Surveillance-2015-print.pdf.

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20. The number of women contracepting is from Mosher (1990) Table 4 and Daniels et al. (2015) Table 4, for 1982 and 2011-13, respectively. These estimates, both from the National Survey of Family Growth, are divided by the number of unmarried women ages 15-44, estimated from Social Capital Project analyses of data from the Annual Social and Economic Supplement to the Current Population Survey accessed via the IPUMS-CPS website (Flood et al., *Integrated Public Use Microdata Series, Current Population Survey*).

21. Social Capital Project analyses of General Social Survey microdata, 1988-2016 (Smith et al.) See also Jean M. Twenge, "Declines in Sexual Frequency among American Adults, 1989-2014," *Archives of Sexual Behavior* 46, no. 8(2017), 2389-2401.

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23. "Birth Control, Divorce Top List of Morally Acceptable Issues," *Gallup*, June 8, 2016, accessed December 4, 2017, http://www.gallup.com/poll/192404/birth-control-divorce-top-list-morally-acceptable-issues.aspx.

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25. The "early 60s"estimate is for 1960-1964 and based on the 1982 National Survey of Family Growth. See William D. Mosher and Christine A. Bachrach, "First Premarital Contraceptive Use: United States, 1960-82," *Studies in Family Planning* 18, no. 2(1987), 83-95. The "mid-80s" estimate is for 1983-1988 and based on the 1988 National Survey of Family Growth. See William D. Mosher and James W. McNally, "Contraceptive Use at First Premarital Intercourse: United States, 1965-1988," *Family Planning Perspectives* 23, no. 3(1991), 108-116, Table 1. Women are asked retrospectively about the year they first had premarital sex and about which contraceptive methods were used. The most recent estimates are from U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, *Use of Contraception in the United States: 1982–2008, Vital Health*

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27. *Ibid*. In addition, as discussed below, teen sexual activity rose through the 1980s and then remained elevated, but teen pregnancies declined. That decline must have been due to increased use of effective birth control. Indeed, pregnancies fell even more among sexually experienced teen women than among teen women generally.

28. U.S. Census Bureau, "Trends in Premarital Childbearing: 1930-1994."

29. In 1974, around 44 percent of nonmarital pregnancies ended in abortion, compared with 52 percent in 1984. Excluding fetal deaths, the estimates were 49 percent in 1974, 58 percent in 1979, and 55 percent in 1984. Social Capital Project computations. See note to Figure 7 in the Source Notes at the end of this paper.

30. In 2009, around 31 percent of nonmarital pregnancies ended in abortion (compared with 44 percent in 1974). Social Capital Project computations. See note to Figure 7 in the Source Notes at the end of this paper.

31. The number of abortion providers nationally fell by 43 percent from 1982 to 2014, while the number of abortions declined by around 41 percent. On the change in abortion providers, see Lawrence B. Finer and Stanley K. Henshaw, "Abortion Incidence and Services In the United States in 2000," *Perspectives on Sexual and Reproductive Health* 35, no. 1(2003), 6-15, and Rachel K. Jones and Jenna Jerman, "Abortion Incidence and Service Availability in the United States, 2014," *Perspectives on Sexual and Reproductive Health* 49, no.1(2017), 17-27, Table 3. Number of abortions were computed by applying abortion rates to the number of women 15-44. Abortion rates are from Rachel K. Jones and Kathryn Kooistra, "Abortion Incidence and Access to Services in the United States, 2008," *Perspectives on Sexual and Reproductive Health* 43, no. 1(2011), 41-50, Table 1, and Jones and Jerman, "Abortion Incidence and Service

Availability in the United States." Number of women is from Social Capital Project analyses of data from the Annual Social and Economic Supplement to the Current Population Survey accessed via the IPUMS-CPS website (Flood et al., *Integrated Public Use Microdata Series, Current Population Survey*).

32. "Abortion," Gallup, In Depth: Topics A to Z, accessed December 4, 2017, http://news.gallup.com/poll/1576/abortion.aspx.

33. Social Capital Project analyses of General Social Survey microdata, 1988-2012 (Smith et al.).

34. Social Capital Project analyses. See note to Figure 7 in the Source Notes at the end of this paper. We estimate the figure at 48 percent in the late 2000s (compared with 49 percent in the early 1980s). Note that intended births from nonmarital pregnancies are a smaller share of nonmarital pregnancies—32 percent—because many unintended pregnancies end in abortion or a fetal death rather than in a birth.

35. Social Capital Project computations. This conclusion is based on the trend in nonmarital pregnancies among childless women ages 15-29 leading to a first birth. See U.S. Census Bureau, "Trends in Premarital Childbearing." These estimates ignore miscarriages, stillbirths, and abortions.

36. Social Capital Project computations. See the note to Figure 15 in the Source Notes at the end of this paper.

37. *Ibid*.

38. This conclusion is in contrast to a new paper finding that liberalized abortion policy was central to changes in family formation. See Caitlin Knowles Myers, "The Power of Abortion Policy: Reexamining the Effects of Young Women's Access to Reproductive Control," *Journal of Political Economy* (forthcoming). We speculate that the difference has to do with the outcomes examined and the age ranges of women considered. Myers analyzes first marriages, first births, and shotgun marriages among women ages 15-22.

39. Social Capital Project computations. See the note to Figure 7 in the Source Notes at the end of this paper. Including miscarriage and stillbirths in pregnancies, the share ending in abortion in the early 1960s was 5 percent for married women and 29 percent for unmarried women, compared with 6 percent and 31 percent in the late 2000s. For our sensitivity analyses, we reestimated the 1960-1964 nonmarital and marital abortion ratios. For instance, instead of dividing the 1974 abortion ratio for nonmarried women to the 1974 abortion ratio of all women, and then applying that to the 1960-1964 abortion ratio, we used the 1979 abortion ratios for nonmarried and all women, which produced a smaller 1960-1964 nonmarital abortion ratio. We did the same to reestimate the 1960-1964 marital abortion ratio, but the difference was so small as to not affect our simulations.

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44. George H. Gallup, Jr., "Current Views on Premarital, Extramarital Sex," and "Birth Control, Divorce Top List of Morally Acceptable Issues," *Gallup*. Similarly, General Social Survey data shows that in 1972, just 27 percent of adults said that having sex before marriage is "not wrong at all," compared to 60 percent in 2016 who said that sex before marriage is "not wrong at all." See General Social Survey, "Is it wrong to have sex before marriage?"

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46. *Ibid*.

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48. *Ibid*.

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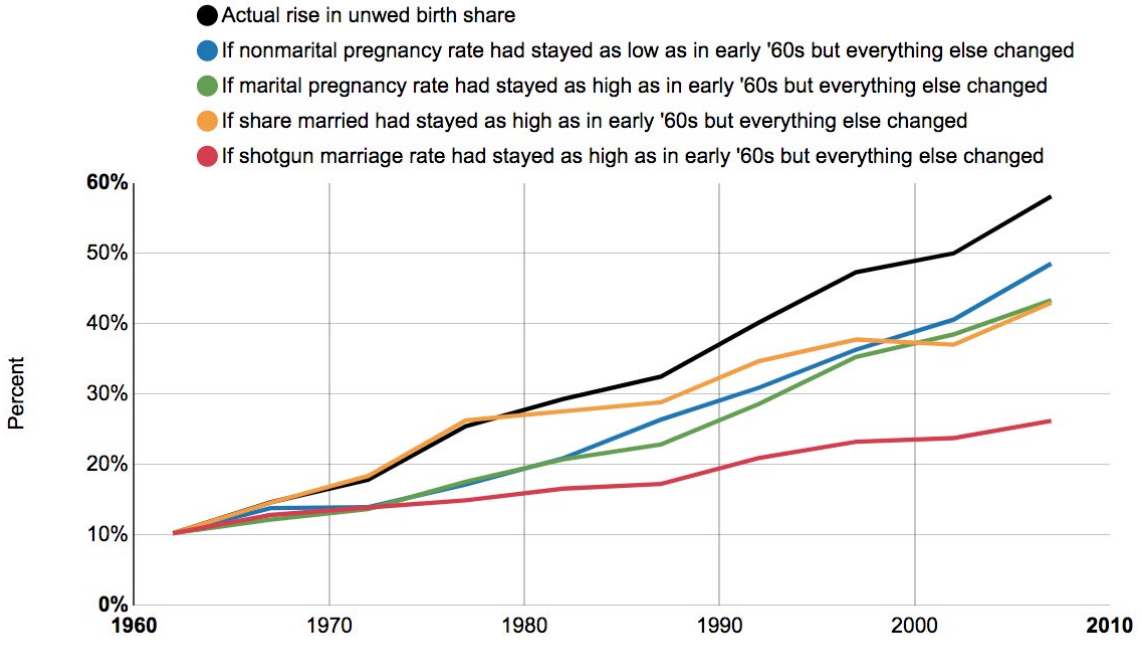
Rising Unwed Pregnancy and Childbearing across Educational and Racial Groups

SCP BRIEF | FEBRUARY 2018

Nonmarital childbearing has increased dramatically in the United States. In 1960, roughly 5 percent of births were outside of marriage. Today, over 40 percent of children are born to single mothers. This trend is troubling, considering that children are on average at-risk for poorer outcomes when raised outside a married-parent home.[1] As we explain in our recent report, Love, Marriage, and the Baby Carriage: The Rise in Unwed Childbearing, several factors contributed to the increase in nonmarital births. The most significant factors, however, have been the decline in "shotgun marriage" (unions occurring between a nonmarital conception and a birth) and the drop in marriage altogether.

Among women of childbearing age (15-44 years of age), we found that the drop in the overall marriage rate was the greatest contributing factor to nonmarital childbearing. But the decline in shotgun marriage was nearly as strong in its impact. When we used the method of a 1999 Census Bureau report by limiting our sample to women ages 15-29 and looking just at first births—focusing on women who were transitioning to motherhood—the decline in shotgun marriage played the largest role in the growth of nonmarital childbearing.[2]

Increase in the Share of Births That Are to Unwed Mothers, and Counterfactual Scenarios, Previously Childless Women 15-29, 1960-64 to 2005-09



Source: Social Capital Project analyses. See the Source Notes at the end of the report *Love, Marriage, and the Baby Carriage: The Rise in Unwed Childbearing.*

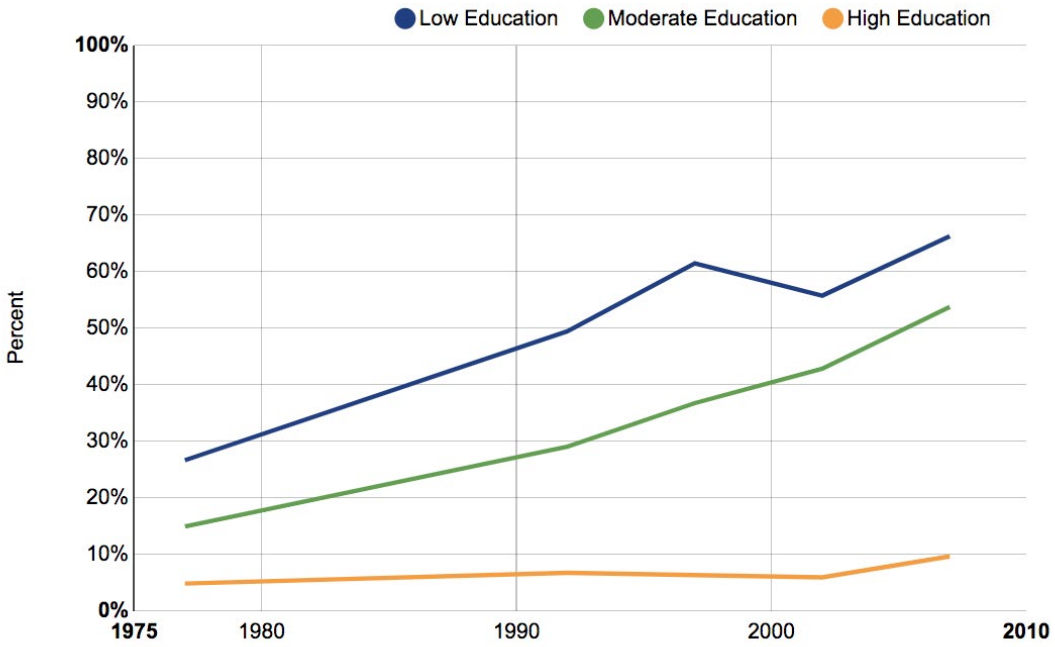
As a follow-up to our previous report, this analysis examines trends in nonmarital births, nonmarital conceptions, and shotgun marriages by education level and race. We rely on Current Population Survey (CPS) data from the June 1980 and 1995 Fertility and Marital History Supplements, and various cycles of the National Survey of Family Growth (NSFG). (See the Source Notes to our original report for methodological details.

EDUCATION

Many social-scientific analyses assess various trends by highest degree attained or years of schooling. However, doing so creates interpretive problems, since overall educational attainment has risen over time. For example, "college graduates" today are a much larger and very different group than "college graduates" were in the 1950s. Similarly, those with less than a high school education today are a much smaller share of the population than in the past. For any given group defined by fixed educational attainment levels, over time that group is likely to have become less academically qualified, because more marginal students have moved into higher levels of attainment. To address this issue, we defined three categories of educational attainment—low, moderate, and high—each of which represents a roughly stable share of women over time. For reasons we discuss in the end notes, we are able to pursue the education analyses only back to the late 1970s.[3]

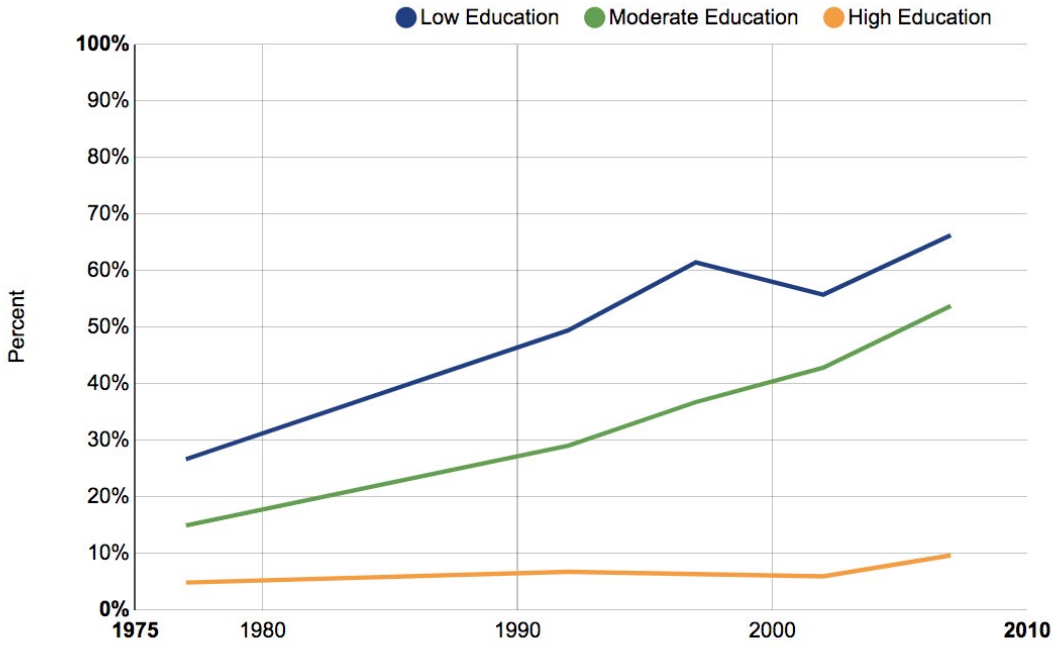
Between 1977 and 2007, nonmarital childbearing increased among women across all education levels, although nonmarital childbearing has stayed much lower and grown more slowly among highly educated women. Among highly educated women over that same time period, nonmarital childbearing doubled from 5 to 10 percent, but among this group nonmarital childbearing is still far from the norm. As of 2007, among moderately educated women and low-educated women, the proportion of nonmarital births was 54 percent and 66 percent, respectively. The greatest increase in nonmarital childbearing occurred among moderately educated women, where it increased by three-and-a-half times over 30 years.

Figure 1. Nonmarital Share of Births, by Education, Women Ages 15-44



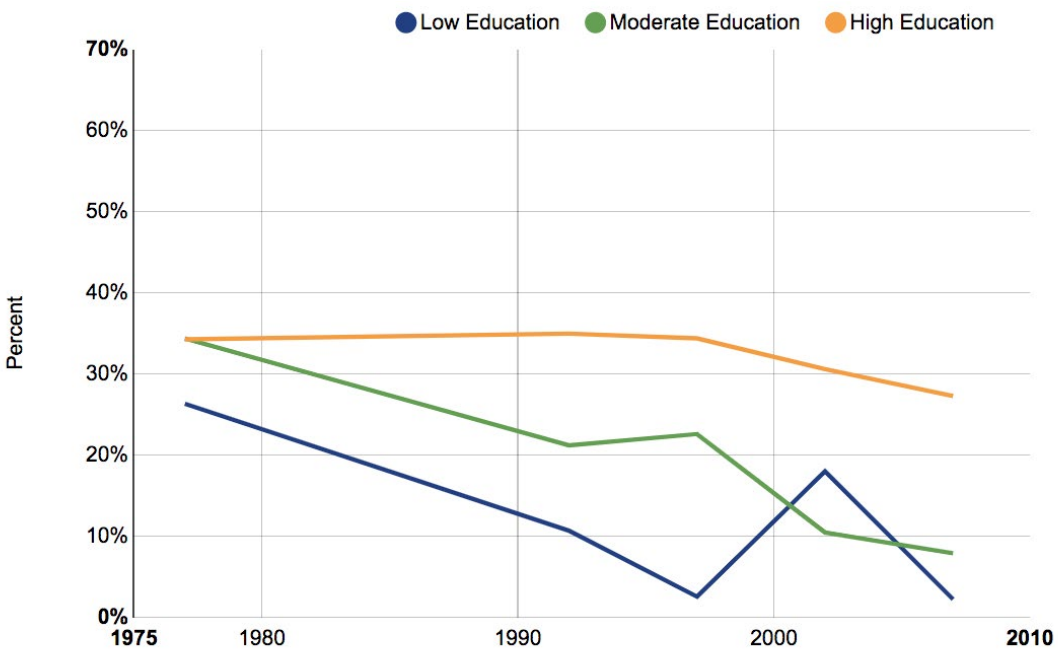
Nonmarital pregnancies have also increased across education levels, as Figure 2 shows. This may seem obvious, given the increase in nonmarital births. However, a nonmarital pregnancy does not necessarily lead to a nonmarital birth, since some women get married after the pregnancy but before the birth, while other pregnancies end in an abortion, miscarriage, or stillbirth. Figure 2 includes only those nonmarital pregnancies that ended in a live birth, so any difference between Figures 1 and 2 is due to single women marrying prior to the birth of the child.

Figure 2. Nonmarital Share of Pregnancies Ending in a Live Birth, by Education, Women Ages 15-44



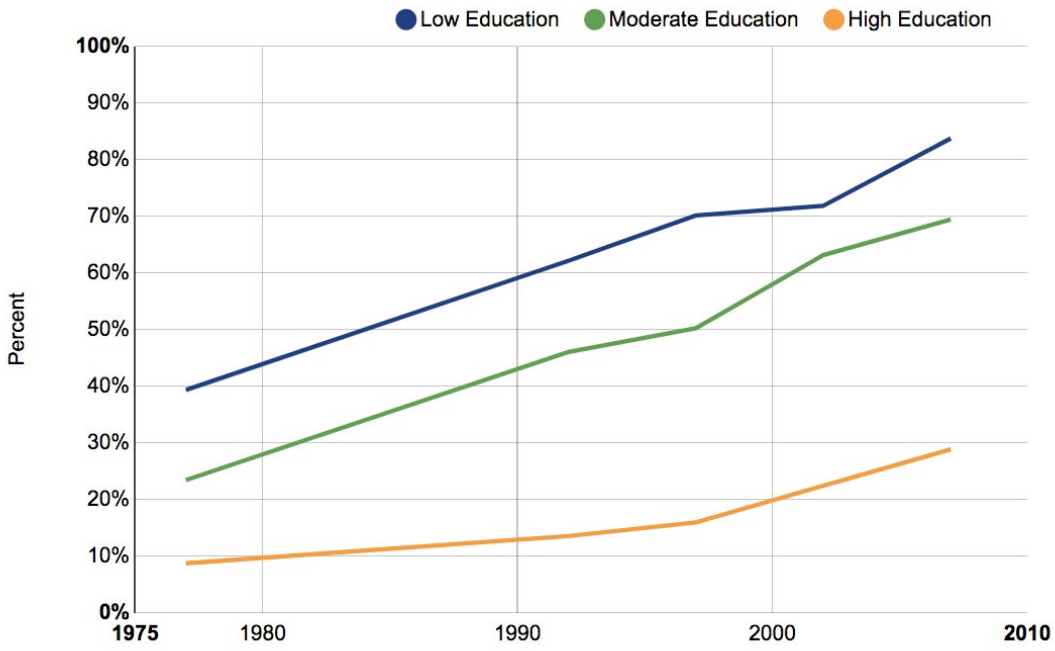
Shotgun marriage rates have dropped among all education levels. However more than a quarter (27 percent) of nonmarital pregnancies among highly educated women are still followed by a shotgun marriage. Shotgun marriage has declined most among low-educated women, but it has also fallen substantially among moderately educated women (Figure 3). In 2007, a mere 2 percent of nonmarital pregnancies among low-educated women were followed by a shotgun marriage, compared to 26 percent in 1977. And in 2007, only 8 percent of nonmarital pregnancies among moderately educated women were followed by a shotgun marriage, compared to 34 percent in 1977.

Figure 3. Share of Nonmarital Pregnancies Ending in a Live Birth That Were Followed by a Shotgun Marriage, by Education, Women Ages 15-44



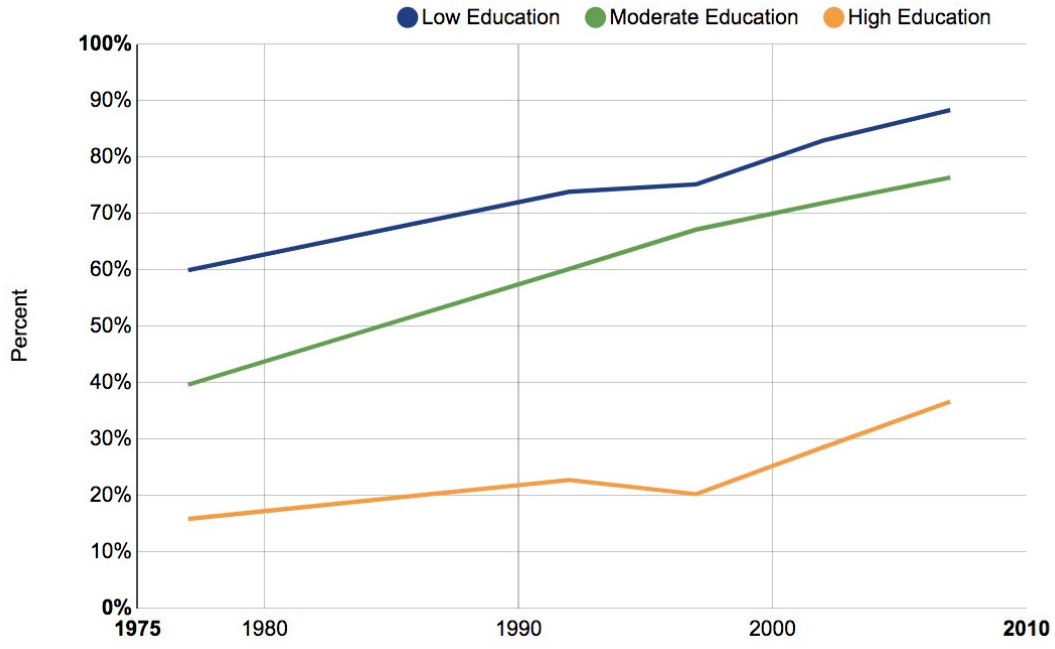
Limiting our analyses to women ages 15-29 (Figures 4-6) and looking only at first births¬ pushes the proportion of unwed births up across all education levels. Unsurprisingly, younger women are more likely to have a nonmarital birth, both in the past and in recent years. Although nonmarital childbearing has increased across all education levels, it is far more common among low- and moderately educated women than among highly educated women. However, nonmarital childbearing has increased to nearly 30 percent for highly educated women ages 15-29 giving birth for the first time. Among low-educated women ages 15-29, the vast majority—84 percent—of all first births are outside marriage. Among moderately educated women, 69 percent of first births taking place outside marriage. Thus, highly educated women are still much less likely to give birth outside of marriage compared to women with lower educational attainment. But at nearly 30 percent, nonmarital childbearing has become quite common.

Figure 4. Nonmarital Share of First Births, by Education, Women Ages 15-29



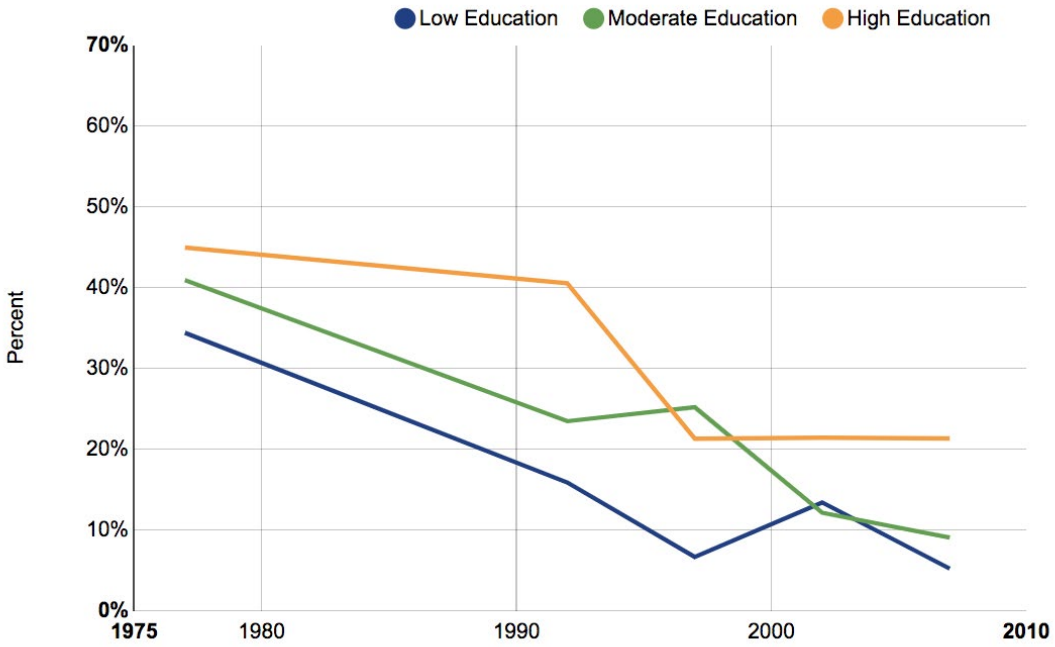
Nonmarital conceptions have also increased among 15-29-year-old women who are first-time mothers, tracking closer to the share of nonmarital births over time as shotgun marriage declines. Notably, between 1997 and 2007, the share of first births conceived outside of marriage among highly educated women nearly doubled.

Figure 5. Nonmarital Share of Pregnancies Ending in a First Live Birth, by Education, Women Ages 15-29



Shotgun marriage rates are somewhat higher among 15- to 29-year-old low- and moderately educated women compared to 15- to 44-year-old women (but nonmarital conceptions are also higher among this younger group). However, the rate of shotgun marriage is somewhat lower for highly educated 15- to 29-year-old women compared to 15- to 44-year-old highly educated women. Between 1977 and 2007, the decline in the shotgun marriage rate for 15- to 29-year-old highly educated women was much greater than it was for 15- to 44-year-old women, dropping by 53 percent, compared to only 20 percent among highly educated women ages 15-44.

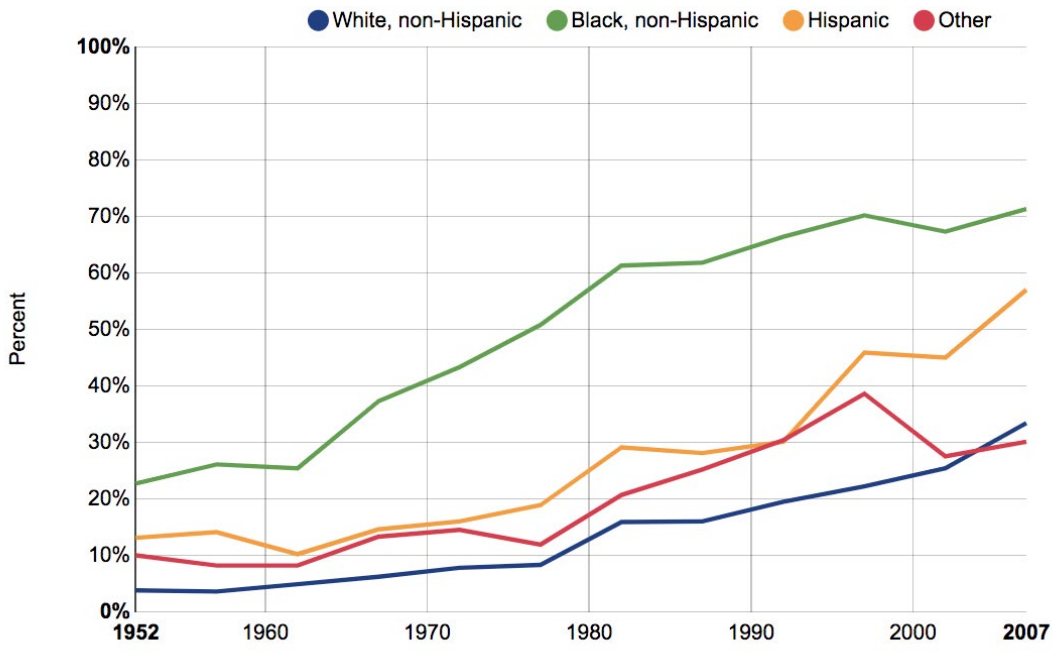
Figure 6. Share of Nonmarital Pregnancies Ending in a First Live Birth That Were Followed by a Shotgun Marriage, by Education, Women Ages 15-29



RACE

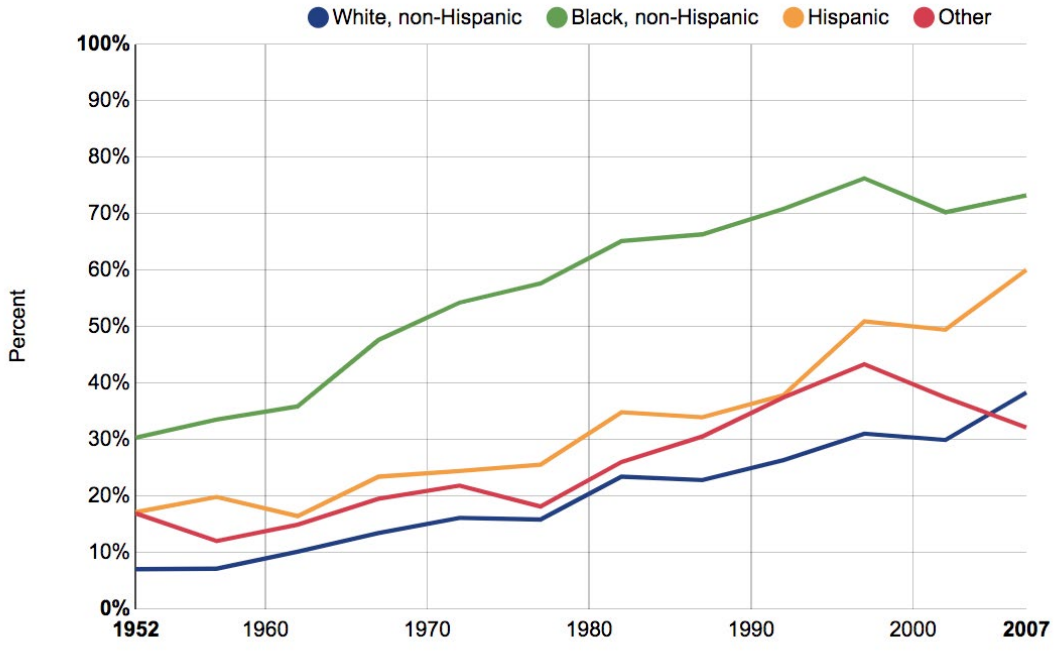
Nonmarital childbearing has also increased among women from all racial groups (Figure 7). We can track these trends back to the 1950s. Although nonmarital childbearing is much lower among non-Hispanic white women (henceforth, "white women") than among non-Hispanic black ("black") women and Hispanic women, white women have experienced the greatest growth in nonmarital childbearing—a nine-fold increase since the early 1950s. In 2007, for white women, the percentage of children born outside marriage was 33 percent, a large increase from 4 percent in 1952. Nonmarital births are highest among black women, at 71 percent as of 2007, up from 23 percent in 1952. Among Hispanic women, nonmarital childbearing was at 57 percent in 2007, up from 13 percent in 1952. Among women of other races, it was lowest, at 30 percent, up from 10 percent in 1952.

Figure 7. Nonmarital Share of Births, by Race, Women Ages 15-44



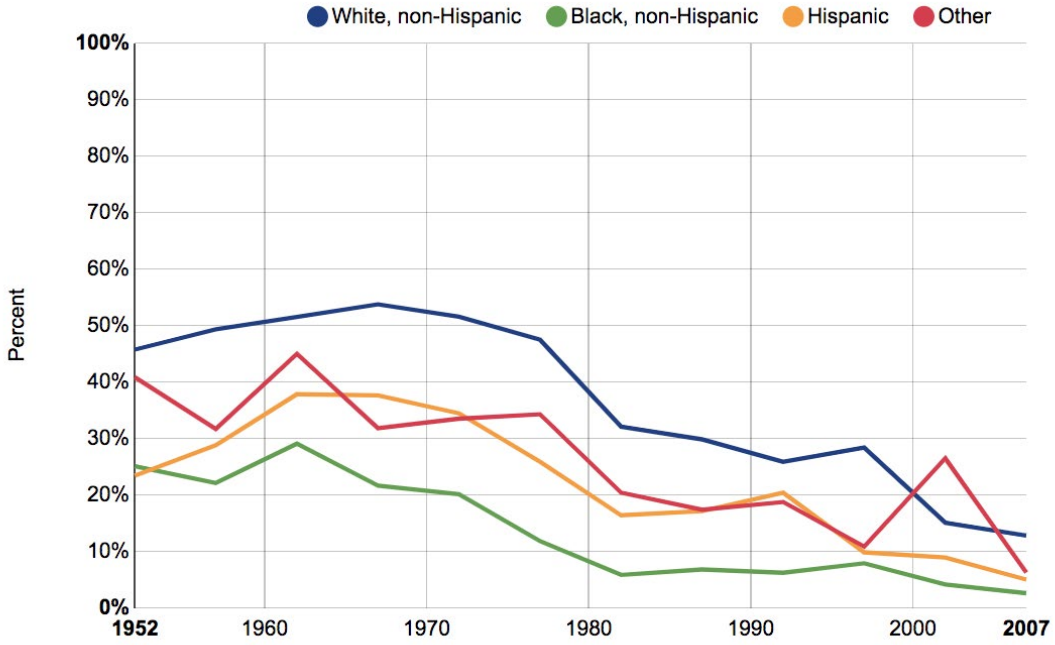
Nonmarital conceptions have increased substantially among all races as well (Figure 8). White women have experienced the greatest growth, with nonmarital pregnancies increasing by five-and-a-half times between 1952 (7 percent) and 2007 (38 percent).

Figure 8. Nonmarital Share of Pregnancies Ending in a Live Birth, by Race, Women Ages 15-44



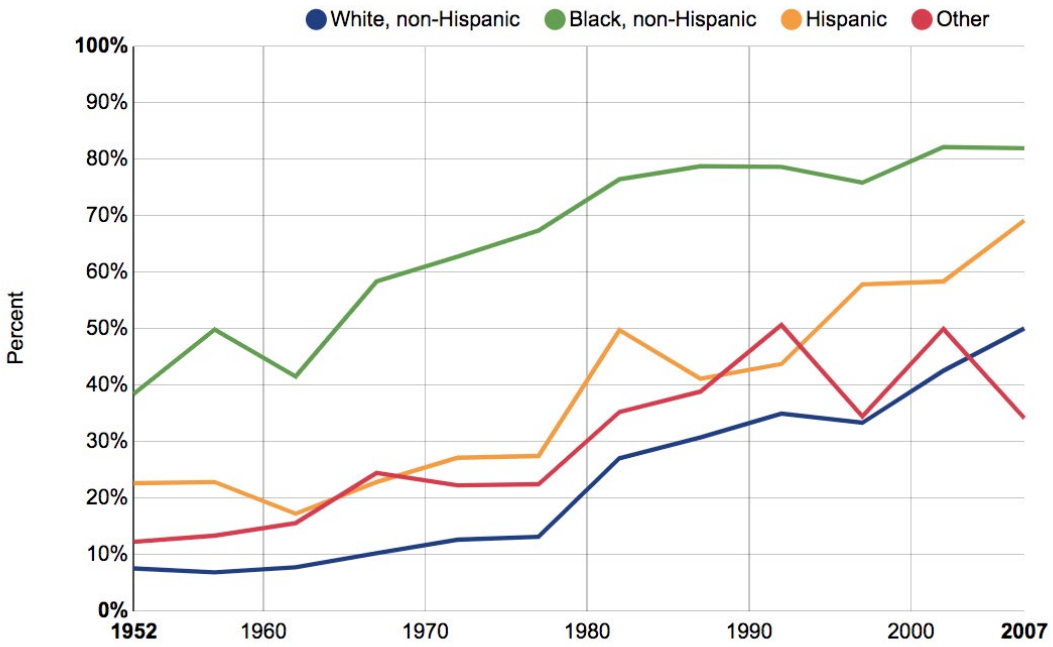
The shotgun marriage rate has also declined precipitously for women of all racial groups (Figure 9). In 2007, only 13 percent of nonmarital pregnancies among white women were followed by a shotgun marriage, compared to 46 percent in 1952 (and a peak of 54 percent in 1967). Only 5 percent of nonmarital pregnancies among Hispanic women were followed by a shotgun marriage in 2007, compared to 23 percent in 1952 (and a peak of 38 percent in 1962). And just 3 percent of nonmarital pregnancies among black women were followed by a shotgun marriage in 2007, compared to 25 percent in 1952 (and a peak of 29 percent in 1962). For women of other races, 6 percent of nonmarital pregnancies were followed by a shotgun marriage in 2007, compared to 41 percent in 1952 (and a peak of 45 percent in 1962). Overall, black women saw the greatest decline in shotgun marriage between 1952 and 2007, followed by women of other races, Hispanic women, and white women.

Figure 9. Share of Nonmarital Pregnancies Ending in a Live Birth That Were Followed by a Shotgun Marriage, by Race, Women Ages 15-44



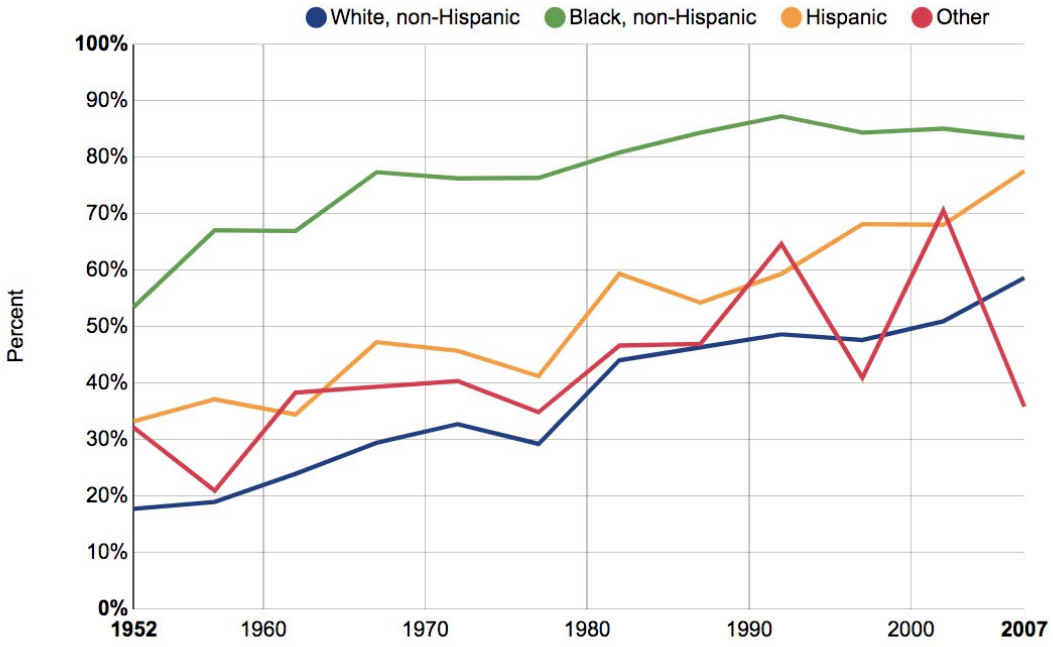
Limiting our analyses to women ages 15-29 giving birth for the first time (Figures 10-12) provides a similar picture of increasing nonmarital childbearing across all racial groups, although unwed births are higher among this group of younger, new mothers compared to 15-44-year-old women. Again, it is white women that have had the greatest growth in unwed births, increasing by close to seven-fold. (Note that the erratic trend among women of "other" races between 1997 and 2007 is likely due to small sample size once we limited our analyses to 15-29-year-olds.)

Figure 10. Nonmarital Share of First Births, by Race, Women Ages 15-29



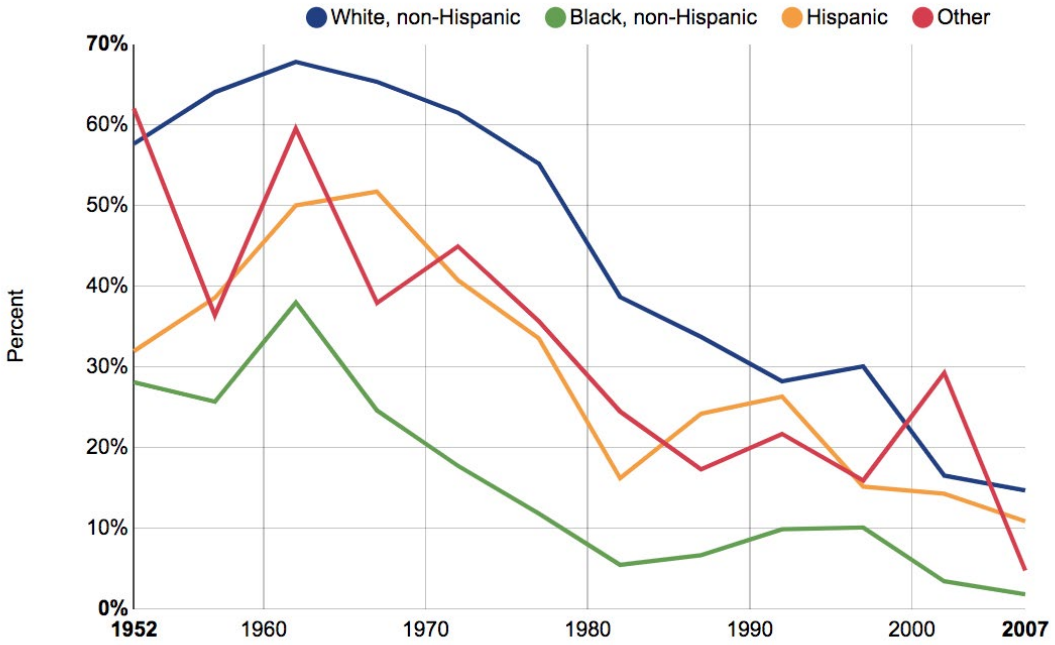
Nonmarital pregnancies are also higher across racial groups for the younger age group, compared to the entire group of 15-44-year-old women. The increase was greatest among white women, with more than a three-fold increase.

Figure 11. Nonmarital Share of Pregnancies Ending in a First Live Birth, by Race, Women Ages 15-29



Finally, shotgun marriage has also declined rapidly across all racial groups for 15-29-year-old women giving birth for the first time. The drop in shotgun marriage has been greater among 15- to 29-year-old women compared to women ages 15-44, considering that nonmarital pregnancies are more common for this group. The exception is among Hispanic women, among whom shotgun marriage has dropped slightly more when considering births to women of all childbearing ages.

Figure 12. Share of Nonmarital Pregnancies Ending in a Live First Birth That Were Followed by a Shotgun Marriage, by Race, Women Ages 15-29



CONCLUSION

Nonmarital childbearing, once rare in the United States, has become commonplace today. This is the case among low- and moderately educated women, as well as across racial lines. While nonmarital childbearing among highly educated women is still quite rare, it has nonetheless increased over time, particularly among younger women giving birth for the first time. Although nonmarital births were already fairly common among Hispanic and black women in earlier decades, today they are the majority or vast majority of all births. Among white women and women of other races, nonmarital births were once the exception, but now they are quite typical.

A major contributing factor to the growth in nonmarital births—for women of all education levels and races—is the decline in shotgun marriage. Because of the decline of marriage—both shotgun marriage and marriage in general—far fewer children today reap the benefits of a married-parent family than in past decades. This is particularly the case among minority children and those from less-educated households. Of course, marriages occurring at the end of the metaphorical shotgun

may create families with less commitment to joint childrearing. Reviving shotgun marriage would surely do less for children than reversing the growth in nonmarital pregnancy. At the very least, nonmarital childbearing—and the forces behind its rise—should be of great concern when considering the wellbeing of children.

ENDNOTES

1. See, for example, W. Bradford Wilcox et al., Why Marriage Matters, Third Edition: Thirty Conclusions from the Social Sciences (New York: Institute for American Values, 2011), accessed January 24, 2018, http://www.americanvalues.org/search/item.php?id=81#.UV7T6ze9EgU.

2. U.S. Census Bureau, Trends in Premarital Childbearing: 1930-1994, Current Population Reports, by Amara Bachu, October 1999, accessed January 29, 2018, https://www.census.gov/prod/99pubs/p23-197.pdf.

3. We first estimated the distribution of educational attainment for women 15-44 or 15-29 during each of several five-year windows between the early 1960s and the present, using the Annual Social and Economic Supplement to the CPS. Then we defined three categories of educational attainment in each five-year group, attempting to the extent possible to keep each group the same relative size. That is, "low education" in earlier years corresponds to fewer years of schooling than "low education" in more recent years, but roughly the same share of women is in this group every year.

   We then assigned women with births in our June CPS and NSFG data to one of the three categories, depending on the year a birth occurred and what the woman reported her educational attainment to be. For instance, a woman who gave birth in the late 1970s was assigned to "low," "medium," or "high" depending on where her educational attainment fell in the distribution of women's educational attainment during the late 1970s.

   Because women report their educational attainment when surveyed—not when they gave birth—this assignment is approximate. The problem is worse in the CPS samples. For example, in the 1980 CPS, women 15-44 years old when they gave birth in 1950 were 45-74 years old in 1980, when they reported their educational attainment. Women giving birth in earlier cohorts have had a longer time since childbirth to obtain additional education. In the NSFG, the problem is less severe because only women 15-44 are interviewed, and they provide information about births that occurred more recently.

   To address this problem, in our education analyses we use the 1980 CPS only to estimate outcomes by education for the 1975-79 birth cohorts (so that births occurred no more than 5 years before a woman provided her educational attainment). Similarly, we use the 1995 CPS only to estimate outcomes for the 1990-94 birth cohorts. The NSFG results are not similarly affected, because there is never more than seven or eight years between the time a woman is interviewed and the relevant birth.

An Invisible Tsunami:

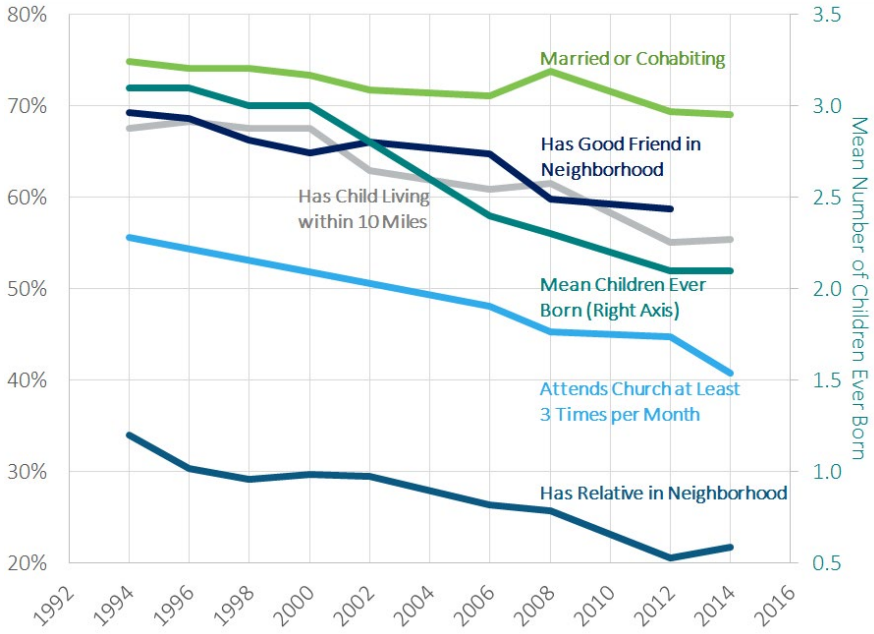
'Aging Alone' and Its Effect on Older Americans, Families, and Taxpayers

SCP REPORT NO. 1-19 | JANUARY 2019

Social capital may be most valuable when an individual's needs are greatest. Old age is a time of life when people often need to rely on family, friends, and other social relationships for care they are no longer able to provide for themselves. If an elderly adult lacks those relationships, however, they may have to lean more heavily on paid professional care, potentially leading to a lower quality of life and higher costs for families and government.

Robert Putnam of Harvard University, author of the landmark study *Bowling Alone: The Collapse and Revival of American Community*, highlighted the looming problem of "aging alone" during a May 2017 Joint Economic Committee hearing.[1] He noted that although many people are aware that the nation faces caretaking challenges due to the sizable increase of its elderly population, few are aware of how declining social capital may exacerbate these challenges. As Putnam pointed out, the elderly often receive much of their care informally, including from family members, friends, and community organizations.[2] However, a variety of social capital indicators suggest a weakening of associational life among Americans. As such, baby boomers and subsequent generations of Americans may enter old age with fewer social ties than did Americans born earlier in the twentieth century. That would mean fewer informal caregivers. To assess this possibility, we examined data from the nationally representative Health and Retirement Study (HRS), conducted by the University of Michigan.[3] The HRS is a set of surveys of adults ages 50 and older in the United States that began in 1992. We examined trends in social capital over a 20-year period—1994 to 2014—among adults ages 61 to 63 years of age.[4] The oldest cohort in our study was thus born between 1931 and 1933, while the youngest cohort was born between 1951 and 1953 (during the baby boom).

SOCIAL SUPPORT AMONG ADULTS AGES 61-63, 1994-2014



Source: Health and Retirement Study, http://hrsonline.isr.umich.edu/.

The results of our analyses, shown in the above chart, confirm that older Americans in the future are unlikely to have the level of support from caregivers that they enjoyed in the past. The share of retiring adults who are living with a spouse or cohabiting with a partner has fallen from about 75 percent to 69 percent, reflecting declining marriage rates and higher divorce rates, which more than offset falling widowhood, rising cohabitation, and growing life expectancy.[5] Retiring adults today are also less likely to have children who can take care of them. In 1994, two-thirds (68 percent) of retiring adults lived within ten miles of an adult child. That share fell to 55 percent in 2014. In large part, this decline reflects falling fertility. The right axis of the figure indicates that the average number of children ever born to retiring adults fell from 3.1 in 1994 to 2.1 in 2014.

Against these declines (and not shown in the figure), retiring adults today have more living siblings than their counterparts had 20 years ago. Nevertheless, they are less likely to have a relative living nearby. The share of retiring adults with a relative in their neighborhood (outside their home) fell from 34 percent in 1994 to 22 percent in 2014. They also have fewer friends close at hand; the share with a good friend in the neighborhood fell from 69 percent to 59 percent between 1994 and 2012 (the last year for which comparable data are available).[6] Finally, retiring adults may have fewer social connections outside their neighborhood than in the past. The share who attend religious services at least three times per month fell from 56 percent to 41 percent between 1994 and 2014.[7] Of course, social support might come from acquaintances based in non-religious institutions and organizations. However, as Putnam writes in *Bowling Alone*,

> Faith communities in which people worship together are arguably the single most important repository of social capital in America.... nearly half of all associational memberships in America are church related, half of all personal philanthropy is religious in character, and half of all volunteering occurs in a religious context.[8]

Our analyses affirm estimates from Putnam's research. According to his projections, social support in old age may decline by roughly one-third between the generation born in 1930 and that born in the mid-1950s (who were in their early 60s between 1991 and today).

The decline in the availability of support from family, friends, neighbors, and congregants among retiring adults has implications for future retirees, caregivers, and taxpayers. Surviving HRS respondents who were between the ages of 61 and 63 in 1994 are in their mid-80s today. Those 61 to 63 in 2014 will reach that age in 2038. In between, we are likely to see an increasingly inadequate level of informal care, even as greater survival rates increase the need for care.

For retirees, that would necessitate a greater amount of institutional care outside the home and away from loved ones, reducing, for many, their quality of life. There are also financial implications for the elderly and their families. While care provided informally creates costs such as the lost wages of caregivers, institutional care often entails burdensome expenses. Medicaid, for instance, is the primary payer of nursing home expenses, but to qualify for assistance, Americans routinely spend down their assets (or, in the case of adult children, their parent's assets). Paying the cost of long-term care privately is prohibitively expensive for many families.

Finally, the decline in social capital among the elderly, by increasing demand for institutional care, is likely to worsen federal and state deficits. Current projections of spending on Medicare and Medicaid inadequately account for declining social support; they implicitly assume that the mix of informal and formal care that today's older Americans receive will stay the same over time. Putnam roughly estimated in his hearing testimony that the inflation-adjusted cost of paid elder care could double by 2030 over the level that would exist under the assumption that social support holds steady.

The good news is that by anticipating these potential costs, we can prepare for and reduce them. Policymakers, health care providers, and institutions of civil society should think creatively about how to mitigate the looming challenge—starting now. And today's prime-age and retiring adults must consider how to balance immediate needs, future plans, and the need for someone to take care of older Americans. Unfortunately, in an age of declining social capital, our collective quiver will be short of arrows as we search for ways to address these questions.

ENDNOTES

1. *Hearing on the State of Social Capital in America*, 115th Congress (2017) (statement of Robert D. Putnam, Malkin Professor of Public Policy, Harvard Kennedy School), accessed November 20, 2018, https://www.jec.senate.gov/public/_cache/files/222a1636-e668-4893-b082-418a100fd93d/robert-putnam-testimony.pdf
2. Much of Putnam's work was done in collaboration with Chaz Kelsh, a graduate student at the Harvard Kennedy School.
3. Health and Retirement Study, accessed November 20, 2018, http://hrsonline.isr.umich.edu/.
4. We utilized data from the 1994, 1996, 1998, 2000, 2002, 2006, 2008, 2012, and 2014 surveys. We selected the age range 61 to 63 to maximize the number of surveys from which we could obtain data while avoiding complicating issues of changing mortality. Each survey includes different birth cohorts. Importantly, we do not look at multiple age groups within any one survey to examine trends, since doing so would conflate period, cohort, and age effects. The 61- to 63-year-old age range was unavailable in the 1992 data. Furthermore, we do not include respondents who were in a nursing home. The percentage of 61-63-year-old adults in a nursing home was small, with a high of around 1 percent in 2002 and a low of 0.05 percent in 2014.
5. Renee Stepler, "Led by Baby Boomers, divorce rates climb for America's 50+ population," Pew Research Center, March 9, 2017, accessed November 20, 2018, http://www.pewresearch.org/fact-tank/2017/03/09/led-by-baby-boomers-divorce-rates-climb-for-americas-50-population/. Susan L. Brown and I-Fen Lin, "The Gray Divorce Revolution: Rising Divorce Among Middle-Aged and Older Adults, 1990-2010," *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 67, no. 6, 731-741. Renee Stepler, "Number of U.S. adults cohabiting with a partner continues to rise, especially among those 50 and older," Pew Research Center, April 6, 2017, accessed November 20, 2018, http://www.pewresearch.org/fact-tank/2017/04/06/number-of-u-s-adults-cohabiting-with-a-partner-continues-to-rise-especially-among-those-50-and-older/; and Susan L. Brown and Matthew R. Wright, "Marriage, Cohabitation, and Divorce in Later Life," *Innovation in Aging* 1, no. 2, September 2017: 1-11. Valerie King and Mindy E. Scott, "A comparison of cohabiting relationships among older and younger adults," *Journal of Marriage and Family* 67, no. 2, May 2005: 271-285.
6. This question was administered differently in 2014 than in previous waves of the survey, and the difference in administration appears to have made the 2014 result noncomparable to earlier years. In the 2014 wave, this question was not asked of the entire sample, but rather a sub-sample of respondents through a "leave-behind" questionnaire. Furthermore, in 2014 this question was only asked of individuals who indicated that they had any friends. Despite being noncomparable to other years, the 2014 result is consistent in that it shows a trend of decline in the percent of 61-63-year-olds reporting that they have a good friend in the neighborhood.
7. In the 1994 wave, only respondents who indicated a religious preference were asked about their frequency of religious attendance; however, in subsequent waves of the survey, all participants were asked about frequency of religious attendance regardless of whether they had a religious preference. In order to make the 1994 religious attendance variable comparable to the other waves, we thus included those who said they had no religious preference in that wave among those who attend religious services less than three times per month.
8. Robert Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon & Schuster, 2000), p. 66.

Volunteering in America

SCP REPORT NO. 2-17 | SEPTEMBER 2017

Few countries are as generous as the United States when it comes to volunteering.[1] One quarter of Americans donated time to an organization in 2015. One need look no further than the outpouring of assistance in response to recent natural disasters for powerful illustrations of American civic-mindedness. In 2006 and 2007, over a million volunteers joined the recovery effort in the wake of Hurricane Katrina. One year after Superstorm Sandy, the Federal Emergency Management Agency reported that, "some 173,544 volunteers had invested more than 1 million volunteer hours in the Sandy recovery effort."[2] And already, Americans have responded to the devastation of Hurricanes Harvey and Irma with characteristic generosity.

One of the findings in the Social Capital Project's first report, "What We Do Together," was that volunteering rates in the US are no lower than in the 1970s, in contrast to many indicators of social capital that have worsened over time. In fact, we found that the number of hours spent volunteering per person has increased.[3]

This post goes further, arguing that volunteering rates may have actually risen over the long run. The post also explores the demographics of volunteerism. Volunteerism is more common among women and among socioeconomically advantaged groups. The volunteering rates of Americans of different ages have converged over time. Over the long run, volunteerism may have declined among adults ages 25 to 44, but it increased among other age groups, in particular the elderly. Volunteerism may have declined since 2002, though different data sources come to different conclusions. Any recent decline has been concentrated among non-Hispanic whites, who continue to have relatively high volunteer rates. Volunteering is more common in the North than in the South, with Utah leading the way overall.

TRENDS IN VOLUNTEERISM

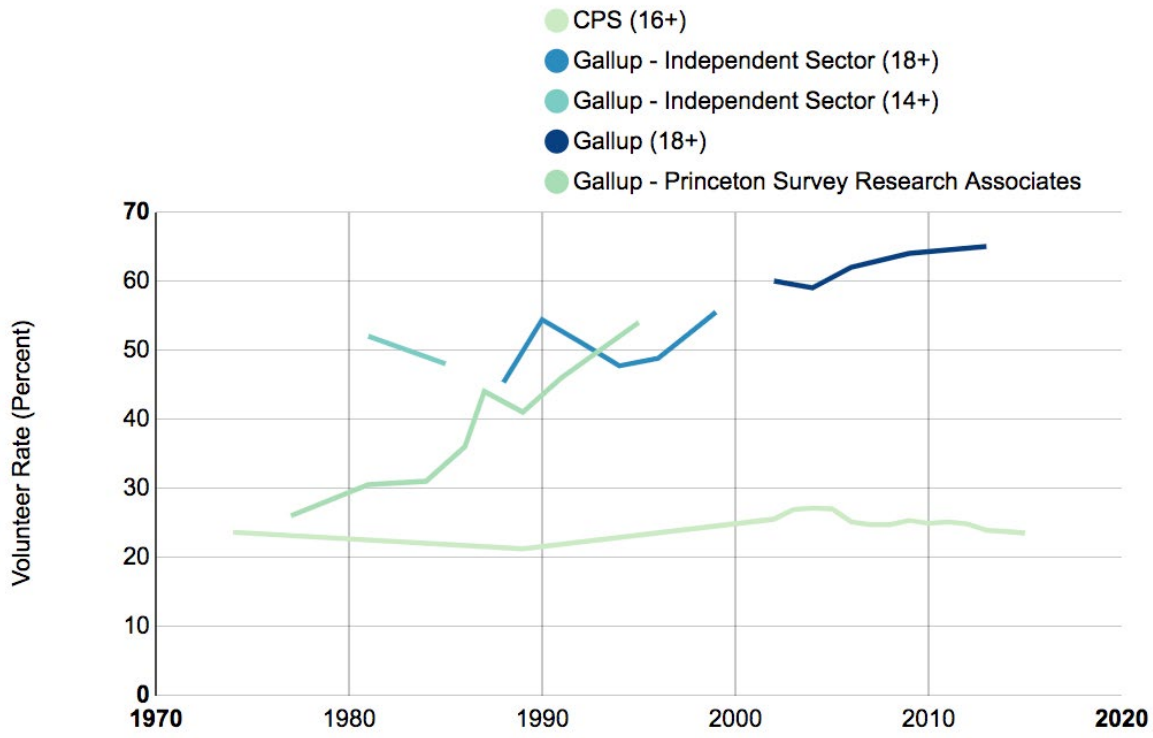
The Current Population Survey (CPS) is the key source of volunteerism data from the federal government. Since 2002, the CPS has included a set of questions on volunteer work that are highly comparable over time. The lower part of Figure 1 displays the trend in volunteerism from these surveys and from two earlier ones conducted in 1974 and 1989.[4] These earlier estimates may not be comparable to the ones since 2002 because their questions were worded differently. However, we can compare the CPS trend to the trend in volunteerism from a series of Gallup surveys (shown in the upper part of Figure 1).[5]

Unfortunately, the two data sources produce different results, though neither indicates that volunteerism has declined. First, the Gallup volunteering estimates are higher in every year than those from the CPS, possibly reflecting differences between the two data sources.[6] According to the CPS, in 2015 only one in four Americans aged 16 and over volunteered at an organization, compared to the two in three adults

Gallup finds volunteered time to a religious organization or other charitable cause. Second, Gallup shows a clear rise in volunteerism over time, while the trend is flat in the CPS data.

In particular, the estimates from the two data sources have diverged since 2004. According to the CPS, volunteering rates may have fallen slightly, while the Gallup data show a continued increase in volunteering. It is unclear what accounts for this difference.

Figure 1. Volunteer Rates, 1974-2015



Note: Clicking legend entries removes or adds individual series. Source: See notes 4 and 5. An interactive version can be found here.

In the CPS, volunteerism is down at nearly all organization types since 2002 (not shown), the exceptions being social and community service groups, environmental or animal care organizations, and "some other type of organization." About one third of volunteers (34 percent in 2015, not shown) give their time primarily to religious organizations, according to the CPS. Child educational and recreational groups are second-most common (accounting for the most time among 19 percent of volunteers), followed by social and community service groups (15 percent). The remaining third of volunteers work primarily in health care, education, civic, or other organizations. These percentages have been fairly stable since 2002.

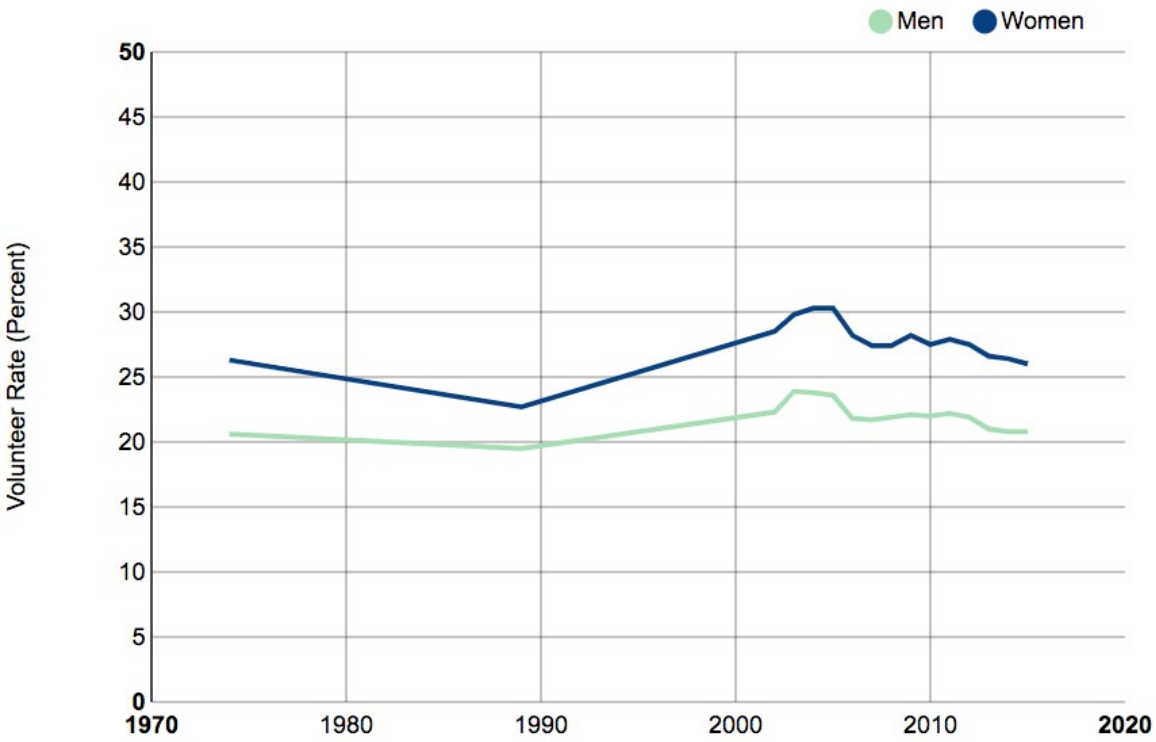
WHO VOLUNTEERS?

A report summarizing the 1974 CPS data reads, "The most typical American volunteer in 1974 was a married, white woman between ages 25 and 44 who held a college degree and was in the upper income bracket."7 This was still true in 2015. In the rest of this post, we focus on the CPS estimates.

Women and Men

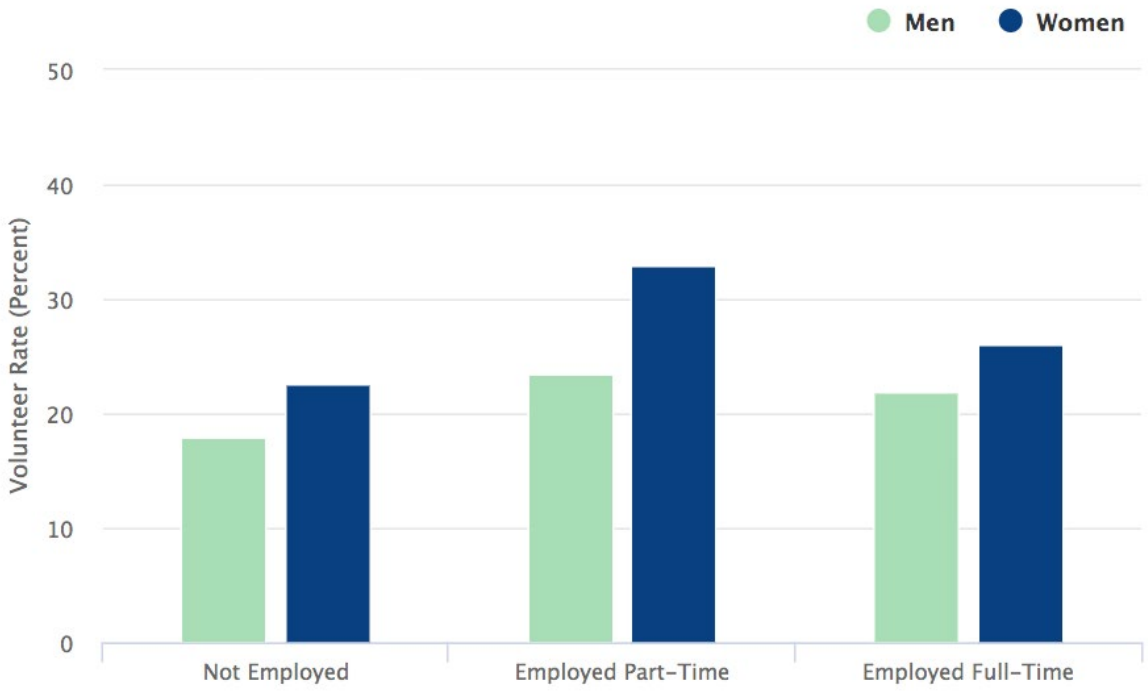
Women have higher volunteer rates than men (26 percent versus 21 percent in 2015). The gap has been strikingly stable over time, as shown in Figure 2; in the CPS, volunteering rates are about the same today as in 1974 among both men and women. While one might speculate that women's higher rates of volunteerism are due to their lower employment rate, women who were employed full-time, part-time, and who were not employed in 2015 all volunteered more than their male counterparts with the same employment status. In fact, women who work full-time have higher volunteerism rates than men who do no work, as shown in Figure 3. The fact that the gender gap in volunteerism is no lower today than in 1974, when fewer women worked (especially full-time), also suggests that the gap is unrelated to hours spent on the job.[8]

Figure 2. Volunteer Rates by Gender, 1974-2015



Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, and 2002-15 Current Population Survey microdata.

Figure 3. Volunteer Rates by Gender and Employment Status, 2015



Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 2015 Current Population Survey microdata. An interactive version can be found here.

Marital Status

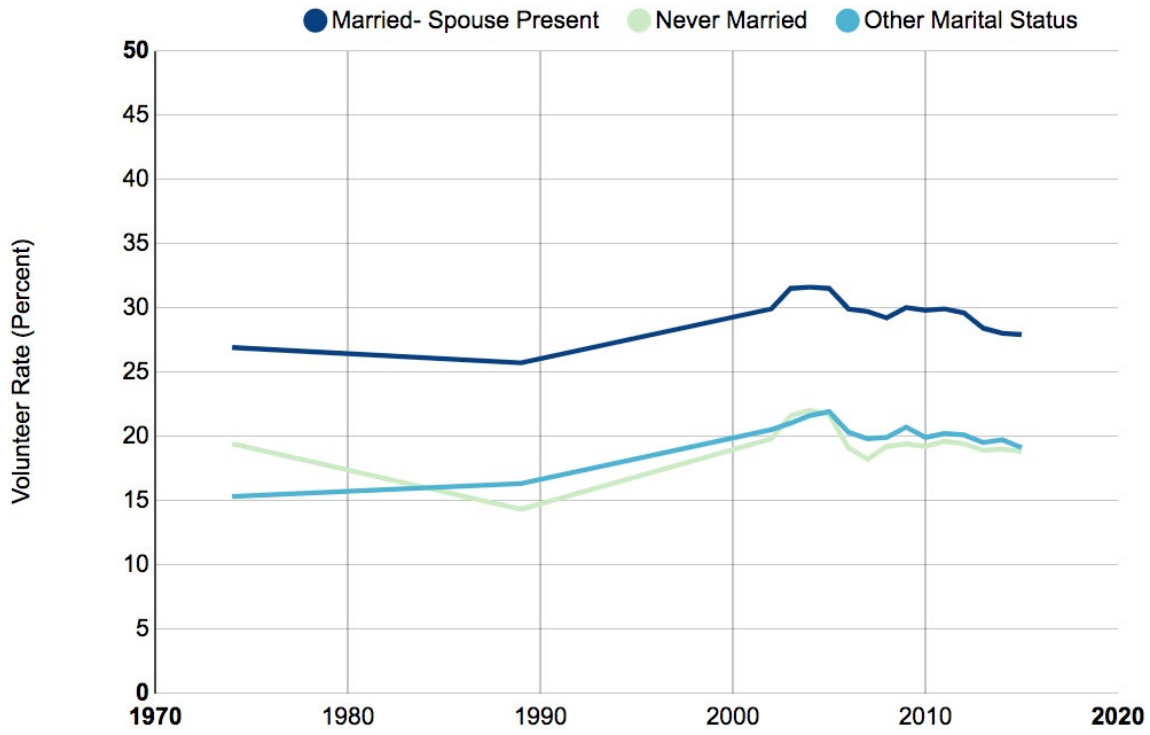
Volunteering is much more common for married individuals than others (Figure 4). In 2015, married Americans were fifty percent more likely to have volunteered than those who had never married (three in ten volunteering, versus two in ten). This may simply reflect that couples have more time than single adults, who cannot share other household responsibilities with a spouse (though they might be cohabiting with a partner). Alternatively, it could be that the kind of people who get and stay married would be relatively more likely to volunteer even if they were single.

As mentioned above, volunteering is frequently connected to educational and youth service organizations. Parents are naturally inclined to support their children's activities. However, married but childless Americans between ages 25 to 54 volunteer more than never-married adults whether or not the latter have children, and married parents volunteer only a bit more than childless married adults (not shown).

Figure 4 shows that the gap in volunteerism between married and never-married adults widened between the mid-1970s and the late 1980s. According to

the CPS, volunteerism increased among married adults and among adults who are separated, divorced, or widowed. Among never-married adults volunteerism was no lower in 2015 than in 1974. Taken together, these facts suggest that had marriage not become rarer over time, volunteerism would have risen, even in the CPS.

Figure 4. Volunteer Rates by Marital Status, 1974-2015

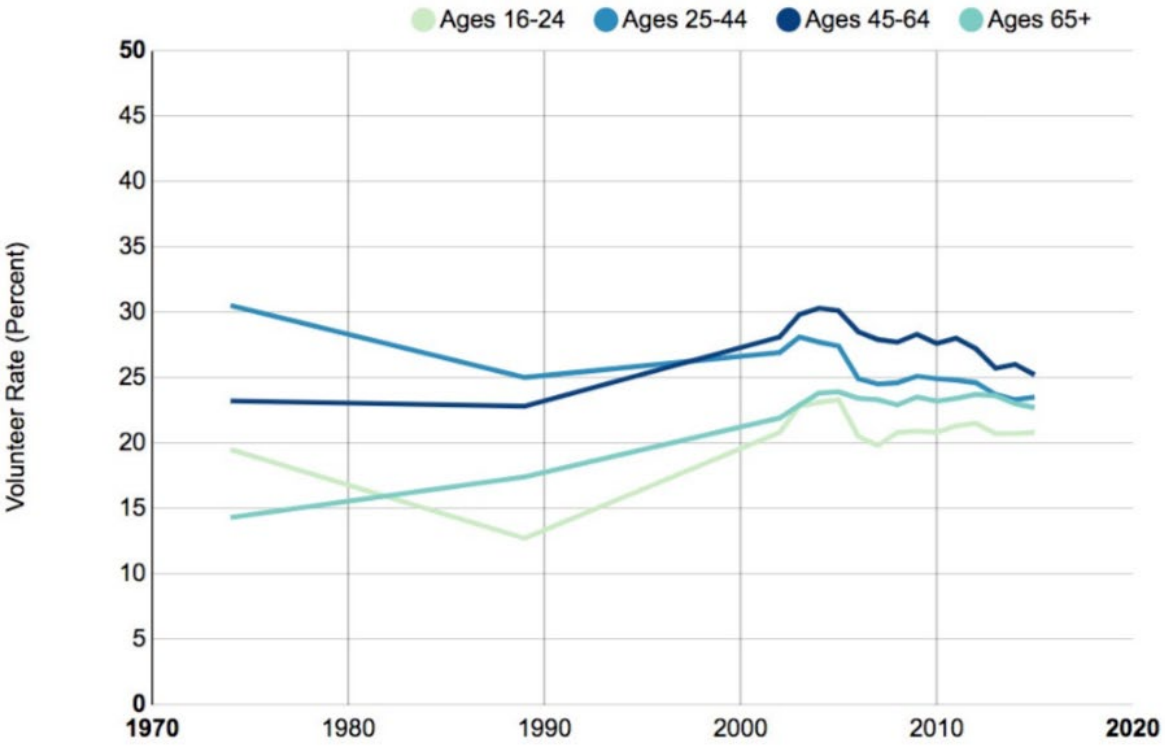


Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, and 2002-15 Current Population Survey microdata. An interactive version can be found here.

Age

Age differences in volunteering have narrowed sharply over the past 45 years (Figure 5). The CPS indicates that volunteer rates rose among adults older than 44, especially among those older than 64 years old. Volunteering also rose among Americans under the age of 25, particularly after 1989. However, adults ages 25 to 44 volunteer less than they used to. They are a somewhat larger share of the population than in 1974 or 1989, which also puts downward pressure on the aggregate rate of volunteerism. Volunteering among those 65 and older has been relatively stable since 2005, but in the CPS it has declined among other groups.

Figure 5. Volunteer Rates by Age, 1974-2015

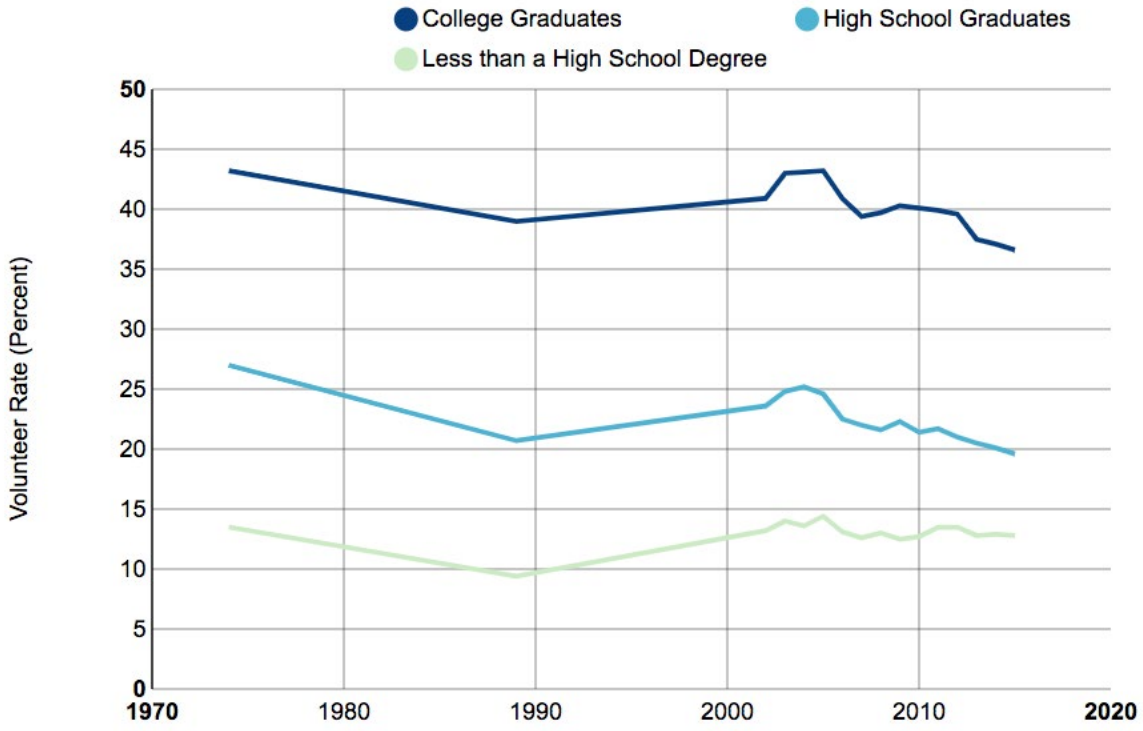


Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, and 2002-15 Current Population Survey microdata.

Education

Figure 6 shows that volunteerism increases with educational attainment.[9] In 2015, those with a college degree were nearly three times as likely to have volunteered in the past year as those with less than a high school degree (37 percent rate versus 13 percent). Volunteering fell between the 1974 and 2015 CPS surveys among those with at least a high school diploma, but it was stable among high school dropouts. Since 2005, however, the CPS data indicate that volunteering fell among adults in all three educational categories. Educational attainment rose between 2002 and 2015.[10] If getting more education has a causal influence on volunteering—a questionable conclusion, to be sure—the recent decline in volunteerism in the CPS would have been larger absent rising levels of educational attainment, and the stable long-term trend would have pointed downward.

Figure 6. Volunteer Rates by Education, 1974-2015

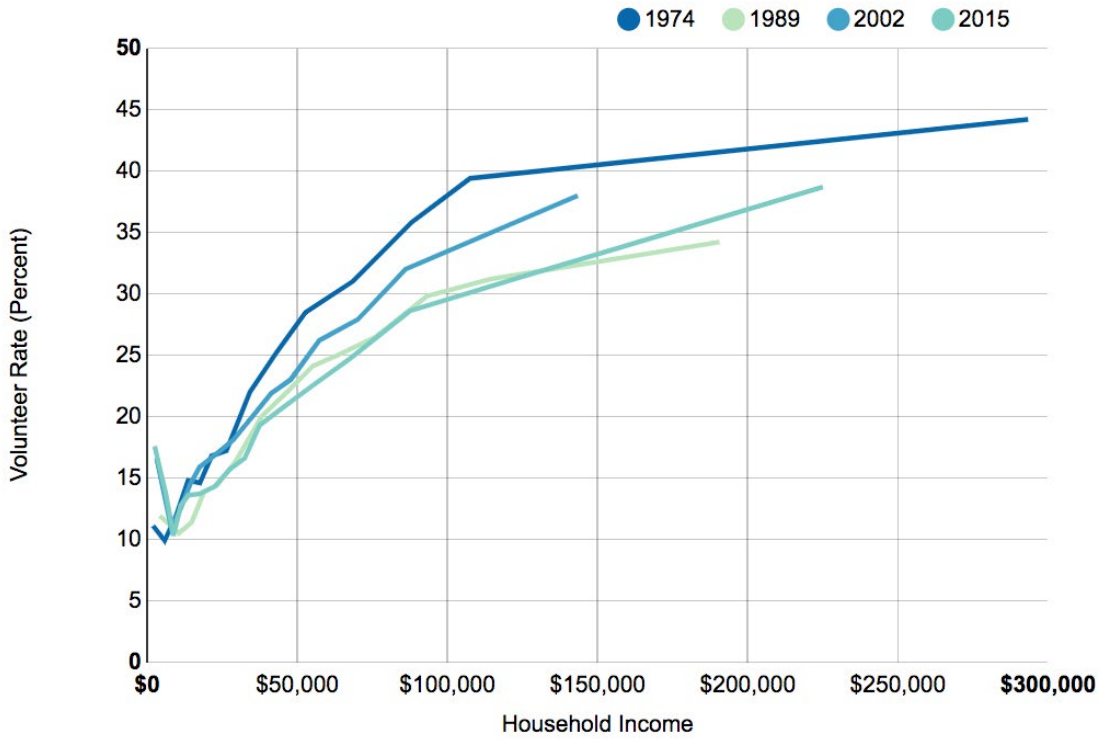


Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, and 2002-15 Current Population Survey microdata. An interactive version can be found here.

Income

In 2015, the volunteer rate for individuals from households making $100,000 or more (35 percent, not shown) was 21 points higher than the volunteer rate for individuals from households making less than $20,000 (14 percent).[11] In general, as income falls, so does volunteering. Below around $10,000, this relationship breaks down, primarily due to income mismeasurement. Figure 7 plots income (in 2015 dollars) against volunteerism rates, showing lines for 1974, 1989, 2002, and 2015. Except toward the bottom of the income distribution (where measurement issues intrude), volunteer rates were higher in 1974 than in the other four years. Over the long run, it is possible that rising incomes kept the volunteerism rate in the CPS from falling.

Figure 7. Volunteer Rates by Family Income, 1974-2015, Selected Years

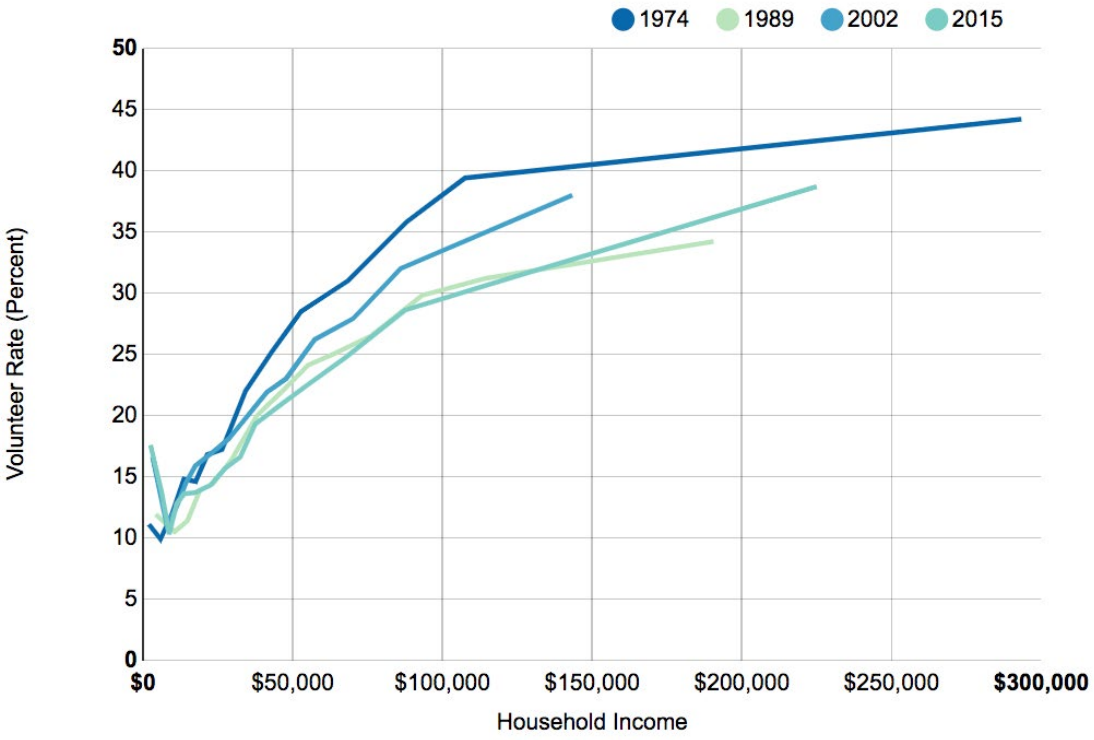


Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, 2002, and 2015 Current Population Survey microdata.An interactive version can be found here.

Race

As indicated in Figure 8, volunteering is most common among non-Hispanic whites, with 27 percent volunteering in 2015. At the other end, 14 percent of Hispanics volunteered.[12] In between, African Americans (18 percent) and others (18 percent) have similar rates of volunteering. The gap between the volunteer rates of whites and nonwhites has narrowed because as the volunteer rate among whites has fallen since 2003, while rates for blacks and Hispanics have remained relatively stable. In fact, Figure 8 suggests that essentially the entire decline in volunteerism since 2003 occurred among non-Hispanic white Americans (and adults in the much smaller "other" category, including Asian Americans and multiracial adults, among others). In addition, though, the rising share of the population that is nonwhite has also put downward pressure on volunteering, since nonwhites tend to volunteer less than whites.

Figure 8. Volunteer Rates by Race, 1974-2015

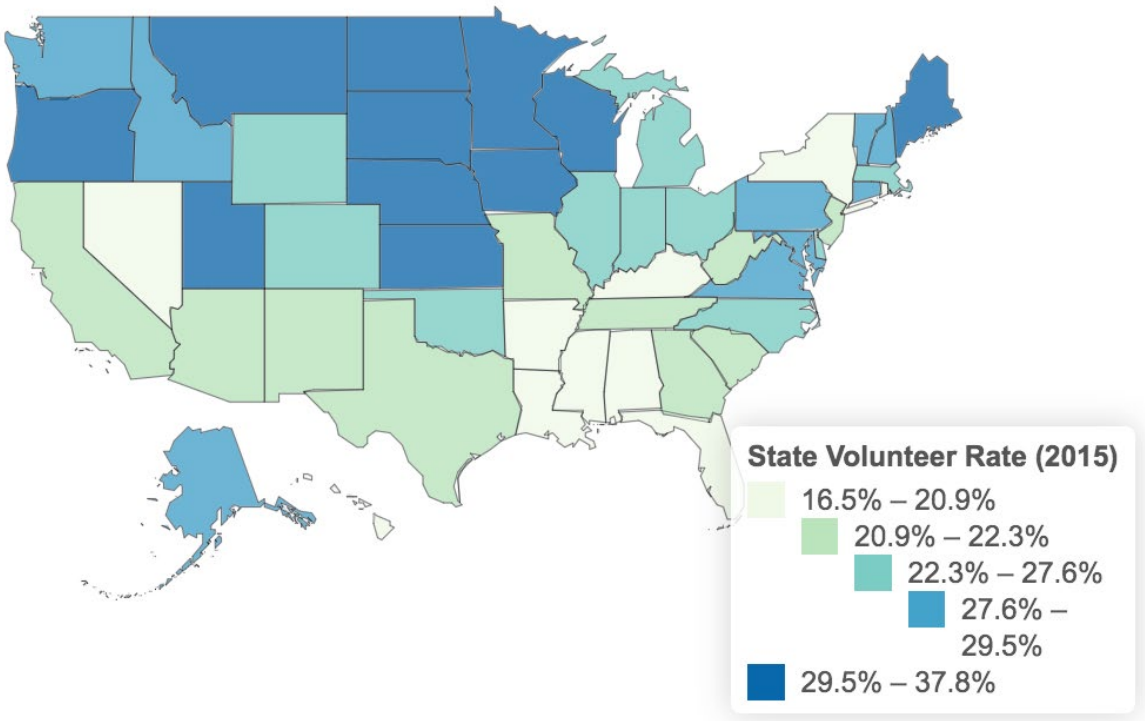


Note: Clicking legend entries removes or adds individual series. Source: Social Capital Project calculations using 1974, 1989, and 2002-2015 Current Population Survey microdata. An interactive version can be found here.

VOLUNTEERING BY STATE

In 2015, the highest state volunteer rate was in Utah with an estimated 38 percent of the population having volunteered in the past year; Mississippi's volunteer rate was the lowest at 16 percent. In general, volunteering is more common in northern states than in southern ones (see Figure 9).

Figure 9. Volunteer Rate by State, 2015



Source: Social Capital Project calculations using 2015 Current Population Survey microdata. An interactive version can be found here.

CONCLUSION

Volunteerism is the rare indicator of social capital that has not worsened (or even rarer, that has improved) over the last forty years. However, there is clear divergence across states in rates of volunteering as well as divisions along demographic and socioeconomic lines. In future work, we hope to dive deeper into these differences.

ENDNOTES

1. Charities Aid Foundation, "World Giving Index 2016", accessed June 5, 2017. https://www.cafonline.org/docs/default-source/about-us-publications/1950a_wgi_2016_report_web_v2_241016.pdf?sfvrsn=4. The U.S. ranked fifth among 140 countries in the percentage who had volunteered with an organization, falling behind four quite poor nations (Turkmenistan, Myanmar, Indonesia, and Sri Lanka).
2. Federal Emergency Management Agency, "In Disaster Recovery, Volunteer Efforts are Priceless", press release, release date, November 7, 2013, https://www.fema.gov/news-release/2013/11/07/disaster-recovery-volunteer-efforts-are-priceless.

3. U.S. Congress, Joint Economic Committee, Social Capital Project, *What We Do Together: The State of Associational Life in America*, report prepared by the Vice Chairman's staff, 115th Cong., 1st Sess., May 2017, https://www.jec.senate.gov/public/index.cfm/republicans/2017/5/what-we-do-together-the-state-of-associational-life-in-america.

4. All of the results in this paper are from our own analyses of CPS microdata, downloaded from the National Bureau of Economic Research website (http://www.nber.org/data/current-population-survey-data.html) for 1974 and 1989 and from the Census Bureau's Data Ferrett utility for 2002-2015. We include all persons at least 16 years old in all analyses. For comparability with the earlier estimates, we ignore the follow-up question in the 2002-2015 surveys that double-checks with respondents about whether they volunteered, following Robert Grimm, Jr. et al., *Volunteer Growth in America: A Review of Trends Since 1974*, (Washington: Corporation for National and Community Service, 2006), https://www.nationalservice.gov/pdf/06_1203_volunteer_growth.pdf.

   The CPS is administered by the Census Bureau and sponsored by the Bureau of Labor Statistics. The federal agency ACTION co-sponsored a supplement to the April 1974 CPS, and another supplement was fielded in May 1989 (apparently without a co-sponsoring agency). Volunteer data since 2002 come from the September CPS, co-sponsored by USA Freedom Corps (2002-2007) and the Corporation for National and Community Service (2008-2015), both of them federal agencies involved in promoting volunteerism.

   There was another CPS supplement on voluntarism in November 1965, but the way that the questions were asked make it especially incomparable to the subsequent surveys. See Howard V. Hayge, "Volunteers in the U.S.: who donates the time?," *Monthly Labor Review* 114:2 (February 1991), 22.

5. The Gallup estimates come from three different survey sets. Gallup has conducted surveys on volunteerism for the Independent Sector for a number of years. We took 1981 and 1985 estimates (for respondents at least 14 years old) from U.S. Bureau of the Census, *Statistical Abstract of the United States: 1989 (109th Edition)*, Washington, DC, 1989, Table 614. Estimates for 1988-1999 are from our analyses using the Survey Documentation and Analysis (SDA) online utility at http://www.icpsr.umich.edu/icpsrweb/NADAC/studies/35584. They represent respondents at least 18 years old.

   Gallup also partnered with Princeton Survey Research Associates on surveys about volunteerism over the years. The estimates cited in Figure 1 are taken from Everett Carll Ladd, *The Ladd Report* (New York: Free Press, 1999), 64. Estimates for 1981 and 1987 are two-month averages. It is unclear what ages are represented in these estimates.

   The 2002-2013 Gallup series is from the Gallup editors, "Most Americans Practice Charitable Giving, Volunteerism," December 13, 2013, http://www.gallup.com/poll/166250/americans-practice-charitable-giving-volunteerism.aspx. The estimates are for adults age 18 or older.

6. The Gallup surveys collect no information for household members other than the respondent, in contrast to the CPS, though this appears to be a relatively small factor, based on our analyses of CPS data. Volunteering for any "charitable cause" is counted in recent Gallup surveys, but only volunteering for organizations is counted in the CPS. Finally, the Gallup surveys are primarily about civic engagement and voluntarism, while the CPS is primarily focused on labor force questions. That may prime Gallup respondents to think about their volunteering activities.

7. The Agency for Volunteer Service (ACTION), *Americans Volunteer - 1974*, (Washington: ACTION, 1975), 3.

8. The 1965 CPS data also indicate a gender gap just as wide as today.

9. In the 1974 and 1989 data, "college degree" means completed 16 or more years of schooling, "high school diploma" means completed 12-15 years, and "less than high school" means fewer than 12 years completed. In the 2002-2015 data, "college degree" means obtaining a bachelor's, master's, professional, or doctoral degree; "high school diploma" means graduating from high school and excludes getting a Graduate Equivalency Degree (GED); "less than high school"

means not getting a high school diploma (including getting a GED). Note that teenagers and young adults are included in these analyses, so some future high school and college graduates are categorized as "less than high school" or "high school diploma" despite the fact they will eventually have higher educational attainment.

10. National Center for Education Statistics, Digest of Education Statistics, Table 104.10, https://nces.ed.gov/programs/digest/d16/tables/dt16_104.10.asp?current=yes.

11. The income variable is the family income of the householder's family, and it is derived from a survey question that asks respondents to place themselves in one of several categories. The number of categories (and the income ranges used to define them) is not the same from year to year. We coded everyone at the midpoint of their nominal income category (at 1.5 times the lower bound of the highest category in each year), then we adjusted these midpoints for inflation using the Bureau of Economic Analysis Personal Consumption Expenditures (PCE) deflator, putting them in constant 2015 dollars. Note that members of a household that are not in the householder's family—such as roommates, cohabiting romantic partners, and others not linked to the householder by blood or marriage—are assigned the householder's family income.

12. The 1974 Spanish origin variable appears to be problematically coded, so the categories for that year are "white," "black," and "other." Beginning in 2003, respondents could indicate multiple racial categories. From this year forward, the categories are "non-Hispanic white alone" (no other racial categories indicated), "non-Hispanic black alone" (no other racial categories indicated), "Hispanic," and "other" (including multiracial respondents).

All The Lonely Americans?

SCP REPORT NO. 2-18 | AUGUST 2018

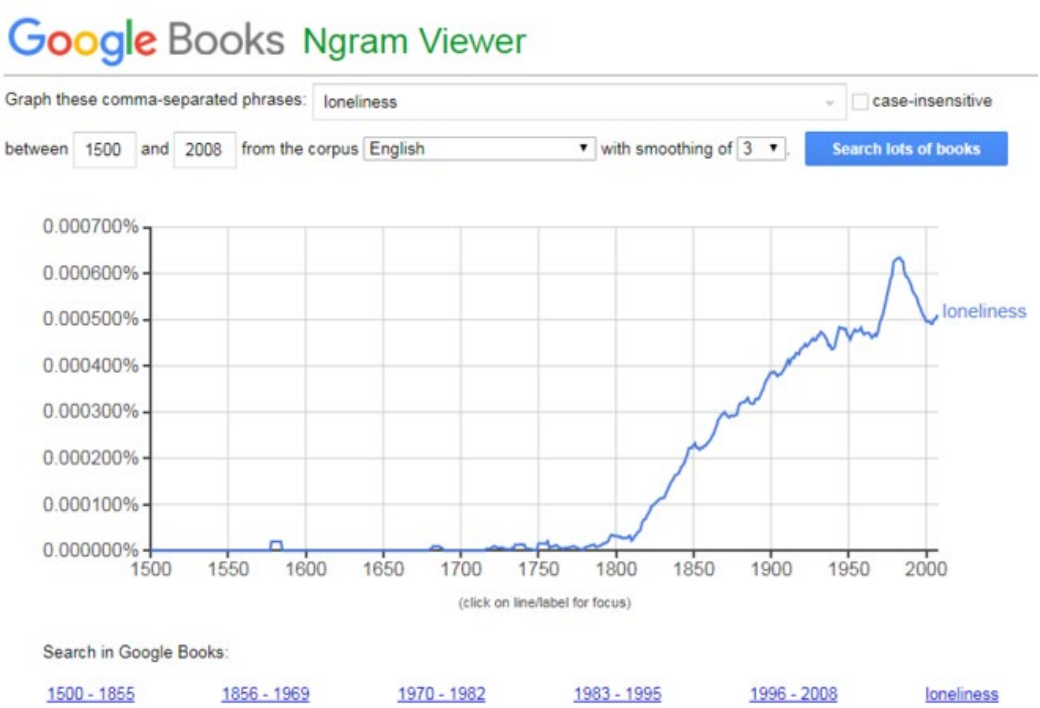
Is America in the middle of a loneliness epidemic?

Claims of rising loneliness are often part of a larger narrative about fraying social bonds in America. In this framing, loneliness is seen as one symptom among many of a larger set of problems. The Centers for Disease Control and Prevention (CDC) recently reported that between 1999 and 2016, the most recent year for which data are available, suicide rates had increased by almost 30 percent,[1] and some states, such as New Hampshire, Vermont, and Utah, saw their rates increase by over 45 percent. Stories about the perpetually-plugged-in-but-socially-disconnected teen draw wide attention.[2] Moreover, there is an emerging consensus in the research community that chronic loneliness has a number of negative consequences.[3] Some scholars have even recently advanced the argument that it should be a public policy priority.[4]

The worry that loneliness is on the rise in America routinely surfaces in national media. Vivek Murthy, former U.S. Surgeon General, has argued as much across numerous articles, interviews, and television and radio appearances. For example, in the Harvard Business Review he stated: "Loneliness is a growing health epidemic. We live in the most technologically connected age in the history of civilization, yet rates of loneliness have doubled since the 1980s. Additionally, the number of people who report having a close confidante in their lives has been declining over the past few decades."

In a speech across the Atlantic previewing the report of the 2017 Jo Cox Commission on Loneliness, Rachel Reeves MP noted that "[i]n the last few decades loneliness has escalated from personal misfortune into a social epidemic." In part spurred on by that report, British Prime Minister Theresa May considered it so important that she initiated a variety of efforts to better understand and address the problem, including appointing an under secretary to coordinate those efforts across the government (which was often reported as May's appointment of a "Minister of Loneliness").

Despite claims of a new crisis, one can find similar concern with the problem of loneliness going back many decades in bestselling books, major newspapers, magazines, and television programs. The 1950s brought us *The Lonely Crowd: A Study of the Changing American Character*, a bestseller; the 1970s brought us *The Pursuit of Loneliness: American Culture at the Breaking Point*, also a bestseller.[5] Our rising concern with loneliness appears to extend even further back in time. Although it is certainly an imperfect measure, Google's Ngram Viewer shows below that the word "loneliness" appeared infrequently in books until the early 19th century, when it steadily increased in relative frequency to the late 1960s, shooting way up until the early 1980s, then declining roughly to levels that prevailed between the 1930s and 1960s. Whatever the status of our actual loneliness, we certainly seem preoccupied with it.



Source: "Google Books Ngram Viewer," Google, accessed August 14, 2018, https://books.google.com/ngrams. See also Jean-Baptiste Michel et al., "Quantitative Analysis of Culture Using Millions of Digitized Books," Science 331, no. 6014: 176-182, http://science.sciencemag.org/content/331/6014/176.

The problem of loneliness is inherently interesting to us at the Social Capital Project. The project has documented the withering of our associational life since the early 1970s. One possible consequence of that deterioration might be the broadening and deepening of Americans' experience of loneliness. But loneliness is not always written about or analyzed rigorously, is sometimes conflated with other important but different concepts, and media reporting about it is often unduly alarmist. This is unfortunate because, as one scholar pointed out, "overstating the problem can make it harder to make sure we are focusing on the people who need help the most."[6]

This brief assesses the evidence that loneliness is on the rise. In the last several decades there has been important progress in understanding the nature, causes, and consequences of loneliness. But it is still unclear how large of a problem it is or whether it is worsening. In fact, despite the public discourse and media attention, we find that there is little evidence that loneliness has worsened.

WHAT IS LONELINESS AND HOW IS IT MEASURED?

Defining loneliness is more subtle than it might appear.

The late University of Chicago psychologist John Cacioppo and his co-author Louise Hawkley defined it as "perceived social isolation."[7] Another slightly more elaborated definition is that loneliness is "the distressing feeling that accompanies discrepancies between one's desired and actual social relationships."[8]

One challenge in studying loneliness is that researchers span multiple disciplines—particularly psychology and sociology—and often rely on different measures of related but distinct phenomena.[9] As sociologists Erin York Cornwell and Linda J. Waite note, "the relative contributions of subjective aspects of isolation, such as loneliness and perceived support, are rarely considered alongside social disconnectedness and social inactivity."[10] Many people wrongly assume that having relatively few social contacts or infrequent social interaction is strongly related to loneliness (or, conversely, that those with many social contacts and interactions are not lonely), but research on loneliness does not support that view. Many people who have few social contacts and are often alone are not lonely, and many people who have a large number of social contacts and interactions can be subjectively lonely.[11] Further, individuals differ a great deal in their propensity to feel lonely.[12]

Loneliness has been measured in a wide variety of ways, from single-item measures to lengthier scales. Since the 1970s, a variety of instruments have been developed to study individual differences in loneliness, but by far the most commonly used is the UCLA Loneliness Scale—first introduced in 1978, revised in 1980, and revised again in 1996; this last version is widely used today.[13] It is a set of 20 questions about how often (and how intensely) the respondent experiences various aspects of loneliness (e.g. "How often do you feel that there is no one you can turn to?", "How often do you feel isolated from others?", and "How often do you feel that you have a lot in common with the people around you?").

Although there is some disagreement about how many different underlying constructs this scale measures, a factor analysis in the latest published revision indicated that it was plausibly measuring a single underlying factor. Importantly, researchers have found across multiple studies that scores on the UCLA Loneliness Scale showed relatively low correlations with objective features of social networks (e.g. number of various kinds of relationships or quantity of interactions), indicating that their measure was not simply redundant with those relationship characteristics.[14]

IS *LONELINESS* INCREASING?

There are a few different but related questions that tend to get lumped into one general story about whether loneliness is on the rise in America, in part because of a lack of good data, and occasionally because of a failure to distinguish the two often distinct lines of psychological and sociological research.

One question is whether Americans are increasingly *alone* (that is, have fewer social contacts, or have less social interaction). This question, which sociologists tend to study, is about objectively observable social networks or relationship characteristics. It is distinguishable from the second question, regarding the subjective experience of loneliness. This latter question—whether Americans are increasingly experiencing loneliness ("perceived social isolation")—has typically been the research purview of psychologists.

Correlations are lower than we might expect between the most common measures of loneliness and objective measures of social network characteristics, so these two questions are substantially though not wholly distinct from each other.[15]

From reading the headlines, one would certainly get the impression that loneliness is increasing. The health insurer Cigna recently released the results of a survey on loneliness—making use of the UCLA Loneliness Scale—that "was created to focus the national conversation on the epidemic."[16] National media covered the survey as such. For example, Washington, D.C.'s National Public Radio station WAMU described an hour-long program on the topic as "The Universal Solitude of Americans: Loneliness on the Rise,"[17] despite the fact that the survey had not shown an increase in loneliness. Late last year, Former Surgeon General Vivek Murthy stated in an article that "[l]oneliness is a growing health epidemic. We live in the most technologically connected age in the history of civilization, yet rates of loneliness have doubled since the 1980s."[18]

However, it is not at all clear that loneliness has increased over the last several decades.

In his 2011 book, *Still Connected: Family and Friends in America Since 1970*, sociologist Claude Fischer puts a fine point on this question: "For all the interest in loneliness, there appears to be little national survey data that would permit us to draw trends."[19]

We looked for the strongest support for the claim that loneliness has risen, and the best we could find comes from polls by FGI. Between 1994 and 2004, the FGI polls indicate that the share of adults saying loneliness was a problem for them rose from roughly 25 percent to 30 percent. It is unclear, however, whether this five-point difference reflects a real shift or arises from chance differences in the people sampled in each year or in survey administration.

The remaining evidence suggests flat trends. In 1985 and 2000, Harris polls found that respondents' experience of loneliness in the past month did not rise over the period, remaining under twenty percent in both years. In 1981 and 1990, Gallup polls

showed that rates of loneliness held roughly steady, with 18 to 20 percent of adults indicating they felt "lonely or remote from other people" the past few weeks. Between 1963 and 2001, NORC surveys show a slight decline in reported feelings of loneliness, from 28 to 25 percent.

In interpreting these data, two caveats are in order. First, it is unwise to assess trends using data points from different polling organizations, which have their own distinctive methods. Any comparison between the NORC results and those from Gallup should be used with significant caution.

Second, as Claude Fischer notes, the NORC polls may have been affected by salient current events. The 1963 NORC poll was conducted just after John F. Kennedy's assassination; the 2001 NORC poll shortly after 9/11. These events might bias the percentages (showing temporarily higher or lower rates of loneliness). However, responses to the same question in a 1965 NORC poll also fell in the same 25- to 28-percent range.

These estimates are hardly conclusive evidence that loneliness has been mostly stable since the early 1960s, but they cast significant doubt on the claim that it has risen significantly.

Why, then, all the assertions that loneliness has increased and now constitutes an epidemic? Across a number of interviews and popular articles, the claim that loneliness has doubled since the 1980s is common but hard to pin down. Just one of many examples is this 2016 New York Times article, which states that "[s]ince the 1980s, the percentage of American adults who say they're lonely has doubled from 20 percent to 40 percent."[20] The piece links to another article in Slate.com.[21] The Slate article, in turn, cites "two recent surveys" and links to a frequently cited AARP survey on loneliness conducted in 2010.[22] We suspect the second referenced survey is a 2012 analysis of data from the Health and Retirement Study (HRS).

Neither survey supports the claim that loneliness doubled between the 1980s and today. First, the AARP's 2010 survey was limited to adults age 45 and older, not adults generally. It defined as "lonely" anyone who scored 44 or higher on the UCLA scale. About 35 percent of respondents were lonely under this cutoff, not 40 percent.[23] (It is unclear why so many media accounts have cited the 40 percent figure when describing the results of this survey.) The survey report itself does not mention past levels of loneliness, but an article written for the official AARP magazine summarized some of the results of the survey and mentioned that 20 percent were found lonely "in a similar survey a decade ago."[24]

That "similar survey" is elusive.[25] It could refer to the 2000 Harris poll question that asked respondents whether or not "being lonely" "affected you in the last month." That percentage was slightly below 20 percent, but it is completely incomparable to the AARP results using the 20-question UCLA scale. The question from the 2001 NORC survey neither produces a figure of 20 percent nor is comparable to the AARP study. Both results are from the general population of adults, not older adults.

The second survey that Slate cites but does not link to is, we believe, a longitudinal survey whose results were published in 2012, one year prior to the Slate article.[26] That study relied on data from the Health and Retirement Study to examine loneliness in subjects older than 60.[27] The study defined "loneliness" as reporting 1 of 3 loneliness items "at least some of the time" and found that about 43 percent of the subjects were lonely.

Again, it is unwise to directly compare this figure to the one found by the AARP, not least of which because AARP's loneliness measure is based on a 20-item, 80-point UCLA Loneliness Scale, and with a different researcher-defined cutoff point for who is "lonely." A less imperfect figure to compare to the AARP's might be of HRS respondents who "reported feeling 2 or 3 of these symptoms at least some of the time." This comparison yields a much lower 22 percent, and is more closely aligned to the share found lonely by the AARP using the full 20-item scale for those of similar age ranges (25 percent among those 70 or older and 32 percent for those age 60-69). Coincidentally, that figure is also close to the 20 percent AARP mysteriously cites from "a decade ago."

As for the "1980s" loneliness figure, we are not sure where it came from; there are a number of possibilities cited by Fischer: the two 1981 Gallup polls, the 1985 Harris poll, a 1982 ABC News/Washington Post poll, and a 1982 World Values Survey poll.[28] What we do know is that none of these polls of the general population of adults is comparable to the AARP or HRS estimates for older adults (which use different measures of loneliness).

It is possible that earlier estimates of loneliness prevalence were even lower. Psychologist John Cacioppo indicated in a 2016 interview that those "who responded that they regularly or frequently felt lonely was between 11% and 20% in the 1970s and 1980s [the percentage varied depending on the study]." The upper bound he referred to is probably from one of the early 1980s survey results. The lower bound was somewhat harder to track down, and it is unclear if we located the correct source. In a 2015 paper, Cacioppo and colleagues cited an earlier book chapter from the 1970s that showed the "prevalence estimated to be 11%-17%."[29] That chapter, in turn, cites only two figures on the prevalence of loneliness, both from the 1960s.[30] One is based on a national survey conducted by the National Opinion Research Center in 1965 whose results are reported in a 1969 book by Norman Bradburn, which found that 26 percent of a national sample of 21- to 59-year-olds reported being "very lonely or remote from other people" in the last few weeks (also cited by Fischer).[31] The second figure cited came from a 1969 study in which respondents in a national sample were asked the same question, but given a timeframe of only one week; 11 percent answered in the affirmative.[32]

In short, the claim that loneliness has doubled since the 1980s is difficult to substantiate. The polling questions from around 2000, from the early 1980s, and from the 1960s are all quite different from each other and from the recent loneliness surveys, asking respondents whether they had experienced loneliness across different timeframes ("the past few weeks," "the last month"). This inconsistency raises questions of reliability. Second, the threshold for being "lonely" varies by

instrument and study. Earlier surveys used only a single item to gauge loneliness, and some emphasized its intensity ("very lonely"), whereas the UCLA Loneliness Scale used in the AARP study is a 20-item questionnaire that is intended to measure the full range of loneliness. Third, the surveys sample different populations. For example, Bradburn's survey was fielded among a sample of 21- to 59-year-olds, whereas the AARP study was of those 45 and older (including many respondents considerably older than 59). The claim that loneliness has doubled—or even increased—since the 1980s (let alone the late 1960s) is simply unwarranted.

More recently, some media outlets have misinterpreted the results of a 2018 Cigna survey to argue that loneliness has increased. The survey indicated that loneliness was higher for younger Americans than for older ones. A mistaken interpretation of this finding would be that older Americans were less likely to be lonely when they were younger than today's younger Americans are. This interprets life-course changes in loneliness as reflecting a change over time for Americans whatever their stage in the life course. While USA Today reported the age-based results as "surprising," the research on the relationship between age and loneliness suggests that the "[p]revalence and intensity of lonely feelings are greater in adolescence and young adulthood (i.e., 16-25 years of age)," decline with age, and then increase again in the very old.[33] The Cigna survey does not support the claim that loneliness has increased over time, nor is the increased loneliness of adolescents a new revelation.

Finally, there is some longitudinal evidence that various American subpopulations are experiencing declines in loneliness. In a 2015 article, researchers looked at loneliness trends in high school and college students over time.[34] In the first analysis, the researchers conducted a meta-analysis of studies that looked at college students who had taken the questionnaire based on the Revised UCLA Loneliness Scale, and found that there was a modest decline in loneliness scores between 1978 and 2009, mostly driven by declining female loneliness. In the second analysis, the researchers found a small but significant decline in loneliness in a representative sample of high school students between 1991 and 2012.

It is entirely possible that loneliness has increased over time, but the available evidence does not appear to support that claim. It is just as possible that loneliness has stayed the same or even declined.

IS *ALONE-NESS* INCREASING?

Inspired in part by Robert Putnam's book *Bowling Alone*, and in particular by his chapter on informal social connections, Fischer's *Still Connected* is the single best data-intensive look at this question. The Social Capital Project has reviewed some of the relevant evidence in an earlier report, but it is worth briefly summarizing Fischer's takeaway from his exhaustive study, and highlighting one particular study that generated a lot of hand-wringing about increasing loneliness that turned out to be less alarming than it initially appeared.

Fischer separately evaluated trends in connections to family, friends and others, social support, and subjective feelings of connectedness. But his conclusion is that although there has been great change over the last several decades—cultural, demographic, economic, technological—we have adapted to those changes and are probably no less connected today than fifty years ago:

> Over the long run—say, the last couple of centuries—Americans' ties to kin have diminished, in number at least, if for no other reason than that families have shrunk in size. In addition, nonkin relationships have probably displaced weaker kinship and local ties—people may now turn to friends instead of cousins, to coworkers instead of neighbors. The friendships that emerge from work, clubs, hobbies, and casual meetings, and that are then sustained by modern affluence and communications, have probably grown in number and kind. In the window of the last forty years, not much has changed, and that continuity probably testifies to the ardor of Americans' ties to their families and friends.[35]

One study in particular is worth mentioning here. As recounted by Fischer, headlines from major newspapers trumpeted the findings of a 2006 paper: "Friendless in America" (*Boston Globe*) and "The Lonely American Just Got a Bit Lonelier" (*New York Times*).[36] Over a period of several years, several of the study's major headline-grabbing claims—often used to support a narrative of increasing loneliness—were found less sturdy than they initially seemed.

The study, entitled "Social Isolation in America: Changes in Core Discussion Networks over Two Decades," made use of the General Social Survey (GSS) to look at "the first nationally representative data on the confidants with whom Americans discuss important matters."[37] The main findings as reported in the study were that between 1985 and 2004 the number of core discussion partners ("confidants") for the typical American had decreased by nearly one person from about three to two. The study reported that those with no confidants almost tripled, from about 8 percent to about 23 percent. As reported, that was a shockingly large number of people who were reporting that they had not one single person to confide in, and it had apparently increased by quite a lot between 1985 and 2004.

Again, however, there is uncertainty about the numbers. Fischer raised questions about the survey methodology,[38] and one of the authors on the original paper later published a reexamination of the GSS data on discussion networks, ultimately finding that although discussion networks did appear to have diminished in size, the initially alarming finding of a large increase in people with no one to confide in did not appear plausible.[39] Despite these important caveats, the original paper's findings are still routinely cited in the media as evidence that we are increasingly alone (and lonely).

CONCLUSION

The discussion of loneliness has suggested to media consumers and policymakers that it is an epidemic—that loneliness has increased substantially in recent years and is a pressing problem in need of urgent attention. These claims, however, are based on a flawed interpretation of the research literature. In fact, there is little evidence that loneliness has increased.

With limited resources for research and interventions, it is essential to use the evidence at our disposal to understand the problems we face. Loneliness is certainly a problem for whom it chronically persists, and it might be a problem in the United States generally, but the first order of business must be understanding the scale and characteristics of the challenge. We will need new data if we want to compare today's loneliness levels to those of the past. Unless we ask survey respondents the same questions that were asked in past surveys, we will never know whether loneliness is on the rise, and other criteria will be necessary to determine whether we are in an epidemic or experiencing a crisis.

ENDNOTES

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Losing Our Minds:

Brain Drain across the United States

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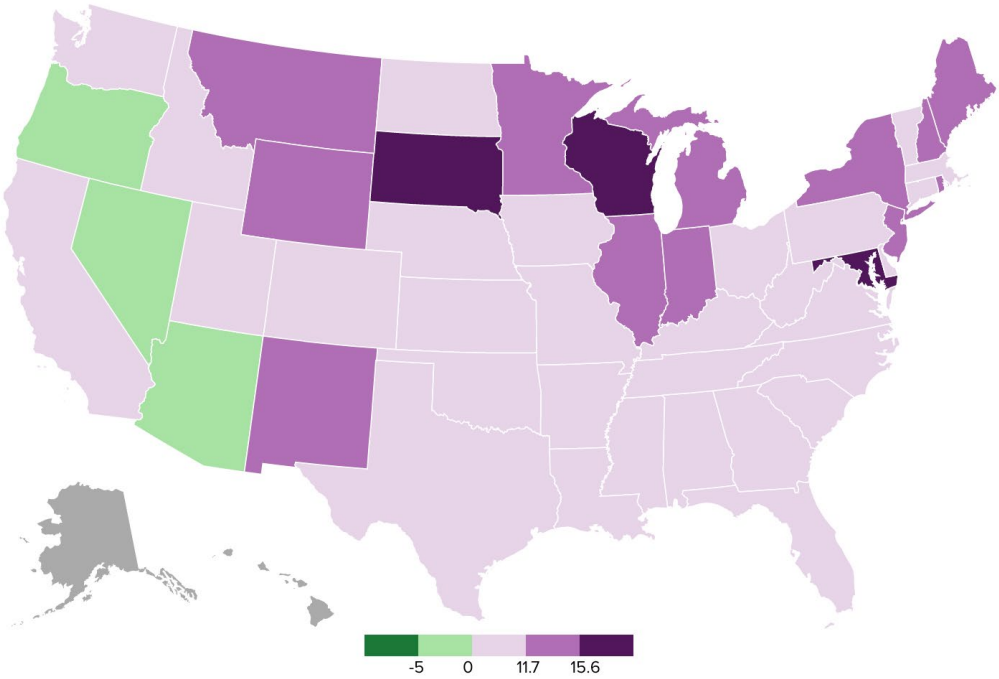

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Over the past 50 years, the United States has experienced major shifts in geographic mobility patterns among its highly-educated citizens. Some states today are keeping and receiving a greater share of these adults than they used to, while many others are both hemorrhaging their homegrown talent and failing to attract out-of-staters who are highly educated. This phenomenon has far-reaching implications for our collective social and political life, extending beyond the economic problems for states that lose highly-educated adults.

This report describes what this so-called "brain drain" looks like across the 50 U.S. states. We use data from the 1940 through 2000 decennial censuses and the 2010 and 2017 American Community Surveys to measure brain drain in each state.

We define a highly-educated "leaver" as someone in the top third of the national education distribution who resides in a state other than her birth state between the ages of 31 and 40. We then analyze brain drain using two measures: "gross" brain drain and "net" brain drain. Gross brain drain is defined as the share of leavers who are highly educated minus the share of adults who remain in their birth state ("stayers") who are highly educated. Net brain drain is the share of leavers who are highly educated minus the share of entrants to a state who are highly educated.

We find that brain drain (and brain gain) states tend to fall along regional lines, although there are a number of exceptions to this general rule. Overall, dynamic states along the Boston-Washington corridor (Massachusetts, New York, New Jersey, and Maryland), on the West Coast (California, Oregon, Washington), and in other parts of the country (Illinois, Texas, Colorado, Arizona, and Hawaii) are the best at retaining and attracting highly-educated adults. Meanwhile, states in northern New England (New Hampshire and Vermont), the Rust Belt (Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, and Missouri), the Plains (North and South Dakota and Iowa), and the Southeast (West Virginia, Kentucky, Tennessee, South Carolina, Alabama, Mississippi, and Louisiana), as well as Delaware, fare the worst on both counts.

We also find that most of the top-performing, brain gain states experienced improvements in terms of gross drain, net drain, or both from 1970 to 2017. On the other hand, many brain drain states, especially in the Southeast, have seen declining fortunes on one or both of these measures during this period. Others, including most of the Rust Belt states, have consistently faced high gross drain and net drain over the past half-century.

Our report provides evidence that highly-educated adults flowing to dynamic states with major metropolitan areas are, to a significant extent, leaving behind more rural and post-industrial states. This geographic sorting of the nation's most-educated citizens may be among the factors driving economic stagnation—and declining social capital—in certain areas of the country. If we are connecting less with communities and people who are different than us, we could be more likely to see adversaries among those in whom we might otherwise find a neighbor.

LOSING OUR MINDS: BRAIN DRAIN ACROSS THE UNITED STATES

The problem of "brain drain" has become an important economic concern among state and local policymakers in recent decades. The Ohio legislature introduced a proposal in 2017 to reduce brain drain.[1] In 2016, Hawaii Governor David Ige requested $10 million to invest in innovation jobs, explaining, "[I] t's about stopping that brain drain."[2] Former Indiana governor Mitch Daniels focused on brain drain during his administration, and now as president of Purdue University he has launched a program to retain Purdue graduates in the state.[3]

States that fail to retain the most-skilled of those born within their borders—or that fail to replace them by attracting the most-skilled born in other states—are at risk of economic stagnation. Recovery from the Great Recession, for example, has been highly uneven across states and metropolitan areas, and economic growth has become more concentrated in a small number of places.[4] Communities that experience depopulation may see the erosion of the local economy.[5]

Brain drain out of less-dynamic states, however, may be an equally important cultural and political concern at the national level. To the extent that some states become home to large numbers of college graduates while non-graduates come to reside disproportionately in other states, social segregation across regions of

the country worsens. Cultural norms and values may become more divergent.[6] Rather than more-cosmopolitan and more-traditional residents intermingling within states, swaths of the country may become more exclusively home to one or the other camp. The places remaining when families with the most resources move to opportunity can be left entirely bereft of community.[7]

Such cultural division would be expected to lead to political division at the national level. Even further, if there is economic inequality between, for instance, coastal cosmopolitans and heartland traditionalists, geographically-based political divides will be exacerbated by economic divides. Compounding the problem, social segregation across states erodes the ability to bridge cultural, political, and economic divides. As communities become more homogeneous, distrust and misunderstanding of those with alternative views increases. The person holding a conflicting viewpoint, rather than being a neighbor, is a distant other.

The extent and distribution of brain drain, far from being simply a state economic concern, has implications for associational life at the national level—what we do together as Americans, regardless of where we live, as opposed to what we do together in local communities. This report explores brain drain by examining the interstate residential mobility patterns of adults.

Highly-educated adults are consistently a larger percentage of those who move compared to those who remain in their birth states. However, we find that these well-educated movers tend to leave certain states and regions of the country at higher rates. In particular, most states in the Rust Belt and Southeast regions of the country and several in the Plains and in New England lose more of their highly-educated natives than do others. These states also fail to attract highly-educated adults from other states. These problems have plagued the Rust Belt states since at least 1970, while the other high-brain-drain states have seen their fortunes worsen over the past half-century. Meanwhile, a smaller number of dynamic states—generally along the Boston-Washington corridor and on the West Coast, but including several regional hubs—are losing fewer highly-educated natives than other states and attracting more talent from other states. These states experienced high brain drain fifty years ago. Thus, there appears to be a growing geographic divide in the United States between talent magnets and communities left behind.

WHAT IS BRAIN DRAIN, AND WHY SHOULD WE CARE?

Americans are a highly mobile people. Roughly a quarter to a third of adults in the United States have moved within the previous five years.[8] While moving rates have declined in the U.S. over the last few decades, they are still higher than in nearly every other country in the world.[9]

Importantly, moving rates are not equal across groups. College-educated adults are and have historically been more likely to relocate than their non-college-

educated peers, and they are more likely to move further from their birth states than others are.[10] They more frequently move for job-related reasons as well.[11] According to leading urbanist Richard Florida, being mobile is particularly critical to the career success of highly-educated adults because the industries these individuals occupy are located in select cities, rather than spread throughout the U.S. like many less-skilled jobs are.[12]

However, mobility comes with a downside: it may lead to brain drain from certain areas of the country, as the highly-educated leave places that offer lower returns for their skills to move to places that offer greater returns.[13] Florida has written extensively about the growing geographic divide along the lines of education that is taking place in the United States as a result of increased clustering of the highly-educated into a handful of major cities.[14] This trend, he argues, is creating a "new urban crisis" of class segregation.[15] "Winner-take-all cities," such as Los Angeles, New York, San Francisco, Chicago, and Boston, claim a disproportionate share of highly-educated Americans and attract the majority of venture capital investments in the country.[16] Americans with less education are often either left behind in stagnant economies or pushed out of expensive, dynamic cities.[17]

These patterns are self-reinforcing. Metropolitan areas that in earlier decades had higher percentages of college-educated men have seen greater increases in the ranks of those men compared with areas that began with a smaller percentage.[18] One result is that economic growth is becoming more distinctive by region. Benjamin Austin, Edward Glaeser, and Lawrence H. Summers find that the coasts are thriving, the western heartland is doing less well but still prospering, and the eastern heartland is struggling with much slower economic growth.[19] While income convergence across regions was typical in the past, today regional economic disparities "seem to be hardening."[20]

The clustering of the highly-educated into major metropolitan areas is part of what some researchers argue is a larger geographical division by self-selection that has been taking place in the United States. In his 2008 book, *The Big Sort*, Bill Bishop makes the case that Americans are increasingly dividing themselves into communities of like-minded individuals.[21] This has exacerbated political divisions. A greater share of the highly-educated tend to hold liberal political views, compared to those with less than a college education. Those living in urban areas are also more likely to hold liberal political views, whereas those living in rural areas are commonly conservative.[22] America's major metropolitan areas tend to vote Democratic, while most other areas of the country vote Republican.[23] Bishop and Florida, along with other researchers, show that an increasing portion of the U.S. population lives in solidly Democratic or Republican counties.[24]

National political divisions are exacerbated by the growing importance of the federal government in policymaking and the structure of the Electoral College and U.S. Senate. Neither heartland traditionalists nor coastal cosmopolitans wish to be ruled by the other camp, but because so much of our policymaking occurs at the national level, each camp feels threatened when it is on the losing end of

political competition. Indeed, given the outsized representation of less-populous states that was the price of forming our more perfect union, a minority of citizens can sometimes impose their will on the majority. For these reasons, the stakes of elections and of polarized political debates appear monumental.

More generally, a consequence of the self-sorting in which Americans have engaged is that people are now more likely to live in communities where they are isolated from others who hold different ideologies and values. Far from affecting only politics, social segregation reduces social cohesion and trust. It leaves behind communities with crumbling institutions of civil society. It also impedes the development of "bridging social capital", or the social wealth that flows from relationships connecting dissimilar communities.[25] Social segregation weakens the sentiment that, as Americans, we share something important in common with each other regardless of our other commitments.

MEASURING BRAIN DRAIN

Our analyses rely on Integrated Public Use Microdata Series (IPUMS) data from the 1940 through 2000 decennial censuses and the 2010 and 2017 American Community Survey (ACS).[26] We focus on migration between states rather than across local areas or regions. Doing so keeps our sample sizes reliably high, is more manageable than looking at counties, is more informative than looking at regions, and allows us to consider movers and non-movers outside metropolitan areas. Within each survey, we assess whether people born in a state still live in the same state when observed as adults. This approach allows us to examine more years of data than if we were to use a shorter-term measure of migration, such as moving within the previous year or within the previous five years.[27] This approach also corresponds more closely with the type of migration that often comes up in discussions of brain drain—the departure of teenagers going to college out of state or young adults taking out-of-state jobs after college.

We look at the state in which an adult is observed in the data when they were between the ages of 31 and 40. This age range comes late enough in the life cycle that most moves immediately following the completion of postsecondary education will have been completed while avoiding moves related to retirement. One consequence of this decision is that outmigration can occur because an adult moved from her birth state or because her parents moved her from her birth state as a child. This distinction may not be a meaningful one, however, for the question of how costly is brain drain.[28]

This report focuses on the extent to which states are losing their best-educated children. A simple way to identify this group would be to use a measure based on a fixed threshold for years of schooling or highest degree received. However, educational attainment rose over time, so any fixed threshold would capture a more rarified group in earlier years than in later ones. "College graduates" today are a much larger and very different group than "college graduates" were in

the 1940s. Just 6 percent of the adults in our sample had four years of college education or more in 1940, and just 14 percent did in 1970. By 2017, however, 37 percent had at least a bachelor's degree.

Instead of using an absolute threshold, we ranked people in each cohort of 31- to 40-year-olds by educational attainment and (for those with the same educational attainment) by their earning power. We defined the "highly educated" as the top one-third of the distribution in each survey.[29]

We pool men and women in our analyses.[30] We ignore immigrants to the United States, whose place of birth, by definition, was outside one of the 50 states. A vast literature explores brain drain from developing countries to developed ones, a topic beyond the scope of our paper.[31]

Gross and Net Brain Drain

There are four kinds of brain drain that might be concerning for economic, cultural, or political reasons. One worry is that if a state cannot convince its most skilled children to remain within its borders as adults, then the state will suffer from the loss of this "homegrown" talent. We characterize this kind of out-migration as "gross" brain drain. (As we will see, gross brain *gain*—when states are left *more* highly educated after out-migration—is much rarer.)

Of course, what may be of concern is not the loss of state-born talent, but whether this loss exceeds the in-migration of out-of-state talent. In that case, a state would experience "net" brain drain. The opposite of net brain drain is net brain gain—when a state enjoys greater in-migration of skill than out-migration.

Even if a state experiences no substantial net brain drain (because it attracts people to replace the talent it loses), gross brain drain might still be worrisome, since talented people born and raised in a state may have a better understanding of the state's needs and of its people. They are also likely to be more similar to the other residents of the state culturally and demographically, which may lead them to better promote social capital development than talented people from outside the state. In addition, talented entrants might settle in a small number of dynamic areas within a state while talented leavers may be rejecting less-dynamic areas. In that case, the born-and-stayers may suffer from the loss of the leavers but see few benefits from the entrants.

Absolute and Relative Brain Drain

In turn, gross and net brain drain both can be considered from two different perspectives. One might define "best educated" in terms of a national threshold or a state threshold. In our case, "highly educated" could refer to people in the top third of the national skill distribution, or it could refer to those in the top third of the state distribution. States with relatively poorly educated birth cohorts might lose a substantial share of their own best-educated men and women, but since there may be few people who are "highly educated" by national standards, they

may lose relatively few men and women who are so educated that they are in the top third nationally. We refer to brain drain based on national education thresholds as "absolute" brain drain, and that based on state thresholds as "relative" brain drain.

We experimented with several specific measures of brain drain. After surveying past approaches, we decided that none were satisfactory. Many failed to distinguish between states with high skills generally, states with high skill levels despite outmigration of skill, and states with high skill levels due to in-migration of skill. Others failed to distinguish between states with high outmigration in general and states with disproportionately high outmigration of those with the highest skills.[32]

To measure brain drain, we distinguish adults born in a given state depending on whether they were still living in the state between the ages of 31 and 40 ("stayers") or whether they were living in a different state ("leavers"). We also compare these groups to adults who moved to a given state ("entrants"). We measure gross brain drain by subtracting the percent of "stayers" who are highly educated from the percent of "leavers" who are highly educated. If this difference is positive, the state has experienced gross brain drain—people who moved out were more highly educated than those who remained in the state. A negative score would indicate that people still living in their birth state are more highly educated than the members of their birth cohort who moved out. We estimate separate absolute gross brain drain and relative gross brain drain scores, defining "highly educated" in national or in state terms.[33]

The net brain drain measure is similarly constructed. We subtract the percent of "entrants" who are highly educated from the percent of "leavers" who are highly educated. A positive score indicates that those who left the state are better educated than those who moved in, meaning that the state has experienced net brain drain. A negative score means the entrants are better educated than the leavers, indicating net brain gain.[34] Again, we estimate separate absolute and relative net brain drain scores.[35]

One weakness of our brain drain measures is that they do not take into account a state's overall out-migration rates. Our measures do reflect the fact that even if a large number of people are leaving a state, that is only a problem of brain drain insofar as the people who leave a state are better educated than the people who stay in it. However, it is also true that if leavers are better educated than stayers (or entrants), that is only an important problem insofar as a large number of people are leaving the state (or a large number are leaving relative to the number entering the state). That distinction is missing from our brain drain measures.

In addition, it may be less concerning for leavers to be better educated than stayers (or entrants) to the extent that stayers are also relatively highly educated. We address these nuances by displaying brain drain rates against outmigration rates and distinguishing between birth states with different education levels. To simplify the presentation of our results, we describe only the estimates from

1970 and 2017, we confine the relative brain drain results to the appendix,[36] and we generally use "absolute brain drain" and "brain drain" interchangeably.[37] We provide our entire dataset—from 1940 to 2017, and including the four combinations of gross and net, absolute and relative brain drain—in spreadsheets available here.

FINDINGS: CONTEMPORARY BRAIN DRAIN

Gross Brain Drain

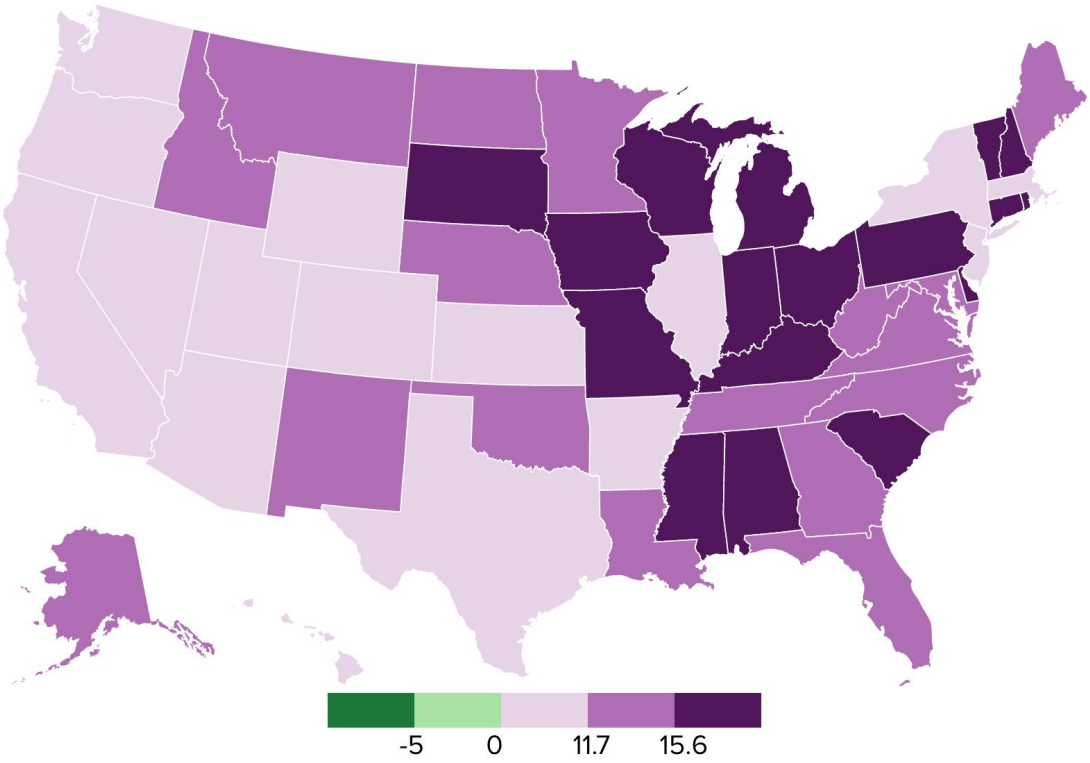
Table 1 lists the states from those with the greatest amount of absolute gross brain drain to the least; Figure 1 displays this geographically. (See Table A1 and Figure A1 in the Appendix for relative gross brain drain.)[38]

Table 1. Gross Brain Drain, 2017

State	Gap in % Highly-Educated between Leavers and Stayers	State	Gap in % Highly-Educated between Leavers and Stayers	State	Gap in % Highly-Educated between Leavers and Stayers
Vermont	26.3	North Dakota	15.6	Colorado	11.7
South Dakota	24.0	North Carolina	15.5	Utah	11.3
Delaware	23.7	Idaho	15.4	Arizona	10.7
Wisconsin	20.4	Georgia	14.7	Washington	10.0
New Hampshire	19.4	Oklahoma	14.2	Kansas	9.5
Ohio	19.0	Tennessee	14.0	Massachusetts	8.8
Michigan	18.9	Minnesota	13.8	Texas	8.8
Pennsylvania	18.0	Louisiana	13.7	Arkansas	8.5
Indiana	17.8	Montana	13.2	Illinois	8.3
South Carolina	17.4	Virginia	13.2	Oregon	7.9
Rhode Island	17.1	Florida	13.0	New York	7.9
Alabama	17.0	Alaska	13.0	New Jersey	7.8
Iowa	16.8	West Virginia	13.0	Nevada	7.4
Mississippi	16.7	Maine	12.4	Hawaii	5.3
Kentucky	16.4	New Mexico	12.0	California	2.3
Connecticut	16.1	Nebraska	11.8	Wyoming	0.1
Missouri	16.0	Maryland	11.8		

Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated.

Figure 1. Gross Brain Drain, 2017

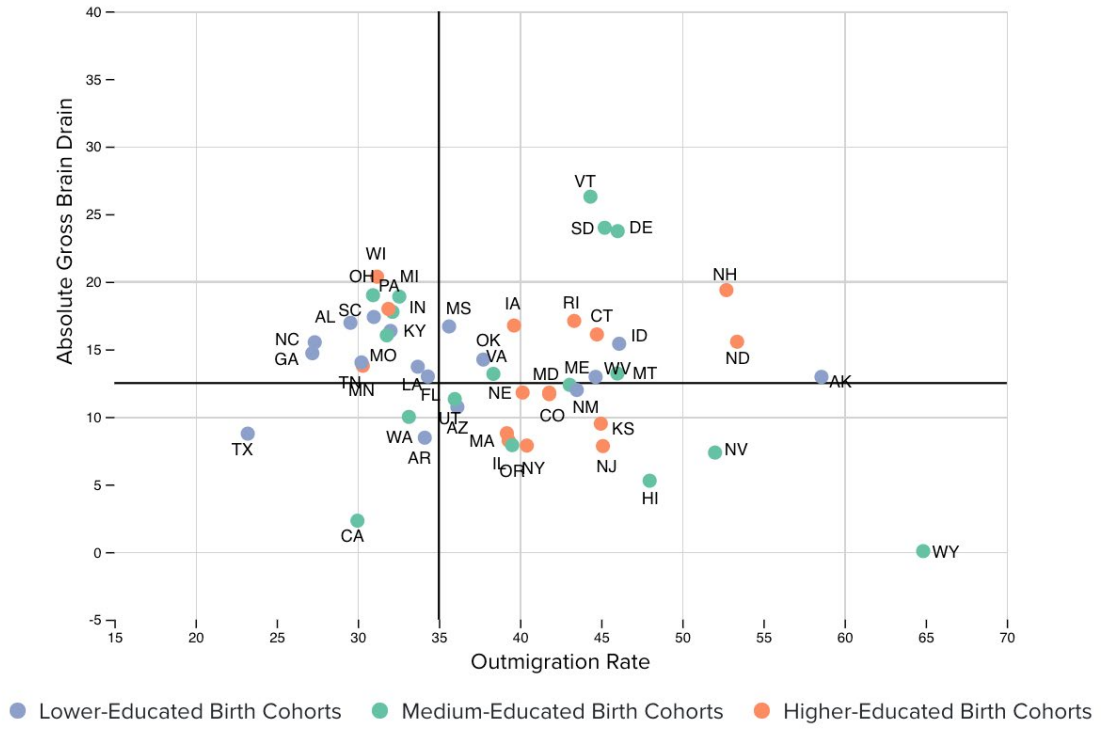


Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated.

To make sense of these estimates, we organize states into three groups: those with high brain drain and high outmigration, those with high brain drain but low outmigration, and those with low brain drain.[39] Leavers being more highly educated than stayers is more painful if it is common for adults born in a state to leave than if most adults remain in the state. Both situations are worse than if leavers mostly resemble stayers. We also distinguish between states with low, medium or high education levels (according to the national education distribution) among adults born there (whether stayer or leaver).[40]

Figure 2 summarizes this information for absolute brain drain. (See Figure A2 for relative brain drain.)

Figure 2. Gross Brain Drain vs. Outmigration Rates, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated. The bolded horizontal and vertical lines indicate the national averages for brain drain and outmigration.

High gross brain drain and high outmigration

In several states, not only are those who leave more likely to be highly educated than those who stay, but outmigration is common. Alaska, Mississippi, Oklahoma, and West Virginia fit this bill. These states' birth cohorts tend to have low education levels compared to the rest of the nation. Other states with high gross brain drain and high outmigration tend to have birth cohorts with medium-to-high education levels. They include most of the New England states (Connecticut, New Hampshire, Rhode Island, and Vermont); several northern Mountain states and Plains states (Iowa, Nebraska, North Dakota, South Dakota, Idaho, and Montana); and two Mid-Atlantic states (Delaware and Virginia).

High gross brain drain but low outmigration

Some states have high brain drain but also have relatively low rates of overall outmigration. Thus, while those who leave the state may be more educated than those who stay, because relatively few leave, brain drain is likely not as much of an issue. States in the Southeast have high levels of brain drain and low outmigration (Alabama, Florida, Georgia, Louisiana, Kentucky, North Carolina, South Carolina, and Tennessee), but their birth cohorts tend to have low education levels. Other states with this combination of high brain drain and low outmigration include many in the Rust Belt (Indiana, Michigan, Minnesota, Missouri, Ohio, Pennsylvania, and Wisconsin), where birth cohorts tend to have medium to high levels of education.

Low gross brain drain

States with low brain drain include a swath in the Plains, Southwest, and Rocky Mountain regions (Arizona, Arkansas, Colorado, Kansas, New Mexico, Nebraska, Nevada, Texas, Utah, and Wyoming).[41] Low brain drain states also include the West Coast (California, Oregon, and Washington). Most states with low brain drain have birth cohorts with moderate to high levels of education, except for Texas and Arkansas. Finally, low brain drain states also include relatively affluent states with dynamic economies (Hawaii, Illinois, Maryland, Massachusetts, New York, and New Jersey). These states often neighbor high-brain-drain states and serve as regional hubs. These affluent states have birth cohorts with medium to high education levels and also generally have somewhat high outmigration rates.

Net Brain Drain

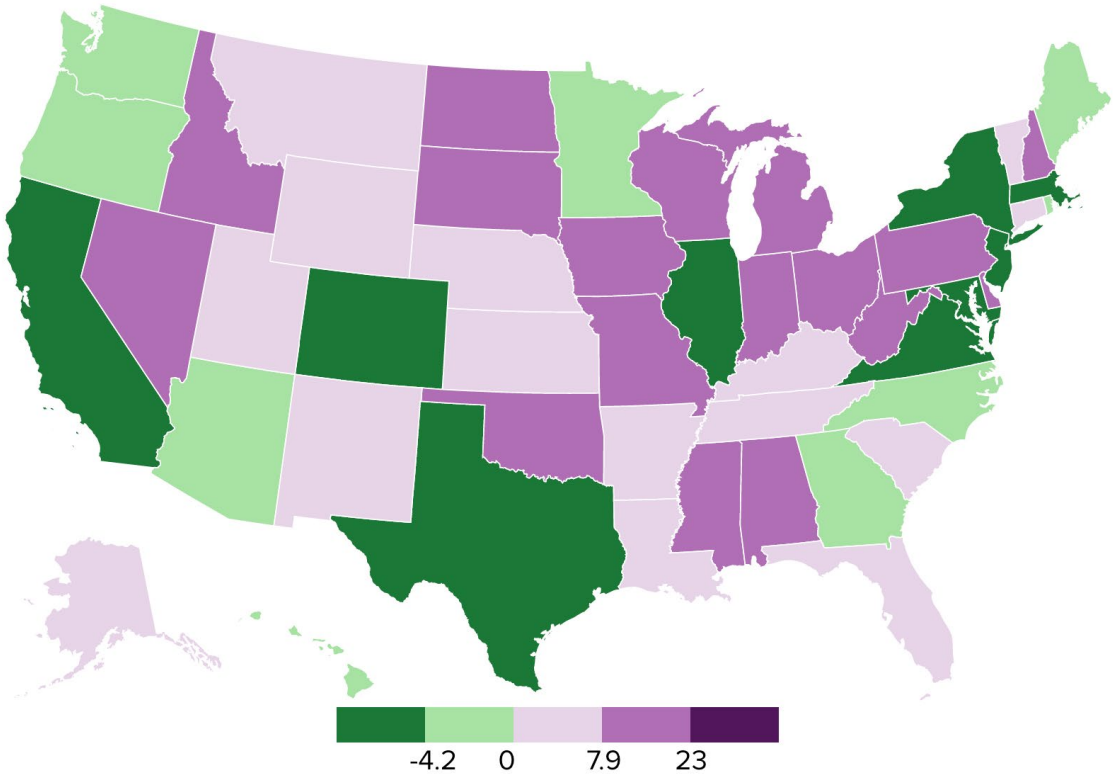
As already noted, a state may have high gross brain drain but, because it attracts highly-educated adults from other states, low net brain drain. Table 2 lists the states from those with the most net brain drain to those with the least; Figure 3 displays this geographically. As with gross brain drain, we display the results for relative net brain drain in the Appendix (Table A2 and Figure A3).[42]

Table 2. Net Brain Drain, 2017

State	Gap in % Highly-Educated between Leavers and Entrants	State	Gap in % Highly-Educated between Leavers and Entrants	State	Gap in % Highly-Educated between Leavers and Entrants
North Dakota	19.9	Vermont	7.8	Minnesota	-0.9
Delaware	17.2	Kentucky	7.8	Georgia	-1.1
South Dakota	14.6	Nebraska	7.6	Hawaii	-1.6
Iowa	14.3	Kansas	7.5	Arizona	-1.9
Mississippi	13.5	South Carolina	6.3	Washington	-3.4
Idaho	12.0	Montana	5.7	Maine	-3.8
Oklahoma	11.0	Arkansas	5.5	Oregon	-3.9
Wisconsin	10.7	Florida	3.7	Colorado	-4.2
Indiana	10.5	Louisiana	2.4	Texas	-5.8
West Virginia	10.4	Alaska	2.1	Virginia	-6.5
Pennsylvania	10.3	Tennessee	2.1	New Jersey	-6.6
New Hampshire	9.6	New Mexico	1.5	Maryland	-10.1
Michigan	9.4	Connecticut	1.5	Illinois	-10.4
Alabama	8.8	Utah	0.8	New York	-15.7
Missouri	8.8	Wyoming	0.2	Massachusetts	-16.4
Nevada	8.6	North Carolina	-0.6	California	-20.2
Ohio	8.6	Rhode Island	-0.6		

Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated.

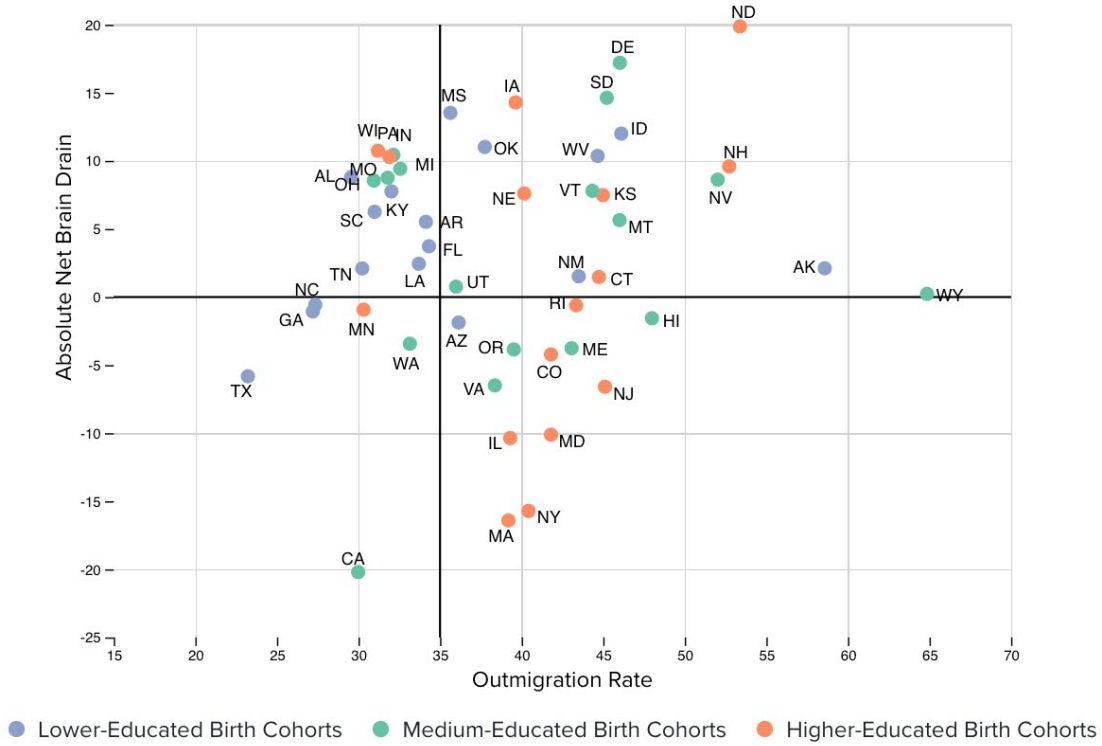
Figure 3. Net Brain Drain, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated.

As before, we group states into three categories based on brain drain levels and outmigration rates, and we distinguish between states with low-, medium-, and high-educated birth cohorts. (See Figure 4 for absolute net brain drain, and Figure A4 for relative net brain drain.)

Figure 4. Net Brain Drain vs. Outmigration Rates, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated. The bolded horizontal and vertical lines indicate the national averages for brain drain and outmigration.

Net brain drain and high outmigration

States that have net brain drain as well as high outmigration (the worst combination) include a swath of states in the Plains, the Rocky Mountain region, and the Southwest (Arizona, Idaho, Iowa, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Utah, and Wyoming).[43] The birth cohorts in these states range from having relatively low to relatively high education levels. New England states are also well-represented in this category (except Massachusetts and Rhode Island, and Maine has absolute net brain gain).[44] They have moderately- to highly-educated birth cohorts. Delaware (moderately-educated birth cohorts) and West Virginia and Alaska (low-educated) also have net brain drain and high outmigration.

Net brain drain but low outmigration

States that experience net brain drain but have low outmigration include two distinct groups. The first is comprised of moderately- to highly-educated Rust Belt states (Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin). The second consists of less-educated states in the Southeast (Alabama, Arkansas, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee).[45]

Net brain gain

States that experience net brain gain include states in the Northeast and the Mid-Atlantic (Maryland, Massachusetts, New Jersey, New York, Rhode Island, and Virginia). These states generally have high outmigration but high in-migration too, and they have moderately- to highly-educated birth cohorts. The West Coast is also home to net brain gain states (California, Oregon, and Washington, all with moderately-educated birth cohorts). Several other dynamic states also experience net brain gain, including Colorado, Illinois, and Minnesota (with relatively highly-educated birth cohorts) and Texas (relatively low-educated).

SUMMARY OF BRAIN DRAIN IN 2017

We summarize, here, which states have high gross and net brain drain (the worst scenario), low gross brain drain but net brain drain, high gross brain drain but net brain gain, and low gross brain drain and net brain gain (the best scenario).[46]

High gross brain drain and net brain drain

This category is the largest of the four. States with high gross and net brain drain include northern Mountain States and the Plains (Idaho, Montana, Iowa, North Dakota, and South Dakota), some New England states (Connecticut, New Hampshire, and Vermont), as well as Alaska, Delaware, Oklahoma, and West Virginia. These states also suffer from high outmigration. They are losing many of their adults born in-state, those leavers are better educated than the stayers, and they are not attracting highly-educated adults born in other states.

States with high gross and net brain drain but low outmigration include many states in the Rust Belt (Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin) and most of the Southeast (Alabama, Florida, Kentucky, Louisiana, Mississippi, South Carolina, and Tennessee). The impact of brain drain in these states is lessened by the relatively small share of people born in the state who leave, but this may be cold comfort, as the leavers are better educated than the stayers and entrants.

Those leaving the highest-gross-brain-drain states that also experience net brain drain tend to end up in neighboring states or in a handful of popular destinations. (See Table 3.) California, Texas, and Florida are especially popular destinations, and Virginia, North Carolina, Georgia, Illinois, and Colorado, are popular regional hubs. California is a top-five destination for 17 of the 25 states in this category.

Table 3. Most Popular Destinations for Highly-Educated Leavers among States with the Highest Gross Brain Drain and Net Brain Drain, 2017

Birth State	Most Popular Destination	Second	Third	Fourth	Fifth
High Outmigration					
New Hampshire	Massachusetts	Maine	New York	California	North Carolina
Vermont	Massachusetts	New York	New Hampshire	Colorado	California
Connecticut	New York	Massachusetts	Florida	California	Virginia
Delaware	California	Pennsylvania	New York	Maryland	New Jersey
West Virginia	Ohio	Virginia	North Carolina	Pennsylvania	South Carolina
Oklahoma	Texas	California	Florida	Arkansas	Colorado
Iowa	Illinois	Minnesota	Missouri	Wisconsin	Nebraska
South Dakota	Minnesota	California	Colorado	Nebraska	Iowa
North Dakota	Minnesota	California	Colorado	Wisconsin	Washington
Montana	Washington	California	Colorado	Arizona	Wyoming
Idaho	Utah	Washington	California	Oregon	Arizona
Alaska	Washington	California	Texas	Arizona	Oregon
Low Outmigration					
Missouri	Illinois	Kansas	Texas	California	Colorado
Wisconsin	Minnesota	Illinois	California	Colorado	Florida
Michigan	Illinois	California	Florida	Texas	Ohio
Indiana	Illinois	California	Florida	Ohio	Texas
Pennsylvania	New York	Virginia	New Jersey	California	Maryland
Ohio	Florida	California	Kentucky	Illinois	North Carolina
Kentucky	Tennessee	Indiana	Texas	Ohio	Georgia
Tennessee	Georgia	Florida	California	Texas	North Carolina
South Carolina	North Carolina	Georgia	Texas	Florida	Tennessee
Florida	Georgia	California	Texas	North Carolina	Virginia
Alabama	Georgia	Florida	Tennessee	Texas	North Carolina
Mississippi	Texas	Alabama	Louisiana	Tennessee	Georgia
Louisiana	Texas	Florida	Georgia	Virginia	California

Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data.
See the "Measuring Brain Drain" section for details.

Low gross brain drain but net brain drain

Some states have low gross brain drain but net brain drain. These include several states in the West (Nevada, New Mexico, Utah, and Wyoming), as well as Kansas and Nebraska. These states also have high outmigration. Arkansas also falls into this category, but it has low outmigration. These states can comfort themselves that they are not losing large shares of their best-educated, but they are attracting so few highly-educated adults born in other states that they end up with lower-educated populations than if there were no interstate migration.

High gross brain drain but net brain gain

A few states have high gross brain drain but net brain gain. These include Maine, Rhode Island and Virginia, which suffer from high outmigration, and Georgia, Minnesota, and North Carolina, which have low outmigration. While they are disproportionately losing the best-educated adults born in-state, these states manage to replace those leavers with better-educated entrants.

Low gross drain and net brain gain

Finally, several states have both low gross brain drain and net brain gain. These include West Coast states (California and Washington with low outmigration, Oregon with high outmigration) and Hawaii and Arizona (both with high outmigration). The category also includes some states on the East Coast (Massachusetts, New York, New Jersey, and Maryland—all with relatively high outmigration). Finally, a few states serve as regional migration hubs: Colorado and Illinois (high outmigration) and Texas (low outmigration). These states generally have higher incomes and dynamic economies.

The states with low gross brain drain and net brain gain are most likely to gain residents from other states within this category. (See Table 4.) Of the 60 origin states in the table (five for each of the 12 states), 36 are states that also have low gross brain drain and net brain gain. The states in this category are, to an important extent, trading highly-educated adults with each other. The rest of the states in this category have high gross brain drain and net brain drain (except for Virginia, listed once). Of these states, Pennsylvania, Ohio, and Michigan are most prevalent. Illinois is the only state in this group where every top-five origin state is a net-brain-drain neighbor.

Table 4. Most Common Origin States for Highly-Educated Entrants among States with the Lowest Gross Brain Drain and Net Brain Gain, 2017

State	Most Common Origin	Second	Third	Fourth	Fifth
Low Outmigration					
California	New York	Illinois	Texas	Pennsylvania	Ohio
Washington	California	Oregon	Texas	Illinois	New York
Texas	California	Louisiana	Illinois	New York	Oklahoma
High Outmigration					
Oregon	California	Washington	Texas	Illinois	Idaho
Hawaii	California	Florida	Michigan	Illinois	New York
Arizona	California	Illinois	Michigan	New York	Ohio
Colorado	California	Texas	Illinois	Michigan	Ohio
Illinois	Michigan	Wisconsin	Ohio	Indiana	Missouri
Massachusetts	New York	Connecticut	Pennsylvania	New Hampshire	New Jersey
New York	New Jersey	California	Pennsylvania	Massachusetts	Connecticut
New Jersey	New York	Pennsylvania	Massachusetts	California	Illinois
Maryland	New York	Pennsylvania	New Jersey	Virginia	California

Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data.
See the "Measuring Brain Drain" section for details.

FINDINGS: CHANGES IN GROSS AND NET BRAIN DRAIN SINCE 1970

How has brain drain changed over time? We have compiled data back to 1940 and made it publicly available. To keep the analyses here manageable, we focus on the estimates for 1970 and look at changes over this (roughly) 50-year period. We organize states into four groups each for gross and net brain drain depending on their 1970 and 2017 levels.

Gross Brain Drain

Table 5 lists the states from those with the greatest gross brain drain in 1970 to the least. Table 6 ranks states from the highest increase in gross brain drain to the highest decline. Figure 5 displays brain drain in 1970 geographically, and Figure 6 displays the change in brain drain.

Table 5. Gross Brain Drain, 1970

State	Gap in % Highly-Educated between Leavers and Stayers
Delaware	35.5
New Jersey	26.8
Connecticut	25.0
Rhode Island	23.3
Ohio	23.0
Hawaii	22.7
Alaska	22.6
New York	22.5
Illinois	21.0
Indiana	20.7
Michigan	20.5
Wisconsin	20.1
Pennsylvania	20.1
Maryland	20.0
Iowa	19.6
Massachusetts	18.7
Minnesota	18.6
Montana	18.1
South Dakota	15.6
Vermont	14.8
Missouri	14.3
Colorado	14.2
New Hampshire	14.1
Kansas	14.1

Table 6. Change in Gross Brain Drain, 1970-2017

State	2017 Brain Drain Minus 1970 Brain Drain
Kentucky	15.46
Mississippi	15.45
South Carolina	14.7
Alabama	12.16
Vermont	11.46
Nevada	10.82
North Carolina	10.08
Oklahoma	8.57
South Dakota	8.36
North Dakota	7.7
Georgia	7.41
West Virginia	6.2
Tennessee	6.06
Idaho	5.82
New Hampshire	5.3
Arkansas	3.5
Louisiana	3.16
Texas	2.96
Virginia	2.75
Utah	2.4
Washington	1.99
Missouri	1.76
Arizona	1.62
Maine	0.5

Table 5. Gross Brain Drain, 1970

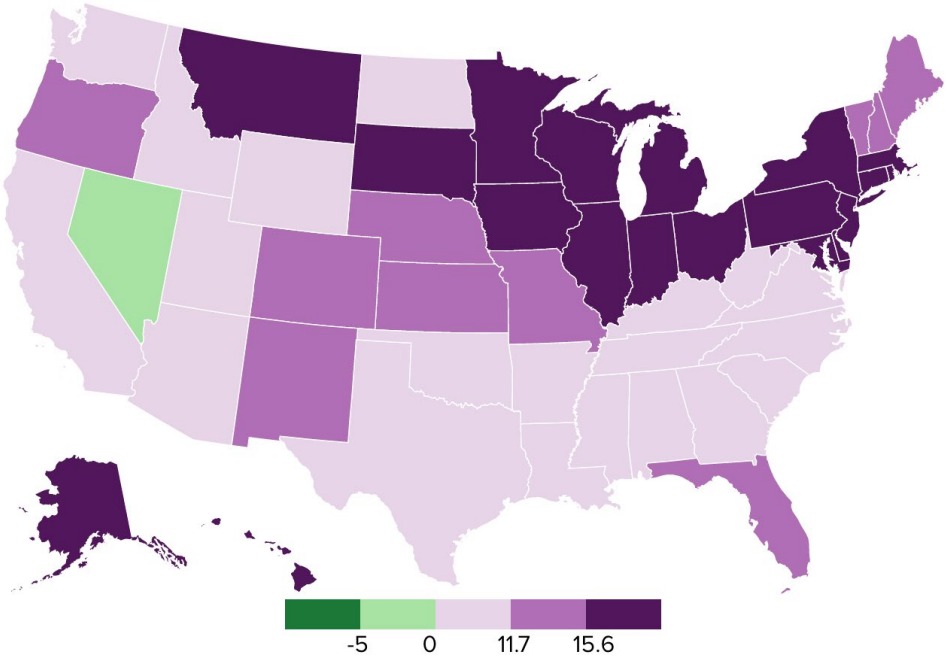
State	Gap in % Highly-Educated between Leavers and Stayers
Florida	14.0
New Mexico	13.6
Nebraska	13.6
Oregon	12.6
Maine	11.9
Louisiana	10.6
Virginia	10.4
Idaho	9.6
Arizona	9.1
Utah	8.9
Washington	8.0
Tennessee	8.0
North Dakota	7.9
Georgia	7.3
West Virginia	6.8
Texas	5.8
Oklahoma	5.7
North Carolina	5.4
California	5.3
Arkansas	5.0
Alabama	4.8
South Carolina	2.7
Wyoming	2.2
Mississippi	1.2
Kentucky	0.9
Nevada	-3.5

Table 6. Change in Gross Brain Drain, 1970-2017

State	2017 Brain Drain Minus 1970 Brain Drain
Wisconsin	0.24
Florida	-0.97
Michigan	-1.61
New Mexico	-1.63
Nebraska	-1.76
Wyoming	-2.08
Pennsylvania	-2.12
Colorado	-2.56
Iowa	-2.82
California	-2.94
Indiana	-2.96
Ohio	-4.03
Kansas	-4.55
Oregon	-4.72
Minnesota	-4.77
Montana	-4.88
Rhode Island	-6.19
Maryland	-8.17
Connecticut	-8.92
Alaska	-9.66
Massachusetts	-9.86
Delaware	-11.74
Illinois	-12.77
New York	-14.65
Hawaii	-17.37
New Jersey	-18.95

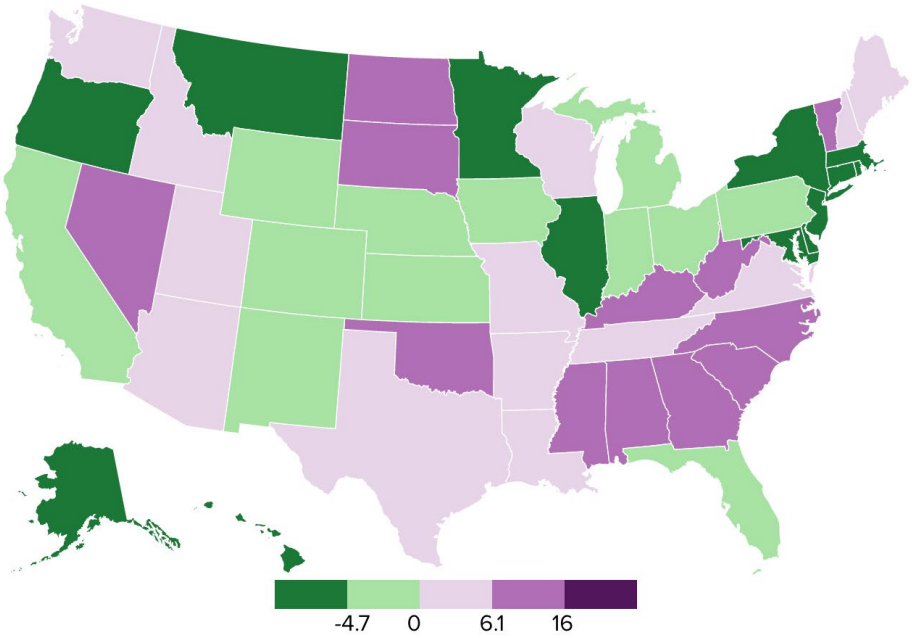
Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated.

Figure 5. Gross Brain Drain, 1970



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated.

Figure 6. Change in Gross Brain Drain, 1970-2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute gross brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of stayers who are highly educated.

High gross brain drain in 1970 and 2017

States that had high gross brain drain both then and now include the New England states, except Massachusetts (Connecticut, Maine, New Hampshire, Rhode Island, and Vermont); the Rust Belt states, except Illinois (Indiana, Michigan, Minnesota, Missouri, Pennsylvania, Ohio, and Wisconsin); several Near West states (Iowa, Montana, and South Dakota), as well as Delaware, Florida and Alaska.

Low brain drain in 1970 but high brain drain in 2017

States that have seen the biggest increases in gross brain drain between 1970 and 2017 include the Southeastern states (Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia), and three more Near West states (Idaho, North Dakota, and Oklahoma).

High brain drain in 1970 but low brain drain in 2017

The biggest declines in brain drain were in western states (Colorado, New Mexico, and Oregon), Middle Atlantic states (Maryland, New Jersey, and New York) plus Massachusetts, as well as Illinois, Hawaii, Kansas, and Nebraska. Some of these states are popular destination states for those from states with both high gross and net brain drain, as Table 3 showed.

Low brain drain in 1970 and 2017

States that are fortunate enough to have had low brain drain 50 years ago and today include many western states (Arizona, California, Nevada, Texas, Utah, Washington, and Wyoming), as well as Arkansas.

Net Brain Drain

Table 7 displays states, from highest net brain drain in 1970 to highest net brain gain. Table 8 ranks the states from the largest increase in net brain drain between 1970 and 2017 to the largest decline. Figures 7 and 8 display the same estimates in maps.

Table 7. Net Brain Drain, 1970

State	Gap in % Highly-Educated between Leavers and Entrants
Michigan	19.55
Ohio	19.29
Illinois	17.84
New York	16.48
Indiana	15.32
Oregon	14.03
New Jersey	12.93
Delaware	12.82
Washington	9.48
Connecticut	9.13
Idaho	9.02
California	8.28
Kansas	6.19
Wisconsin	5.04
Wyoming	4.73
Missouri	4.6
Iowa	4.53
Nevada	4.17
South Dakota	4.05
Minnesota	3.67
Montana	3.67
Nebraska	3.12
Florida	2.59
Rhode Island	2.56

Table 8. Change in Net Brain Drain, 1970-2017

State	2017 Brain Drain Minus 1970 Brain Drain
Alabama	29.15
Kentucky	28.59
South Carolina	26.59
Mississippi	26.42
West Virginia	25.62
North Dakota	25.5
Vermont	24.01
Georgia	17.51
Oklahoma	16.02
North Carolina	14.83
Tennessee	14.52
New Hampshire	14.17
Virginia	12.69
New Mexico	12.61
Arkansas	12.08
South Dakota	10.58
Iowa	9.76
Pennsylvania	8.15
Alaska	7.87
Louisiana	6.8
Maine	5.76
Wisconsin	5.7
Nebraska	4.48
Nevada	4.45

Table 7. Net Brain Drain, 1970

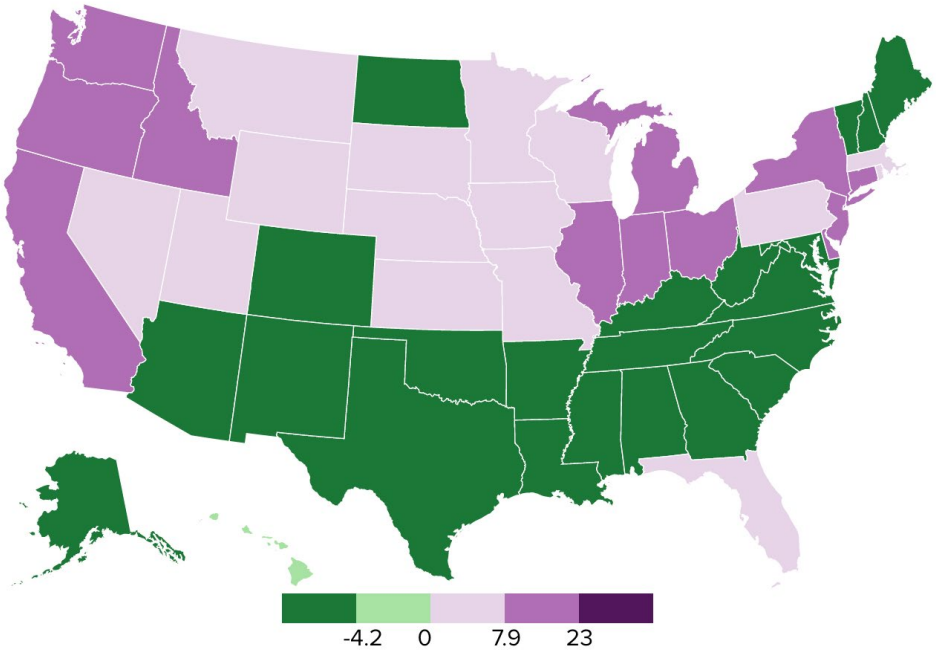
State	Gap in % Highly-Educated between Leavers and Entrants
Pennsylvania	2.14
Massachusetts	0.62
Utah	0.36
Hawaii	-2.31
Louisiana	-4.36
New Hampshire	-4.58
Oklahoma	-5
Maryland	-5.19
Colorado	-5.27
Arizona	-5.52
North Dakota	-5.63
Alaska	-5.76
Arkansas	-6.56
Texas	-7.74
Maine	-9.52
New Mexico	-11.09
Tennessee	-12.42
Mississippi	-12.89
West Virginia	-15.26
North Carolina	-15.4
Vermont	-16.21
Georgia	-18.57
Virginia	-19.18
South Carolina	-20.33
Alabama	-20.34
Kentucky	-20.83

Table 8. Change in Net Brain Drain, 1970-2017

State	2017 Brain Drain Minus 1970 Brain Drain
Delaware	4.38
Missouri	4.16
Arizona	3.65
Idaho	2.98
Montana	1.98
Texas	1.92
Kansas	1.29
Florida	1.14
Colorado	1.05
Hawaii	0.75
Utah	0.4
Rhode Island	-3.17
Wyoming	-4.5
Minnesota	-4.6
Indiana	-4.87
Maryland	-4.92
Connecticut	-7.66
Michigan	-10.13
Ohio	-10.74
Washington	-12.91
Massachusetts	-17.03
Oregon	-17.88
New Jersey	-19.52
Illinois	-28.2
California	-28.48
New York	-32.19

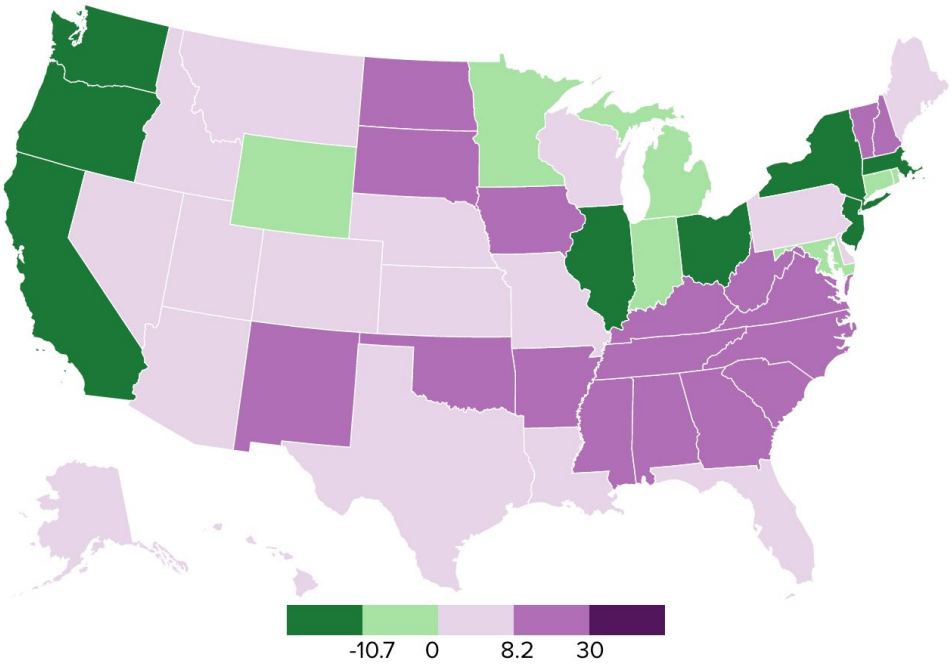
Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated.

Figure 7. Net Brain Drain, 1970



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated.

Figure 8. Change in Net Brain Drain, 1970-2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Absolute net brain drain is the difference between the share of leavers who are highly educated (top third of the national education distribution) and the share of entrants who are highly educated.

Net brain drain in 1970 and 2017

States that had net brain drain in 1970 and 2017 include Mountain states and the Plains (Idaho, Iowa, Kansas, Montana, Nebraska, Nevada, South Dakota, Utah, and Wyoming), states in the Rust Belt (Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin), as well as Connecticut, Delaware, and Florida.

Net brain gain in 1970 but net brain drain in 2017

States that were net-brain-gain states fifty years ago but are net-brain-drain states today include much of the Southeast (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, South Carolina, Tennessee, and West Virginia), northern New England states (New Hampshire and Vermont), parts of the Southwest (New Mexico and Oklahoma), and Alaska and North Dakota.

Net brain drain in 1970 but net brain gain in 2017

A number of states switched from net brain drain to net brain gain between 1970 and 2017. They include several northeastern states (Massachusetts, New Jersey, New York, and Rhode Island), states in the upper Midwest (Illinois and Minnesota), and on the West Coast (California, Oregon, and Washington).

Net brain gain in 1970 and in 2017

States enjoying net brain gain in both 1970 and 2017 include Mid-Atlantic and Southeast states (Georgia, Maryland, North Carolina, and Virginia), as well as Maine, Hawaii, and several western states: Arizona, Colorado, and Texas.

SUMMARY OF CHANGES IN BRAIN DRAIN

Combining changes in gross and net brain drain creates 16 possible categories. Here we highlight eight combinations of interest, which include 40 states.

High gross brain drain and net brain drain in 1970 and 2017

Twelve states experienced both high gross brain drain and net brain drain in both 1970 and 2017—the worst combination. Many of these are Rust Belt states (Indiana, Michigan, Missouri, Ohio, Pennsylvania, and Wisconsin); three are Plains or northern Mountain States (Iowa, Montana, and South Dakota). Connecticut, Delaware, and Florida round out the group.

High gross brain drain in both 1970 and 2017 and net brain gain switching to net brain drain

In New Hampshire, Vermont, and Alaska, steadily high gross brain drain was accompanied by net brain drain replacing net brain gain.

Gross brain drain switching from low to high and net brain gain switching to net brain drain

Nine mostly southern states were in the second-most common category, experiencing rising gross brain drain and net brain gain turning into net brain drain: West Virginia, Kentucky, Tennessee, South Carolina, Alabama, Mississippi, Louisiana, Oklahoma, and North Dakota.

Low gross brain drain in both 1970 and 2017 but net brain drain in both 1970 and 2017

Three western states—Wyoming, Utah, and Nevada—had similar brain drain levels in both years.

Gross brain drain switching from low to high but net brain gain in both 1970 and 2017

In three southeastern states, brain drain worsened while the state experienced net brain gain in both years: Virginia, North Carolina, and Georgia.

Gross brain drain switching from high to low and net brain drain switching to net brain gain

In the third-most-common category are states that improved in terms of both gross and net brain drain. These include the dynamic states of Massachusetts, New York, New Jersey, Illinois, and Oregon.

Gross brain drain switching from high to low and net brain gain in both 1970 and 2017

The three dynamic states of Maryland, Colorado, and Hawaii fall into this category.

Low gross brain drain and net brain gain in both 1970 and 2017

Only two states, both in the Southwest, fell into this most-fortunate category: Arizona and Texas.

CONCLUSION

States which retain and attract highly-educated adults stand to reap substantial economic benefits. At the same time, those that bleed much of their homegrown talent will see their economic fortunes decline if they fail to replace the leavers with highly-educated out-of-staters. Yet even if they do manage to offset their losses, these states are still losing a vital source of social capital.

What is more, the outmigration of highly-educated adults has almost certainly played a role in the deterioration of civil society in struggling communities

across the country. And to the extent that the geographic mobility of the highly-educated has increased social bifurcation, it has likely exacerbated distrust of and intolerance toward people who hold different beliefs. One need only glance at today's polarized political environment to see these attitudes on display.

Our research finds that states that are doing the best—low gross brain drain and net brain gain—generally cluster along the Boston-Washington corridor and on the West Coast: Massachusetts, New York, New Jersey, Maryland, California, Oregon, and Washington. Other brain gain states are regional hubs—Hawaii, Arizona, Colorado, Texas, and Illinois. Several of these states experienced high gross brain drain and net brain drain in 1970, but have reversed course; others have seen continued good prospects or improvements on one or both measures. For the most part, these states are home to what Richard Florida would describe as "winner-take-all cities."[47]

On the other hand, states in the Southeast, in the Rust Belt, and in other parts of the country tend to fare much worse when it comes to retaining and attracting the highly-educated. Several states in the Southeast—West Virginia, Kentucky, Tennessee, South Carolina, Alabama, Mississippi, and Louisiana—had low gross brain drain and net brain gain in 1970, but today generally experience high gross brain drain as well as net brain drain. Most Rust Belt states—Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, and Missouri—have done poorly on these measures in both 1970 and 2017. Perhaps unsurprisingly, states that defy these regional trends (for example, Illinois in the Rust Belt, and Virginia, North Carolina, and Georgia in the Southeast) seem to be attracting highly-educated out-of-staters to their dynamic metropolitan hubs.

Brain drain has significant consequences—economic, yes, but also political and cultural. By increasing social segregation, it limits opportunities for disparate groups to connect. And by siphoning a source of economic innovation from emptying communities, brain drain can also lead to crumbling institutions of civil society. As those natives who have more resources leave, those left behind may struggle to support churches, police athletic leagues, parent-teacher associations, and local businesses. State and local policymakers are understandably focused on the economic consequences of brain drain. But anyone concerned about the health of associational life in America should worry that what this report has mapped out, to some extent, is the geography of social capital drain.

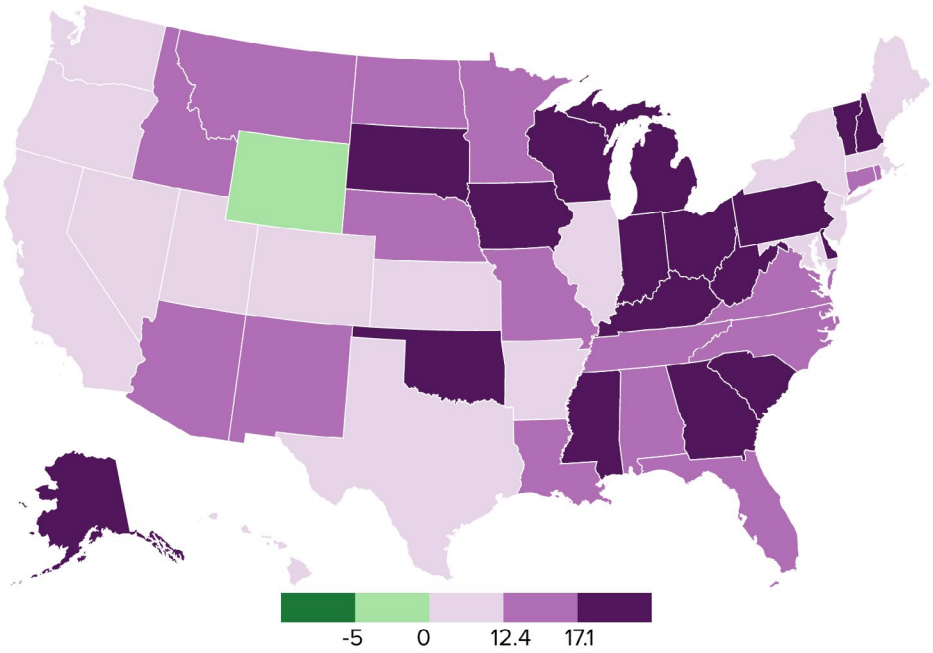
APPENDIX: TABLES AND FIGURES, RELATIVE BRAIN DRAIN

Table A1. Relative Gross Brain Drain, 2017

State	Gap in % Highly-Educated between Leavers and Stayers	State	Gap in % Highly-Educated between Leavers and Stayers
Vermont	25.4	Florida	15.1
South Dakota	22.8	Arizona	14.7
Delaware	22.7	Rhode Island	14.0
South Carolina	21.1	Nebraska	13.8
Wisconsin	20.2	New Mexico	13.5
Alaska	20.2	Virginia	13.0
Kentucky	19.5	Montana	12.9
Ohio	18.9	Minnesota	12.7
New Hampshire	18.9	Maine	12.3
Michigan	18.8	Colorado	12.3
West Virginia	18.7	Arkansas	11.7
Georgia	18.5	Utah	11.7
Indiana	18.2	Maryland	11.5
Iowa	18.1	Washington	11.2
Oklahoma	17.6	Texas	10.9
Pennsylvania	17.5	Massachusetts	10.9
Mississippi	17.3	Kansas	10.1
Alabama	17.1	New Jersey	9.3
Connecticut	17.0	Illinois	8.7
North Carolina	17.0	Oregon	7.7
North Dakota	16.7	New York	7.5
Tennessee	16.6	Nevada	7.3
Missouri	16.2	Hawaii	6.4
Idaho	16.2	California	2.8
Louisiana	15.9	Wyoming	-0.5

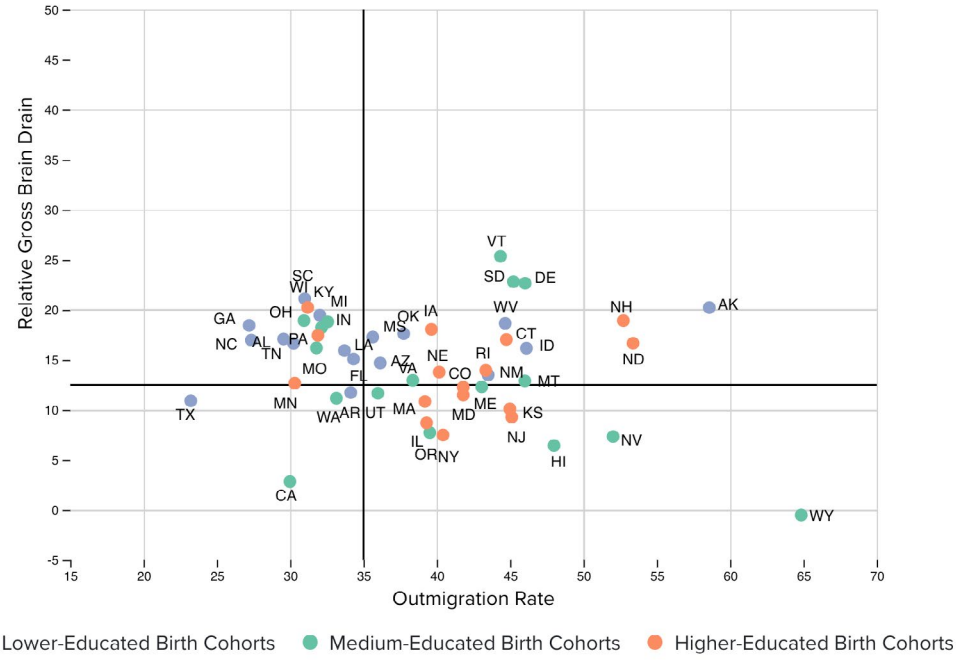
Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative gross brain drain is the difference between the share of leavers who are highly educated (top third of the state education distribution) and the share of stayers who are highly educated.

Figure A1. Relative Gross Brain Drain, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative gross brain drain is the difference between the share of leavers who are highly educated (top third of the state education distribution) and the share of stayers who are highly educated.

Figure A2. Relative Gross Brain Drain vs. Outmigration Rates, 2017



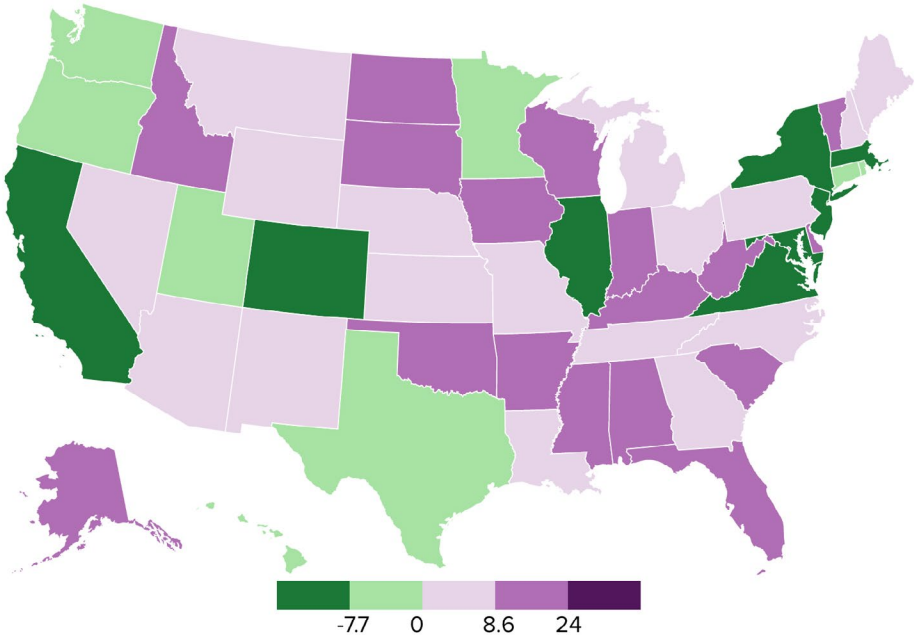
Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative gross brain drain is the difference between the share of leavers who are highly educated (top third of the state education distribution) and the share of stayers who are highly educated. The bolded horizontal and vertical lines indicate the national averages for brain drain and outmigration.

Table A2. Relative Net Brain Drain, 2017

State	Gap in % Highly-Educated between Leavers and Entrants	State	Gap in % Highly-Educated between Leavers and Entrants
West Virginia	19.8	Ohio	7.2
Mississippi	17.5	Tennessee	7.1
Oklahoma	16.9	New Hampshire	5.9
Delaware	16.1	Georgia	5.5
North Dakota	15.1	Pennsylvania	5.5
South Dakota	14.4	Nebraska	4.9
Idaho	13.3	North Carolina	3.7
South Carolina	12.4	Kansas	2.7
Kentucky	12.4	Wyoming	2.1
Indiana	11.9	Hawaii	-0.3
Alaska	11.8	Texas	-0.6
Iowa	11.2	Utah	-1.0
Alabama	11.0	Washington	-2.0
Florida	10.1	Rhode Island	-2.7
Vermont	9.7	Oregon	-3.9
Arkansas	9.5	Minnesota	-4.2
Wisconsin	8.7	Connecticut	-5.2
Nevada	8.1	Colorado	-7.8
Michigan	7.9	New Jersey	-8.0
New Mexico	7.6	Virginia	-9.0
Louisiana	7.6	Maryland	-9.8
Maine	7.5	Illinois	-12.5
Missouri	7.4	California	-16.8
Arizona	7.3	New York	-21.8
Montana	7.2	Massachusetts	-21.9

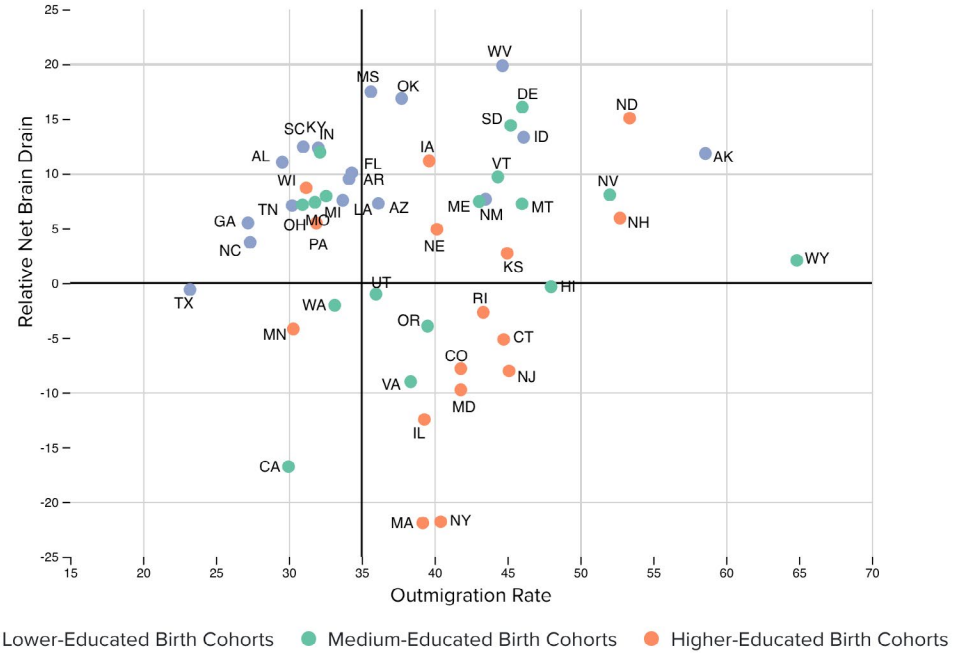
Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative net brain drain is the difference between the share of leavers who are highly educated (top third of the national state distribution) and the share of entrants who are highly educated.

Figure A3. Relative Net Brain Drain, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative net brain drain is the difference between the share of leavers who are highly educated (top third of the national state distribution) and the share of entrants who are highly educated.

Figure A4. Relative Net Brain Drain vs. Outmigration Rates, 2017



Source: Social Capital Project analyses of IPUMS decennial census and American Community Survey data. See the "Measuring Brain Drain" section for details. Relative net brain drain is the difference between the share of leavers who are highly educated (top third of the national state distribution) and the share of entrants who are highly educated. The bolded horizontal and vertical lines indicate the national averages for brain drain and outmigration.

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27. The American Community Survey (source of the 2010 and 2017 data) does not ask where adults lived five years earlier. The decennial census only asked where adults lived one year ago in 1950.

28. It is also the case that someone might have moved from the birth state temporarily, only to return before we observe them in adulthood. Our approach would not consider this an example of brain drain. Some of the people we observe between 31 and 40 will return to their birth state in subsequent years, but we did not explore how large this group is.

29. Technically, we ranked by educational attainment and the wage percentile in the state in which a person resided when observed at age 31 to 40. Implicitly, those who are higher up the wage distribution are assumed to be "higher educated" than those lower down, conditional on having the same educational attainment. This approach avoids the problem of many people "clumping" at certain educational attainment levels, which makes it difficult to compare similarly sized groups over time.

30. Early results that restricted the samples to men yielded similar conclusions.

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32. Among the measures we considered and rejected: the share of leavers who are highly educated; the share of leavers who are highly educated divided by the share of stayers who are highly educated; and the share of men born in a state who move and are highly educated.

33. We also considered using log odds ratios rather than the difference in highly-educated rates. For example, our indicator of gross brain drain divided (1) the odds that a state's leavers are highly educated rather than not highly educated by (2) the odds that a state's stayers are highly educated rather than not highly educated. This odds ratio is the same obtained by dividing (1) the odds that a highly-educated person born in the state is a leaver rather than a

stayer by (2) the odds that a non-highly-educated person in the state is a leaver rather than a stayer. The final measure is the natural logarithm of this odds ratio. It is higher the greater the gross brain drain. This measure was highly correlated with the simpler and more-easily-interpretable measure we settled on.

34. This measure is equivalent to subtracting a measure of gross brain gain from gross brain drain. The gross brain gain measure, in this case, is the share of entrants who are highly educated, less the share of stayers who are highly educated. We do not focus on this measure in the paper, but we include it in the data we make publicly available.

35. A "gross brain gain" indicator analogous to the log-odds gross brain drain measure would compare (1) the odds that a state's entrants are highly educated rather than not highly educated and (2) the odds that a state's stayers are highly educated rather than not highly educated. Subtracting gross brain gain from gross brain drain would then yield a measure of net brain drain. Mathematically, this is equivalent to a log odds ratio comparing (1) the odds that a state's leavers are highly educated rather than not highly educated and (2) the odds that a state's entrants are highly educated rather than not highly educated. The measure is higher when leavers are more likely to be highly educated than are entrants. Alternatively, the net brain drain measure may be considered to be a log odds ratio comparing (1) the odds that a not-highly-educated person is an entrant rather than a leaver and (2) the odds that a highly-educated person is an entrant rather than a leaver. The measure is higher when the highly-educated are less likely to be entrants than leavers. Again, this measure was highly correlated with the simpler measure of net brain drain we settled on.

36. Contemporary patterns are, with some exceptions, similar whether looking at absolute brain drain or relative brain drain. In fact, the correlation between absolute and relative gross brain drain across states is very strong. Depending on the year, correlation coefficients ranged from 0.89 (in 1940 and 1950) to 0.96 (in 1980). That is to say, it makes little difference for purposes of assessing gross brain drain whether one defines "highly educated" with respect to the national education distribution or the state distribution. The correlation between absolute and relative net brain drain was generally lower, ranging from 0.62 (in 1940) to 0.92 (in 2017).

37. We exclude Washington, DC from our analyses because the estimates were consistently outliers. We suspect this may reflect that some Maryland and Virginia residents who give birth in the District report their birth state as Washington, DC. See https://twitter.com/RAVerBruggen/status/1095703251419320321.

38. Note that no state experiences gross brain gain, meaning its leavers are less educated than its stayers. Wyoming does have *relative* gross brain gain.

39. "High" (for brain drain or outmigration) means a value above the national average, and "low" means the value is below the national average.

40. We divide states into thirds to create these categories. We include Washington DC in this ranking, so that each third includes 17 states (though Washington DC estimates are not shown).

41. Arizona and New Mexico are high in terms of relative brain drain (see Figure A2).

42. Note that the relative net brain drain measure compares the share of leavers that are highly educated (according to the education distribution of their birth state) to the share of entrants that are highly educated (according to the education distribution of *their* birth state). If a state has relatively low-educated birth cohorts, it can end up with higher education levels after out- and in-migration without experiencing relative net brain gain by our measure, since entrants may be better-educated than leavers but less highly-educated relative to their birth state education distribution than leavers are relative to *their* birth state distribution.

43. However, Utah has relative net brain gain and Arizona has absolute net brain gain.

44. Connecticut also has relative net brain gain.

45. However, Georgia and North Carolina have absolute net brain gain.

46. The correlation between the two absolute measures—absolute gross drain and absolute net drain— ranged from 0.12 in 2000 to 0.64 in 1960 (0.40 in 2017). The correlation between the two relative measures ranged from 0.27 in 1990 to 0.77 in 1970 (0.42 in 2017).

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Inactive, Disconnected, and Ailing

A Portrait of Prime-Age Men Out of the Labor Force

SCP REPORT NO. 3-18 | SEPTEMBER 2018

The share of prime-age men—between the ages of 25 and 54—that is neither working nor looking for work has been rising for decades. This rise has left an increasing number of men outside the world of work, historically an important source of social capital. Research suggests that these men often have especially constricted associational lives.

This report is intended to enrich our understanding of who these prime-age "inactive" men are. It summarizes evidence from past research and fills out our picture of these men, providing some details about their past and present social and emotional lives. We introduce an under-utilized dataset little-known to economists and sociologists, the "National Epidemiological Survey on Alcohol and Related Conditions-III," or NESARC-III.

Consistent with other survey data, the NESARC-III indicates that in 2013, 11 percent of prime-age men were outside the labor force. Roughly 45 percent of them indicate that their current situation involves illness or disability. Roughly 15 percent of inactive men are in school, 5 to 10 percent are retired, and another 5 to 10 percent are homemakers or caregivers. About a quarter of prime-age inactive men do not fit any of these categories. Contrary to the common view that most of these men have "dropped out" of the labor force after becoming discouraged by the job market, few prime-age inactive men indicate this to be true, and only 12 percent of able-bodied prime-age inactive men indicate in household surveys that they want a job or are open to taking one.

We confirm research by other scholars that a large number of inactive men are unambiguously and seriously sick or disabled. We provide new information, showing that many inactive men have poor physical health, poor mental health, or both. Over one-third of them (and nearly three in five disabled inactive men) are in the bottom quarter, nationally, of both physical and mental health.

Inactive men have fewer skills than employed men and live in poorer homes, often relying on public safety nets to get by. Two-thirds of inactive men personally received government assistance in the preceding year.

One-third of inactive men have been incarcerated (including nearly half of disabled inactive men). Along with other evidence presented here on mobility-impeding behavior, such high incarceration rates suggest employment challenges.

Though inactive men are relatively unlikely to have children, when they do, they are more likely than employed fathers to have children outside the home. Yet they are less likely to pay child support to the mothers of those children, possibly reflecting the disincentive to work that child support obligations create.

Finally, compared with employed men, inactive men are more socially isolated, less happy, and have more adverse childhood experiences to overcome.

Productive social capital can provide opportunities to adults integrated into the world of work, but deficient social capital can limit the opportunities of children who will grow into inactive adults.

INTRODUCTION

August of 1953 was a lifetime ago. That month saw the Soviet Union announce that it had successfully tested its first hydrogen bomb. The United States returned nearly 400 ships to West Germany that it had seized during World War II. With the economy booming, 97.9 percent of American men between the ages of 25 and 54 were working or seeking work.

Much has changed over the decades, including the employment situation of men. In April of 2014, instead of 2.1 percent of prime-age men being "out of the labor force," as in the heady days of 1953, 12.1 percent were neither working nor seeking work. Despite recent increases in participation, that number remains elevated today, at 11.0 percent. The increase over the past few decades has been greater than in nearly all of our peer countries.[1] What happened?

Answering this question is complicated and fully doing so requires data going back decades. The contours of this debate are reflected in three recent papers relying on the Bureau of Labor Statistics' Current Population Survey (CPS).[2] In the absence of other rich datasets going decades back in time, a number of researchers have instead relied on recent surveys to paint a contemporary portrait of these "inactive" men.

This report is intended to enrich our understanding of who prime-age inactive men are. As discussed in the Social Capital Project's initial report, "What We Do Together," the typical inactive man appears to have an especially constricted associational life.[3] Alan Krueger reports that inactive men "spend nearly 30 percent of their time alone, compared with 18 percent for prime age, employed men."[4] A substantial portion of the waking hours of inactive men is taken up by television, video games, and electronic devices.[5] What Nicholas Eberstadt has called "the death of work" has produced negative consequences at the personal and social levels that may be difficult to quantify but are easy to describe. These include the corrosive effects of prolonged idleness on personality and behavior, the loss of self-esteem and the respect of others that may attend a man's voluntary loss of economic independence, and the loss of meaning and fulfillment that work demonstrably brings...[6]

Indeed, Krueger finds that inactive men have lower levels of subjective well-being than employed men—less satisfaction with their lives, less happiness, and more stress and sadness.

This report provides new information on inactive men, including some details about their past and present social and emotional lives. We introduce an under-utilized dataset little-known to economists and sociologists, the "National Epidemiological Survey on Alcohol and Related Conditions-III," or NESARC-III. Though intended primarily to examine "alcohol use and disorders and related physical and mental disabilities," because the survey asks respondents about their employment status, it provides information on inactive men that is otherwise unavailable.

Future work should focus on prime-age women who are out of the labor force and the ways in which they differ from their male counterparts. Women's labor force participation has fallen since the 1990s, but the decline has been small relative to the massive rise that preceded it for more than half a century. In August of 1953, 37 percent of prime-age women were in the labor force. The rate peaked in April 2000 at 78 percent, and it was 75 percent in July of this year.

Introducing the NESARC-III

The NESARC-III is a nationally representative survey of the civilian noninstitutionalized population ages 18 and older.[7] It was sponsored by the National Institute on Alcohol Abuse and Alcoholism at the National Institutes of Health. The survey was fielded in 2012 and 2013, interviewing 36,309 adults (and 8,932 men between the ages of 25 and 54). Importantly, the NESARC-III includes questions to ascertain mental disorders according to the Diagnostic and Statistical manual of Mental Disorders (DSM-5) as well as the Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS-5).[8] Access to the NESARC-III is restricted, and would-be users must sign a data use agreement to protect the privacy of participants.[9] The survey collected saliva samples, and genetic data are available with tight restrictions. (We did not attempt to obtain genetic data.)

In our analyses, the sample generally consists of 7,020 employed and 1,162 inactive men between the ages of 25 and 54. The latter includes 532 disabled men, 212 students, 87 retirees, 52 homemakers, and 279 other inactive men. The estimates for homemakers and retirees are relatively imprecise.

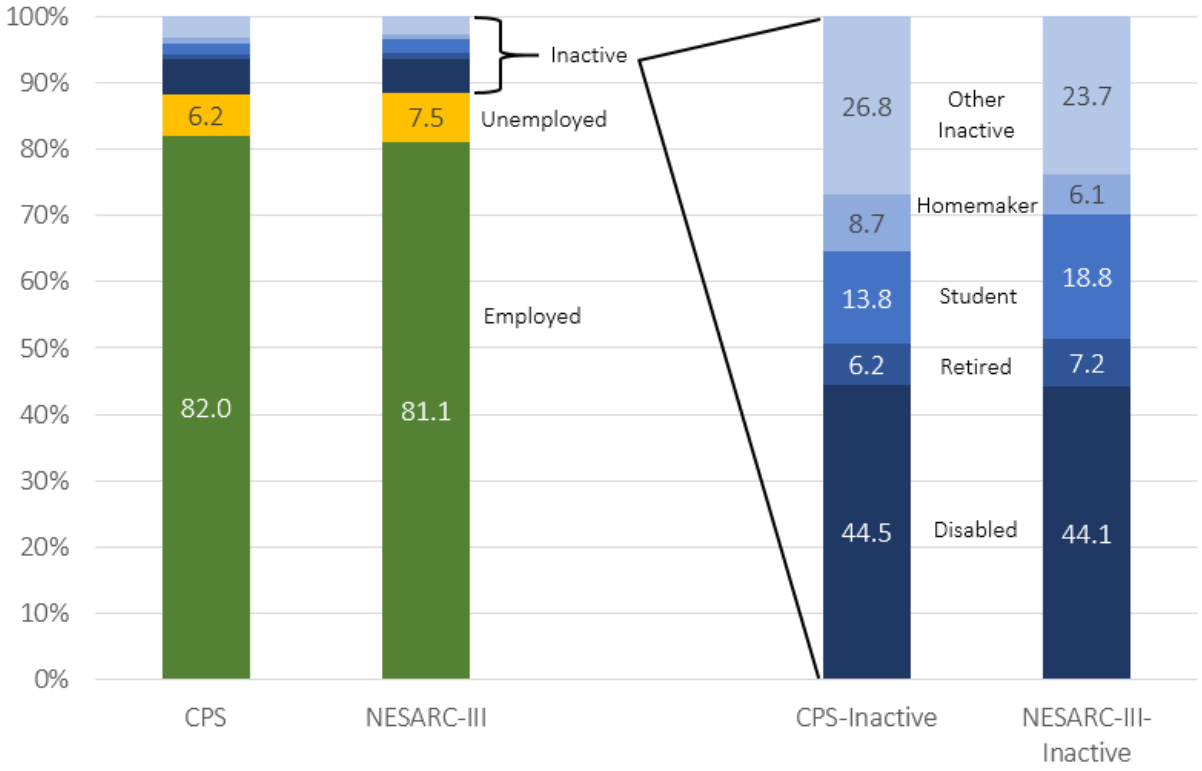
WHY ARE INACTIVE MEN OUT OF THE LABOR FORCE?

The NESARC-III asks respondents to choose one or more of fourteen options to describe their economic situation. We grouped prime-age men—that is, between the ages of 25 and 54—into mutually exclusive and exhaustive categories: employed, unemployed, or one of five classes of inactivity (disabled, students, retirees, homemakers, and "other").[10]

In the 2013 Annual Social and Economic Supplement (ASEC) to the CPS, 82 percent of prime-age men were employed, 6 percent were unemployed, and 12 percent were out of the labor force. As shown in Figure 1, in our NESARC-III analyses, the estimates were 81, 7, and 11 percent—reassuringly close.

The categories of inactive men we created largely correspond with ones used in the CPS, either today or in the past. In the 2013 ASEC, 45 percent of prime-age men out of the labor force said they had a disability that limited or prevented work. We found that 44 percent of prime-age men out of the labor force said they were permanently disabled in the NESARC-III. The 2013 ASEC indicates that 6 percent of prime-age men who are out of the labor force were retired and did not have a disability that limited or prevented work. We found that 7 percent in the NESARC-III are retired and not permanently disabled.

Figure 1. Distribution of Prime-Age Men by Labor Force Status and Reason for Inactivity, CPS vs. NESARC-III



Source: Social Capital Project analysis of the NESARC-III microdata. Note: "Students" in the CPS include men on summer vacation, while they are excluded from the NESARC-III definition.

In the 2013 ASEC, 14 percent of prime-age inactive men not disabled or retired were enrolled in school, on holiday, or on vacation during the school year (but not on summer vacation). We found a higher share of such men in the NESARC-III who were in school (16 percent) and an even higher share (19 percent) who were either in school or on summer break or holiday and thus met our definition of a student. The 2013 ASEC indicates that 9 percent of prime-age inactive men were "taking care of house or family" and were not disabled, retired, or enrolled in school. Our corresponding figure was 6 percent. Finally, 27 percent of inactive men in the 2013 ASEC were outside all of these categories, compared with 24 percent in the NESARC-III.[11]

Inability to Find Work Is a Small Part of the Story

As a different way of classifying inactive men, we might ask how many are out of the labor force because they could not find work and stopped trying. There are several ways of getting at this question, all of them suggesting that relatively few prime-age inactive men fit this description. Winship (2017a) reported that only two to three percent of prime-age inactive men meet the Bureau of Labor Statistics' definition of "discouraged workers" who have given up finding a job out of frustration. Winship also found that in 1993 (the last year in which all inactive men in the CPS were asked whether or not they wanted a job), 70 percent said they did not. In contrast, just 23 percent said they did want a job, and another 2 percent said they might. (The remainder didn't know.) In 2014, about the same share of non-disabled men said they wanted a job (or might). Able-bodied men who wanted a job or were open to it constituted just 12 percent of all prime-age inactive men.

Looking at the data another way, Winship found that among prime-age men who had not worked the entire previous year, just 7 percent in 2014 said that the "main reason" they did not work was that they could not find a job. That compared with 52 percent who were disabled, 15 percent in school, 10 percent taking care of home or family, and 9 percent who were retired. Eberstadt (2016) also found that few prime-age men who are not working say they cannot find a job. Just 14 percent of those in the 2004 Survey of Income and Program Participation (SIPP) who hadn't worked the previous 4 months said they could not find work—and that group included men who were in the labor force but unemployed (actively seeking a job).

Austin, Glaeser, and Summers (2018) report that between 1995 and 2015, the share of prime-age men who were inactive but did not want a job rose, while the share who were inactive and wanted a job was flat. Juhn, Murphy, and Topel (2002) indicate that very little of the rise in nonwork (including unemployment) from 1967 to 2000 was accounted for by men who could not find a job. Over half the increase was accounted for by disabled men. Similarly, Winship (2017a) found that from 1968 to 2014, men who could not find a job accounted for just 9 percent of the rise in inactivity throughout the entire preceding year. Men with a disability or illness accounted for 47 percent of the rise. He also estimated that men who wanted a job accounted for only 27 percent of the increase in inactivity from 1969 to 2014.

Demographics of Prime-Age Inactive Men

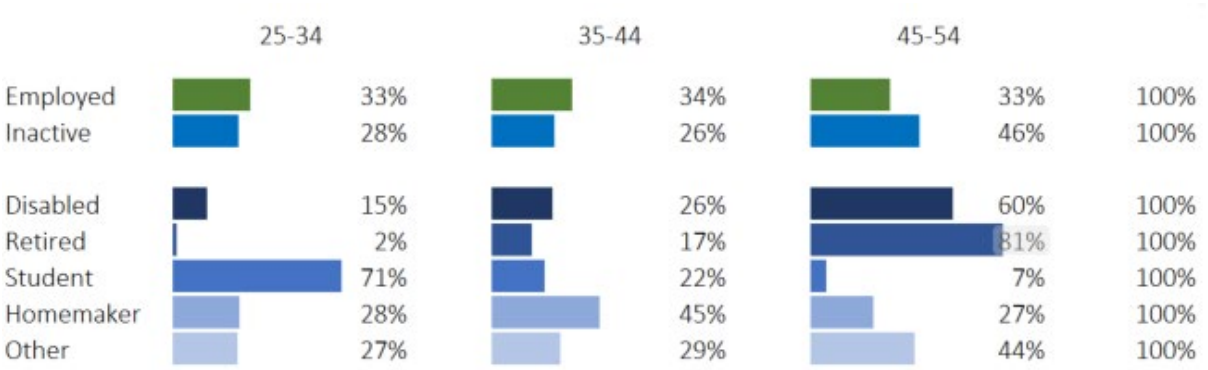
In Figure 2, we present the first of several breakdowns of prime-age inactive men using the NESARC-III data. The three sets of bar charts in Figure 2 break these men into three categories based on their age. The first two bars within each set contrast prime-age inactive men with prime-age employed men. The five bars below them contrast our five categories of prime-age inactive men. The percentages for any group of men, summed across the three bar charts, equals 100 percent, though

this will not generally be true throughout the report. Prime-age inactive men in the NESARC-III are older than employed men. That is mostly due to retirees (81 percent of whom are between the ages of 45 and 54) and disabled inactive men, but older men are also overrepresented among "other" inactive men. Students tend to be younger, unsurprisingly; seven in ten are ages 25 to 34.

Winship (2017a) shows that non-disabled, non-retired inactive men who do not want a job are younger than those who want a job. The CEA found that, holding age constant, labor force participation has fallen steadily across birth cohorts from 1943 to 1992 at nearly all age levels. Within-age changes in labor force participation account for nearly all the rise in inactivity, with changes in the age distribution of men accounting for practically none of the rise.

President Obama's Council of Economic Advisers (2016) also reported that prime-age inactive men are more likely to live in the South than men generally. Winship (2017a) showed that prime-age inactive men are more likely to live in the Southeast specifically, and they are more likely to live in rural areas. Eberstadt (2016) reported that compared with employed men, inactive men are more likely to be black and less likely to be an immigrant.

Figure 2. Age of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

Attachment to the Labor Force

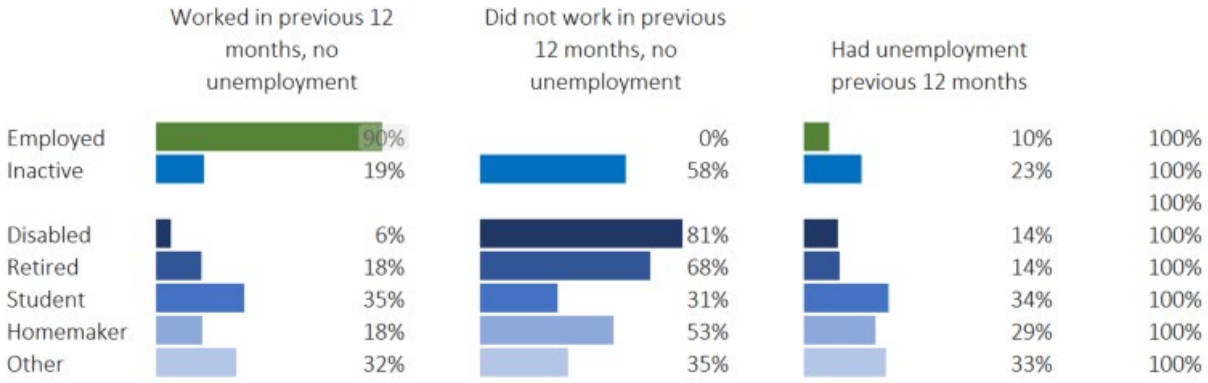
Most inactive men have little attachment to work. Eberstadt's analyses indicate that 68 percent of prime-age inactive men had been inactive for at least a year in 2014—up from about half of such men in 1994. Accounting for inactive men who had been unemployed in the previous year, the Council of Economic Advisers found that 83 percent of inactive prime-age men had not worked in over a year as of 2015. That was an increase from 73 percent in 1988.

While at any point in time, men with low labor force attachment make up the bulk of inactive men, a large share of men spending any time inactive do so for relatively brief periods. Because they cycle into and then out of inactivity, while men with low labor force attachment remain inactive month after month, the importance of this "in-and-out" population (to use the term of Coglianese, 2018) is understated by point-in-time snapshots. According to Austin, Glaeser, and Summers (2018), of the prime-age men who switched jobs in at least one of eight months in which they were observed over a 16-month period, 67 percent were out of the labor force for at least one of those eight months.

Coglianese divides inactive men into in-and-outs and dropouts. The former were in the labor force during at least one of eight months when they were participating in the CPS (two four-month periods separated by 8 months). "Dropouts" were out of the labor force during all eight months. In-and-outs were 62 percent of the combined groups. Both groups became more prevalent over time, but two-thirds of the rise in prime-age male inactivity from 1977 to 2015 was accounted for by dropouts. The rise in in-and-outs has been primarily due to an increase in employment-to-nonparticipation flows, not to a decline in nonparticipation-to-employment flows, an increase in flows that involve unemployment, nor an increase in the duration of nonparticipation spells.

Figure 3 shows that while 90 percent of employed men worked in the previous twelve months and had no unemployment spell lasting a month, that was true of just 19 percent of inactive men. More typically, inactive men neither worked in the previous twelve months, nor had any month-long spell of unemployment (meaning that they were inactive the whole year). That was true of 58 percent of them. Another 23 percent had experienced an unemployment spell of a month or more in the previous year. That is to say, just one in four prime-age inactive men spent time looking for work in the preceding year.

Figure 3. Work Attachment of Prime-Age Employed and Inactive Men



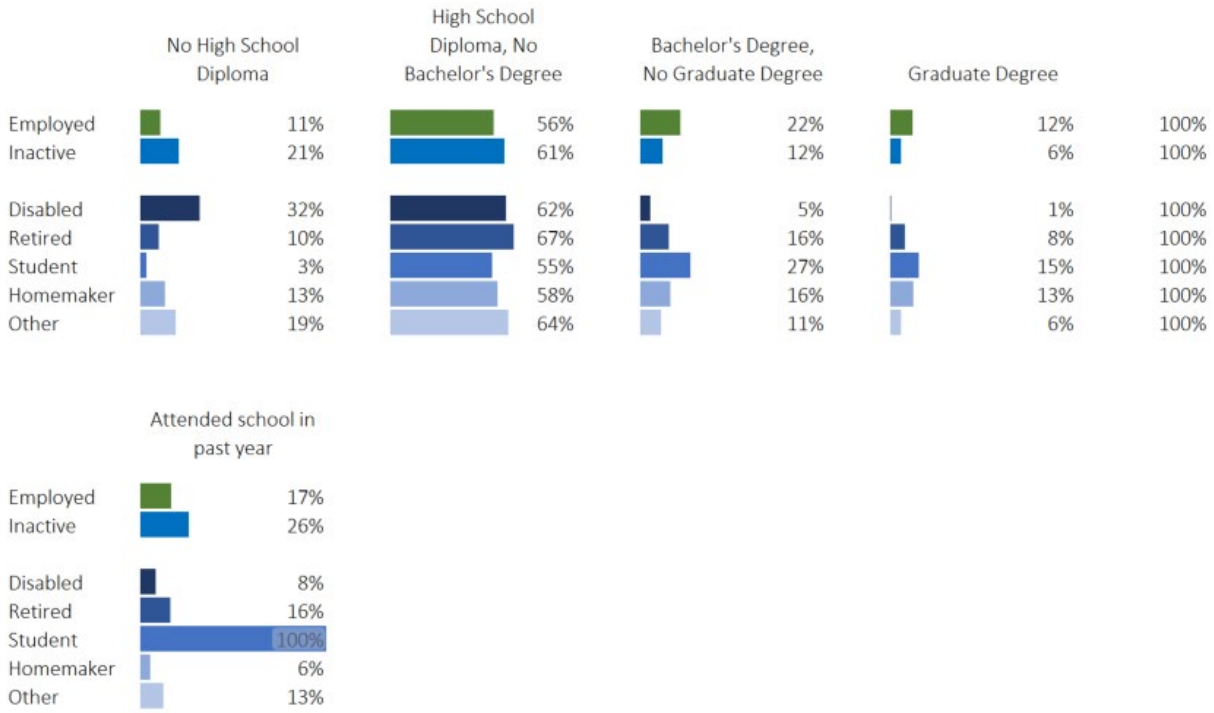
Source: Social Capital Project analysis of the NESARC-III microdata.

Striking patterns emerge in terms of the experiences of different types of inactive men. Four out of five disabled inactive men were inactive the entire previous twelve months, as were two-thirds of retirees and over half of homemakers. Students and those in the "other" category were roughly evenly divided between workers in the past year with no unemployment, full-year inactive men, and men with some unemployment in the past year. All five categories of men were more likely to have been inactive the whole year or unemployed part of the year, compared with employed men.

Schooling and Occupation

The top part of Figure 4 confirms the findings of Eberstadt (2016) and Winship (2017a) that inactive men have lower educational attainment than employed men or men generally. Notably, one in three disabled men does not have a high school education. In contrast, 42 percent of students already have a college degree. The bottom part of Figure 4 reveals that inactive men are more likely than employed men to have been in school the previous year. By definition, 100 percent of non-disabled, non-retired students were in school in the past year.

Figure 4. Education of Prime-Age Employed and Inactive Men

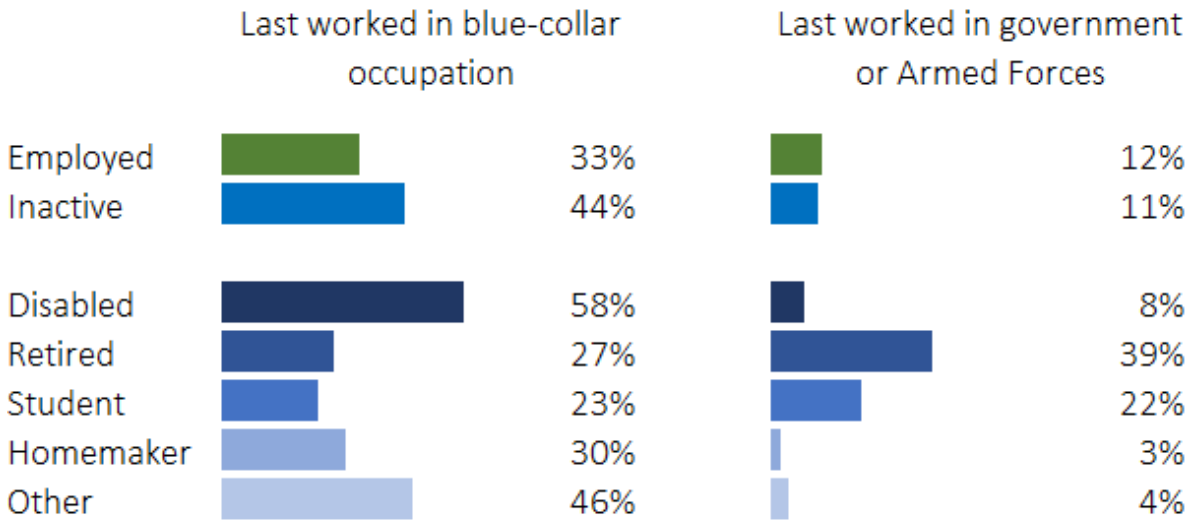


Source: Social Capital Project analysis of the NESARC-III microdata.

Interestingly, Tuzemen (2018) finds that inactivity rose most over the past 20 years among men with a high school diploma but no bachelor's degree. Also worth noting is the finding from Juhn, Murphy, and Topel (2002) that the rise in nonwork (including unemployment) from 1967 to 2000 was greater among men with lower hourly wages. Coglianese (2018) finds that "in-and-outs" are better educated than other inactive men.

Turning to occupations, Figure 5 shows that inactive men are more likely than employed men to have worked in a blue-collar job as their last occupation.[12] That was only true, however, of disabled and "other" inactive men. These results are consistent with Winship (2017a), which found that disabled men (and non-disabled men who wanted a job) included disproportionate shares of men who had last worked a "physical, blue-collar job."[13]

Figure 5. Occupations and Employment Sectors of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

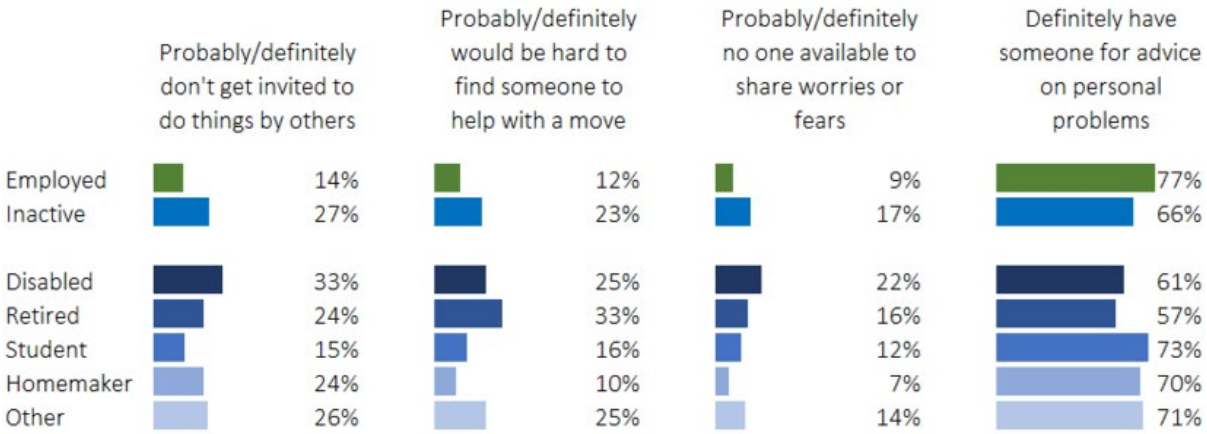
Another result shown in Figure 5 is that while inactive men as a whole are about as likely as employed men to have worked in government or the Armed Forces in their most recent position, students and, especially, retirees are disproportionately comprised of men previously holding those occupations. Retirees are over three times as likely as employed men to have come from the government or Armed Forces sectors, suggesting that generous public employee or military pensions facilitate early retirement.

Social Connectedness

Figure 6 considers several measures of social connectedness, a topic that has generated less attention among previous researchers of labor force nonparticipation. Compared with employed men, prime-age inactive men are twice as likely to say that they don't often get invited to do things with others, that it would be difficult to find someone to help them with a move, and that there is no one to share worries and fears with. They are less likely to say that they have someone they could turn to for personal problems. Students resemble employed men on these dimensions, and homemakers present a mixed picture, consistent with many of them living with family but having weaker ties to those who work outside the home.

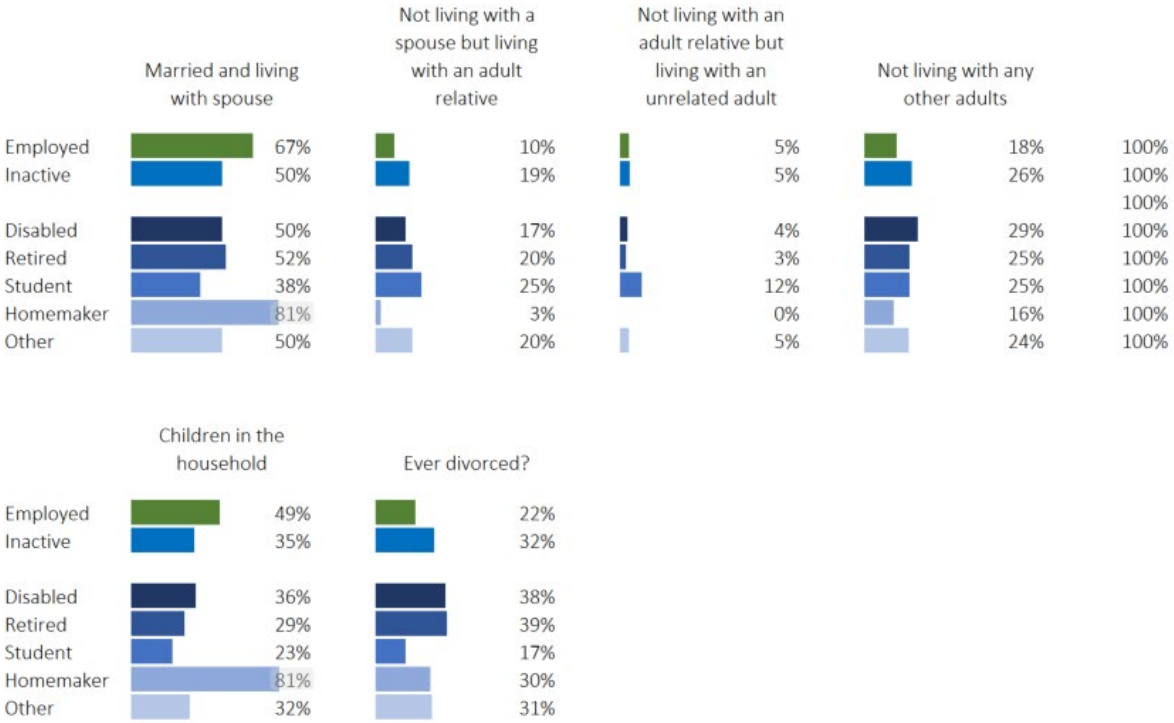
This disconnectedness suggests that workplace ties are not being replaced by relationships inactive men have outside of work. One reason for that is that inactive men are more likely to live alone. In the upper part of Figure 7, we show that over one in four inactive men are the only adult in their home, compared with 18 percent among employed men. Eberstadt (2016) reported that compared with employed men, inactive men are less likely to be married (or to have ever married). Consistent with that finding, Figure 7 shows that while two-thirds of employed men are married, only half of inactive men are (ranging from 38 percent among students to 81 percent among homemakers). Fully 20 to 25 percent of students, retirees, and "other" inactive men are single and live with an adult relative. That is consistent with the finding in Winship (2017a) that prime-age inactive men are much more likely than prime-age men generally to be single and living with a relative who heads the household. Figure 7 also shows that 12 percent of students live with a roommate (or cohabiting partner).

Figure 6. Social Connectedness of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

Figure 7. Living Arrangements and Marital Status of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

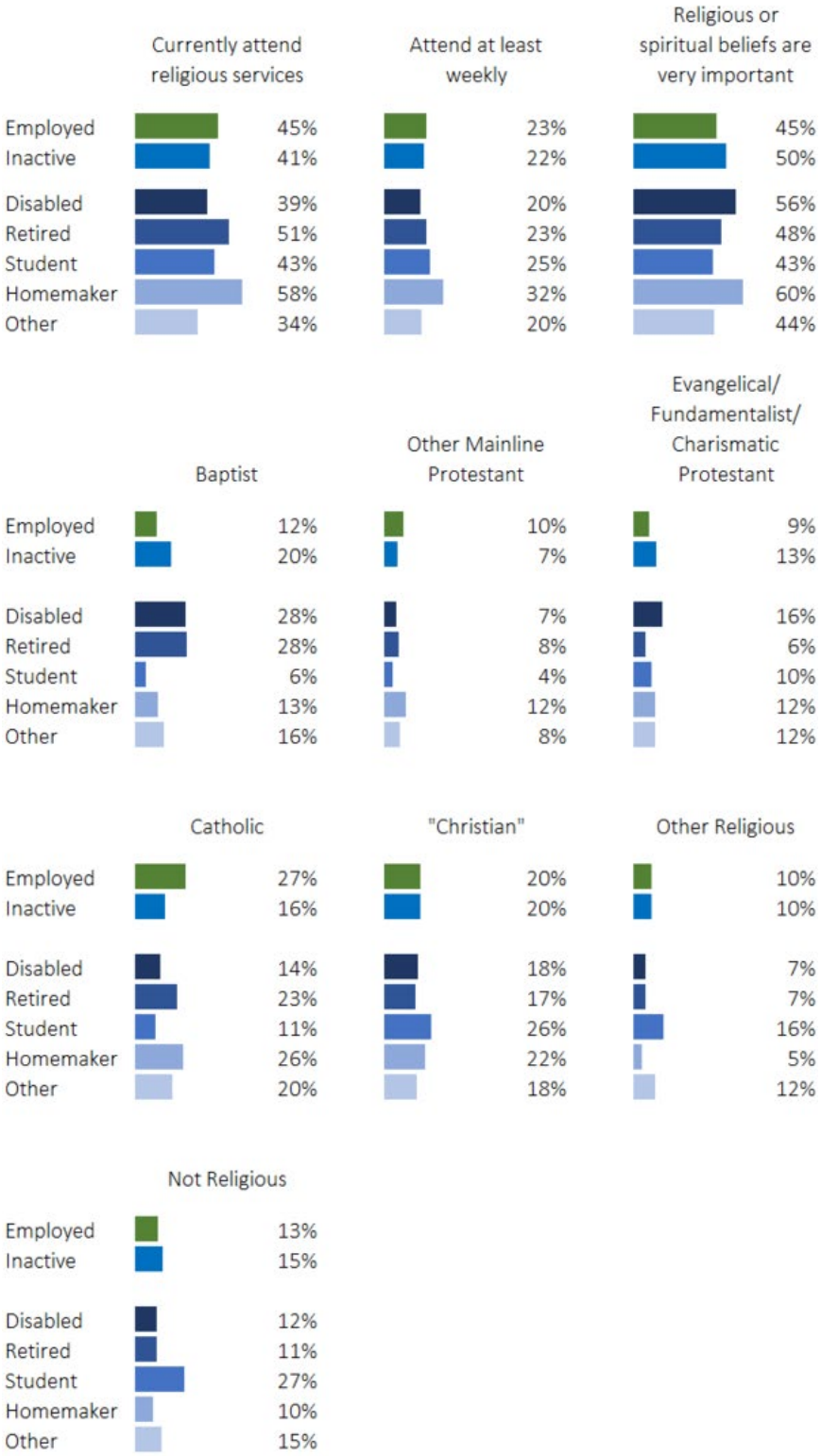
The lower part of Figure 7 confirms Eberstadt's finding that inactive men are less likely to have children than employed men. Only homemakers are more likely than employed men to live with children; four in five do so. Inactive men are also somewhat more likely than employed men to have ever gotten divorced. Retirees and disabled inactive men are almost twice as likely as employed men to have done so.

The lower social connectedness found here adds nuance to Eberstadt's time-use finding that compared with employed men, inactive men have effectively substituted "socializing, relaxing, and leisure" for work. It is true that many of these activities are not necessarily social (watching television, listening to the radio, arts and crafts, playing video games and other games). However, Krueger (2017) finds that among all men 16-35, over half the time spent playing games was with another person, and 70 percent of the time it involved interacting with someone else.[14] Further, Eberstadt finds that inactive men spend two hours per week more on "socializing and communicating with others" than employed men. Apparently, this added time does not compensate for the weaker or narrower web of social connections they have.

Coglianese (2018) reports that "in-and-outs" are more likely than other inactive men to be married or cohabiting. He also finds that half of the rise in in-and-outs involves men who are married or cohabiting, and most of the rest involves men living with parents. The rise involving men who are married or cohabiting appears to be driven by higher earnings of partners. Winship (2017a) finds that about three in four prime-age inactive men are living with a spouse, cohabiting partner, or another family member who heads the household. The latter group alone describes a quarter of inactive men.

Finally, another form of social connection is through religious communities. The upper left panel of Figure 8 indicates that homemakers and retirees are more likely to attend religious services than employed men, though retirees are no more likely to attend weekly (upper middle panel). Inactive men are more likely to say that their religious beliefs are very important than are employed men, especially disabled men and homemakers. The bottom six panels divide prime-age men into six categories based on their self-reported religious affiliation.[15] Baptists are over-represented among inactive men, and especially among disabled and retired men. Evangelical/fundamentalist/charismatic Protestants (those outside Mainline Protestantism) are also over-represented among inactive men, especially among the disabled. Meanwhile, Catholics are under-represented among inactive men, especially disabled men and students, and non-religious men are over-represented among students.

Figure 8. Religious Experience of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

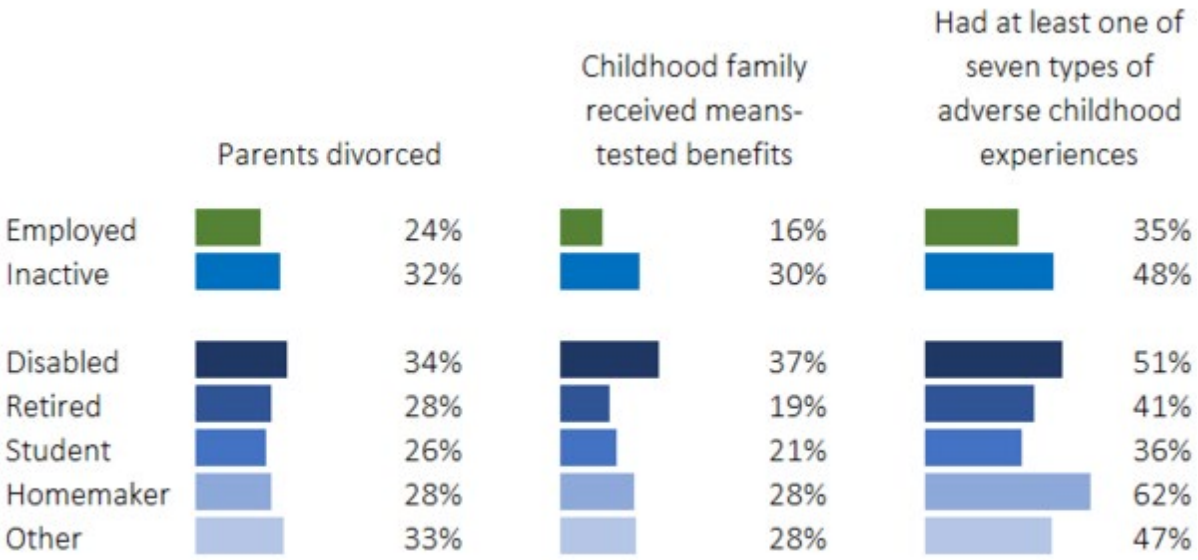
Childhood Experiences and Social Support

The NESARC-III includes questions about the childhood experiences of inactive men, another area related to social capital that labor force surveys typically ignore. We have already seen that inactive men are more likely to be divorced than employed men. They are also somewhat more likely to have experienced a parental divorce (Figure 9). Below, we will see that inactive men are more likely to receive federal means-tested benefits than employed men. In Figure 9, we show that they are about twice as likely as employed men to have been raised in a family that received such benefits during their childhood.

The NESARC-III also includes questions allowing for the computation of "adverse childhood experience" (or ACE) scores. Half of inactive men experienced at least one of seven ACEs during their childhood, compared with roughly one-third of employed men.[16] Homemakers are most likely to have experienced an ACE, though the estimate is imprecise.[17] Half of disabled men have experienced an ACE, and nearly half of "other" inactive men. Students are no more likely than the employed to have experienced an ACE.

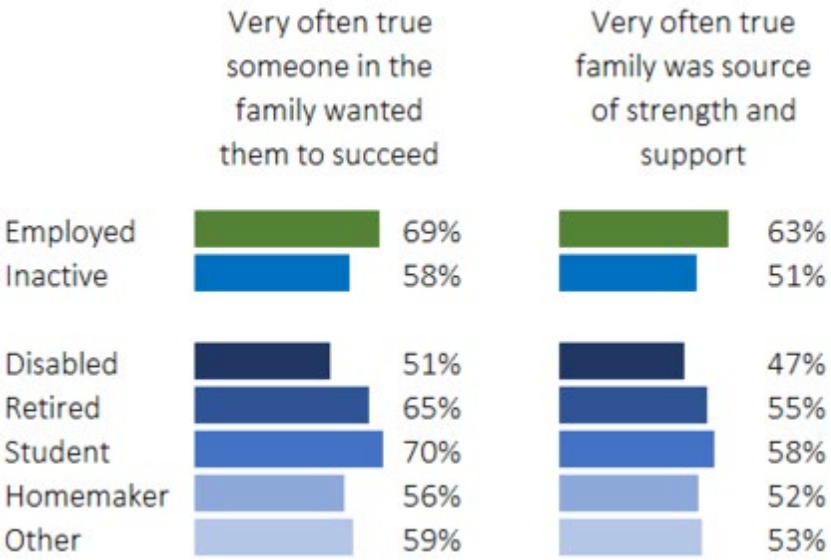
The bottom panels of Figure 9 indicate that inactive men received somewhat less support from their families in childhood than employed men. Students stand out as an exception.

Figure 9. Childhood Experiences of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

Figure 9. Childhood Experiences of Prime-Age Employed and Inactive Men

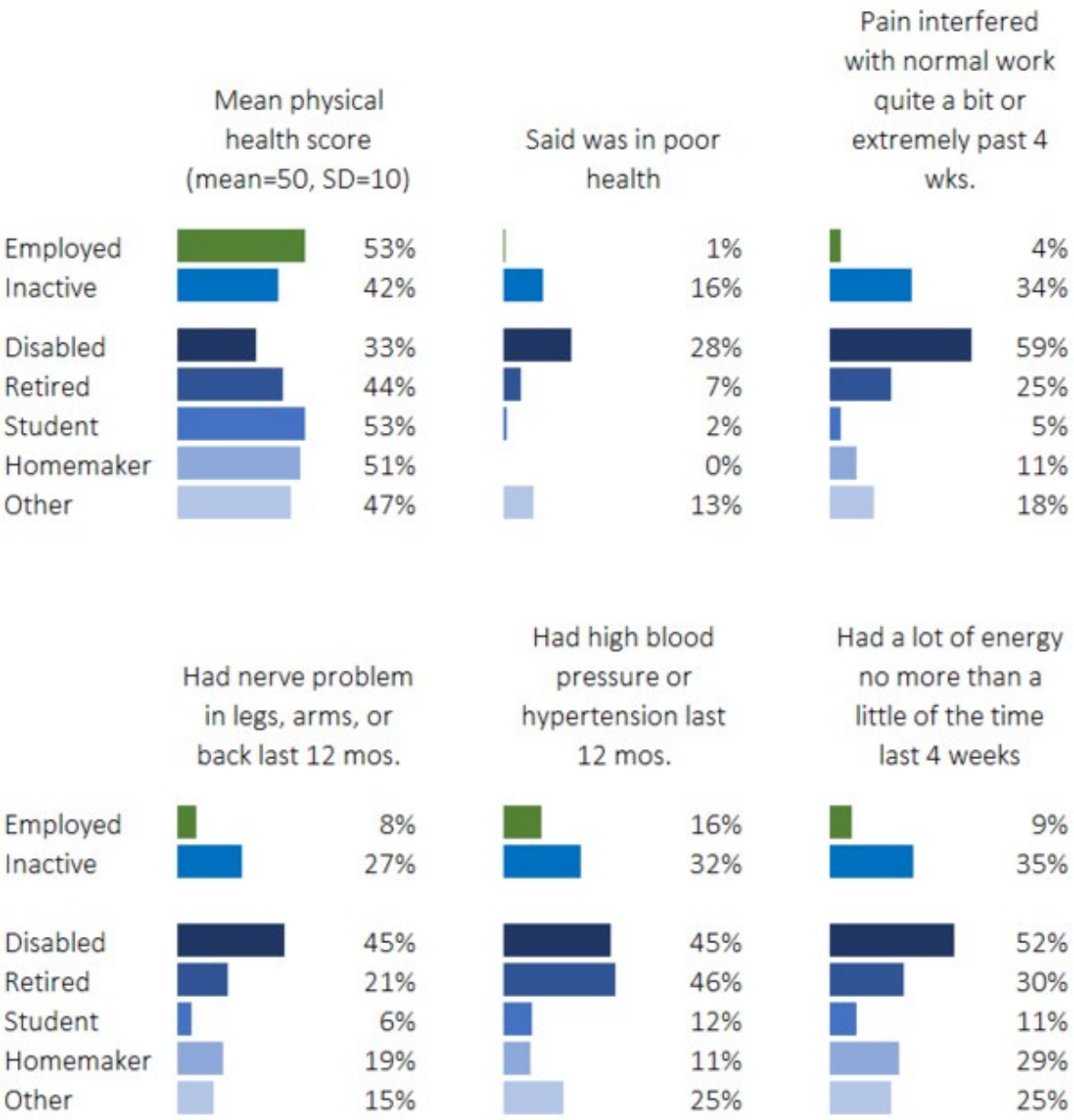


Source: Social Capital Project analysis of the NESARC-III microdata.

Physical Health

As noted above, nearly half of prime-age inactive men indicate they are permanently disabled. Unsurprisingly, disabled inactive men report poor physical and mental health. Figure 10 focuses on physical health. The NESARC-III includes nationally normed scores summarizing physical health (Physical Health Composite Scores, from the Short-Form 12 Health Survey, Version 2). The mean of these scores is 50, meaning that a score of less than 50 implies physical health that is below the national average.[18] In the upper left corner of Figure 10, we can see that on average, inactive men have worse health than employed men (and men generally, since the mean is below 50). However, students and homemakers are as physically healthy as employed men. Retirees score lower, but in all likelihood, that just reflects the fact that they are older than the other groups. As one might expect, disabled men fare much worse than everyone else. Their mean score of 33 is at the 6th percentile of prime-age men in the NESARC-III.

Figure 10. Physical Health of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

These patterns recur for other indicators of physical health. Disabled inactive men are much more likely than other men to rate their own health as poor, to say that pain interfered with their normal work "quite a bit" or "extremely," and to indicate they have had a nerve problem. With retired men, they are more likely than other men to have had high blood pressure or hypertension in the past year. Students and homemakers generally fare as well as employed men on these measures. Notably, more than half (59 percent) of disabled men said that pain had interfered in their "normal work" "quite a bit" or "extremely" in the previous month. More than half also said that at most, they had a lot of energy "a little of the time" in the previous month.

These results support the findings of Krueger (2017), who reports that substantial numbers of inactive men are in pain and poor health. While just 12 percent of employed prime age men rate their health as fair or poor, 43 percent of inactive men do. (Our NESARC-III estimates are 9 percent and 43 percent.) In Krueger's survey, only one in five employed men report having taken pain medication the previous day, but 44 percent of inactive men do, including 58 percent of inactive men with one of six disabilities. Krueger presents evidence from an online survey suggesting that about two-thirds of inactive men who took pain medication used prescription medication. The same survey found that 40 percent of prime age inactive men said that pain prevented them from working fulltime.

Krueger also reports that one-third of prime age inactive men report one of six disabilities in the CPS, including 40 percent of those with no more than a high school education, and 42 percent of men 40 to 54 years old. Disabled inactive men report more pain than disabled employed men.

Using other measures of wellbeing, Austin, Glaeser, and Summers (2018) also found that prime age men who are not working (including those who are looking for work) are significantly more likely to have physical health problems and physical activity limitations than the employed are.

There is some ambiguity in the data in trying to assess how many men who report themselves disabled or in pain could take a job. For one, the subjective severity of pain is difficult to assess on an individual basis. In addition, some inactive men who report a disability and who receive federal disability benefits may be taking advantage of the system. If they were concerned about the confidentiality of this federal survey, these men would want to give answers to the physical and mental health questions in the NESARC-III that are consistent with their being eligible for disability benefits.

Several data points suggest that disabled men have become less likely to work over time. Krueger found that inactivity rose from 2009 to 2017 among prime-age men with a disability. This serendipitously extended the same finding reported by Burkhauser and Daly (2011) for the 1982 to 2009 period, which demonstrates that the Krueger finding was not simply the result of starting with a Great Recession

year. Krueger also found that while the share of inactive men reporting day-long pain sometime in previous three months did not change much from 1997 to 2015, employment conditional on having pain fell somewhat. It may be that these trends simply reflect that more men used to work through pain in the past, that subjective pain thresholds have diminished, or that health care providers have become more likely to diagnose physical and mental problems. But none of these hypothetical changes are likely to explain declines in inactivity in the past decade.

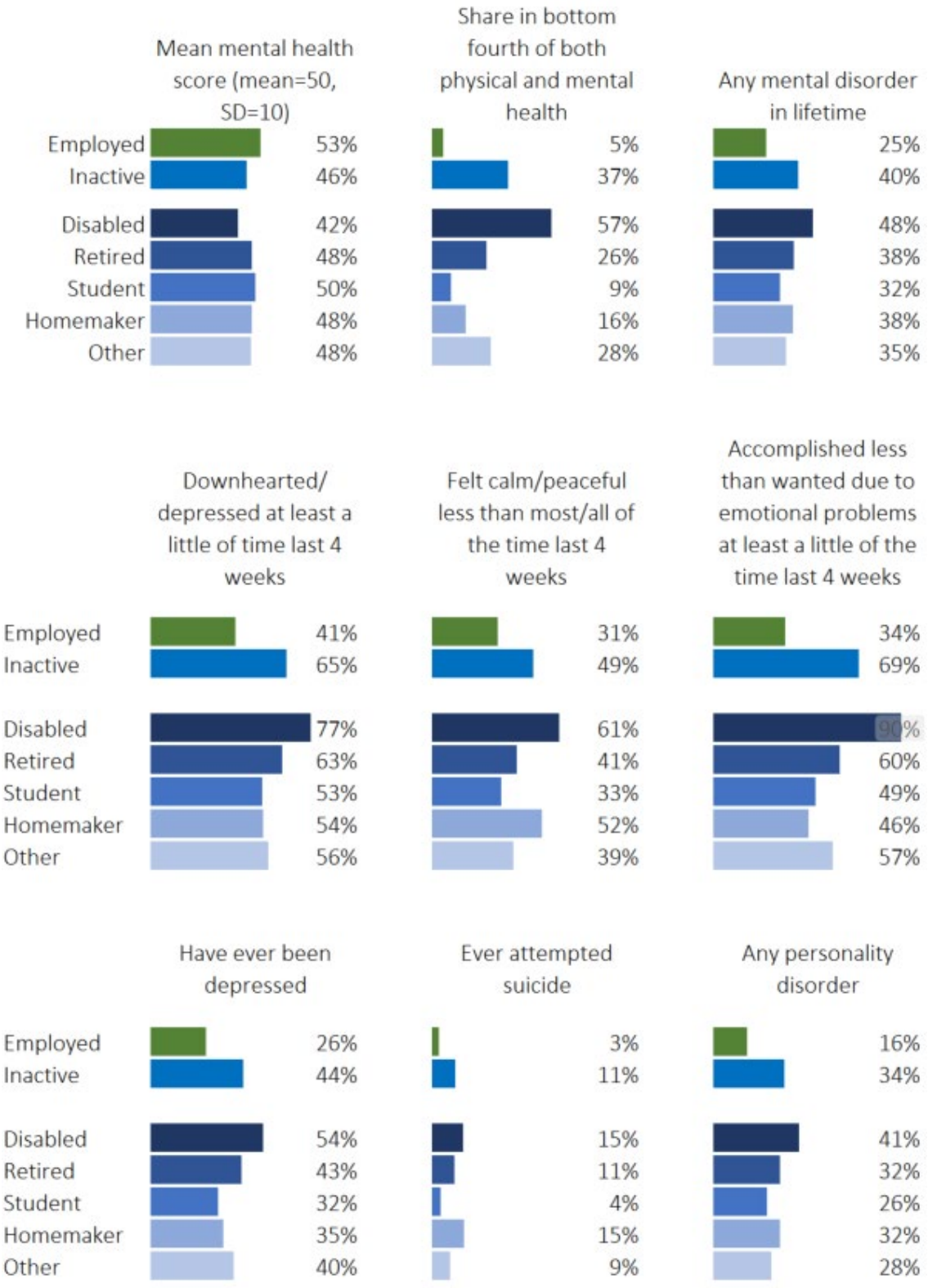
Bolstering the case that some men reporting themselves disabled do not have work-impeding pain is the recurrent finding—currently being reinforced in the ongoing economic expansion—that disability rolls decline when the economy improves and increase when it takes a dip. Along the same lines, countries with more generous welfare states have higher rates of self-reported disability, even controlling for demographics and health.[19] Between 1982 and 2006, states with higher GDP had lower disability rates, whether comparing states to themselves in different years or comparing different states in the same year.[20]

Other research suggests that it has become easier to receive federal disability benefits over time, and that that has induced more prime-age men to leave the labor force.[21] To be sure, a sizable share of prime-age inactive men has always been disabled. In 1968, prior to the creation of SSI or the rise in SSDI rolls, the vast majority were.[22] That most disabled inactive men are likely to be deserving of federal benefits is not inconsistent with the existence of a non-negligible share that could be working.

Mental Health

In Figure 11, we display nine mental health indicators, highlighting the challenges that inactive men—often socially disconnected—face. Inactive men fare worse than employed men on all nine of them. Once again, disabled men have the worst health across most of these measures. More than half of them are in the bottom quarter nationally of both physical and mental health (based on their Physical Health Composite Score and Mental Health Composite Score). A shocking 90 percent of disabled men said they had accomplished less than they wanted in the last month due to emotional problems. Nearly half had suffered a mental disorder at some point in their lives.[23] Half indicated they had been depressed in the past for at least two weeks.[24] Disabled men fared worst on every indicator, though homemakers were just as likely to have attempted suicide.

Figure 11. Mental Health of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

As noted in the introduction, Krueger (2017) found that inactive men spend nearly twice as much time alone compared with employed men. He also reports that inactive men have less satisfaction with their lives, less happiness, and more stress and sadness than employed men. Similarly, Austin et al. indicate that inactive men have low life satisfaction and poor mental health at rates that are more than double those of the employed.

It is unclear the extent to which poor mental health is caused by poor physical health, but this is surely part of the story among the disabled. Also unclear is the extent to which poor mental health is caused by social disconnection. In our analyses, we found that average mental health scores among inactive men were correlated with the extent to which they felt they had no one with whom to share their worries and fears. Men who said that sentiment was "definitely false" were near the national average (mean score of 48). The mean declined to 44 among those saying the statement was "probably false," to 41 among those saying it was "probably true," and to 39 among those saying it was "definitely true." Inactive men with higher ACE scores also had lower mental health scores on average, suggesting that family experiences in childhood may matter for adult wellbeing.

Criminal Activity and Other Mobility-Impeding Behavior

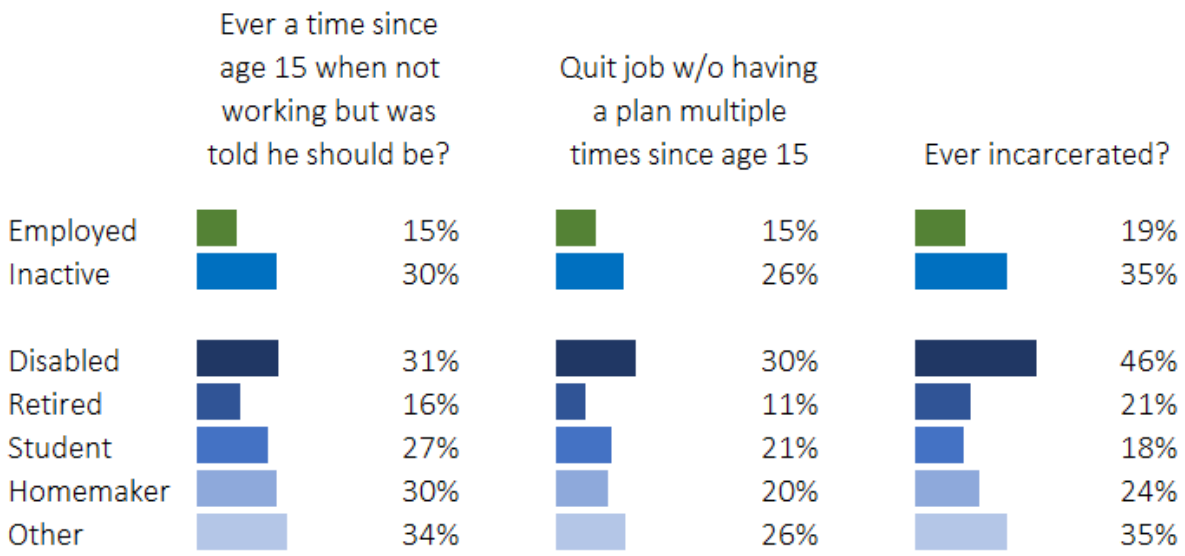
The NESARC-III includes a wide range of questions that assess "conduct disorder" and "antisocial personality disorder." These questions allow an examination of behaviors that impede upward mobility. For instance, the left panel of Figure 12 reveals that twice as many inactive men as employed men have had a time since age 15 when they were not working and other people thought they should have been. Retirees were no more likely than employed men to say that was the case. The patterns are very similar in terms of how many prime-age men have quit their job more than once without having another one lined up.

Inactive men are also much more likely to have ever been incarcerated than employed men. Over one-third of inactive men have been incarcerated, including nearly half of disabled men and over a third of "other" inactive men. Since a criminal record impedes the ability to find a job, it is possible that many ex-convicts have withdrawn from the labor force out of frustration. However, it could just be that many men who commit crimes are more likely to have characteristics that make them undesirable hires.

Eberstadt (2016) presents evidence suggesting that inactive men are more likely to have a criminal record, and Winship (2017a), using a survey sponsored by the Kaiser Family Foundation, CBS News, and the New York Times, reported that one-third of prime-age inactive men were ex-convicts. Eberstadt also finds that inactive men are more likely than employed men to admit to illegal drug use. Our analyses found that by the DSM-5 definition of drug or alcohol use disorder, inactive men who were disabled, students, or who fell into the "other" category

were more likely to have an issue with substance abuse than employed men, though the differences were modest.

Figure 12. Mobility-Impeding Behavior of Prime-Age Employed and Inactive Men

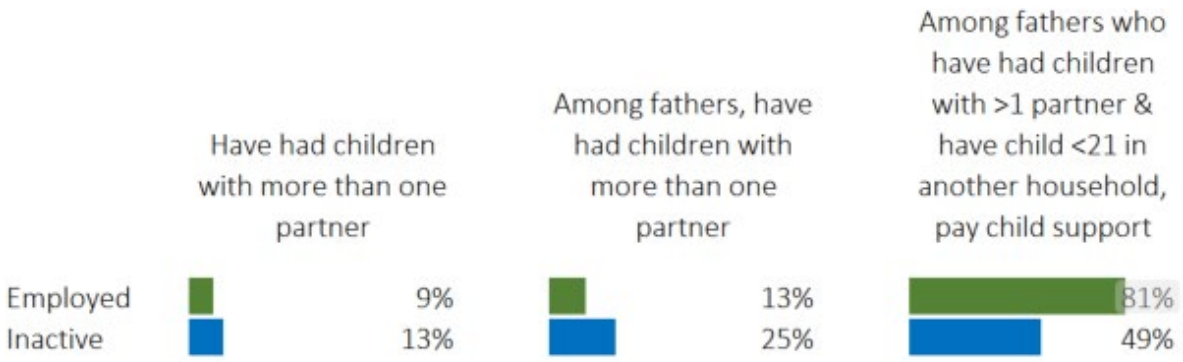


Source: Social Capital Project analysis of the NESARC-III microdata.

Multi-Partner Fertility and Child Support Obligations

Child support obligations are another barrier to employment for some men. If they can find other ways to support themselves, those options may be more attractive than working and having part of each paycheck go to another household. The NESARC-III does not include information on this topic, so we turned to another survey, Wave One of the 2014 Survey of Income and Program Participation (SIPP). Figure 13 shows estimates for employed men and inactive men as a whole. (The samples sizes were unreliably small when we tried to analyze the groups of inactive men.) Inactive men are somewhat more likely than employed men to have children born to multiple mothers. However, that is despite the fact that inactive men are less likely to have any children. One in four inactive fathers has children with multiple mothers—twice the rate for employed fathers. Yet, if we focus on fathers with children by multiple mothers who have at least one child under 21 living outside the household, employed fathers are much more likely than inactive ones to pay child support. Four in five employed fathers in this situation pay child support, compared with just half of inactive fathers.[25] While hardly proof that prime-age inactivity results in part from the threat of wage garnishment to pay child support obligations, the evidence here is consistent with that possibility.

Figure 13. Multi-Partner Fertility of Prime-Age Employed and Inactive Men

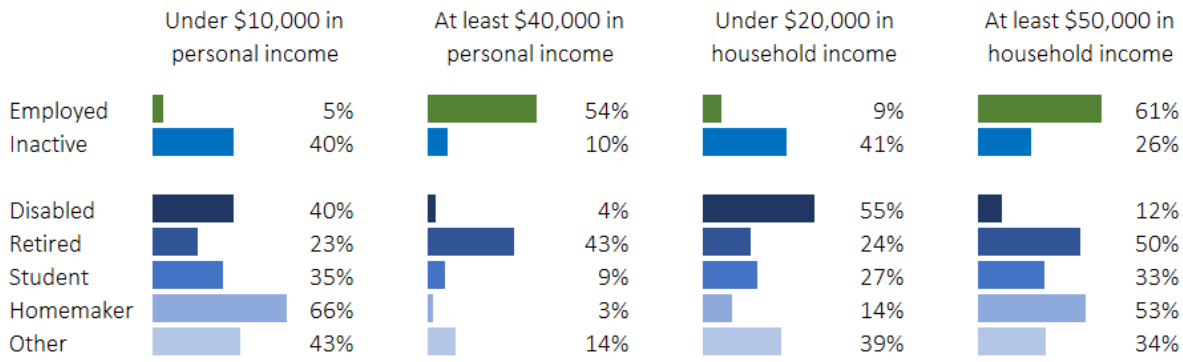


Source: Social Capital Project analysis of the 2014 Wave 1 Survey of Income and Program Participation microdata.

Income and Receipt of Government Transfers

In Figure 14, we look at the share of prime-age men with low or high personal income or household income over the preceding 12 months. Unsurprisingly, given that inactive men do not work and, in many circumstances, have not worked for some time, they have much lower personal income than employed men. That is especially true of homemakers, and it is less true of retirees. Inactive men also have much lower household income than employed men. This time, disabled men do worst, while sizable shares of retirees and homemakers have relatively high household incomes.

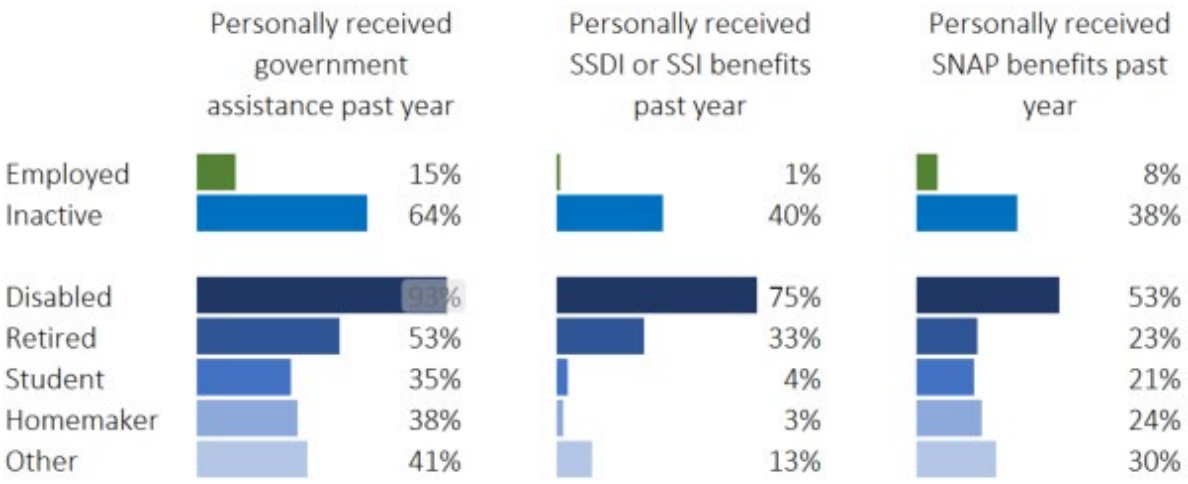
Figure 14. Income of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

One source of personal income received by inactive men is government transfers. The left panel of Figure 15 shows that nearly two-thirds of inactive men received benefits in the preceding year from either Social Security, Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), Emergency Assistance, Women, Infants, and Children Program (WIC), Supplemental Nutrition Assistance Program (SNAP), Medicare, Medicaid, or military health care programs. That includes 93 percent of disabled men who are inactive and over half of retirees. Four in ten prime-age inactive men received disability payments in the form of Social Security Disability Insurance (SSDI) or SSI. Among those who are disabled, three in four received benefits from one of these programs. However, a third of retirees did as well, suggesting that the pool of disabled inactive men may be larger than our "disabled" group suggests. Given the poor health that disabled men report, it is unsurprising that so many also indicate receiving disability benefits. However, nearly as many prime-age inactive men received SNAP benefits as got disability benefits, and the disabled were most likely to rely on them (with over half receiving benefits).

Figure 15. Transfer Income of Prime-Age Employed and Inactive Men



Source: Social Capital Project analysis of the NESARC-III microdata.

Eberstadt (2016) and Winship (2017a) both found similar results. Eberstadt showed that among prime-age inactive men who were household heads, 63 percent received means-tested benefits in 2013. He found that 57 percent of prime-age inactive men received disability benefits, and 66 percent lived in a household where someone was getting disability. Winship found that three in four prime-age inactive men lived in a household with transfer income, including 90 percent of disabled men.

Consistent with the other Coglianese (2018) results reported above, in-and-outs appear to be in better socioeconomic circumstances than other inactive men. They have higher incomes and are much less likely to have transfer income. Their food expenditures also decline less upon exiting the labor force than is the case for unemployed job losers or retirees. They are more likely to be homemakers or in school and less likely to be disabled or retired.

CONCLUSION

This report has summarized the evidence on the characteristics of prime-age inactive men and enriched our picture of them by bringing new data to bear. The decline in prime-age male labor force participation has left an increasing number of men outside the world of work, historically a source of identity, pride, independence, and social connectedness (to say nothing of money). As noted in the Social Capital Project's flagship report, "What We Do Together," coworkers constitute an important aspect of our social lives, "[w]hether in the carpool lane, offsite at lunch, in the break room, at the holiday party, behind the counter during down times, out on business trips, or post-work at the bar or on the softball field."[26] The rise in inactivity, then, contributes to the withering of American associational life.

Determining what should be done to arrest and reverse the rise in inactivity depends on further improving our understanding of the motives, aspirations, objectives, and capabilities of these men. If many inactive men would work were the wages on offer better, that might imply policies to promote tighter labor markets or to subsidize low-wage work. If many would work but for the increasing accessibility of disability benefits as a safety net, that might imply reforms to SSDI, SSI, and veteran's disability programs. If few inactive men want a job, that implies a different set of policies than if most would prefer to work. If many men are simply too sick or disabled to work, that should inform our goals for increasing labor force participation.

The pool of inactive prime-age men is irreducibly diverse. We have confirmed research by other scholars that a large number of them are unambiguously and seriously sick or disabled. They have poor physical health, poor mental health, or both. Nevertheless, because health, medical, and workforce changes should have reduced the ranks of this group over time, and because policy changes have increased the number of men claiming disability, it is very likely that a non-negligible share of men who declare themselves disabled in household surveys could work without difficulty.[27] At the same time, many inactive men are in school, retired, or primarily responsible for taking care of family and the home. It is unclear that there is any role for public policy in nudging them into the workforce. Finally, about a fifth to a quarter of prime-age inactive men do not appear to fall into any of these categories. We should better understand these men, though that may require bigger datasets with new survey questions.

The evidence presented in this report suggests that inactive men have fewer skills than employed men and live in poorer homes, often relying on public safety nets to get by. Many of them have been incarcerated, which, along with other evidence on mobility-impeding behavior, suggests employment challenges. Though inactive men are relatively unlikely to have children, when they do, they are more likely to have children outside the home. Yet they are less likely to pay child support to the mothers of those children, possibly suggesting reforms to child support policy both to encourage work and to ensure paternal obligations are fulfilled.

Compared with employed men, inactive men are more socially isolated, less happy, and have more adverse childhood experiences to overcome. Whether through greater work, where appropriate, or by other means of connecting them to community, we ought to consider how we might expand inactive men's access to social capital. Finally, as policymakers seek to expand opportunities for these men to work and otherwise contribute to society, they may need to address the damage done to many inactive men by unhealthy family lives growing up. Productive social capital can provide opportunities to adults integrated into the world of work, but deficient social capital can limit the opportunities of children who will grow into inactive adults.

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ENDNOTES

1. Eberstadt (2016).
2. See Council of Economic Advisers (2016), Winship (2017a), Winship (2017b). See also Juhn, Murphy, and Topel (2002) and Juhn and Potter (2006). Autor and Wasserman (2013) focus on the drop in the employment-to-population ratio (which is affected by trends in the unemployment rate) from 1979 to 2008. Moffitt (2012) also focuses on the drop in the employment-to-population ratio, but only from 1989 to 2007. Abrahamson and Kearney (2018), too, examine the employment-to-population ratio, but only from 1999 to 2016, and Aaronson et al. (2014) look at it from 2007 to 2014. Austin, Glaeser, and Summers (2018) conduct limited analyses from 1980 to 2010, also based on the employment-to-population ratio.
3. U.S. Congress, Joint Economic Committee, Social Capital Project (2017).
4. Krueger (2017).
5. The Council of Economic Advisers (2016) present results suggesting around half of waking hours are spent watching television—twice as much time as prime-age men generally. Eberstadt (2016) finds that, on average, prime-age inactive men spend five and a half hours a day watching television or movies. The estimates for working men and unemployed men were roughly two hours and three and a half hours, respectively.
6. Eberstadt (2016), 152.
7. See https://www.niaaa.nih.gov/research/nesarc-iii.
8. The NESARC-III was preceded by the 1988 Alcohol Supplement of the National Household Interview Survey, the 1991-1992 National Longitudinal Alcohol Epidemiological Survey, the Wave 1 NESARC (2001-2002), and the Wave 2 NESARC (2004-2005).
9. See https://www.niaaa.nih.gov/research/nesarc-iii/nesarc-iii-data-access/procedures-obtaining-dataset. This manuscript was prepared using a limited access dataset obtained from the National Institute on Alcohol Abuse and Alcoholism and does not reflect the opinions or views of NIAAA or the U.S. Government.
10. We characterized prime-age men as employed if they said that they were working either full time or part time, were employed but not at work due to a temporary illness or injury, employed but on vacation, or employed but absent from work without pay. A small number of these men also indicated they were unemployed or out of the labor force, but we included them as employed. We classified men as unemployed if they were not "employed" and indicated that they were "unemployed or laid off and looking for work." Finally, all other men who were not "employed" or "unemployed" were classified at out of the labor force.

    We further grouped prime-age men out of the labor force according to their "present situation." Men who indicated they were "unemployed and permanently disabled," were deemed disabled. (Note that in most analyses of joblessness, "unemployed" means that someone is not working, but available for work and looking for work. The NESARC-III survey seems to have used "unemployed" to mean, simply, "not working.") Men who were not "disabled" and who said they were in school full or part time or "on summer break/holiday from school" were classified as students. Those men indicating they were retired were categorized as such if they were not disabled and were not students. Men declaring themselves "full time homemakers" were classified as such if they were not in one of the prior categories. Finally, the remaining men out of the labor force (present situation of "unemployed or laid off and not looking for work" or "some other activity") were designated "other."
11. To estimate the number of students and homemakers in the CPS, we incorporated information from the Basic Monthly Survey variable indicating the major activity of those not in the labor force who did not give "disabled" or "retired" as a reason for their inactivity. This variable is called NILFACT in the IPUMS data. To use this variable, we merged the ASEC to the Basic Monthly Survey.

12. These occupations include jobs in farming, forestry, and fishing; precision production, craft and repair; operators, fabricators and laborers; transportation and material moving; and handlers, equipment cleaners and laborers.

13. These occupations include jobs in farming, fishing, and forestry; construction and extraction; installation, maintenance, and repair; building and grounds maintenance; production; and transportation and material moving.

14. Krueger (2017) also reports that among inactive men 21-30, time spent "playing games" rose 86 percent from 2004-2007 to 2012-2015, but it was largely matched by a decline in television watching.

15. Survey respondents were shown a card with 56 options from which to choose. We grouped these responses into the six categories in Figure 8. "Other Mainline Protestant" includes Lutherans, Methodists, Episcopalians, Presbyterians, several other denominations with Calvinist roots (Christian Reform, United Church of Christ, Disciples of Christ, Dutch Reformed), two Anabaptist denominations (Church of the Brethren and Mennonites), and Quakers. About 80 percent of prime-age men in this category are Lutheran, Methodist, or Presbyterian.

    "Evangelical/Fundamentalist/Charismatic Protestants" include Adventists (Seventh-Day Adventists and Church of God), Pentacostal denominations (Apostolic, Assemblies of God, Foursquare Gospel, Full Gospel, and Pentacostalism), Holiness Movement denominations (Church of the Nazarene, "Holiness/Holy," and the Salvation Army), Churches of Christ, Independent Christian Church, Spiritualists, "Protestant," "Fundamentalist," and "Evangelical/Born Again." About 50 percent of these prime-age men answered "Pentacostal," "Protestant," "Church of God," or "Churches of Christ." The distinction between mainline and other Protestants is rough, since many mainline denominations have evangelical offshoots, and many people answering "Protestant" are part of a mainline denomination. Further, many people answering "Christian" are Protestant but not categorized as mainline or not mainline.

    "Other Religious" includes Mormons, Jews, Muslims, Eastern Orthodox, Buddhists, Hindus, Sikhs, Taoists, "Unitarian/Universalist," Christian Science, Jehovah's Witness, Scientologist, "Native American," New Age, Druid, Pagan, Wiccan, Rastafarian, Santeria, Eckankar, Ethical Culture, Baha'i, and "Other Religion." About 60 percent in this group are Buddhist, Muslim, Jewish, Hindu, or Mormon.

    "Not religious" includes "No religious affiliation," agnostics, and atheists.

16. We followed the scoring methodology from the original ACE study by Felitti, et al. (https://www.ajpmonline.org/article/S0749-3797(98)00017-8/fulltext). The seven types of ACEs include experiencing psychological abuse, physical abuse, sexual assault or abuse, substance abuse, mental health problems, violence against one's mother, or incarceration. The specific experiences incorporated into the ACE scores for this report include an adult living in the home (1) swearing, insulting, or saying hurtful things to the respondent fairly often or very often; (2) doing something to make the respondent fearful of being physically hurt (fairly often or very often); (3) pushing, grabbing, slapping, or hitting the respondent fairly or very often; (4) hitting the respondent so hard that it left a mark or bruise or injured them (fairly or very often); (5) having a drinking problem; (6) having a drug abuse problem; (7) being treated for a mental illness; (8) attempting suicide; and (9) being incarcerated. They also include an adult male living in the home (10) pushing, grabbing, slapping, or throwing something at an adult female in the home (sometimes, fairly often, or very often); (11) kicking, biting, or hitting an adult female in the home (at least sometimes); (12) hitting an adult woman in the home repeatedly for at least a minute (at least sometimes); and (13) threatening or using a knife or gun against an adult woman in the home (sometimes, fairly often, or very often). Further, they include (14) ever being touched sexually when not wanted (or when too young to understand what was happening); (15) being made to touch someone else sexually when the respondent didn't want to (or when he was too young to understand); and (16) experiencing a rape or (17) attempted rape. All of these experiences relate to the time before a respondent turned 18.

17. There are only 52 prime-age inactive male homemakers in the data.

18. The standard deviation is 10 in the US population. Physical health scores range from just under 5 to just over 71 among prime-age men in the NESARC-III.

19. O'Brien (2015).

20. O'Brien (2013).

21. Winship (2015).

22. Winship (2017a).

23. As assessed by the NESARC-III, including having experienced a major depressive episode, a major depressive disorder, dysthymia, a manic episode, a hypomanic episode, a bipolar 1 episode, a specific phobia, social phobia, panic disorder, agoraphobia, generalized anxiety disorder, posttraumatic stress disorder, anorexia nervosa, bulimia nervosa, and binge-eating disorder. These are defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

    Personality disorders in Figure 11 are defined by the DSM-5. Personality disorders include schizotypal personality disorder, borderline personality disorder, conduct disorder, and antisocial personality disorder.

24. We identify men as depressed if they said that (1) over a two-week period: they had "felt sad, hopeless, depressed, or down nearly every day," "other people noticed that you were sad, hopeless, depressed, or down nearly every day," they didn't care about things that they usually cared about, or other people noticed that they didn't care about things they usually cared about, or (2) over a two-year period, their mood was low more than half the time.

25. Of course, men may be paying child support to someone outside the household but not have had children by multiple mothers. However, we were concerned about the interpretation of the estimates if we considered all fathers with someone under 21 outside the household. As best we can tell, adult children who have moved out of the home of their married parents are counted as "someone under 21 outside the household." If the fathers of these children make up a larger share of fathers with "someone under 21 outside the household" among the employed than among the inactive, then interpreting the share of fathers who pay child support is not straightforward. We checked the result in Figure 13 in a second way that reassured us. We confined the sample to fathers with someone under 21 outside the household who reported having ever had more children than their wife or cohabiting partner (regardless of whether they reported multipartner fertility). Within this group, 81 percent of employed fathers reported paying child support, versus just 52 percent of inactive men—almost exactly the same as when we focus on men with multipartner fertility. This comparison is also not ideal in that some men with a child outside the household may be living with a woman with two or more biological children ever born to her.

26. U.S. Congress, Joint Economic Committee, Social Capital Project (2017), 42.

27. Winship (2015, 2017b).

Long-Term Trends in Deaths of Despair

SCP REPORT NO. 4-19 | SEPTEMBER 2019

Anne Case and Angus Deaton famously chronicled a dramatic rise among middle-aged non-Hispanic whites since 1999 in "deaths of despair"—deaths by suicide, drug and alcohol poisoning, and alcoholic liver disease and cirrhosis.[1] The Social Capital Project has extended Case and Deaton's research to cover the full American population as far back as available data permit: to 1900 in some cases, and to 1959 or 1968 in others. We present here a snapshot of the long-term trends in deaths of despair. We also attach our full dataset for use in future research, including results broken down by age, sex, and race.

Mortality from deaths of despair far surpasses anything seen in America since the dawn of the 20th century. (The trend for middle-aged whites reveals a more dramatic rise but only goes back continuously to 1959.) The recent increase has primarily been driven by an unprecedented epidemic of drug overdoses, but even excluding those deaths, the combined mortality rate from suicides and alcohol-related deaths is higher than at any point in more than 100 years. Suicides have not been so common since 1938, and one has to go back to the 1910s to find mortality from alcohol-related deaths as high as today's.

At the same time, a long-term perspective reveals that while drug-related deaths have been rising since the late 1950s, the current increase in suicide and alcohol-related deaths began only around 2000, as the opioid crisis ramped up. Suicide and alcohol-related mortality trends track each other well over the past 45 years, and after accounting for the changing age distribution of the US, combined deaths from the two causes were as common in the mid-1970s as today.

Self-reported unhappiness probably has been on the rise since around 1990 (though not all sources agree). That predates the increase in deaths of "despair" by a decade. Moreover, unhappiness likely fell over the 25 years preceding 1990, while deaths of despair rose and then plateaued. And one data source suggests stable levels of unhappiness over the long run.

Rising unhappiness may have increased the demand for ways to numb or end despair, such that the cumulative effects show up years later in the form of higher death rates. But the proliferation of a uniquely addictive and deadly class of drugs has meant that the supply of despair relief has become more prevalent and more lethal, which would have increased mortality even absent an increase in despair. Given the lack of correspondence between trends in economic and social indicators, unhappiness, loneliness, and deaths of "despair," it may be more productive for policymakers to focus on the overdose epidemic than on despair per se.

DEFINITIONS AND METHODS

All of our estimates are from data publicly available from the Centers for Disease Control and Prevention (CDC). In the analyses below, we modify the Case-Deaton definition of "deaths of despair" in several ways. (Our data file includes trends using their definition as well.) Alcohol-related mortality, in our analyses, includes only those liver disease deaths deemed to be from alcohol abuse. But unlike Case and Deaton we add in deaths from a number of other diseases not associated with the liver that are attributed to alcohol abuse, as well as deaths from mental health disorders attributed to alcohol dependency. We also categorize deaths from alcohol poisoning under alcohol-related deaths, rather than lumping them in with drug overdoses as Case-Deaton prefer. In our analyses, drug-related deaths include those overdose deaths not deemed suicides, as in the Case and Deaton research, but also deaths from mental health disorders attributed to drug addiction. In those of our estimates using modern-day data, we exclude deaths due to drugs administered in medical or surgical care (which are included in the Case-Deaton definition). Our suicide definition matches that used by Case and Deaton; it includes alcohol- and drug-related deaths deemed suicides. The methodological appendix, below, provides additional detail, and detail is also provided in our data file.

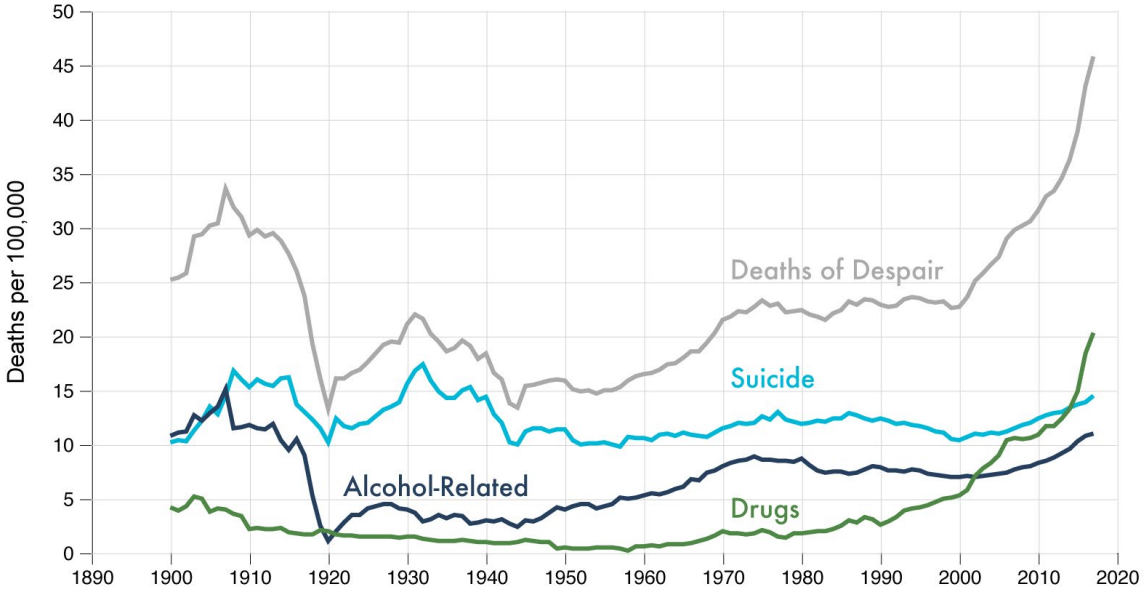
The increase in deaths of despair has been so large among non-Hispanic whites between the ages of 45 and 54 that it has caused overall mortality in this group to rise since 1999. For this reason, Case and Deaton devote special attention to the group. We display trends for the overall population and for non-Hispanic whites in this midlife age range. (Prior to 1999, Hispanic whites and non-Hispanic whites cannot be separated, so we include all whites together. Our checks indicate this has a minimal impact on the trends and levels reported here.)[2]

We also show the component trends for men and women separately. Our dataset provides trends broken down for other age ranges and racial groups.

DEATHS OF DESPAIR

Figure 1 displays trends in crude death rates going back to 1900.[3] Mortality from deaths of despair fell dramatically between 1907 and 1920, rose during the 1920s,

Figure 1. Deaths of Despair and Its Components, 1900-2017, Crude Rates



Source: Social Capital Project analyses of CDC data. For details, see the appendix.

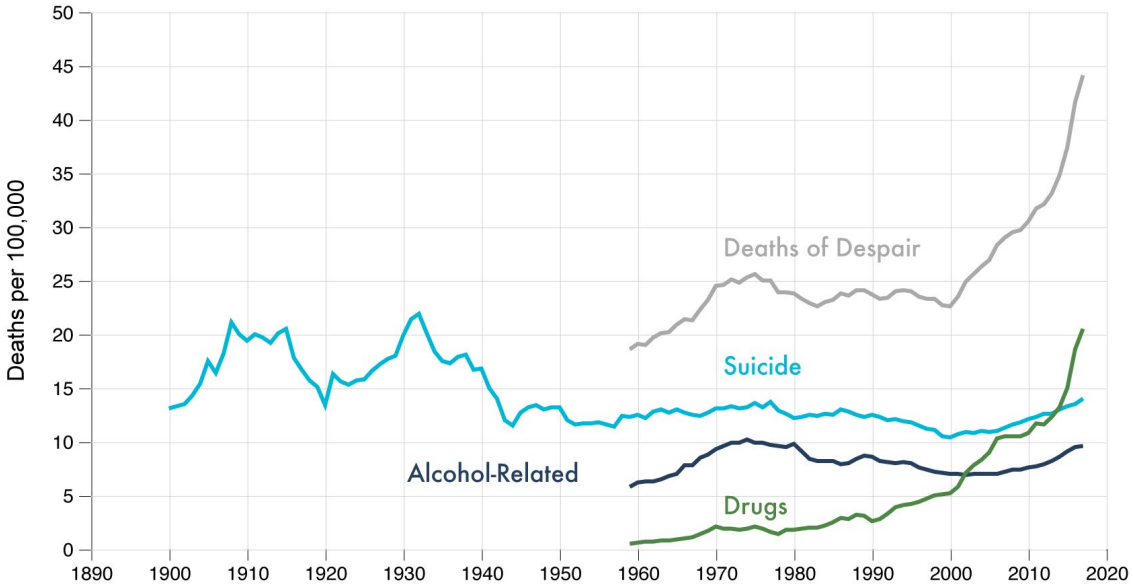
and reversed that increase during the 1930s and early 1940s. Deaths of despair then rose from the mid-1950s to the mid-1970s and stabilized before skyrocketing after 2000. In 2000, there were 22.7 deaths of despair per 100,000 Americans—not that different from the 1970 rate of 21.5. By 2017, the rate had doubled to 45.8 per 100,000.

We estimate the previous historical high (33.6) to have occurred in 1907, a level surpassed in 2013. A full explanation for the patterns in Figure 1 is beyond the scope of this brief, but notable historical events that might explain some of the changes over time include the Pure Food and Drug Act (1906), the Panic of 1907 (1907-08), the Harrison Narcotics Tax Act (1914), World War I (1914-18, with US involvement from 1917-18), the flu epidemic of 1918 (1918-19), the deep Depression of 1920-21, Prohibition (1920-33), the Great Depression (1929-38), World War II (1939-45, with US involvement primarily 1942-45), and the counterculture revolution of the 1960s. We return to some of these events in the discussion of subcomponent trends below.

Figure 2 provides trends using age-adjusted mortality rates. The CDC has estimated rates that hold constant 11 age groups at their 2000 shares of the population, so that the changes in rates over time are unaffected by whether older or younger people are becoming more or less prevalent. The long-term patterns

for deaths of despair are similar to those for the crude rates, but the estimates are available only back to 1959. Age-adjusted suicide rates go all the way back to 1900, and they indicate higher death rates than the crude rates early in the 20th century. This suggests that if the early-20th-century population had been as old as the 2000 population, the overall crude suicide rate would have been higher (as well as, in all likelihood, the crude rates for drug- and alcohol-related deaths).

Figure 2. Deaths of Despair and Its Components, 1900-2017, Age-Adjusted Death Rates



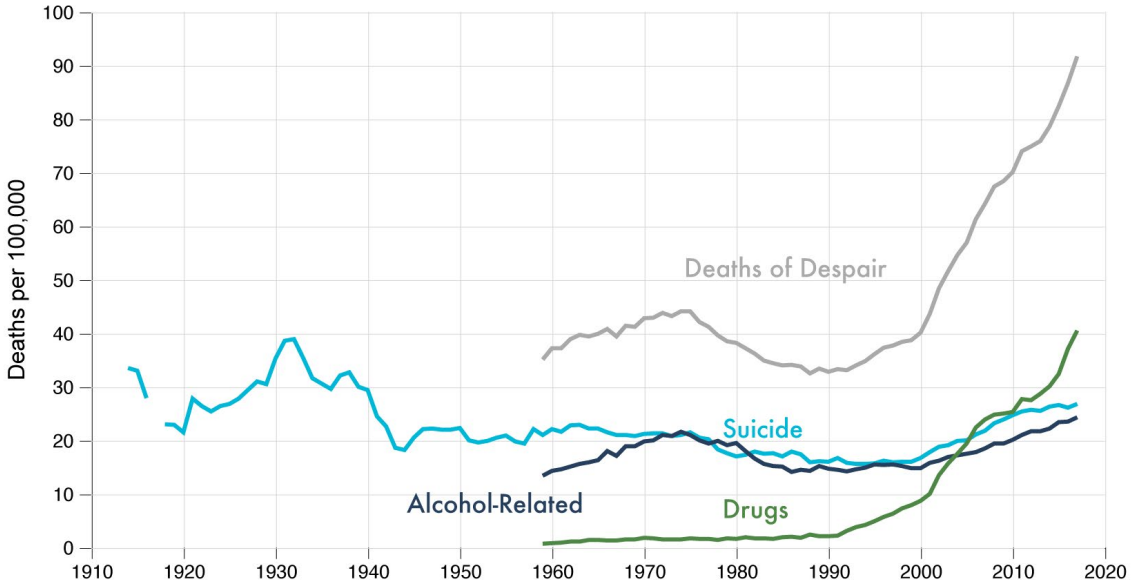
Source: Social Capital Project analyses of CDC data. For details, see the appendix.

It is unclear that age-adjusted comparisons over such a long period are better than the crude comparisons, however; people live longer in 2000 than in 1900 because life is materially better and easier, so imposing that age distribution on the 1900 population is a somewhat artificial exercise. Nevertheless, it is likely that age-adjusted deaths of despair rates for the early 20th century would be higher than the crude rates shown in Figure 1 for the same period.

Age-adjustment makes more sense, however, when comparing more recent years. Figure 2 suggests that after controlling for changes in aging, suicide rates have not changed much over the past 50 years. The rate in 1959 was 12.3 per 100,000, compared with 14.0 in 2017. Both suicides and alcohol-related deaths were as common in the mid-1970s as in 2017; the combined death rate from both was 23.5 per 100,000 in 1975 and 23.6 in 2017.

Figure 3 shows the age-adjusted trend since 1959 for whites between the ages of 45 and 54 (non-Hispanic whites from 1998 forward). Among this group, the 1975 peak was followed by a large drop in deaths of despair, so that the 1988 rate was the lowest on record. Soon thereafter, the situation deteriorated dramatically. From that low of 32.6 deaths per 100,000, the rate rose to 48.5 in 2002 (exceeding the 1975 peak) and to 91.6 in 2017.

Figure 3. Deaths of Despair and Its Components, 1914-2017, Crude Rates, Non-Hispanic Whites Ages 45-54



Source: Social Capital Project analyses of CDC data. For details, see the appendix.
Prior to 1998, the trend includes Hispanic whites.

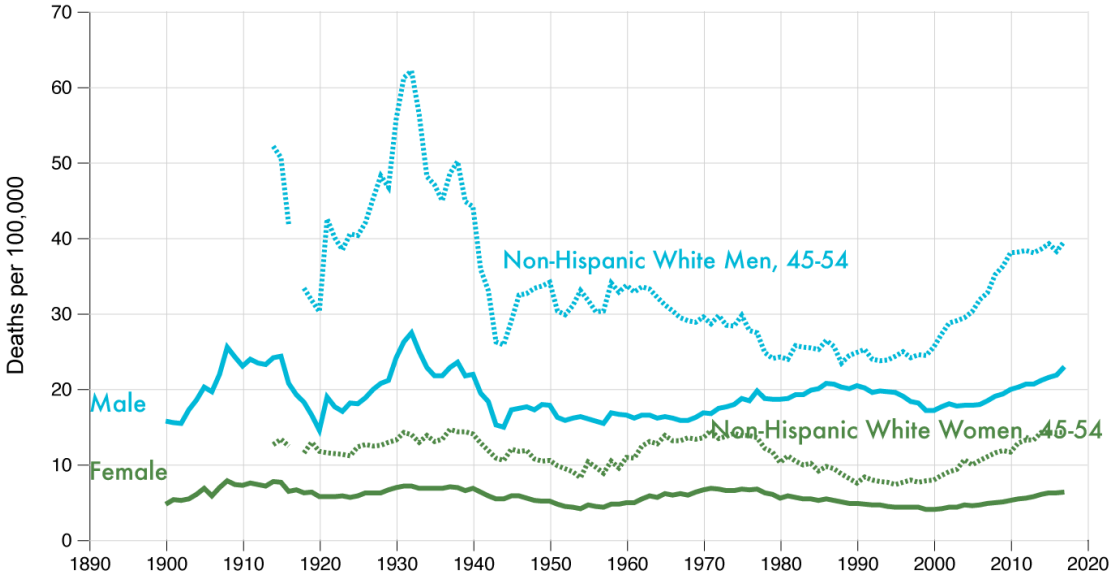
SUICIDE

The suicide rate has risen steadily since the early 2000s, reaching 14.5 per 100,000 in 2017 (Figure 1). That was about the average between 1910 and 1919, and the average over 1930-39 was higher. Suicides actually became steadily rarer from 1986 to 2000 (from 1977 using age-adjusted rates), but the 2017 crude rate was the highest since 1938. The suicide rate has risen steadily since the early 2000s, reaching 14.5 per 100,000 in 2017 (Figure 1). That was about the average between 1910 and 1919, and the average over 1930-39 was higher. Suicides actually became steadily rarer from 1986 to 2000 (from 1977 using age-adjusted rates), but the 2017 crude rate was the highest since 1938.

Suicides spiked with the onset of the Great Depression, but they were rising steadily throughout the 1920s. The declines after 1915 and 1938 are partly attributable to World Wars I and II. These drops do not so much reflect the substitution of war-related deaths for suicides: suicide fell among women during these periods too, and the declines began before Americans entered the conflicts. Rather, as Emile Durkheim first posited, the likely explanation is that wars promote social integration, which reduces despair.[4] The Panic of 1907 may also have caused a spike in suicides, but there too the increase had begun years earlier. The influenza epidemic of 1918 substituted flu deaths for some suicides, lowering the suicide rate.

From 1904 to 1940, age-adjusted rates of suicide were above 15 per 100,000 in every year except 1920. They have never reached that that level since (Figure 2). The trend for middle-aged non-Hispanic whites has been similar, though rates have consistently been higher than for the general population, and the recent rise since 1999 has been steeper (Figure 3). The suicide rate for middle-aged non-Hispanic white women has approached its all-time high (Figure 4).

Figure 4. Suicide Rates by Sex, Overall and Non-Hispanic Whites Ages 45-54, 1900-2017



Source: Social Capital Project analyses of CDC data. For details, see the appendix. Prior to 1999, the "non-Hispanic white" trend includes Hispanic whites.

ALCOHOL-RELATED DEATHS

In 2017, there were 11.0 deaths related to alcohol per 100,000 Americans (Figure 1). That was higher than at any time since the start of World War I. These deaths had been declining from the mid-1970s to the early 2000s, following a pattern similar to suicides.

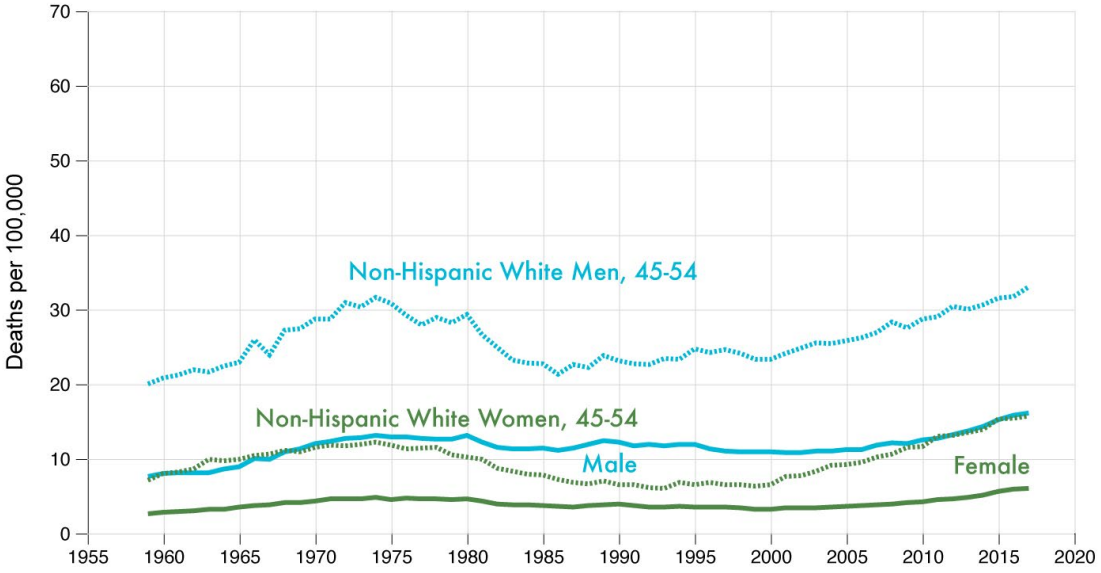
Figure 1 reveals that most of the large drop in deaths of despair in the years before 1920 was due to a decline in alcohol-related deaths. Prior to that drop, alcohol-related mortality was higher than it is today, but by 1920 it had fallen from its 1907 high of 15.1 deaths per 100,000 to just 1.1—lower than the number of deaths from drugs. This decline preceded Prohibition at the national level, and alcohol-related deaths actually rose through much of Prohibition. A number of states had enacted their own prohibition laws prior to 1920, but they tended to be rural, and the impact seems to have been too small to have affected national figures much.[5] Furthermore, suicide death rates follow a similar trajectory between 1907 and 1920.

Most likely, World War I and the flu epidemic were the biggest factors behind the drop. Since many alcohol-related deaths reflect an accumulation of years of alcohol abuse, however, it is possible that Prohibition dampened growth in alcohol-related deaths in subsequent decades.[6] In the 1930s and 1940s, alcohol-related deaths were much further below their pre-1920 high than were suicide deaths, even though alcohol consumption had risen nearly back to its old high by the mid-1940s.[7] Alcohol consumption hit a new peak in 1980. That increase may account for much of the rise in alcohol-related deaths

between the mid-1940s and the mid-1970s, during which time suicides rose much more slowly. Alcohol has become steadily more affordable since at least 1950, though consumption fell significantly after 1980.[8]

As shown in Figure 2, after age-adjusting, alcohol-related deaths actually peaked in 1974 at 10.2 per 100,000 (still lower than the suicide death rate in any year on record). The number of alcohol-related deaths for middle-aged non-Hispanic whites (Figure 3) was comparable to the number from suicide through much of the 1970s, but today's rate of 24.3 per 100,000 is the highest on record. Among middle-aged non-Hispanic whites, women exceeded their previous high in 2011, while men did not exceed their previous high until 2016 (Figure 5).

Figure 5. Crude Alcohol-Related Death Rates by Sex, Overall and Non-Hispanic Whites Ages 45-54, 1959-2017



Source: Social Capital Project analyses of CDC data. For details, see the appendix. Prior to 1999, the "non-Hispanic white" trend includes Hispanic whites.

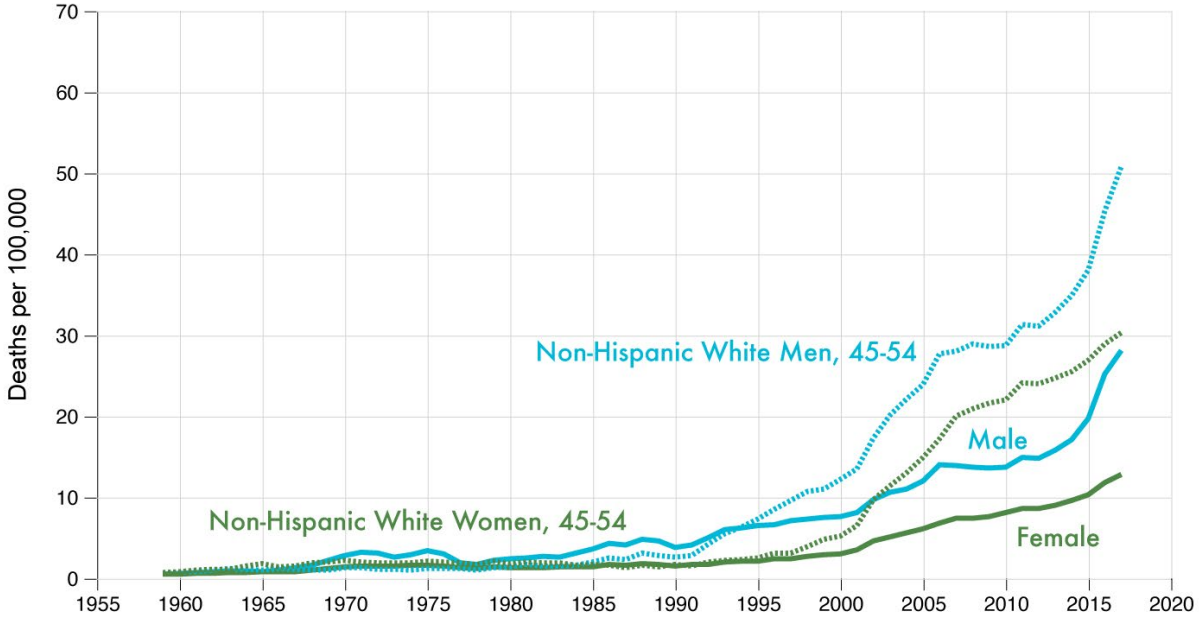
DRUG-RELATED DEATHS

Drug-related deaths have been rising at an accelerating rate since the late 1950s (Figure 1). The increase has been especially sharp over the past 20 years. This long-run increase was preceded by a long-run decline dating back at least to the early 1900s. Cocaine and heroin use increased dramatically during the late 19th and early 20th centuries, and they (and morphine) became controlled substances only in 1914.[9] The rise in drug overdose deaths likely was boosted by the countercultural revolution of the 1960s, when illegal drug use increased.[10] The 1980s saw the crack cocaine epidemic. And then came the opioids crisis.

The proliferation of opioid deaths was initially a result of oversupply and abuse of legal prescription narcotics. However, as awareness of the dangers of misuse grew, policy changes restricted the supply and form of prescribed opioids. The crisis then shifted toward illegal drugs—first heroin and then more lethal synthetic opioids like fentanyl.[11] On an age-adjusted basis, drug-related deaths rose by over 20 percent in 2002 and by nearly 25 percent in 2016. The overdose crisis is following a very different trend than those for other "deaths of despair."

Similar numbers of men and women died of drug overdoses when such deaths were rare. But male overdose deaths have been rising faster and are now over twice as common as female overdose deaths (Figure 6).

Figure 6. Crude Drug-Related Death Rates by Sex, Overall and Non-Hispanic Whites Ages 45-54, 1959-2017



Source: Social Capital Project analyses of CDC data. For details, see the appendix. Prior to 1999, the "non-Hispanic white" trend includes Hispanic whites.

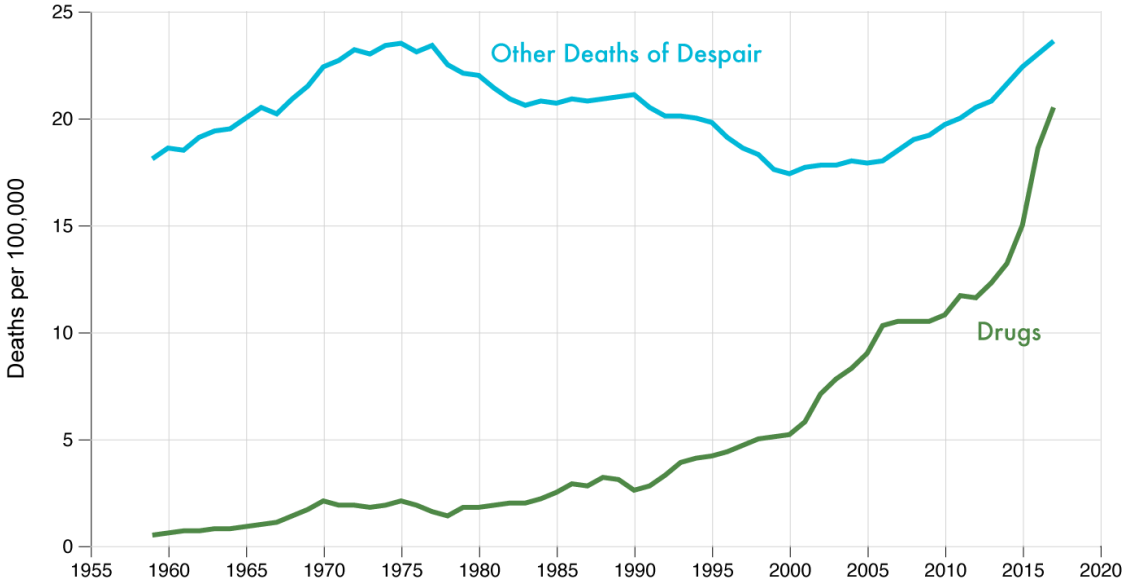
RISING DESPAIR?

In 2000, the age-adjusted mortality rate from deaths of despair was at the same level as the previous low in 1983, and only slightly higher than in 1968. On an age-adjusted basis, combined mortality from suicide and alcohol-related deaths were the lowest on record, going back to 1968. It is no wonder that no one spoke of "deaths of despair" at that time.

The age-adjusted mortality rate from drug-related causes in 2000 was 5.2 per 100,000, having doubled in ten years, over which time suicide and alcohol-related deaths were falling. By 2007, drug-related deaths had doubled again. By 2017, the rate had nearly doubled again, standing at 20.5 per 100,000.

As noted, even absent this dramatic acceleration in drug-related deaths, "deaths of despair" would be higher than at any point in the past one hundred years. But on an age-adjusted basis, deaths of despair other than drug-related deaths was essentially the same in 2017 as in 1975 (Figure 7).

Figure 7. Drug-Related Deaths versus Other Deaths of Despair, 1959-2017, Age-Adjusted Death Rates

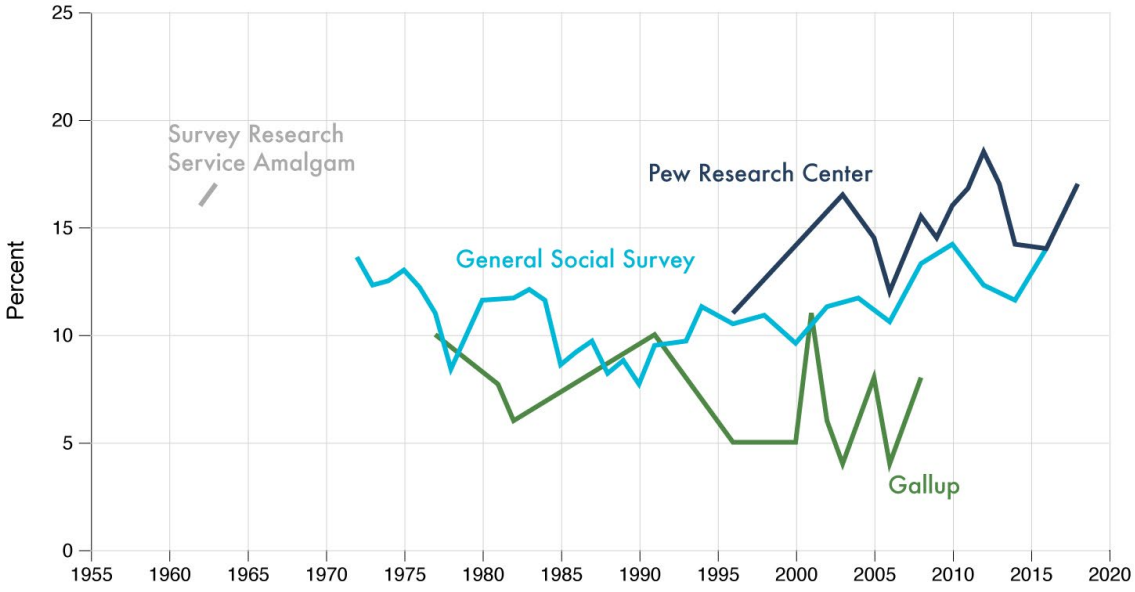


Source: Social Capital Project analyses of CDC data. For details, see the appendix.

Figures 1 and 2 showed that alcohol-related deaths and suicides track each other well over the past 45 years, but the same is not true of drug-related deaths. One possible explanation of the patterns discussed in this study is that while the suicide and alcohol-related mortality trends primarily reflect a "demand-side" problem—a desire to numb or end despair—the drug-related mortality trend also incorporates a "supply-side" problem. That is, the rise in drug overdoses not only reflects an increase in despair, but a change in the supply, addictiveness, and lethality of drugs that may be taken to numb despair.

Even the trends in suicide and alcohol-related deaths however, presumably reflect factors other than changes in despair. Figure 8 shows trends in self-reported unhappiness from four sources.[12] Together, three of the four tell a consistent story of falling and then rising unhappiness. But while deaths of despair rose between 1965 and 1975 and then leveled off over the next 15 years, unhappiness fell over the period (with a temporary increase during the double-dip recession of the early 1980s). Unhappiness then rose, but the upward march of deaths of despair began only with a ten-year delay, starting in 2000. Furthermore, if the Gallup Organization trend in unhappiness is correct, unhappiness was flat to declining even in the 1990s and 2000s. Previous research by the Social Capital Project has found little evidence that loneliness has changed much over the long run.[13]

Figure 8. Trends in Unhappiness (Percent "Not Too Happy"), 1963-2018



Source: Social Capital Project analyses of public opinion data. For details, see footnote 12 and the appendix.

Finally, it is worth emphasizing how challenging the trends in this paper are for theories that explain rising "despair" by referring to either economic trends or social capital trends. It is very difficult to find such trends that improve over the 1970s and 1980s, then worsen after either 1990 or 2000.[14] Case and Deaton have drawn attention to an important public health phenomenon, but we have far to go before understanding its implications for public policy and the health of our economic, community, and family life. In the meantime, apart from the question of whether or why despair may be on the rise, we clearly remain in the grip of a national opioid crisis that requires the attention of policymakers.

METHODOLOGICAL APPENDIX

This appendix provides methodological details for the Social Capital Project report, "Long-Term Trends in Deaths of Despair." All estimates derive from publicly available data from the Centers for Disease Control and Prevention (CDC). All age-adjusted rates are benchmarked against the 2000 population distribution across 11 age groups. That is, they assume that each age group's share of the population is fixed at 2000 levels, so that trends over time are not affected when the American population gets younger or older, except insofar as the age distribution within the 11 age groups changes. See Robert N. Anderson and Harry M. Rosenberg (1998). "Age Standardization of Death Rates: Implementation of the Year 2000 Standard." National Vital Statistics Reports 47(3). https://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_03.pdf.

As noted in the report, prior to 1933, not all states were part of the "death registration area," included in mortality data. Between the late 1800s and the late 1920s, the share of the population included in registration states rose from less than one-third to over 90 percent by the late 1920s. (See https://www.cdc.gov/nchs/data/vsus/VSUS_1949_1.pdf.) Mortality data are available for the entire continental United States beginning in 1933, and data for Alaska and Hawaii are included beginning in 1959 and 1960, respectively. Our analyses indicate that the changing number of states included in the data does not meaningfully affect the long-term trends we estimate. For instance, in 1933, the overall crude death rate for the lower 48 states was 1,068 per 100,000, while it was 1,122 per 100,000 for the 11 states included in the data in both 1900 and 1933. Similarly, the death rates from suicide, alcoholism, and cirrhosis of the liver were 16, 3, and 7 per 100,000 for the lower 48 states and 18, 4, and 9 per 100,000 for the original 11 states. (Sources: https://www.cdc.gov/nchs/data/vsus/vsrates1900_40.pdf, https://www.cdc.gov/nchs/data/vsushistorical/mortstatsh_1900-1904.pdf, and https://www.cdc.gov/nchs/data/vsushistorical/mortstatsh_1933.pdf.) The 1962 and 1963 rates for whites and by race exclude New Jersey. The 1972 mortality data is based on a 50 percent sample, according to the CDC.

The definitions we use for each subcomponent of deaths of despair are shown in Table 1.

Table 1. ICD Codes Used

ICD Version	Years in Use, U.S.	Suicide	Alcohol-Related Deaths	Drug-Related Deaths
1	1900-1909	155-163	56, 112b	59, 175
2	1910-1920	155-163	56, 113b	59, 165
3	1921-1929	165-174	66, 122a	68, 177
4	1930-1938	163-171	75, 124a	76, 179
5	1939-1948	163, 164	77, 124a	79, 179
6	1949-1957	E963, E970-E979	307, 322, 581.1, E880	323, E870-E878
7	1958-1967	E963, E970-E979	307, 322, 581.1, E880	323, E870-E878
8	1968-1978	E950-E959	291, 303, 571.0, E860	304, E850-E859, E980.0-E980.3
9	1979-1998	E950-E959	291, 303, 305.0, 357.5, 425.5, 535.3, 571.0-571.3, 790.3, E860	292, 304, 305.2-305.9, E850-E858, E980.0-E980.5
10	1999-2016	X60-X84, Y87.0	E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, O35.4, P04.3, Q86.0, R78.0, X45, Y15	F11-16, X40-44, Y10-14

ode 112b and 113b are approximated for 1900-1920. See the discussion below.

OVERALL CRUDE RATES

Suicides

Crude rates from 1900 to 1960 are from Robert D. Grove and Alice M. Hetzel (1968). "Vital Statistics Rates in the United States 1940-1960." Table 65. https://www.cdc.gov/nchs/data/vsus/vsrates1940_60.pdf. Includes International Classification of Diseases (ICD) Codes 155-163 from 1900 to 1920; 165-174 from 1921 to 1929; 163-171 from 1930 to 1938; 163 and 164 from 1939 to 1948; and E963 and E970-E979 from 1949 to 1960.

Crude rates from 1961 to 1967 are from National Center for Health Statistics. "Table 290. Death Rates for 60 Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1960-67." https://www.cdc.gov/nchs/data/dvs/mx196067.pdf. Includes ICD-7 Codes E963-E979.

Crude rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes E950-E959.

Crude rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes E950-E959.

Crude rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes X60-X84 and Y87.0.

Alcohol-Related Deaths

Crude rates from 1900 to 1920 were estimated by the Social Capital Project using death rates from alcoholism (Code 56) and cirrhosis (Code 112 from 1900-09 and Code 113 from 1910-20), from Robert D. Grove and Alice M. Hetzel (1968). "Vital Statistics Rates in the United States 1940-1960." Table 65. https://www.cdc.gov/nchs/data/vsus/vsrates1940_60.pdf. Cirrhosis with mention of alcoholism is available beginning only in 1921. We found the difference between death rates from cirrhosis generally and cirrhosis with mention of alcoholism to be roughly constant at around 7 per 100,000 in the years following 1920 (average of 6.9 using Third Revision ICD Codes 1921-1929, and average of 6.9 for 1921-1934, spanning the Third and Fourth Revisions, with a range from 6.7 to 7.2 for both intervals). When a 1900-20 trend for cirrhosis from alcoholism was estimated by simply subtracting 7 from the cirrhosis death rates, it overlaid the trend for alcoholism very closely, rising and falling in parallel. Therefore, we summed death rates from alcoholism and cirrhosis for each year from 1900 to 1920 and subtracted 7.

Crude rates from 1921 to 1948 were estimated by the Social Capital Project by summing death rates from alcoholism (from Grove and Hetzel (1968), Table 65, Code 66 for 1920-29, Code 75 for 1930-38, and Code 77 for 1939-48) and from cirrhosis with mention of alcoholism. The sources for cirrhosis with mention of alcoholism include Bureau of the Census (1938). "Vital Statistics—Special Reports," 7(1), p. 670. https://babel.hathitrust.org/cgi/pt?id=osu.32435063006076&view=1up&seq=680 (for 1921-37); National Center for Health Statistics (1940). "Vital Statistics of the United States, 1938. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/VSUS_1938_1.pdf; National Center for Health Statistics (1941). "Vital Statistics of the United States, 1939. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/VSUS_1939_1.pdf; National Center for Health Statistics (1943). "Vital Statistics of the United States, 1940. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/vsus_1940_1.pdf; National Center for Health Statistics (1943). "Vital Statistics of the United States, 1941. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii and Puerto Rico." https://www.cdc.gov/nchs/data/vsus/VSUS_1941_1.pdf; National Center for Health Statistics (1944). "Vital Statistics of the United States, 1942. Part I, Natality and Mortality

Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/VSUS_1942_1.pdf; National Center for Health Statistics (1945). "Vital Statistics of the United States, 1943. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/VSUS_1943_1.pdf; National Center for Health Statistics (1946). "Vital Statistics of the United States, 1944. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, and the Virgin Islands." https://www.cdc.gov/nchs/data/vsus/VSUS_1944_1.pdf; National Center for Health Statistics (1947). "Vital Statistics of the United States, 1945. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, the Virgin Islands, and Alaska." https://www.cdc.gov/nchs/data/vsus/vsus_1945_1.pdf; National Center for Health Statistics (1948). "Vital Statistics of the United States, 1946. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, the Virgin Islands, and Alaska." https://www.cdc.gov/nchs/data/vsus/VSUS_1946_1.pdf; National Center for Health Statistics (1949). "Vital Statistics of the United States, 1947. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, the Virgin Islands, and Alaska." https://www.cdc.gov/nchs/data/vsus/VSUS_1947_1.pdf; and National Center for Health Statistics (1950). "Vital Statistics of the United States, 1948. Part I, Natality and Mortality Data for the United States Tabulated by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, the Virgin Islands, and Alaska." https://www.cdc.gov/nchs/data/vsus/VSUS_1948_1.pdf.

Crude rates from 1949 to 1960 were estimated by the Social Capital Project by summing death rates from alcoholism and alcoholic psychosis (from Grove and Hetzel (1968), Table 65, Codes 307 and 322) and from cirrhosis with mention of alcoholism (Code 581.1) and alcohol poisoning (Code E880). The sources for cirrhosis with mention of alcoholism and alcohol poisoning include National Center for Health Statistics (1951). "Vital Statistics of the United States, 1949. Part I, Natality, Mortality, Marriage, Divorce, Morbidity, and Life Table Data for the United States. General Tables by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, Virgin Islands and Alaska." https://www.cdc.gov/nchs/data/vsus/VSUS_1949_1.pdf; National Center for Health Statistics (1953). "Vital Statistics of the United States, 1950. Volume III, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1950_3.pdf; National Center for Health Statistics (1954). "Vital Statistics of the United States, 1951. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1951_2.pdf; National Center for Health Statistics (1955). "Vital Statistics of the United States, 1952. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1952_2.pdf; National Center for Health Statistics (1955). "Vital Statistics of the United States, 1953. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1953_2.pdf; National Center for Health Statistics (1956). "Vital Statistics of the United States, 1954. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1954_2.pdf; National Center

for Health Statistics (1957). "Vital Statistics of the United States, 1955. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1955_2.pdf; National Center for Health Statistics (1958). "Vital Statistics of the United States, 1956. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1956_2.pdf; National Center for Health Statistics (1959). "Vital Statistics of the United States, 1957. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1957_2.pdf; National Center for Health Statistics (1964). "Vital Statistics of the United States, 1958. Volume II, Mortality Data." https://www.cdc.gov/nchs/data/vsus/VSUS_1958_2.pdf; National Center for Health Statistics (1964). "Vital Statistics of the United States, 1959. Volume II, Mortality Statistics for the United States and Each State." https://www.cdc.gov/nchs/data/vsus/VSUS_1959_2.pdf; and National Center for Health Statistics (1963). "Vital Statistics of the United States, 1960. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/VSUS_1960_2A.pdf.
Crude rates from 1961 to 1967 were estimated by the Social Capital Project by summing death rates from alcoholism (Code 322), alcoholic psychosis (Code 307), cirrhosis with mention of alcoholism (Code 581.1), and alcohol poisoning (Code E880). The sources include National Center for Health Statistics (1964). "Vital Statistics of the United States, 1961. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/VSUS_1961_2A.pdf; National Center for Health Statistics (1964). "Vital Statistics of the United States, 1961. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/VSUS_1961_2A.pdf; National Center for Health Statistics (1964). "Vital Statistics of the United States, 1962. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/VSUS_1962_2A.pdf; National Center for Health Statistics (1965). "Vital Statistics of the United States, 1963. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/mort63_2a.pdf; National Center for Health Statistics (1966). "Vital Statistics of the United States, 1964. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/mort64_2a.pdf; National Center for Health Statistics (1967). "Vital Statistics of the United States, 1965. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/mort65_2a.pdf; National Center for Health Statistics (1968). "Vital Statistics of the United States, 1966. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/mort66_2a.pdf; and National Center for Health Statistics (1969). "Vital Statistics of the United States, 1967. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/mort67_2a.pdf.

Crude rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes 291.0 (Delirium tremens), 291.1 (Korsakov's psychosis (alcoholic)), 291.2 (Other alcoholic hallucinosis), 291.3 (Alcoholic paranoia), 291.9 (Other and unspecified), 303.0 (Episodic excessive drinking), 303.1 (Habitual excessive drinking), 303.2 (Alcoholic addiction), 303.9 (Other and unspecified alcoholism), 571.0 (Alcoholic cirrhosis of the liver), E860 (Accidental poisoning by alcohol).

Crude rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes 291.0 (Alcohol withdrawal delirium), 291.1 (Alcohol

amnestic syndrome), 291.2 (Other alcoholic dementia), 291.3 (Alcohol withdrawal hallucinosis), 291.4 (Idiosyncratic alcohol intoxication), 291.5 (Alcoholic jealousy), 291.8 (Other specified alcoholic psychosis), 291.9 (Unspecified alcoholic psychosis), 303 (Alcohol dependence syndrome), 305.0 (Alcohol abuse), 357.5 (Alcoholic polyneuropathy); 425.5 (Alcoholic cardiomyopathy); 535.3 (Alcoholic gastritis); 571.0 (Alcoholic fatty liver); 571.1 (Acute alcoholic hepatitis); 571.2 (Alcoholic cirrhosis of liver); 571.3 (Alcoholic liver damage, unspecified); 790.3 (Excessive blood level of alcohol); E860.0 (Alcoholic beverages); E860.1 (Other and unspecified ethyl alcohol and its products); E860.2 (Methyl alcohol); E860.3 (Isopropyl alcohol); E860.4 (Fusel oil); E860.8 (Other specified alcohols); E860.9 (Unspecified alcohol).

Crude rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes E24.4 (Alcohol-induced pseudo-Cushing syndrome); F10 (Mental and behavioural disorders due to abuse of alcohol); G31.2 (Degeneration of nervous system due to alcohol); G62.1 (Alcoholic polyneuropathy); G72.1 (Alcoholic myopathy); I42.6 (Alcoholic cardiomyopathy); K29.2 (Alcoholic gastritis); K70 (Alcoholic liver disease); K85.2 (Alcohol-induced acute pancreatitis); K86.0 (Alcohol-induced chronic pancreatitis); O35.4 (Maternal care for (suspected) damage to fetus from alcohol); P04.3 (Newborn affected by maternal use of alcohol); Q86.0 (Fetal alcohol syndrome (dysmorphic)); R78.0 (Finding of alcohol in blood); X45 (Accidental poisoning by and exposure to alcohol); and Y15 (Poisoning by and exposure to alcohol, undetermined intent).

Drug-Related Deaths

Crude rates from 1900 to 1948 are from Robert D. Grove and Alice M. Hetzel (1968). "Vital Statistics Rates in the United States 1940-1960." Table 65. https://www.cdc.gov/nchs/data/vsus/vsrates1940_60.pdf. Includes ICD Codes 175 from 1900 to 1909; 165 from 1910 to 1920; 177 from 1921 to 1929; and 179 from 1930 to 1948. These generally reflect deaths from acute poisoning (other than from gases). Adding chronic poisoning changes the levels modestly but does not affect the trend.

Crude rates from 1949 to 1960 include ICD Codes 323 and E870-E878 and are from National Center for Health Statistics (1951). "Vital Statistics of the United States, 1949. Part I, Natality, Mortality, Marriage, Divorce, Morbidity, and Life Table Data for the United States. General Tables by Place of Occurrence with Supplemental Tables for Hawaii, Puerto Rico, Virgin Islands and Alaska." https://www.cdc.gov/nchs/data/vsus/VSUS_1949_1.pdf and the other sources listed under Alcohol-Related Deaths, above, for the same years.

Crude rates from 1961 to 1967 include ICD Codes 323 and E870-E878 and are from National Center for Health Statistics (1964). "Vital Statistics of the United States, 1961. Volume II, Mortality, Part A." https://www.cdc.gov/nchs/data/vsus/VSUS_1961_2A.pdf and the other sources listed under Alcohol-Related Deaths, above, for the same years.

Crude rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes 304 (Drug dependence), E850-E859 (Accidental poisoning by drugs and medicaments), E980.0 (Barbituric acid and derivatives (drug overdose - undetermined intent)), E980.1 (Salicylates and congeners (drug overdose -undetermined intent)), E980.2 (Psychotherapeutic agents (drug overdose - undetermined intent)), E980.3 (Other and unspecified drugs (drug overdose - undetermined intent)).

Crude rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes 292 (Drug psychoses), 304 (Drug dependence), 305.2 (Cannabis abuse), 305.3 (Hallucinogen abuse); 305.4 (Barbiturate and similarly acting sedative or hypnotic abuse); 305.5 (Opioid abuse); 305.6 (Cocaine abuse); 305.7 (Amphetamine or related acting sympathomimetic abuse); 305.8 (Antidepressant type abuse); 305.9 (Other, mixed, or unspecified drug abuse); E850-E858 (Accidental poisoning by drugs, medicinal substances, and biologicals), E980.0 (Analgesics, antipyretics, and antirheumatics), E980.1 (Barbiturates), E980.2 (Other sedatives and hypnotics), E980.3 (Tranquilizers and other psychotropic agents), E980.4 (Other specified drugs and medicinal substances), E980.5 (Unspecified drug or medicinal substance).

Crude rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes F11 (Mental and behavioural disorders due to use of opioids), F12 (Mental and behavioural disorders due to use of cannabinoids), F13 (Mental and behavioural disorders due to use of sedatives or hypnotics), F14 (Mental and behavioural disorders due to use of cocaine), F15 (Mental and behavioural disorders due to use of other stimulants, including caffeine), F16 (Mental and behavioural disorders due to use of hallucinogens), X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics), X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified), X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified), X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system), X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances), Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent), Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent), Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent), Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent), Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent).

OVERALL AGE-ADJUSTED RATES

Suicides

Age-adjusted rates from 1900 to 1949 are from National Center for Health Statistics. "HIST293. Age-Adjusted Death Rates for Selected Causes by Race and Sex Using Year 2000 Standard Population: Death Registration States, 1900-32 and United States 1933-49." https://www.cdc.gov/nchs/data/dvs/hist293_1900_49.pdf. Includes ICD Codes 155-163 from 1900 to 1920; 165-174 from 1921 to 1929; 163-171 from 1930 to 1938; 163 and 164 from 1939 to 1948; and E963 and E970-E979 in 1949.

Age-adjusted rates from 1950 to 1959 are from National Center for Health Statistics. "HIST293. Age-Adjusted Death Rates for Approximately 64 Selected Causes, by Race and Sex: United States, 1950-59." https://www.cdc.gov/nchs/data/dvs/hist293_1950_59.pdf. Includes ICD Codes E963 and E970-E979.

Age-adjusted rates from 1960 to 1967 are from National Center for Health Statistic. "HIST293. Age-Adjusted Death Rates for 60 Selected Causes, by Race and Sex Using 2000 Standard Population: United States, 1960-67." https://www.cdc.gov/nchs/data/mortab/aadr6067.pdf. Includes ICD Codes E963 and E970-E979.

Age-adjusted rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes E950-E959.

Age-adjusted rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes E950-E959.

Age-adjusted rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes X60-X84 and Y87.0.

Alcohol-Related Deaths

Age-adjusted rates from 1959 to 1967 were computed directly by SCP staff, using annual CDC mortality microdata and intercensal population estimates. For the mortality data, see National Bureau of Economic Research, "Mortality Data—Vital Statistics NCHS' Multiple Cause of Death Data, 1959-2017," https://www.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html. NBER notes that, "The chief of the NCHS mortality branch has said that while the 1959-1967 files are generally ok, they have not been rigorously verified. 'Counts by selected causes and demographic groups seem to match up with VSUS, but because in some cases these files had to be reconstructed and pieced together from different sources-some were damaged or lost-we cannot at this time be certain as to their accuracy.'" Denominator population data used for rate calculation from CDC, "Population by age groups, race, and sex for the Death Registration

States, 1900-32, and for the United States, 1933-59," https://www.cdc.gov/nchs/data/dvs/pop0059.pdf, and "Intercensal Population by age groups, race, and sex for 1960-97," https://www.cdc.gov/nchs/data/dvs/pop6097.pdf. Data are age-adjusted to the 2000 standard population using 11 discrete age groups, as detailed in the report, "Age Standardization of Death Rates: Implementation of the Year 2000 Standard," https://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_03.pdf. Included are ICD-7 Codes 307, 322, 581.1, E880.

Age-adjusted rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes 291.0 (Delirium tremens), 291.1 (Korsakov's psychosis (alcoholic)), 291.2 (Other alcoholic hallucinosis), 291.3 (Alcoholic paranoia), 291.9 (Other and unspecified), 303.0 (Episodic excessive drinking), 303.1 (Habitual excessive drinking), 303.2 (Alcoholic addiction), 303.9 (Other and unspecified alcoholism), 571.0 (Alcoholic cirrhosis of the liver), E860 (Accidental poisoning by alcohol).

Age-adjusted rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes 291.0 (Alcohol withdrawal delirium), 291.1 (Alcohol amnestic syndrome), 291.2 (Other alcoholic dementia), 291.3 (Alcohol withdrawal hallucinosis), 291.4 (Idiosyncratic alcohol intoxication), 291.5 (Alcoholic jealousy), 291.8 (Other specified alcoholic psychosis), 291.9 (Unspecified alcoholic psychosis), 303 (Alcohol dependence syndrome), 305.0 (Alcohol abuse), 357.5 (Alcoholic polyneuropathy); 425.5 (Alcoholic cardiomyopathy); 535.3 (Alcoholic gastritis); 571.0 (Alcoholic fatty liver); 571.1 (Acute alcoholic hepatitis); 571.2 (Alcoholic cirrhosis of liver); 571.3 (Alcoholic liver damage, unspecified); 790.3 (Excessive blood level of alcohol); E860.0 (Alcoholic beverages); E860.1 (Other and unspecified ethyl alcohol and its products); E860.2 (Methyl alcohol); E860.3 (Isopropyl alcohol); E860.4 (Fusel oil); E860.8 (Other specified alcohols); E860.9 (Unspecified alcohol).

Age-adjusted rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes E24.4 (Alcohol-induced pseudo-Cushing syndrome); F10 (Mental and behavioural disorders due to abuse of alcohol); G31.2 (Degeneration of nervous system due to alcohol); G62.1 (Alcoholic polyneuropathy); G72.1 (Alcoholic myopathy); I42.6 (Alcoholic cardiomyopathy); K29.2 (Alcoholic gastritis); K70 (Alcoholic liver disease); K85.2 (Alcohol-induced acute pancreatitis); K86.0 (Alcohol-induced chronic pancreatitis); O35.4 (Maternal care for (suspected) damage to fetus from alcohol); P04.3 (Newborn affected by maternal use of alcohol); Q86.0 (Fetal alcohol syndrome (dysmorphic)); R78.0 (Finding of alcohol in blood); X45 (Accidental poisoning by and exposure to alcohol); and Y15 (Poisoning by and exposure to alcohol, undetermined intent).

Drug-Related Deaths

Age-adjusted rates from 1959 to 1967 were computed directly by SCP staff, using annual CDC mortality microdata and intercensal population estimates. For the

mortality data, see National Bureau of Economic Research, "Mortality Data—Vital Statistics NCHS' Multiple Cause of Death Data, 1959-2017," https://www.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html. NBER notes that, "The chief of the NCHS mortality branch has said that while the 1959-1967 files are generally ok, they have not been rigorously verified. 'Counts by selected causes and demographic groups seem to match up with VSUS, but because in some cases these files had to be reconstructed and pieced together from different sources-some were damaged or lost-we cannot at this time be certain as to their accuracy.'" Denominator population data used for rate calculation from CDC, "Population by age groups, race, and sex for the Death Registration States, 1900-32, and for the United States, 1933-59," https://www.cdc.gov/nchs/data/dvs/pop0059.pdf, and "Intercensal Population by age groups, race, and sex for 1960-97," https://www.cdc.gov/nchs/data/dvs/pop6097.pdf. Data are age-adjusted to the 2000 standard population using 11 discrete age groups, as detailed in the report, "Age Standardization of Death Rates: Implementation of the Year 2000 Standard," https://www.cdc.gov/nchs/data/nvsr/nvsr47/nvs47_03.pdf. Included are ICD-7 Codes 323, E870-878.

Age-adjusted rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html). Included are ICD-8 Codes 304 (Drug dependence), E850-E859 (Accidental poisoning by drugs and medicaments), E980.0 (Barbituric acid and derivatives (drug overdose - undetermined intent)), E980.1 (Salicylates and congeners (drug overdose -undetermined intent)), E980.2 (Psychotherapeutic agents (drug overdose - undetermined intent)), E980.3 (Other and unspecified drugs (drug overdose - undetermined intent)).

Age-adjusted rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html). Included are ICD-9 Codes 292 (Drug psychoses), 304 (Drug dependence), 305.2 (Cannabis abuse), 305.3 (Hallucinogen abuse); 305.4 (Barbiturate and similarly acting sedative or hypnotic abuse); 305.5 (Opioid abuse); 305.6 (Cocaine abuse); 305.7 (Amphetamine or related acting sympathomimetic abuse); 305.8 (Antidepressant type abuse); 305.9 (Other, mixed, or unspecified drug abuse); E850-E858 (Accidental poisoning by drugs, medicinal substances, and biologicals), E980.0 (Analgesics, antipyretics, and antirheumatics), E980.1 (Barbiturates), E980.2 (Other sedatives and hypnotics), E980.3 (Tranquilizers and other psychotropic agents), E980.4 (Other specified drugs and medicinal substances), E980.5 (Unspecified drug or medicinal substance).

Age-adjusted rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). Included are ICD-10 Codes F11 (Mental and behavioural disorders due to use of opioids), F12 (Mental and behavioural disorders due to use of cannabinoids), F13 (Mental and behavioural disorders due to use of sedatives or hypnotics), F14 (Mental and behavioural disorders due to use of cocaine), F15 (Mental and behavioural disorders due to use of other stimulants, including caffeine), F16 (Mental and behavioural disorders due to use of hallucinogens),

X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics), X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified), X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified), X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system), X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances), Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent), Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent), Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent), Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent), Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent).

CRUDE RATES BY AGE AND FOR NON-HISPANIC WHITES AGES 45-54

As noted in our report, it is not possible to separate Hispanic and non-Hispanic whites prior to 1999 so our estimates include Hispanic whites from 1900 to 1997. Our checks indicate this has a minimal impact on the trends and levels we report. We looked separately at trends for all whites (including Hispanics) from 1999 to 2017. The difference in levels in 1999 is fairly small, and the rise thereafter is only somewhat less steep than when Hispanics are excluded.

The 1962 and 1963 rates for whites exclude New Jersey, which did not report deaths by race in those years.

Suicides and All-Cause Mortality

Crude rates from 1900 to 1939 are from National Center for Health Statistics. "HIST 290. Death Rates from Selected Causes, by 10-year Age Groups, Race, and Sex: Death-Registration States, 1900-1932, and United States, 1933-1939." https://www.cdc.gov/nchs/data/dvs/hist290_0039.pdf.

Crude rates from 1940 to 1949 are from National Center for Health Statistics. "Table 2. Death Rates from Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1940-1949." https://www.cdc.gov/nchs/data/dvs/mx194049.pdf.

Crude rates from 1950 to 1959 are from National Center for Health Statistics. "HIST 290F. Death Rates for Approximately 64 Selected Causes, by 10-Year Age Groups,

Race, and Sex: United States, 1950-59." https://www.cdc.gov/nchs/data/dvs/mx1950_59.pdf.

Crude rates from 1960 to 1967 are from National Center for Health Statistics. "Table 290. Death Rates for 60 Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1960-67." https://www.cdc.gov/nchs/data/dvs/mx196067.pdf.

Crude rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-78 (https://wonder.cdc.gov/cmf-icd8.html).

Crude rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-98 (https://wonder.cdc.gov/cmf-icd9.html).

Crude rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-present (https://wonder.cdc.gov/ucd-icd10.html).

Alcohol-Related Deaths and Drug-Related Deaths

Crude rates from 1959 to 1967 were computed directly by SCP staff, using annual CDC mortality microdata and intercensal population estimates. For the mortality data, see National Bureau of Economic Research, "Mortality Data—Vital Statistics NCHS' Multiple Cause of Death Data, 1959-2017," https://www.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html. NBER notes that, "The chief of the NCHS mortality branch has said that while the 1959-1967 files are generally ok, they have not been rigorously verified. 'Counts by selected causes and demographic groups seem to match up with VSUS, but because in some cases these files had to be reconstructed and pieced together from different sources-some were damaged or lost-we cannot at this time be certain as to their accuracy.'" Denominator population data used for rate calculation from CDC, "Population by age groups, race, and sex for the Death Registration States, 1900-32, and for the United States, 1933-59," https://www.cdc.gov/nchs/data/dvs/pop0059.pdf, and "Intercensal Population by age groups, race, and sex for 1960-97," https://www.cdc.gov/nchs/data/dvs/pop6097.pdf.

Crude rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-78 (https://wonder.cdc.gov/cmf-icd8.html).

Crude rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html).

Crude rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html).

CRUDE AND AGE-ADJUSTED RATES BY SEX AND BY RACE

The racial categories available in the data change over time. Between 1900 and 1967, the distinction is simply between whites and nonwhites. From 1968 to 1998, CDC WONDER distinguishes between whites, blacks, and others. Since 1999, the categories in CDC WONDER have included Hispanics and non-Hispanic whites, blacks, American Indians and Alaska Natives, and Asians and Pacific Islanders. The 1962 and 1963 rates by race exclude New Jersey, which did not report deaths by race in those years.

Suicides

Crude rates from 1900 to 1939 are from National Center for Health Statistics. "HIST 290. Death Rates from Selected Causes, by 10-year Age Groups, Race, and Sex: Death-Registration States, 1900-1932, and United States, 1933-1939." https://www.cdc.gov/nchs/data/dvs/hist290_0039.pdf.

Crude rates from 1940 to 1949 are from National Center for Health Statistics. "Table 2. Death Rates from Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1940-1949." https://www.cdc.gov/nchs/data/dvs/mx194049.pdf.

Crude rates from 1950 to 1959 are from National Center for Health Statistics. "HIST 290F. Death Rates for Approximately 64 Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1950-59." https://www.cdc.gov/nchs/data/dvs/mx1950_59.pdf.

Crude rates from 1960 to 1967 are from National Center for Health Statistics. "Table 290. Death Rates for 60 Selected Causes, by 10-Year Age Groups, Race, and Sex: United States, 1960-67." https://www.cdc.gov/nchs/data/dvs/mx196067.pdf.

Age-adjusted rates from 1900 to 1949 are from National Center for Health Statistics. "HIST293. Age-Adjusted Death Rates for Selected Causes by Race and Sex Using Year 2000 Standard Population: Death Registration States, 1900-32 and United States 1933-49." https://www.cdc.gov/nchs/data/dvs/hist293_1900_49.pdf.

Age-adjusted rates from 1950 to 1959 are from National Center for Health Statistics. "HIST293. Age-Adjusted Death Rates for Approximately 64 Selected Causes, by Race and Sex: United States, 1950-59." https://www.cdc.gov/nchs/data/dvs/hist293_1950_59.pdf.

Age-adjusted rates from 1960 to 1967 are from National Center for Health Statistic. "HIST293. Age-Adjusted Death Rates for 60 Selected Causes, by Race and Sex Using 2000 Standard Population: United States, 1960-67." https://www.cdc.gov/nchs/data/mortab/aadr6067.pdf.

Crude and age-adjusted rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-1978 (https://wonder.cdc.gov/cmf-icd8.html).

Crude and age-adjusted rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html).

Age-adjusted rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html).

Alcohol-Related Deaths and Drug-Related Deaths

Crude and age-adjusted rates from 1959 to 1967 were computed directly by SCP staff, using annual CDC mortality microdata and intercensal population estimates. For the mortality data, see National Bureau of Economic Research, "Mortality Data—Vital Statistics NCHS' Multiple Cause of Death Data, 1959-2017," https://www.nber.org/data/vital-statistics-mortality-data-multiple-cause-of-death.html. NBER notes that, "The chief of the NCHS mortality branch has said that while the 1959-1967 files are generally ok, they have not been rigorously verified. 'Counts by selected causes and demographic groups seem to match up with VSUS, but because in some cases these files had to be reconstructed and pieced together from different sources-some were damaged or lost-we cannot at this time be certain as to their accuracy.'" Denominator population data used for rate calculation from CDC, "Population by age groups, race, and sex for the Death Registration States, 1900-32, and for the United States, 1933-59," https://www.cdc.gov/nchs/data/dvs/pop0059.pdf, and "Intercensal Population by age groups, race, and sex for 1960-97," https://www.cdc.gov/nchs/data/dvs/pop6097.pdf. The latter source does not provide nonwhite population estimates for 1962 or 1963, because New Jersey did not report data by race. Since deaths cannot be divided between whites and nonwhites in New Jersey in those two years, we estimate a population denominator for those two years that excludes New Jersey residents. To do so, we estimate the share of the 1962 and 1963 national population comprised of Americans other than New Jersey residents, using https://www2.census.gov/programs-surveys/popest/tables/1980-1990/state/asrh/st6070ts.txt. We then apply this fraction to the national 1962 and 1963 population totals in https://www.cdc.gov/nchs/data/dvs/pop6097.pdf. That document also provides the number of whites who are not from New Jersey in each of those years. We subtract non-New-Jersey whites from the non-New-Jersey total population to get non-New-Jersey nonwhites in each year. Finally, we estimate the number of non-New-Jersey deaths by race using the microdata and divide by the non-New-Jersey population by race.

Crude and age-adjusted rates from 1968 to 1978 are from the CDC WONDER Online Database, Compressed Mortality Files, 1968-78 (https://wonder.cdc.gov/cmf-icd8.html).

Crude and age-adjusted rates from 1979 to 1998 are from the CDC WONDER Online Database, Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html).

Crude and age-adjusted rates from 1999 to 2017 are from the CDC WONDER Online Database, Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html).

CRUDE AND AGE-ADJUSTED RATES USING CASE-DEATON DEFINITIONS

As noted in our report, in our analyses we modify the definition of "deaths of despair" used by Anne Case and Angus Deaton in their research, as well as the definitions of the subcomponents. (For their definitions, see the data appendix to their "Mortality and Morbidity in the 21st Century" at https://www.brookings.edu/wp-content/uploads/2017/03/casedeaton_sp17_dataappendix.pdf.)

While our suicide rates are estimated exactly the same as theirs, we modify what kinds of deaths are included in our categories of alcohol- and drug-related deaths. Case and Deaton include within deaths of despair "alcoholic liver disease and cirrhosis," but they exclude a number of diseases and mental disorders explicitly recorded as linked to alcohol abuse, and they group deaths from alcohol poisoning with drug overdoses. We include in "alcohol-related deaths" these other categories, based in part on a CDC document for guidance (https://www.cdc.gov/niosh/ltas/pdf/niosh-119-table-2007.pdf). See the details above in the section on overall crude mortality rates from alcohol-related deaths. At the same time, many cirrhosis deaths are unrelated to alcoholism, so we include in alcohol-related deaths only those explicitly linked to alcohol.

In addition to excluding alcohol poisoning deaths from our "drug-related deaths"—Case and Deaton's category is comprised of accidental and intent undetermined drug overdose and alcohol poisoning—we include a number of mental disorders related to drug abuse. See the details above in the section on overall crude mortality rates from drug-related deaths.

For comparative purposes, we provide long-term estimates consistent with their definitions. Since Case and Deaton are tracking recent trends, they rely solely on ICD-9 and ICD-10 codes, as follows:

- Suicide: ICD-9 codes E950-E959 and ICD-10 codes X60-84, Y87.0.
- Poisoning involving "accidental and intent undetermined drug overdose and alcohol poisoning": ICD-9 codes E850-E860 and E980, and ICD-10 codes X40-45, Y10-15, Y45, Y47, and Y49.
- Alcoholic liver disease and cirrhosis: ICD-9 code 571 and ICD-10 codes K70, K73, and K74.

To extend the Case-Deaton series back to 1968, we estimate crude and age-adjusted rates for the entire population and crude rates for whites between the ages of 45 and 54 using the CDC WONDER Online Database, including the Compressed Mortality Files, 1968-78 (https://wonder.cdc.gov/cmf-icd8.html), the Compressed Mortality Files, 1979-1998 (https://wonder.cdc.gov/cmf-icd9.html), and the Detailed Mortality Files, 1999-2017 (https://wonder.cdc.gov/ucd-icd10.html). From 1968 to 1978, we use ICD-8 codes E950-E959 for suicides, code 571 for alcoholic liver disease and cirrhosis, and codes E850-E860 and E980 for poisonings. From 1979 to 2017, we use the same ICD-9 and ICD-10 definitions as them. As noted above, prior to 1999, Hispanic whites cannot be separated from non-Hispanic whites, so all whites are included.

TRENDS IN UNHAPPINESS (PERCENT "NOT TOO HAPPY")

Figure 8 of the paper shows trends in unhappiness from four sources. (See Table 2, below, for the individual data points.) The question wording and response options for all four sources is the same: "Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?" Figure 8 in the paper and Table 2 below display the percent responding "not too happy." The 1963 and 1965 estimates are from Survey Research Service Amalgam and the 1972 through 2016 estimates are from the General Social Survey. The National Opinion Research Center (NORC) conducted the surveys for both SRSA and the GSS. Pew Research Center estimates run from 1996 to 2018. Gallup estimates run from 1977 to 2008. All estimates except from the GSS were obtained from the Roper Center's iPoll database. The Gallup estimate for 1981 averages estimates from three surveys that year. The Pew estimates are averages from two surveys each in 2003, 2005, 2008, 2009, 2012, and 2016; from four surveys in 2011; and from five in 2014. GSS estimates were obtained from the GSS Data Explorer online tool on NORC's website. We replace GSS estimates for 1972, 1980, and 1985-87 with ones from Betsey Stevenson and Justin Wolfers (2008). "Happiness Inequality in the United States." Journal of Legal Studies 37: S33-S79, Table A1. Their estimates correct for the effects of survey changes that artificially affected responses to the happiness question.

Table 2. Trends in Unhappiness

Year	Gallup	GSS	Pew	SRSA
1960				
1961				
1962				16

1963				17
1964				
1965				
1966				
1967				
1968				
1969				
1970				
1971				
1972		13.6		
1973		12.3		
1974		12.5		
1975		13		
1976		12.2		
1977	10	11		
1978		8.4		
1979				
1980		11.6		
1981	8			
1982	6	11.7		
1983		12.1		
1984		11.6		

1985		8.6		
1986		9.2		
1987		9.7		
1988		8.2		
1989		8.8		
1990		7.7		
1991	10	9.5		
1992	9			
1993		9.7		
1994		11.3		
1995				
1996	5	10.5	11	
1997				
1998	5	10.9		
1999				
2000	5	9.6		
2001	11			
2002	6	11.3		
2003	4		16.5	
2004	6	11.7		
2005	8		14.5	
2006	4	10.6	12	

2007	6			
2008	8	13.3	15.5	
2009			14.5	
2010		14.2	16	
2011			16.75	
2012		12.3	18.5	
2013			17	
2014		11.6	14.2	
2015				
2016		14	14	
2017				
2018			17	

ENDNOTES

1. Anne Case and Angus Deaton (2017). "Mortality and Morbidity in the 21st Century." Brookings Papers on Economic Activity. Spring 2017. https://www.brookings.edu/wp-content/uploads/2017/08/casetextsp17bpea.pdf.

2. We looked separately at trends for all whites (including Hispanics) from 1999 to 2017. The difference in levels in 1999 is fairly small, and the rise thereafter is only somewhat less steep than when Hispanics are excluded.

3. Mortality data are available for the entire continental United States beginning in 1933, and data for Alaska and Hawaii are included beginning in 1959 and 1960, respectively. Our analyses indicate that the changing number of states included in the data does not meaningfully affect the long-term trends we estimate. For instance, in 1933, the overall crude death rate for the lower 48 states was 1,068 per 100,000, while it was 1,122 per 100,000 for the 11 states included in the data in both 1900 and 1933. Similarly, the death rates from suicide, alcoholism, and cirrhosis of the liver were 16, 3, and 7 per 100,000 for the lower 48 states and 18, 4, and 9 per 100,000 for the original 11 states. (Sources: https://www.cdc.gov/nchs/data/vsus/vsrates1900_40.pdf, https://www.cdc.gov/nchs/data/vsushistorical/mortstatsh_1900-1904.pdf, https://www.cdc.gov/nchs/data/vsushistorical/mortstatsh_1933.pdf.) The 1962 and 1963 rates for whites and by race exclude New Jersey.

4. Emile Durkheim (1897). Le suicide. (Paris: Felix Alcan). For an analysis of suicide and the two world wars, see David Lester (1994). "Suicide Rates before, during, and after the World Wars." European Psychiatry 9: 262-64.

5. Angela K. Dills and Jeffrey K. Miron (2004). "Alcohol Prohibition and Cirrhosis." American Law and Economics Review 6(2): 285-318.

6. Ibid.

7. For alcohol consumption trends, see Sarah P. Haughwout, Robin A. LaVallee, and I-Jen P. Castle (2015). "Apparent Per Capita Alcohol Consumption: National, State, and Regional Trends, 1977-2013." National Institute on Alcohol Abuse and Alcoholism, Surveillance Report #102, Table 1. https://pubs.niaaa.nih.gov/publications/surveillance102/CONS13.pdf. Originally accessed at Hannah Ritchie and Max Roser (2018). "Alcohol Consumption." Our World in Data website, "Alcohol consumption in the United States" section. https://ourworldindata.org/alcohol-consumption.

8. Alcohol affordability trends are based on Social Capital Project estimates comparing the Consumer Price Index (CPI-U) for alcoholic beverages (available beginning in 1953 from the Bureau of Labor Statistics at https://www.bls.gov/cpi/data.htm) to nominal per capita disposable personal income (from the Bureau of Economic Analysis, National Income and Product Accounts Table 2.1, at https://apps.bea.gov/iTable/index_nipa.cfm). See also William C. Kerr, Deidre Paterson, Thomas K. Greenfield, Alison Snow Jones, Kerry Anne McGeary, Joseph V. Terza, and Christopher J. Ruhm (2013). "U.S. Alcohol Affordability and Real Tax Rates, 1950-2011." American Journal of Preventive Medicine 44(5): 459-64. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3631317/.

9. David T. Courtwright (2001). Forces of Habit: Drugs and the Making of the Modern World (Cambridge, MA: Harvard University Press). David F. Musto (1999). The American Disease: Origins of Narcotic Control (Oxford: Oxford University Press).

10. Courtwright (2001). Gopal Das (1993). "Cocaine Abuse in North America: A Milestone in History." Journal of Clinical Pharmacology 33(4): 296-310.

11. Social Capital Project (2018). "The Numbers behind the Opioid Crisis: Revised Utah Edition." United States Joint Economic Committee, Office of the Vice Chairman. https://www.jec.senate.gov/public/index.cfm/republicans/analysis?ID=56F20AB6-A971-4EAC-A495-DE552F4F03C5.

12. The question wording and response options for all four sources is the same: “Taken all together, how would you say things are these days—would you say that you are very happy, pretty happy, or not too happy?” Figure 8 displays the percent responding “not too happy.” The 1963 and 1965 estimates are from Survey Research Service Amalgam and the 1972 through 2016 estimates are from the General Social Survey. The National Opinion Research Center (NORC) conducted the surveys for both SRSA and the GSS. Pew Research Center estimates run from 1996 to 2018. Gallup estimates run from 1977 to 2008. All estimates except from the GSS were obtained from the Roper Center’s iPoll database. The Gallup estimate for 1981 averages estimates from three surveys that year. The Pew estimates are averages from two surveys each in 2003, 2005, 2008, 2009, 2012, and 2016; from four surveys in 2011; and from five in 2014. GSS estimates were obtained from the GSS Data Explorer online tool on NORC’s website. We replace GSS estimates for 1972, 1980, and 1985-87 with ones from Betsey Stevenson and Justin Wolfers (2008). “Happiness Inequality in the United States.” Journal of Legal Studies 37: S33-S79, Table A1. Their estimates correct for the effects of survey changes that artificially affected responses to the happiness question.

13. Social Capital Project (2018). “All the Lonely Americans?” US Joint Economic Committee, Office of the Vice Chairman. https://www.jec.senate.gov/public/index.cfm/republicans/2018/8/all-the-lonely-americans.

14. For social capital trends, see Social Capital Project (2017). “What We Do Together: The State of Associational Life in America.” US Joint Economic Committee, Office of the Vice Chairman. https://www.jec.senate.gov/public/index.cfm/republicans/analysis?ID=82AEEDDA-B550-481E-BA31-9623B85A20D6.

The Numbers Behind the Opioid Crisis

Revised Utah Edition

SCP REPORT NO. 4-18 | NOVEMBER 2018

A NOTE FROM SENATOR LEE ON THE REVISED UTAH EDITION

In 2017, I assumed the Vice Chairmanship of the Joint Economic Committee (JEC) of Congress. I knew that I wanted to use this opportunity to do something different. Many of our biggest challenges today (including our economic challenges) are rooted in changes that are fundamentally social in nature: the breakdown of the family, the withering of civil society, the retreat from community life, and the evaporation of trust in our institutions. I created the Social Capital Project within the JEC in order to shine a light on the importance and state of associational life in America. Over the past two years, the project has released a number of reports and other products assessing our social assets and deficits.

One of those reports explored the opioid crisis, one of the most pressing issues of our time. Who succumbs to addiction—and is therefore at risk of dying from a drug overdose—is affected by a variety of factors, but many of them are social. Married men are much less likely to die of an opioid overdose than single men, perhaps because of the support that marriage provides them. Adults who experience childhood trauma—often at the hands of a family member—are also especially at risk of addiction.

This revised edition of that report, "The Numbers behind the Opioid Crisis," coincides with the 2018 Solutions Summit I have organized to address Utah's frighteningly high opioid mortality rate. It updates a number of estimates from the original report with 2016 data, and it includes a special emphasis on the situation in Utah.

It is my hope that you will find the report to be a valuable resource and that it will help communities in Utah and elsewhere as they develop solutions to this public health emergency.

Senator Mike S. Lee
October 1, 2018

EXECUTIVE SUMMARY

In 2016, roughly 64,000 people died from drug overdoses, and opioids accounted for nearly two-thirds of those deaths.[1] It is difficult to comprehend the full scope and magnitude of the opioids crisis, its causes, and its consequences—for families, communities, and workplaces. But better understanding the challenges it poses is a necessary first step to informed public policy. This report gathers an unprecedented amount of data on the opioids crisis. Key findings include:

Nationally, opioid overdose deaths have risen to an alarming rate

- In 2016, approximately 64,000 people died from drug overdoses, and opioid overdose deaths alone accounted for nearly two-thirds of them.
- Since 1999, opioid-related deaths have quadrupled, and between 2015 and 2016, the number of deaths from fentanyl and other synthetic opioids more than doubled.[2] There is a glimmer of optimism in that it looks like these increases have decelerated over the past year.

In Utah, opioid deaths may have peaked but are still elevated.

- Since 2012, opioid deaths have hovered at around 16 to 17 per 100,000 Utahns. That remains above the national rate of 13 per 100,000.
- While opioid deaths are surging at the national level, because Utah's epidemic has involved primarily prescription opioids, it has not seen the same recent spike.

Opioid-related deaths are shifting to younger demographic groups, typically white, single or divorced, and with relatively less formal education

- In 2015, of the population age 25 and older, 61 percent of Americans were married, and together with widowed Americans made up 68 percent of the population, but accounted for only 28 percent of opioid overdose deaths. In contrast, never-married and divorced Americans made up about 32 percent of the population, but accounted for 71 percent of all opioid overdose deaths.
- In 2015, among those age 25 and older, 33 percent had a bachelor's degree or higher, but they accounted for only 9 percent of all opioid overdose deaths. In stark contrast, 40 percent had no more than a high school diploma or equivalent, but they accounted for 68 percent of opioid overdose deaths.

The oversupply and abuse of legal prescription pain relievers is at the heart of the crisis

- In the 1960s, four out of five heroin addicts began with heroin, but by the 2000s three out of four heroin addicts began either with prescription opioids obtained legally through a doctor's prescription or illegally from someone else's prescription.[3] Drugs freely given by friends and family

- constitute over 40 percent of prescription pain relievers taken by abusers of those drugs.
- In 2016, nearly 215 million prescriptions for opioids were filled in the United States. Data analyzed by the CDC show that 61.8 million patients received those prescriptions, or 19.1 percent of the U.S. population.[4]
- In the median U.S. county, physicians prescribed an amount of opioids in 2015 equivalent to a nearly two-week supply of oxycodone for every resident.
- A majority of opioid overdose deaths are a result of combining opioids or combining them with other central nervous system agents, including benzodiazepines (often used to treat anxiety and sleep problems).

Illegally obtained opioids have rapidly become a major problem

- As prescription rates for opioids have declined, there has been a growing threat from illegal opioids, such as heroin and synthetic opioids like fentanyl (which is 25 to 50 times more powerful than heroin). Fentanyl is often disguised in a substance that resembles heroin or in counterfeit prescription pills.
- Fentanyl seizures by law enforcement increased by a factor of six between 2014 and 2016.

Hospitalization for opioids abuse has also risen across geographic, demographic, and socioeconomic groups

- Heroin use and opioid prescription misuse resulting in emergency room visits have been rising in many states and their major metropolitan areas.
- As with prescribing rates, opioid-related inpatient hospital stays are concentrated in Appalachia, the West, and New England.
- In 2014, those aged 25-64 had the highest rates of inpatient stays, and lower income individuals and those in the large metropolitan areas had higher rates of stays than other groups from 2005-2014.

The opioid crisis will affect the next generation for years to come

- Reports of young children overwhelming foster care systems are pouring out of states like Ohio, which since 2010 have witnessed an increase of nearly one-fifth in the number of children placed with relatives or in foster care.[5]
- Between 2009 and 2014, the percent of children nationwide with parental alcohol or drug use as a factor in out-of-home placement rose from 29.4 percent to 35.1 percent.
- New England and the South have the highest rates of neonatal abstinence syndrome (NAS) per 1,000 hospital births. In 2013, according to a CDC study, NAS incidence per 1,000 hospital births was highest in Vermont (33.3) and West Virginia (33.4).[6] The recent rise in NAS has been fueled by opioid addiction.

In 2016, approximately 64,000 people died from drug overdoses.[7] In fact, drug overdoses are now the top cause of accidental death for all Americans under age 50.[8] Opioid overdose deaths alone accounted for nearly two-thirds of drug overdose deaths, and have surpassed the all-time peaks of annual deaths caused (individually) by car crashes, H.I.V., and guns.[9] Today's opioid mortality crisis dwarfs earlier waves in the 1970s and the years around 1990.

More than 20,000 deaths in 2016 were attributable to synthetic opioids like fentanyl (a number that more than doubled over the previous year), over 15,000 were attributable to heroin, and over 14,000 to prescription opioids like oxycodone. Some of these deaths involved multiple opioids, and final numbers have yet to show the proportion of 2016 drug overdose deaths involving opioids. In 2015, however, 33,091 deaths were attributed to opioids, or 63.1 percent of the 52,404 drug overdose deaths in that year.[10] Since 1999, opioid-related deaths have quadrupled.[11] The United States consumes more opioids than any other country by a wide margin, and as a result has the highest opioid-related death rate in the world.[12]

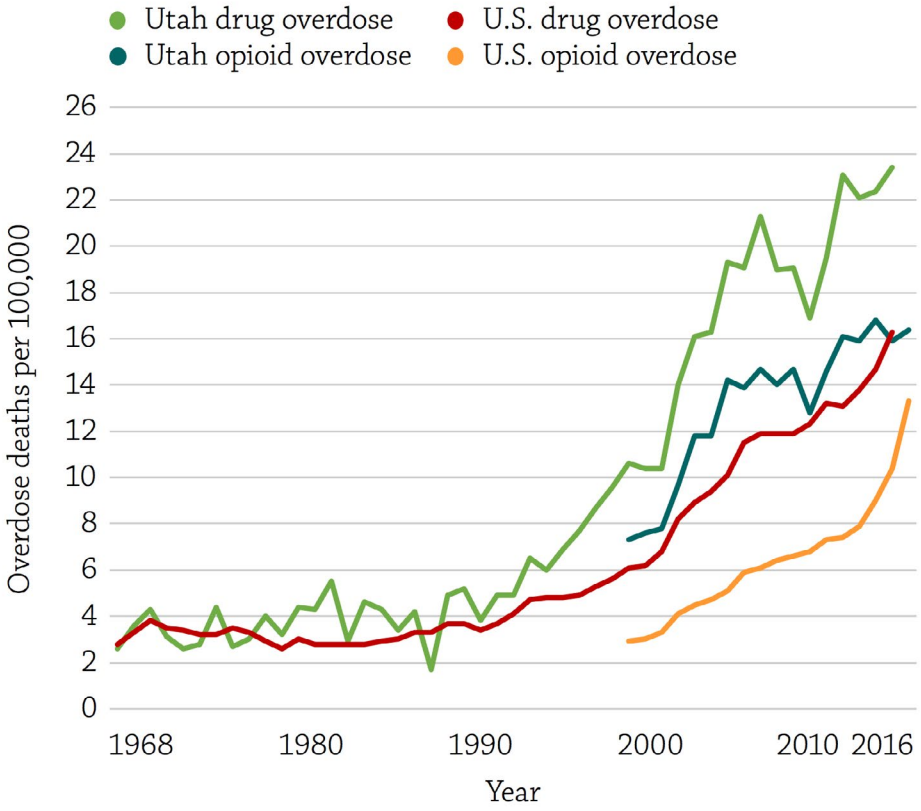
The effects of our opioid crisis on families, communities, and workplaces are far-reaching.[13] For the first time since 1993, life expectancy in the United States declined, with one research paper estimating that opioid overdose deaths accounted for 2.5 months of the 4 months' decline.[14] The increase in opioid-related drug overdose deaths is a significant contributor to the troubling mortality trends that Princeton University economists Anne Case and Angus Deaton identified among white non-Hispanics. It has been linked to labor market outcomes in research by Princeton University economist Alan Krueger. The Joint Economic Committee (JEC) also recently shined a light on this issue in a hearing on the "Economic Aspects of the Opioid Crisis," where a broad range of both causes and consequences of the crisis were discussed.[15]

This data brief gathers together for the first time the available data on the opioids crisis. It is our hope that the Social Capital Project can help inform public policy aimed at addressing what President Trump and his Department of Health and Human Services have declared a national public health emergency.

OPIOID OVERDOSE DEATHS IN AMERICA CONTINUE TO SKYROCKET, BUT IN UTAH THEY MAY HAVE PEAKED

The Social Capital Project's initial post on the opioid crisis showed unintentional drug and opioid overdose death rates since 1968.[16] Figure 1 below shows overdose death rates of all intents over the same time frame. (All rates in this paper are per 100,000 people unless otherwise indicated. For full methodological details to all charts, see the Source Notes at the end of this report.) In 1968, opioid overdose deaths were a small fraction of overall drug overdose deaths, but in 2016 they accounted for the majority of all drug-related deaths.

Figure 1. Ageadjusted overdose death rates (all intents), 1968-2016

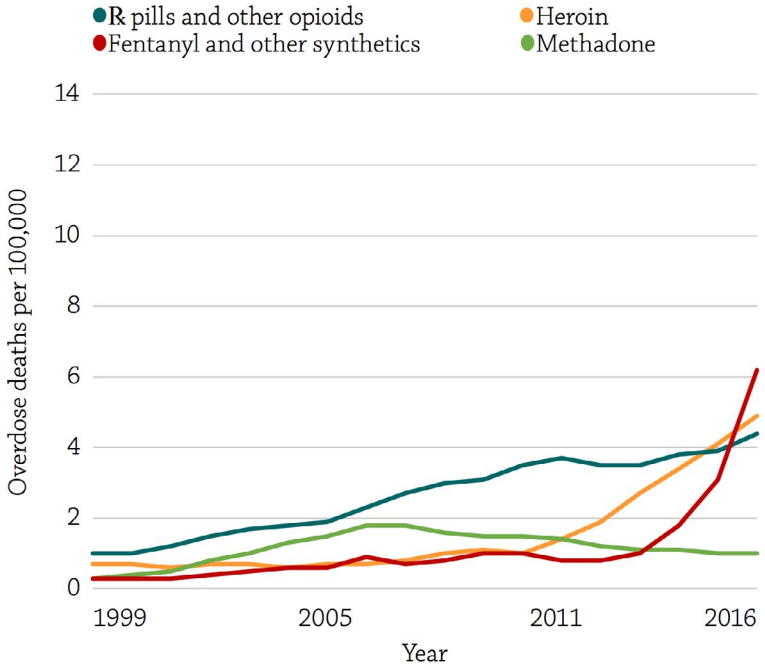


Source: Centers for Disease Control and Prevention (CDC). Includes all deaths, unintended or otherwise. National Vital Statistics System data produced using CDC WONDER's Multiple Cause of Death Module: 1999-2016 (https://wonder.cdc.gov/mcd.html). National Vital Statistics System downloadable Multiple Cause of Death files: 1968-78 and 1979-1998 (https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm). Provided by CDC staff to Social Capital Project.

Figure 1 shows that as of 2016, drug and opioid overdose death rates remained higher in Utah than in the US as a whole. However, it also indicates that in Utah, drug and opioid overdose deaths have plateaued. There has been no discernable trend since 2012, even though nationally, death rates accelerated.

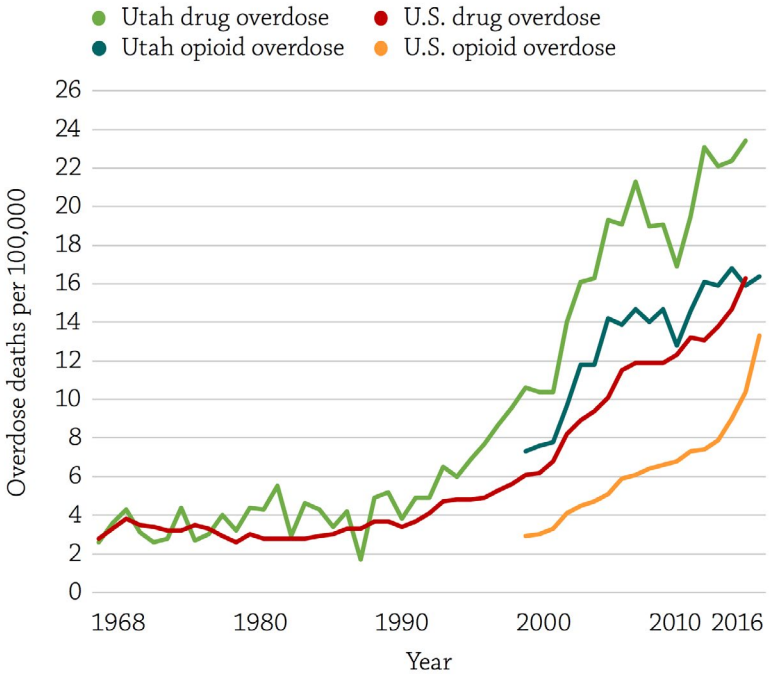
The opioid crisis has worsened recently because of the expanding supply of synthetic opioids that are flooding into illegal drug markets, such as fentanyl (which is 25 to 50 times stronger than heroin), carfentanil (roughly 5,000 times stronger than heroin), and others.[17] Opioid overdose deaths can be classified consistently by type of drug back to 1999. Figure 2a below shows trends in death rates from five categories of opioids: heroin, methadone, "other synthetic opioids" (besides methadone, but including fentanyl), "other natural and semisynthetic opioids" (including oxycodone, hydrocodone, and most opioid prescription painkillers, as well as morphine), and "other and unspecified opioids" (including unidentified opioids). From 2014 to 2016, deaths from these synthetic opioids increased by an astonishing 250 percent, and they accounted for 31 percent of drug overdose deaths in 2016.[18]

Figure 2a. National age-adjusted overdose deaths by opioid type, 1999-2016



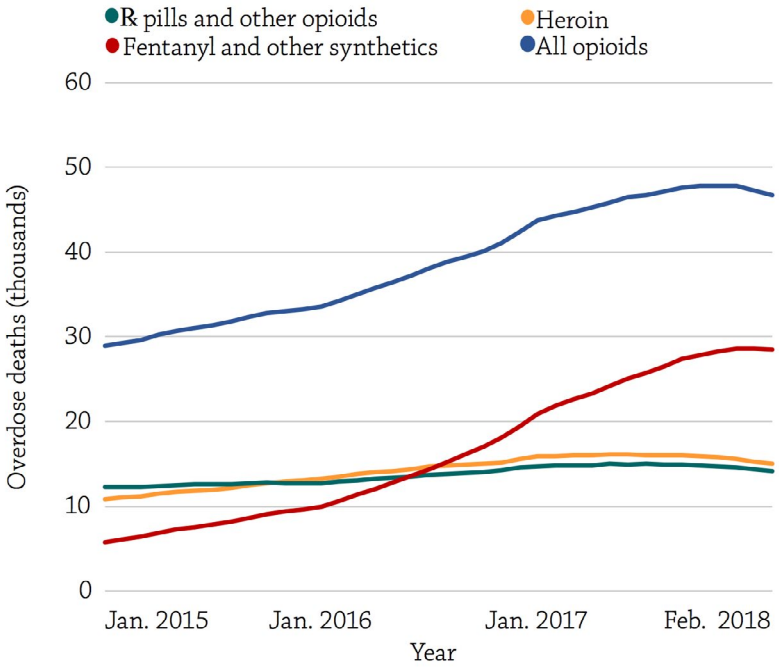
Source: Age-adjusted rates. Includes all deaths, unintended or otherwise. CDC WONDER (https://wonder.cdc.gov).

Figure 2b. Ageadjusted overdose deaths in Utah by opioid type, 1999-2016



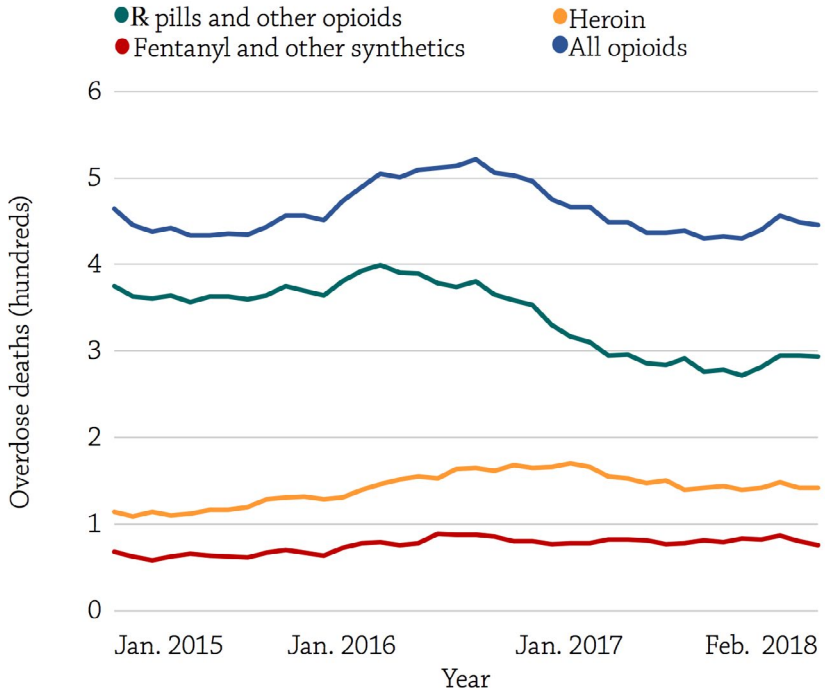
Source: Age-adjusted rates. Includes all deaths, unintended or otherwise. CDC WONDER (https://wonder.cdc.gov).

Figure 2c. National provisional overdose death counts by opioid type, January 2015 to February 2018



Source: Data for overdose deaths for 12 months ending in each month indicated from Provisional Drug Overdose Death Counts, NVSS, accessed at https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm.

Figure 2d. Provisional overdose death counts in Utah by opioid type, January 2015 to February 2018



Source: Data for overdose deaths for 12 months ending in each month indicated from Provisional Drug Overdose Death Counts, NVSS, accessed at https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm.

In Utah, the story is quite different (Figure 2b). Opioid deaths have primarily involved—and continue to primarily involve—prescription drug overdoses. The sharp rise in deaths from synthetic opioids at the national level did not occur in Utah, though heroin deaths continue to rise and exceeded national levels in 2016.

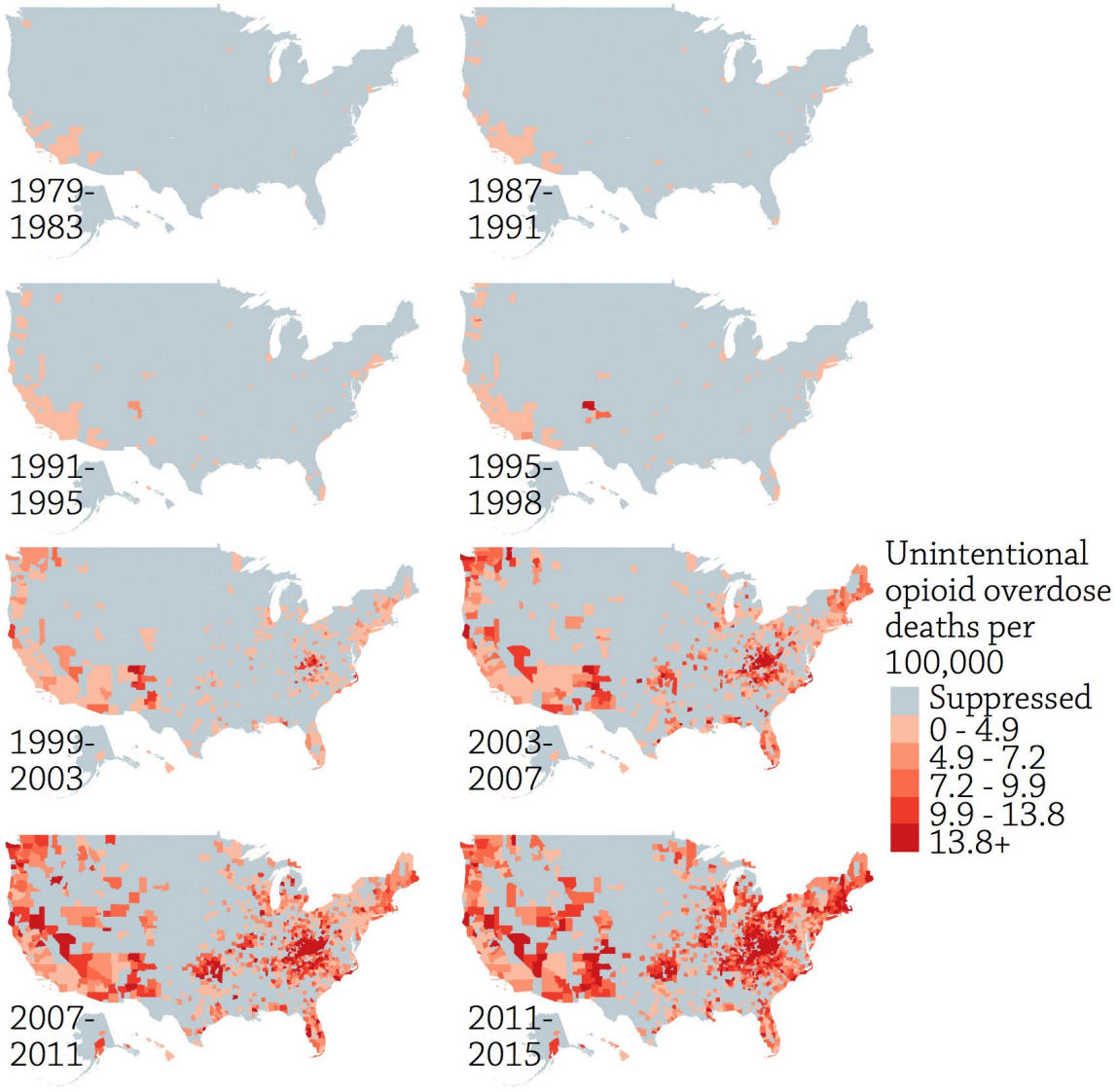
Figures 2c and 2d look at more recent trends through February 2018, for the US and Utah. The charts display for each month back to January 2015 the number of overdose deaths from opioids over the preceding 12 months. In other words, the estimate for February 2018 is for deaths between March 2017 and that month. Note that these are deaths, not death rates—they have not been adjusted for population change.

Nationally, the increase in opioid overdose deaths in recent years has been driven by synthetics. However, the rise in both has decelerated, and there is a glimmer of
hope that the tide may even be turning. More data is needed, however, before we can conclude that with any confidence.

Figure 2d indicates that in Utah, opioid deaths peaked between September 2015 and August 2016, and deaths from prescription opioids peaked between April 2015 and March 2016. The most recent opioid death estimates show a slight increase, but the February 2018 estimate remains 15 percent lower than the peak. For the category including prescription opioids, deaths are down 26 percent from
their peak. Even deaths from heroin and from synthetics appear to be declining.

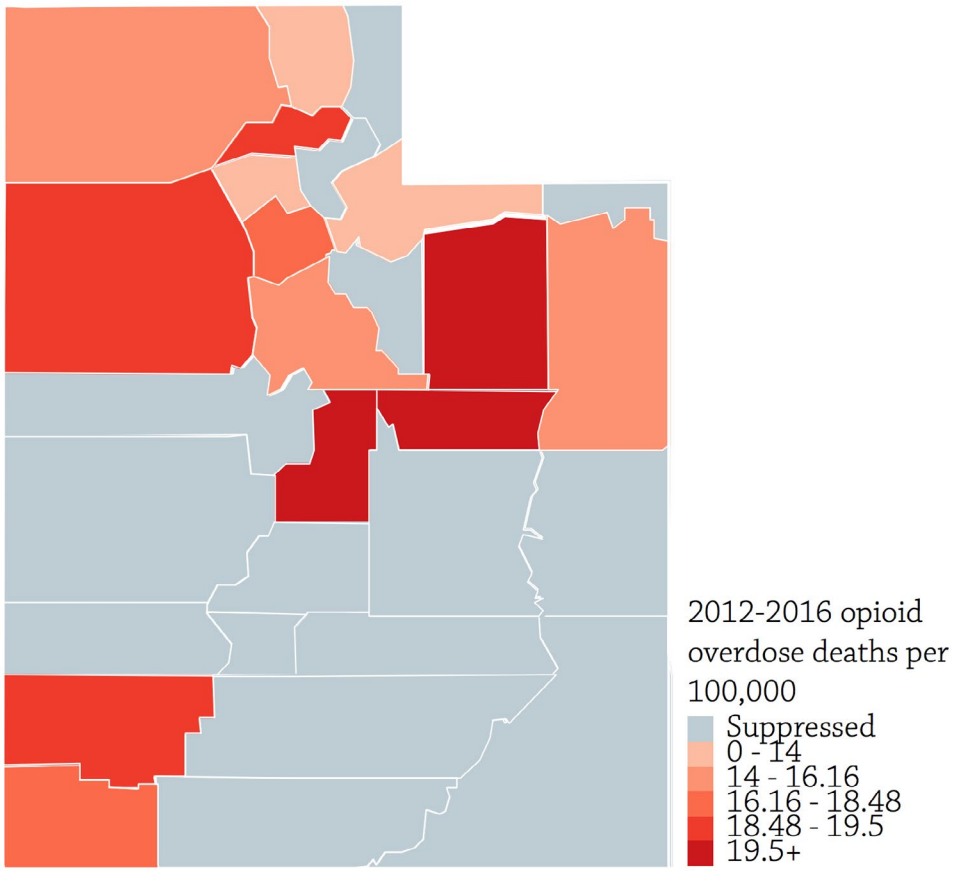
The maps below show the spread of unintentional opioid overdose deaths over time and geography, as originally presented in the first Social Capital Project post on the opioids crisis.[19]

Figure 3a. Geographic spread of unintentional opioid overdose deaths, by county, 1979-83 to 2011-15



Source: CDC, Compressed Mortality File (CMF) 1979-1998 and Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/cmf-icd9.html and http://wonder.cdc.gov/mcd-icd10.html.

Figure 3b. Opioid overdose deaths in Utah, by county, 2012-2016



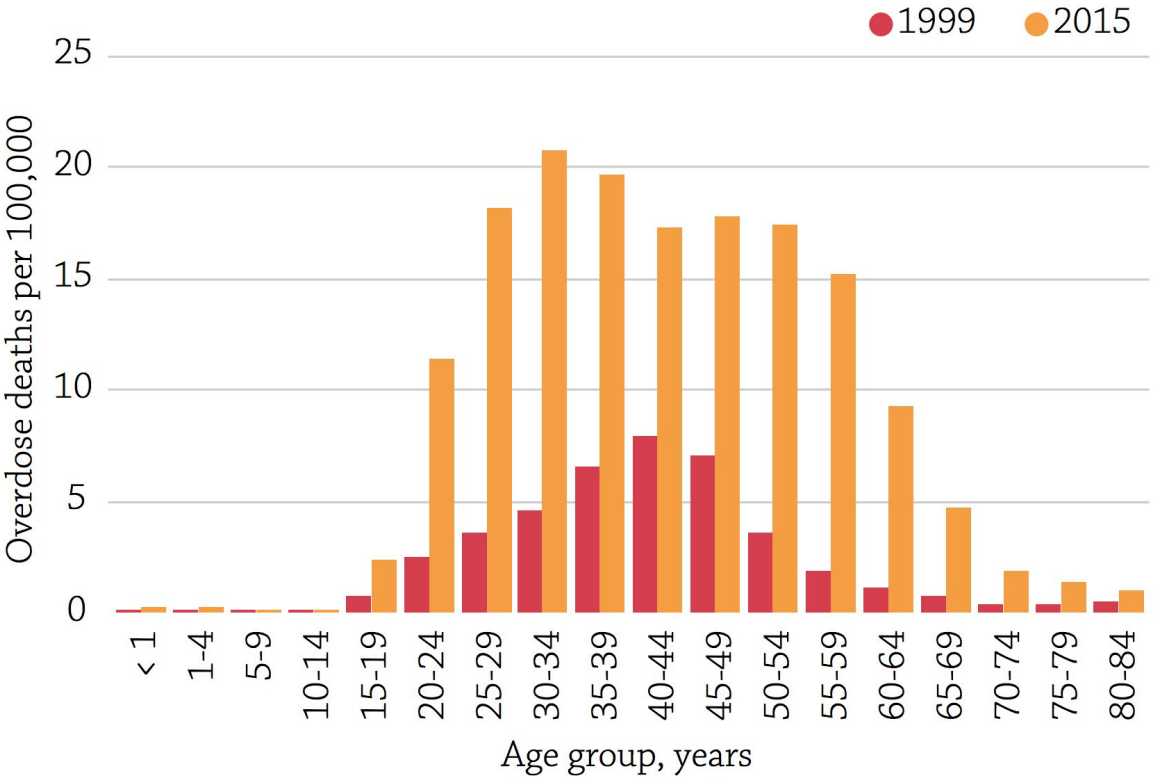
Source: Age-adjusted rates. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

Figure 3b displays opioid overdose death rates for Utah counties with reliable data (14 of the state's 19 counties). The lightest counties in the chart have suppressed data. Unlike in the national maps, this one includes all opioid overdose deaths (regardless of intent) and uses age-adjusted rates. Sanpete, Carbon, and Duchesne Counties stand out as having the highest rates. Cache, Davis, and Summit Counties have the lowest.

BETWEEN 1999 AND 2015, OPIOID DEATHS SHIFTED TO YOUNGER DEMOGRAPHIC GROUPS, TYPICALLY WHITE, SINGLE OR DIVORCED, AND WITH RELATIVELY LESS FORMAL EDUCATION

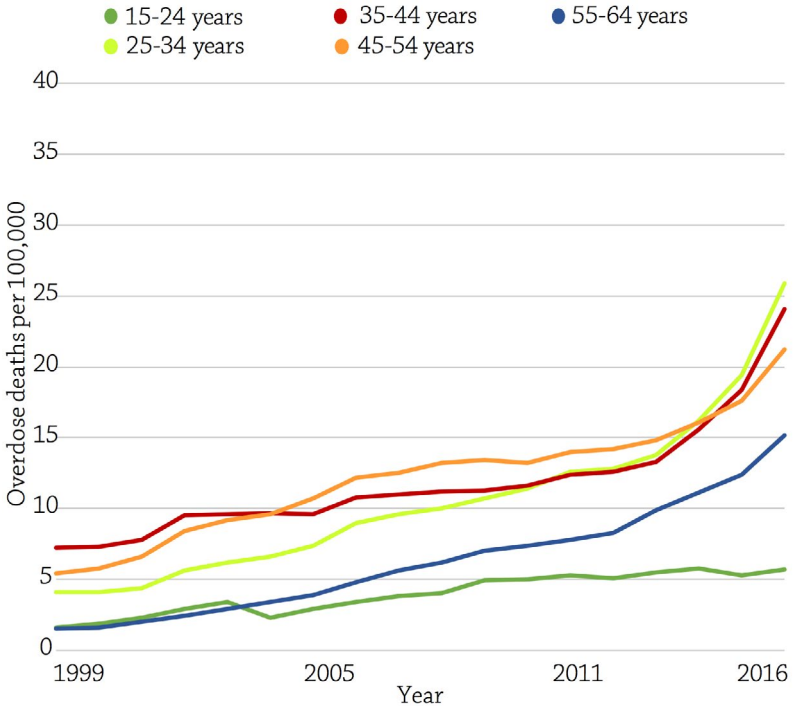
Between 1999 and 2015, overdose deaths for opioids like heroin and fentanyl have skewed younger, with the highest overdose death rates occurring among those between 25 and 39 years of age (Figure 4a).[20] By comparison, overdose deaths from prescription opioids, particularly for opioid medications commonly distributed in pill form, have dramatically risen for those 45 to 59 years of age. Deaths categorized as resulting from unspecified narcotics have fallen, likely in part because medical examiners and coroners are better able to identify specific opioids on death certificates.

Figure 4a. Opioid overdose deaths by age group, 1999 and 2015



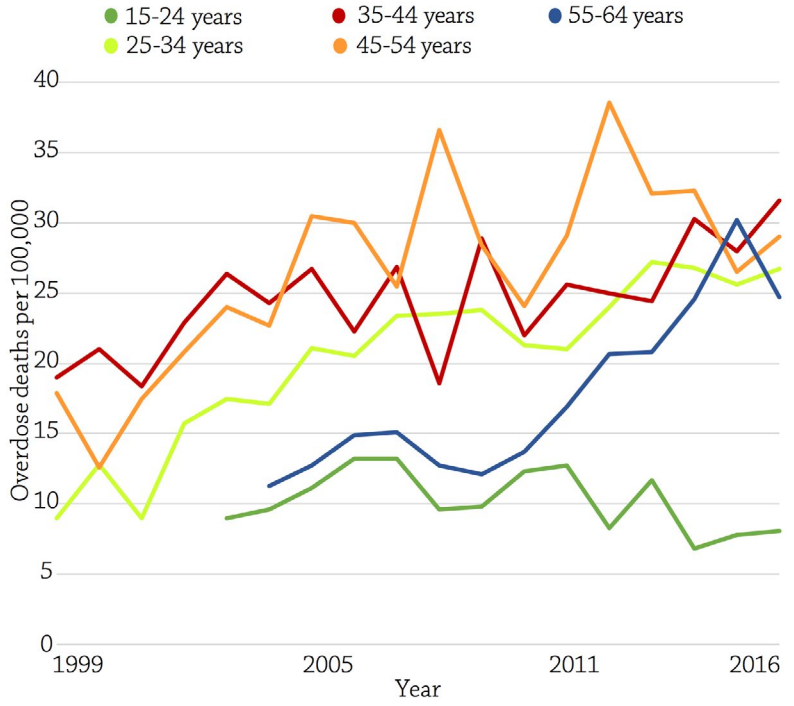
Source: Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

Figure 4b. Opioid overdose deaths by age group, 1999-2016



Source: Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

Figure 4c. Opioid overdose deaths in Utah by age group, 1999-2016



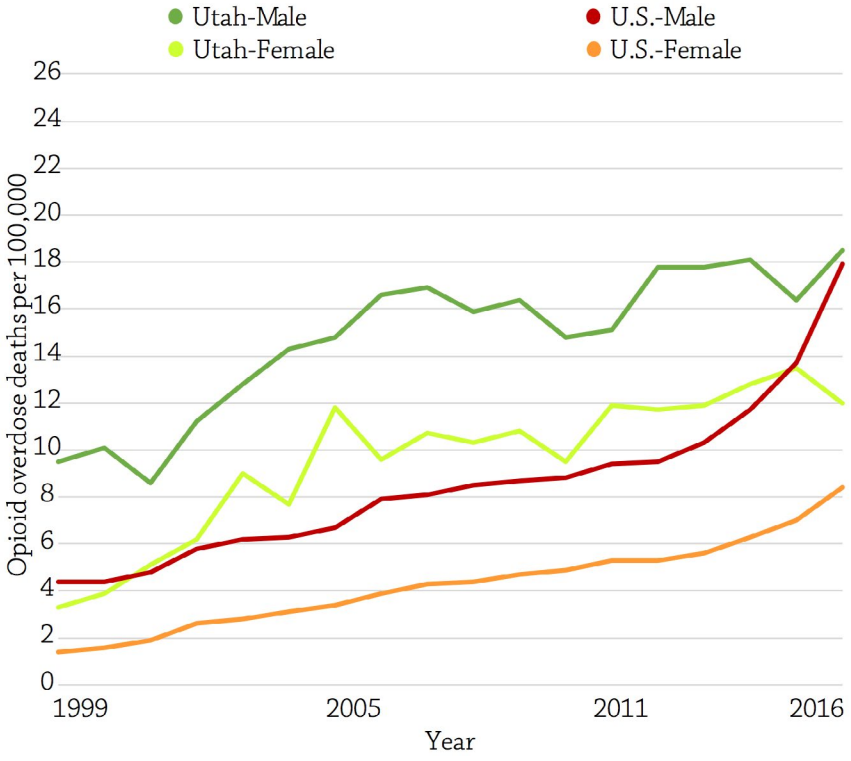
Source: Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

Figure 4b organizes people into larger age groups and displays the full 1999-to2016 trend. The increase in opioid overdose deaths has been sharpest among those ages 25 to 44, but it has been substantial for older adults too.

Age trends for Utah are shown in Figure 4c. The plateauing of overdose deaths apparent in Figure 1 is less evident here. Older Utahns, between the ages of 55 and 64, have seen an especially large increase in overdose deaths compared with older Americans generally. Though for years their overdose death rates were unusually high, Utahns under age 35 no longer have rates that are higher than in the nation as a whole.

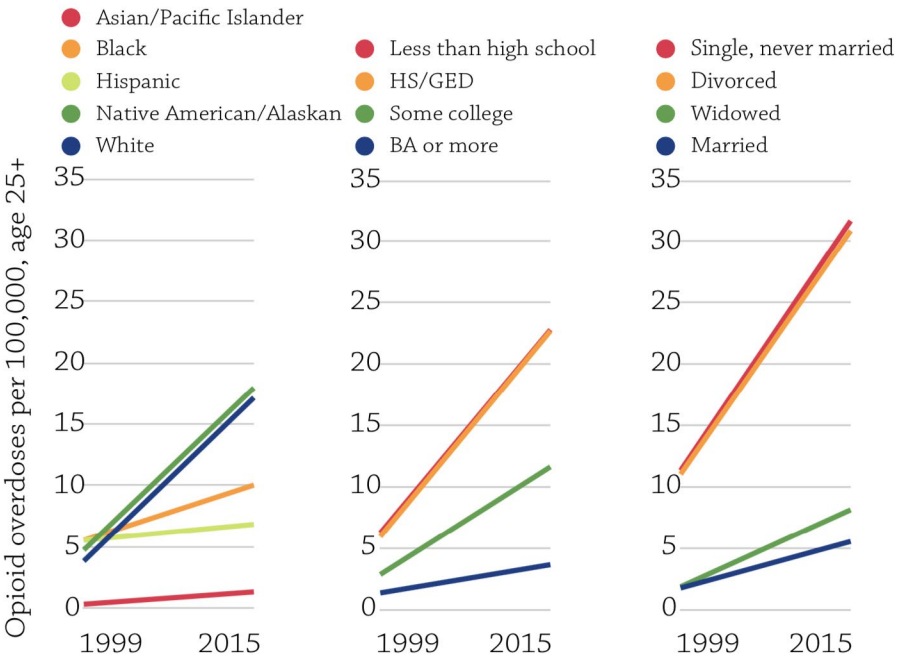
Next, Figure 5 displays opioid overdose deaths by sex. Nationally, men have seen much bigger increases than women, especially in terms of deaths from heroin and synthetics. Because of data suppression issues, we show the Utah trend only for overall opioid mortality. In contrast to the national pattern, men and women in Utah have seen a similar increase in opioid deaths. This parity reflects the prominence of prescription opioids in Utah. Even nationally, men and women have seen similar increases in opioid overdose deaths from the category that includes prescription drugs.

Figure 5. Opioid overdose deaths by type of opioid and sex



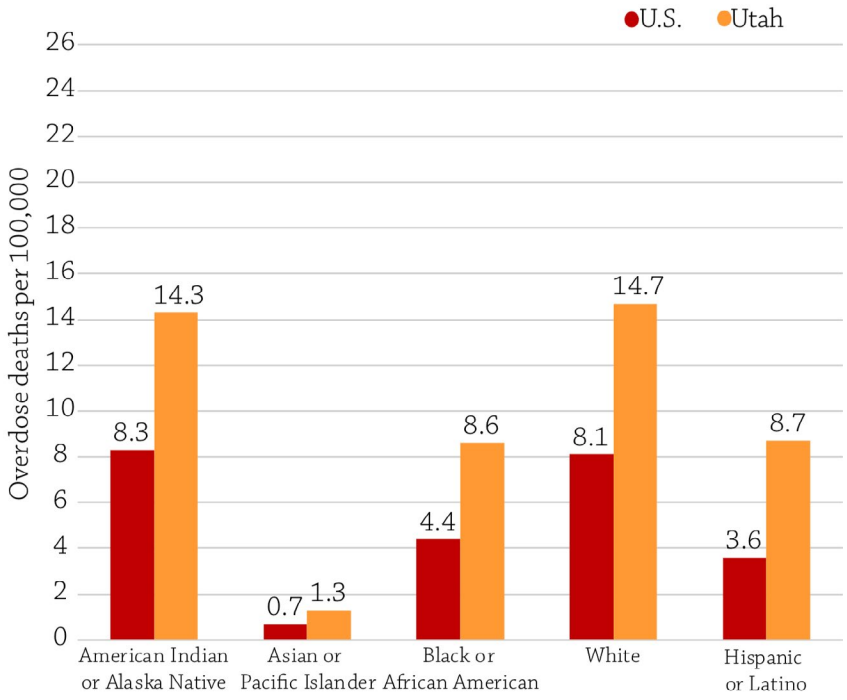
Source: Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 and 1999-2016 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

Figure 6a. Opioid overdose deaths by race, by educational attainment, and by marital status, 1999 and 2015



Source(s): Social Capital Project staff calculations, crude rates shown. CDC. Includes all deaths, unintended or otherwise. See Source Notes for details.

Figure 6b. Opioid overdose deaths by race, Utah vs U.S., 1999—2016

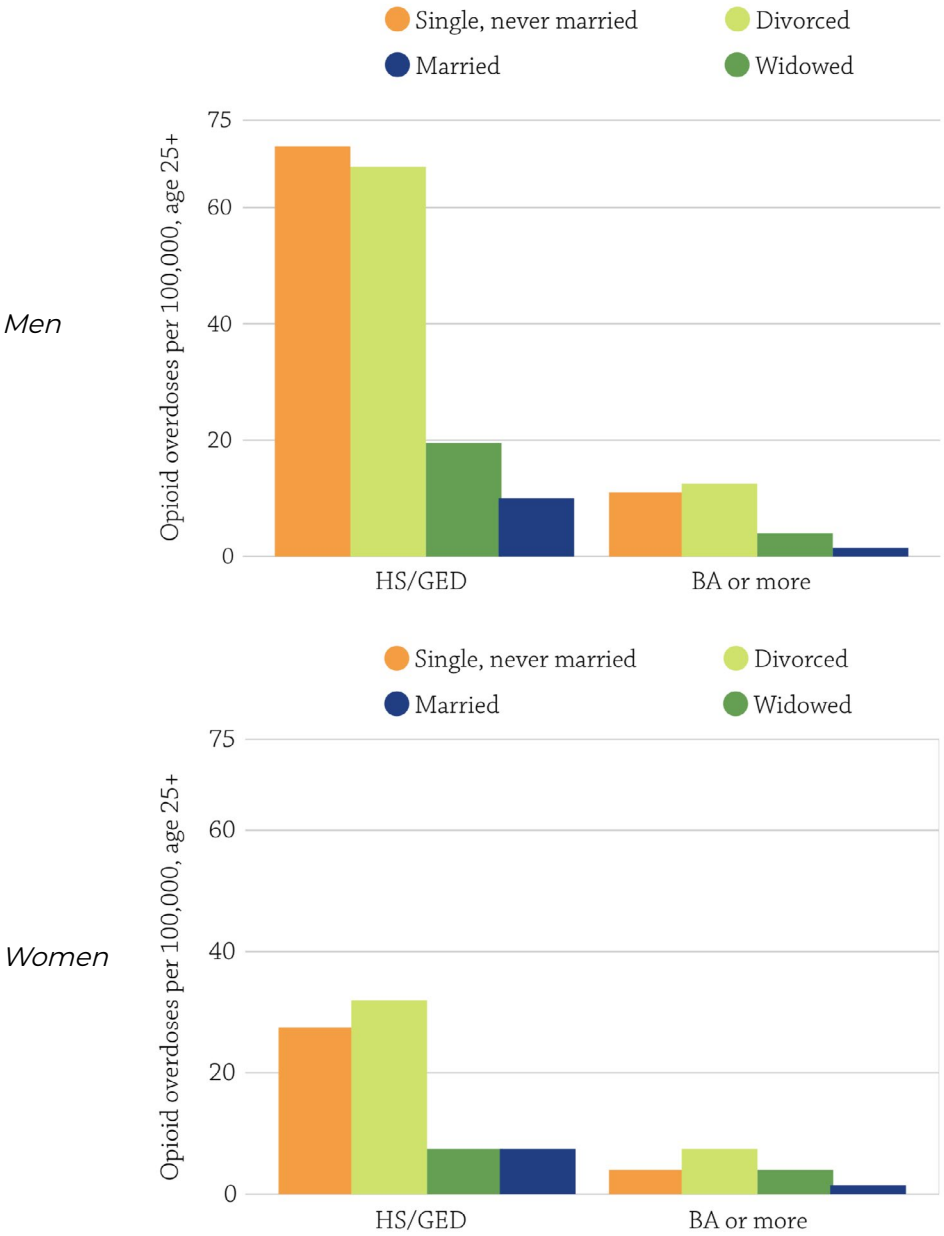


Source(s): Age-adjusted rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2016 on CDC Wonder Online Database. Accessed at http://wonder.cdc. gov/mcd-icd10.html. See Source Notes for details.

Between 1999 and 2015, Native Americans and non-Hispanic whites saw more dramatic increases in overdose death rates (Figure 6a). Opioid overdose death rates have remained remarkably low for Asian Americans and Pacific Islanders.

In Figure 6b, we compare the racial breakdown for Utah to the national figures. Utahns of every background have higher opioid mortality rates than their counter- parts in the rest of the country.

Figure 7. Opioid overdose death rates by gender, educational attainment, and marital status, 2015



Source(s): Social Capital Project Staff calculations, crude rates shown. Includesall deaths, unintended or otherwise. CDC. See Source Notes for details.

Adults with lower educational attainment and who are divorced or have never married have higher opioid overdose death rates and have experienced larger increases in mortality (Figure 7). Across education groups, generally those either widowed or married still had a relatively lower overdose death rate than those single or divorced. In 2015, of the population age 25 and older, 61 percent of Americans were married, and together with widowed Americans made up 68 percent of the population, but accounted for only 28 percent of opioid overdose deaths. In contrast, never-married and divorced Americans made up about 32 percent of the population, but accounted for 71 percent of all opioid overdose deaths.

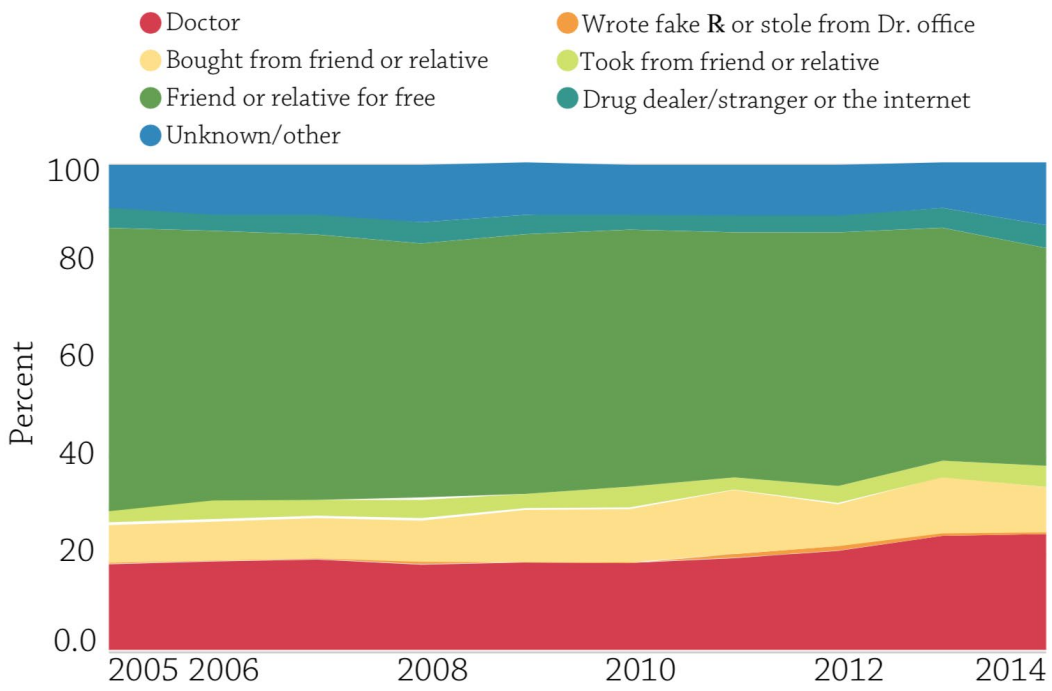
In 2015, among those age 25 and older, 33 percent had a bachelor's degree or higher, but they accounted for only 9 percent of all opioid overdose deaths. In stark contrast, 40 percent had no more than a high school diploma or equivalent, but they accounted for 68 percent of opioid overdose deaths. (Not shown in Figure 7, 27 percent had some college education, accounting for 23 percent of opioid over- dose deaths.)

ABUSE OF PRESCRIPTION PAIN RELIEVERS IS AT THE HEART OF THE CRISIS

One reason for the severity of the opioid crisis is that for much of the crisis opioids have been easily and often legally obtained by prescription. In the 1960s, four out of five heroin addicts began with heroin, but by the 2000s three out of four heroin addicts began either with prescription opioids obtained legally through a doctor's prescription or illegally from someone else's prescription.[21]

Studies that try to estimate rates of addiction among people who are prescribed opioids often use inconsistent methods and definitions, making comparisons and generalizations difficult.[22] According to one review of studies focused on opioid abuse in chronic non-cancer pain management, individuals who are prescribed opioids have a 15-26 percent chance of misusing or abusing opioids, or expressing "addiction-related aberrant behaviors."[23] These behaviors can include forging prescriptions, earlier-than-typical requests for refills on medication, and injecting medications that were intended for oral use. In another review of studies, addiction rates ranged from 8 to 12 percent among individuals who had been prescribed opi- oids to manage chronic non-cancer pain.[24] A 2013 survey found that, among those who used pain relievers non-medically between 2002 and 2011, 4 percent began using heroin within five years.[25]

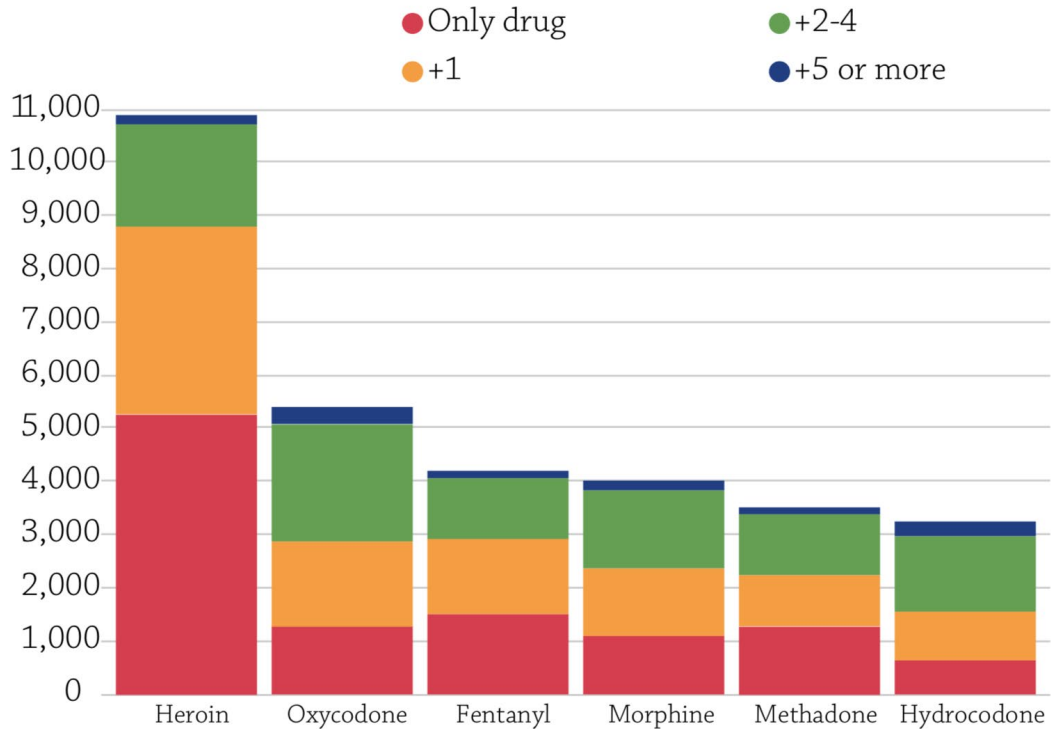
Figure 8. Source of pain relievers among prescription abusers in the past year, 2005-2014



Source: Social Capital Project analyses of the National Survey on Drug Use and Health (NS- DUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and-health-nsduh-2002-2014-nid16959.

The majority of individuals who misused pain relievers in the past year gained access to it through a friend or relative. A teenager may steal from their parents' medicine cabinet; a grandparent might offer their extra pills to a son-in-law who is struggling with back pain; a neighbor may ask for advice on pain relief and receive a few doses. In each case, relatively close social relationships serve to expand the reach of prescription pain relievers beyond their intended use. Social network analysis has shown that, in some areas, illegal pills are a form of community curren- cy, with those who use opioids daily having relatively more social connections.[26] Figure 8 shows the source of pain relievers among "nonmedical pain reliever" users in the last year.

Figure 9. Opioid overdose deaths by number of drugs involved, 2014



Source: CDC, National Vital Statistics Reports, Vol. 65, No. 10, December 20, 2016, Table 5 (https:// www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_10. pdf). Includes all deaths, unintended or otherwise.

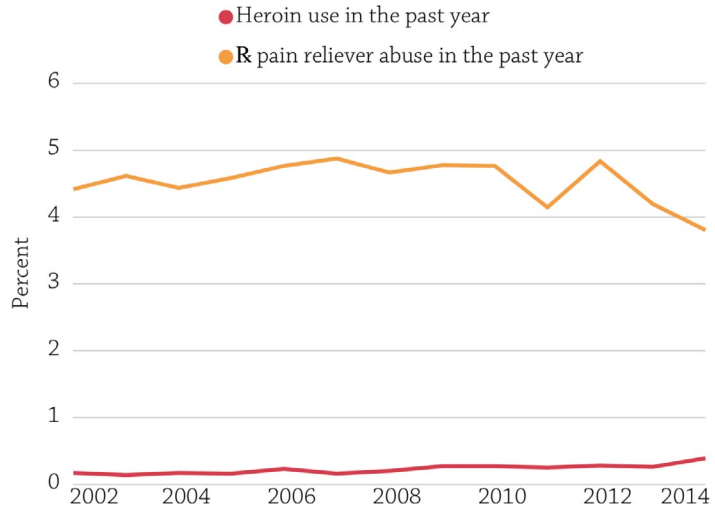
Despite the closeness of social networks among prescription opioid abusers, they can remain remarkably isolated from other friends and family members who remain largely unaware of misuse or addiction.[27] One mental-health literacy survey conducted by Michigan State University researchers found that nearly one-third of respondents couldn't identify the signs of prescription drug misuse.[28]

Another indicator of the centrality of prescription drugs to the opioid crisis is the fact that a majority of opioid overdose deaths are a result of combining opioids or combining them with other central nervous system agents, including benzodiaze pines (often used to treat anxiety and sleep problems). In 2014, for example, over half of heroin overdose deaths involved at least one other drug, as did over eight in ten hydrocodone overdose deaths (see Figure 9).[29]

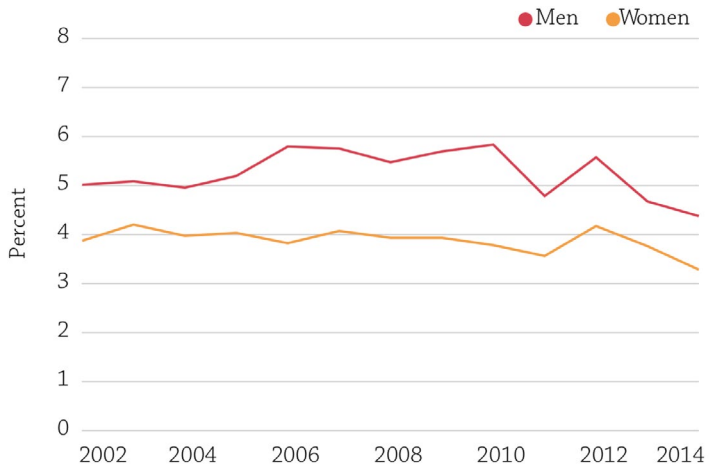
Abuse of prescription pain relievers ("nonmedical pain reliever use") declined between 2010 or 2012 and 2014. However, as shown in Figure 10, it remains much more widespread than heroin use. Reported prescription pain reliever abuse is higher for men than women. Hispanics, non-Hispanic whites, and non-Hispanic blacks have similar rates of prescription pain reliever abuse, while non-Hispanic Asians have lower rates.

Figure 10. Type of nonmedical opioid use in the past year, ages 18 and older, 2002-2014

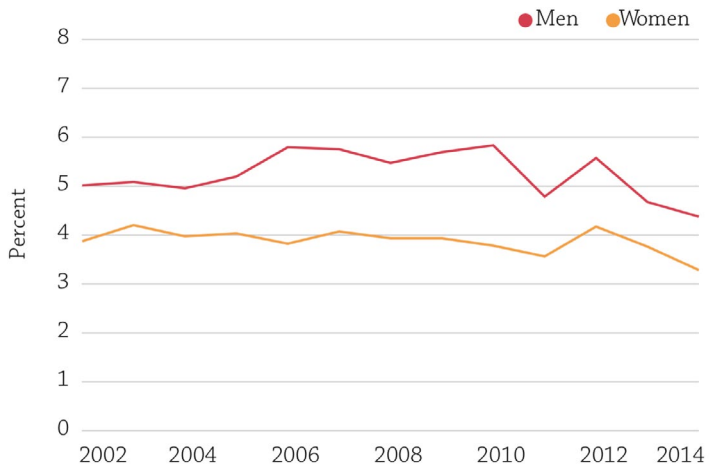
Heroin and nonmedical pain reliever use in the past year



Nonmedical pain reliever use in the past year by gender



Nonmedical pain reliever use in the past year by gender



Source: Social Capital Project analyses of the National Survey on Drug Use and Health (NS- DUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey- drug-use-and-health-nsduh-2002-2014-nid16959.

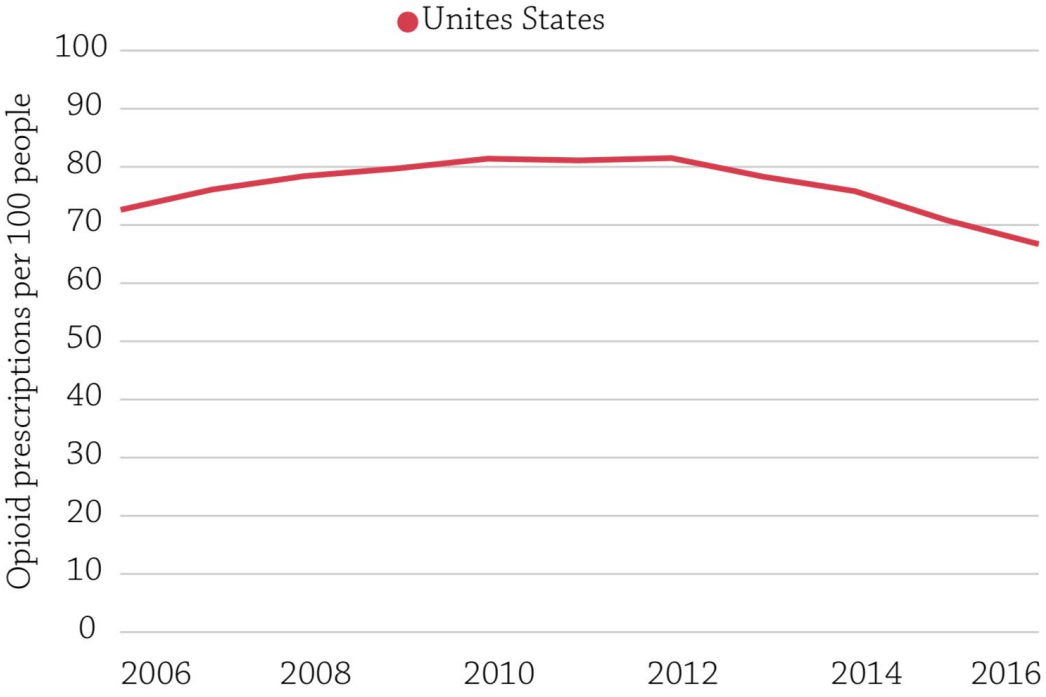
THE OVERSUPPLY OF PRESCRIPTION PAIN KILLERS CONTINUES TO CONTRIBUTE TO THE OPIOID CRISIS

A March 2017 study from the CDC determined that 13.5 percent of patients receiving eight days or more of prescription opioid therapy used opioids one year later—up from 6 percent among patients receiving any prescription opioid therapy.[30] Among patients taking prescription opioids for at least 30 days, 30 percent were using opioids one year later.

Research examining the introduction of the Medicare Part D prescription drug ben- efit found that a 10 percent increase in the supply of prescription opioids leads to an estimated 7.4 percent increase in opioid-related deaths.[31] Prescribing practices are tied to several risk factors for both prescription opioid addiction and over- dose.[32] These factors include daily doses of more than 100 morphine milligram equivalents (MME) and opioid use of longer than three months. MME units are a way to aggregate opioid prescriptions in order to estimate the dosage level of a given prescription.

According to the CDC, daily dosages of more than 20 MME increase the risk of overdose, and dosages of 50 MME per day or more double the risk of overdose relative to the risk at a dosage of less than 20 MME per day.[33] Fifty MME is equivalent to approximately two 15mg tablets of sustained-release oxycodone.

Figure 11. Opioid prescriptions per 100, 2006-2016

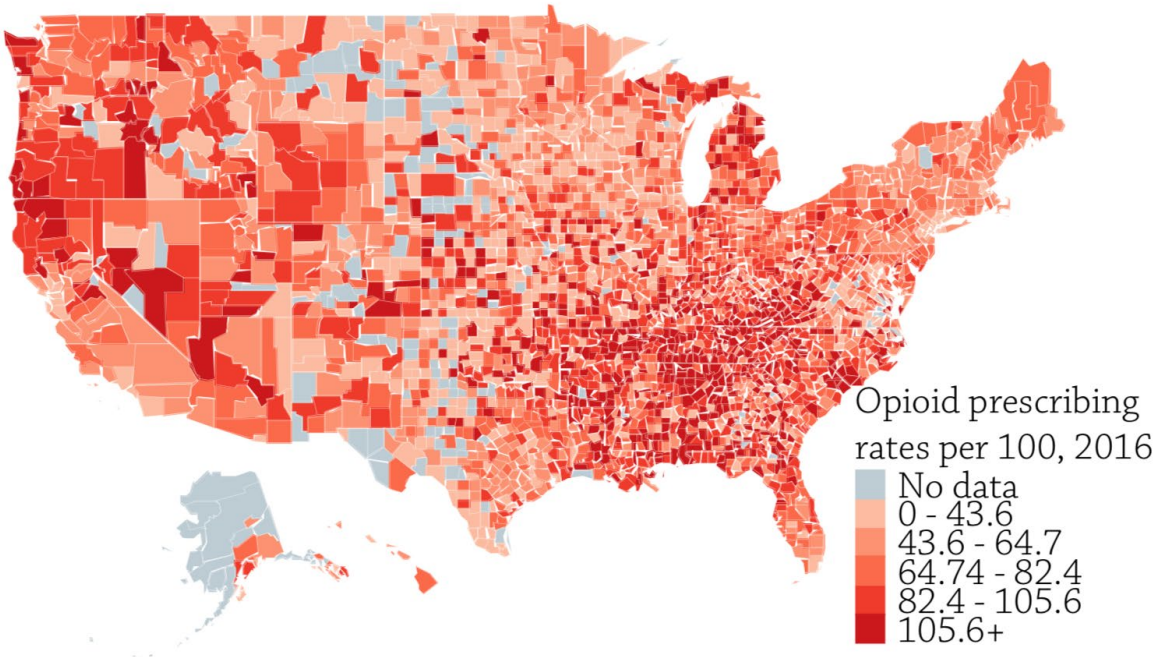


Source: "Table 1. Total number and rate of opioid prescriptions dispensed, United States, 2006- 2016," U.S. Prescribing Rate Maps, CDC, last modified July 31, 2017, https://www.cdc.gov/ drugoverdose/maps/rxrate-maps.html.

In 2016, nearly 215 million prescriptions for opioids were filled in the United States. Data analyzed by the CDC show that 61.8 million patients received those prescrip- tions, or 19.1 percent of the U.S. population.[34] Of the patients who were prescribed opioids, 3.7 million were ages 19 and under. Forty-one percent of opioid prescriptions were for a supply of 30 days or more, and 26.4 percent were for at least 50 MME per day. Ten percent of the prescriptions were for dosages of greater than 90 MME per day. The average number of prescriptions per patient was 3.5 and the average supply per prescription was 18.1 days.

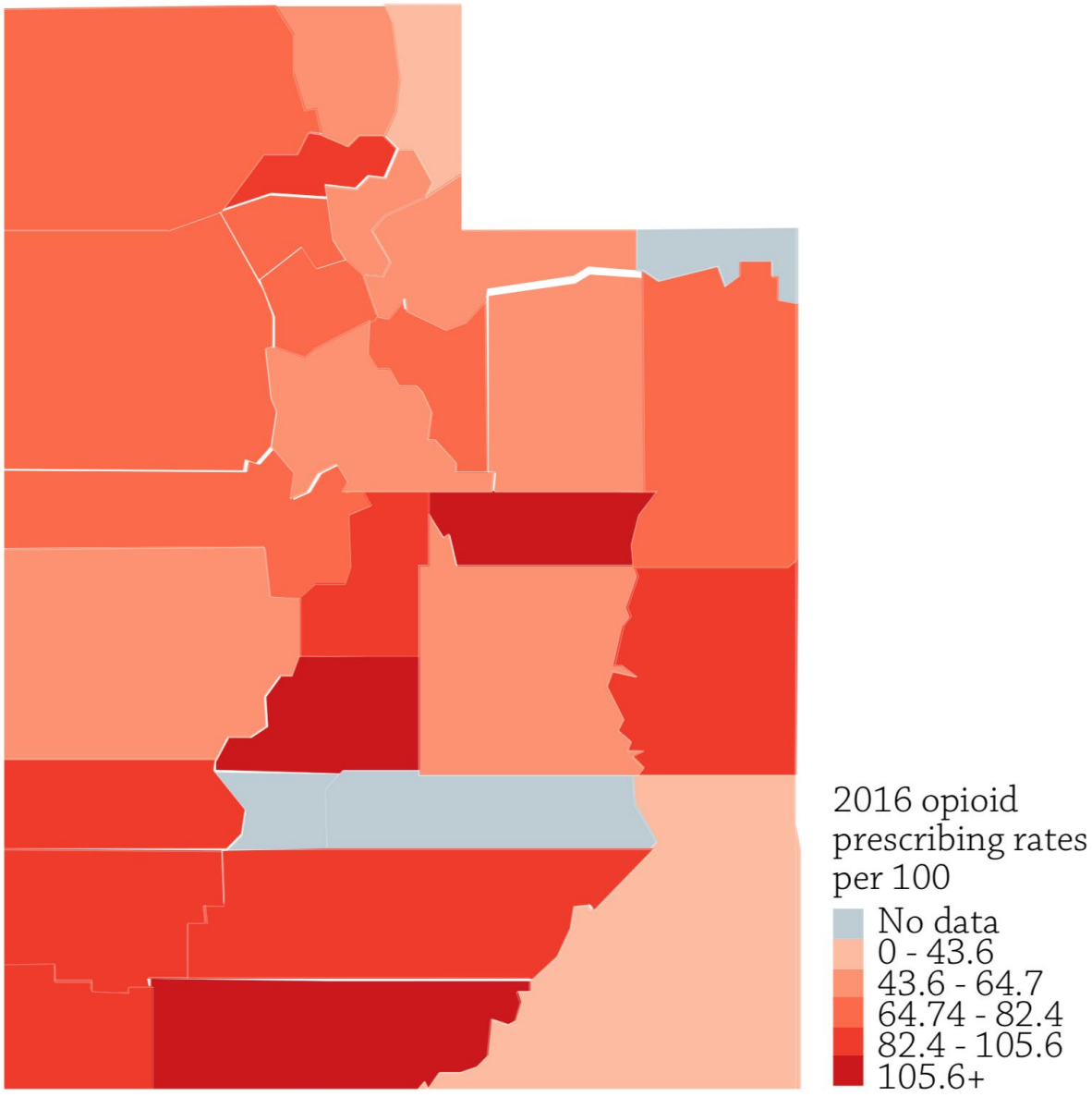
Based on Alan Krueger's research, in 2015 physicians prescribed 648.7 MMEs per person in the median U.S. county.[35] That amounts to nearly a two-week supply of oxycodone for every resident. The prescribed amount for the county at the 75th percentile was 930 MME per capita, more than an 18-day supply of oxycodone.

Figure 12a. Opioid prescriptions per 100, by county, 2016



Source: "U.S. County Prescribing Rates, 2016," CDC, last modified July 31, 2017, https://www.cdc. gov/drugoverdose/maps/rxcounty2016.html.

Figure 12b. Opioid prescriptions per 100 in Utah, by county, 2016

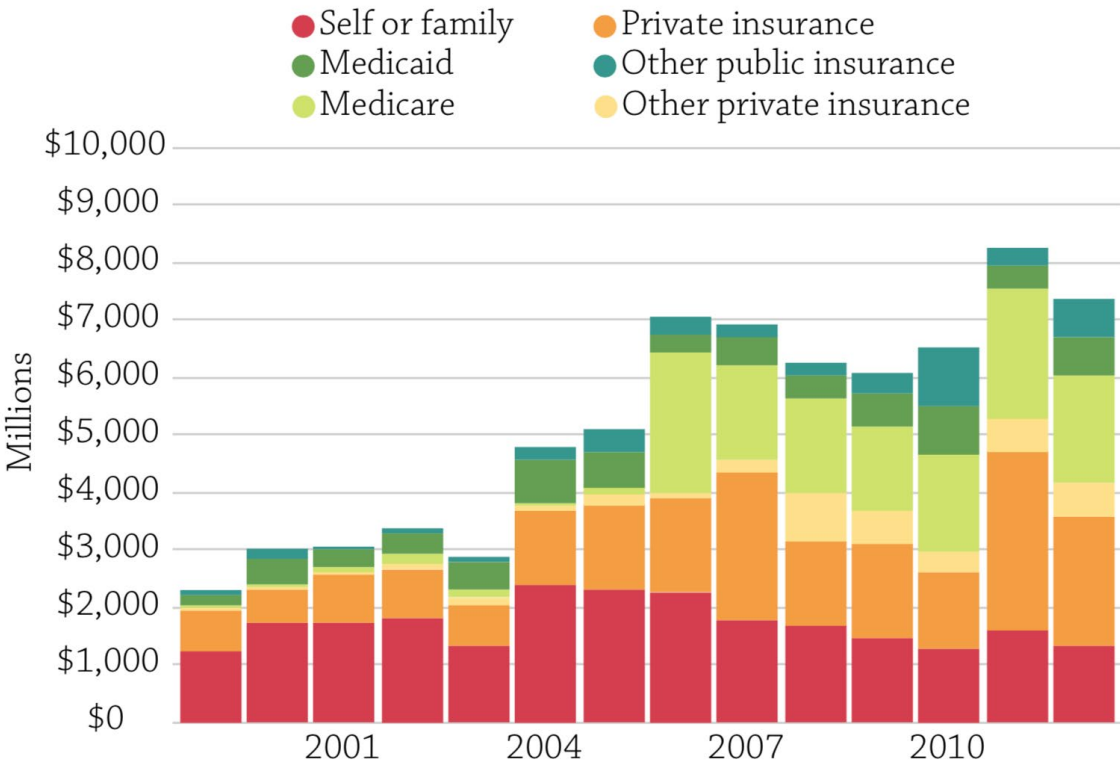


Source: "U.S. County Prescribing Rates, 2016," CDC, last modified July 31, 2017, https://www.cdc. gov/drugoverdose/maps/rxcounty2016.html.

From 1999 to 2010, opioid prescribing rates based on MME steadily increased.[36] But as Figure 11 shows, since 2012, opioid prescriptions per person have declined. Figures 12a and 12b display maps of prescription rates for U.S. and Utah counties. Kane, Sevier, and Carbon Counties had the highest rates in Utah, while Rich and San Juan Counties had the lowest rates.

As prescribing steadily increased between 1999 and 2010, payment trends for opioids also shifted. In 2012, the latest year for which data are available, private insurance and Medicare accounted for most of the spending on opioid prescriptions, with Medicare's share of payments having increased significantly following the implementation of the Part D drug benefit program in 2006 (Figure 13). Between 1999 and 2012, Medicaid and out-of-pocket expenditures on prescription opioids remained relatively stable, although Medicaid spending on opioids for the population under age 65 rose from $135 million in 1999 to $648 million in 2012 (2009 dollars).

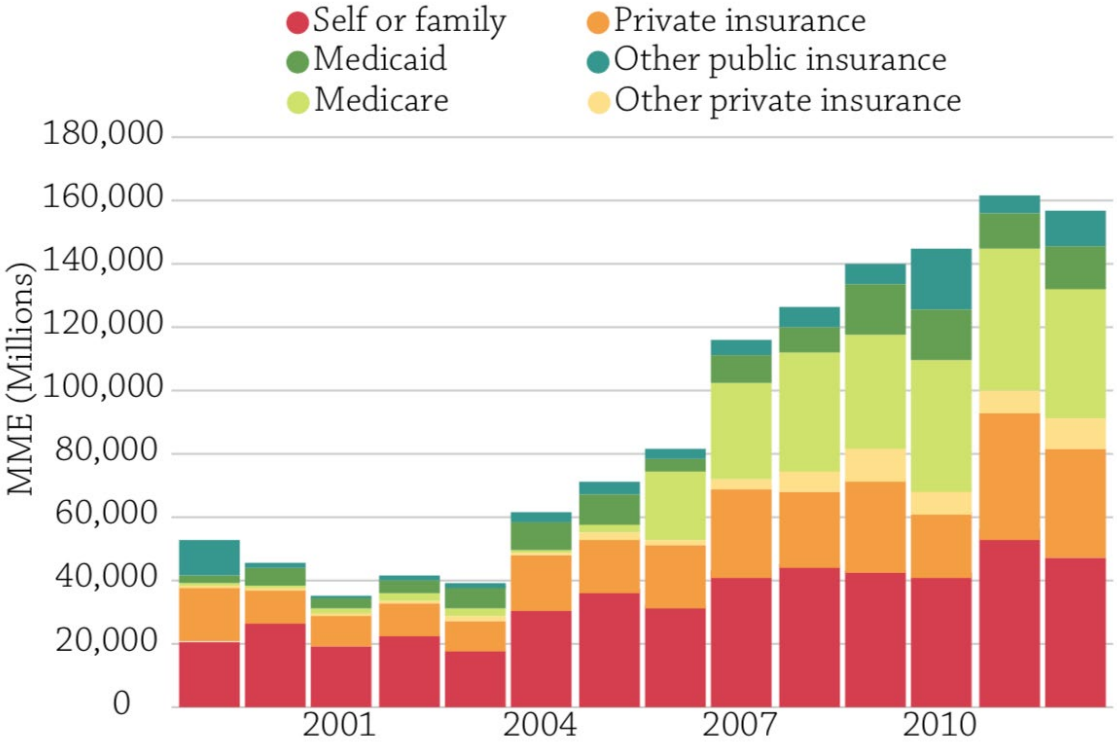
Figure 13. Total expenditures for opioid prescriptions by insurance type, 1999-2012



Source: Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insurers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 829, https://doi.org/10.1377/hlthaff.2015.1103.

There is some debate over the extent to which the Medicaid expansion included in the Affordable Care Act contributed to the opioid epidemic.[37] Since increasing the supply of opioid prescriptions tends to increase mortality from opioids, expanded prescription drug coverage through not only Medicare Part D but through Medic- aid expansions would be expected to increase opioid overdose deaths.

Figure 14. Total morphine milligram equivalents (MME) by payer type, 1999-2012

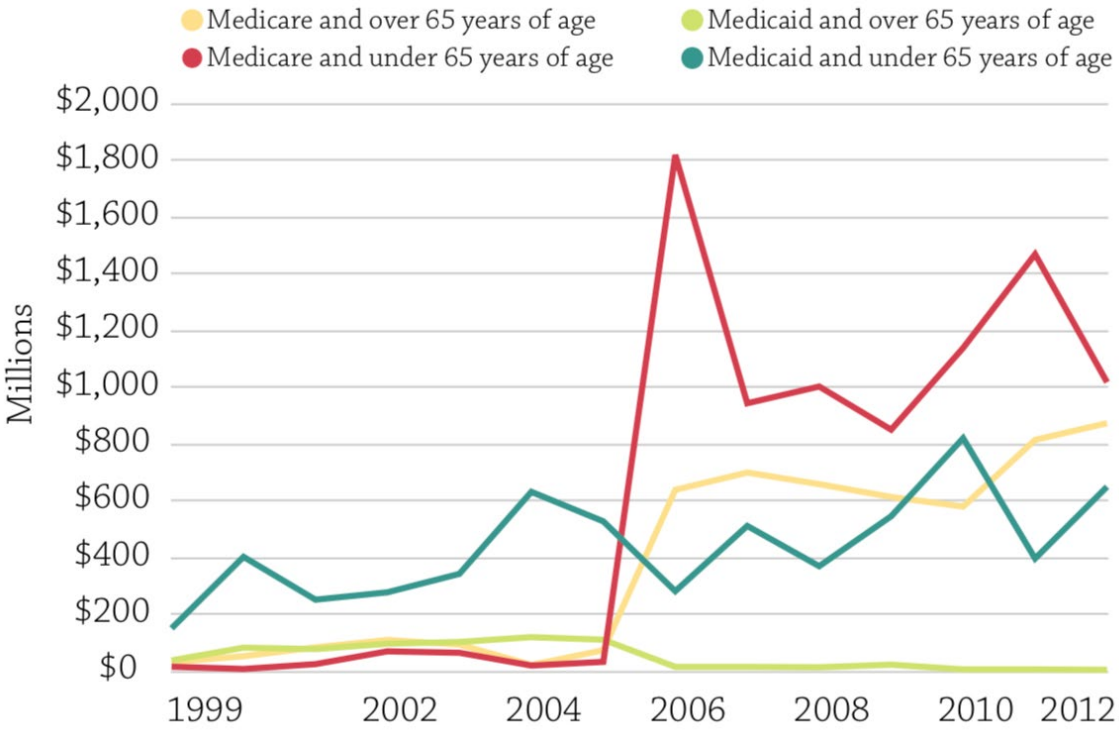


Source: Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insurers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 829, https://doi.org/10.1377/hlthaff.2015.1103.

However, ascertaining the importance of Medicaid expansion is complicated by the fact that opioid mortality rose disproportionately in Medicaid expansion states prior to those states expanding the program. Medicaid beneficiaries have a higher-than-usual rate of opioid use disorder, but as Figure 14 makes clear, Medicaid was responsible for only a small share of opioid prescriptions as of 2012.[38] And opioid spending within Medicaid is presumably heavily concentrated among recipients of Supplemental Security Income (SSI) disability benefits, who were eligible for Medicaid before the Affordable Care Act passed.

While the vast majority of those who are eligible for Medicare are over the age of 65, the program spends significantly more money on opioid prescriptions for the enrolled population that is under 65. Medicare eligibility factors for those under 65 include receipt of Social Security Disability Insurance (SSDI), following a 24-month waiting period, and end-stage renal disease. Because prescription opioids are meant to address serious pain, it is worth noting that, in 2012, 27.1 percent of SSDI beneficiaries received disability payments due to musculoskeletal-related impair- ments (and in 2016, this number was 29 percent).[39] This is particularly relevant be- cause of the strong connection between musculoskeletal disease and prescription pain medication among the disabled population.[40]

Figure 15. Opioid expenditures by age group and Medicare or Medicaid recipiency, 1999-2012



Source: Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insurers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 829, https://doi.org/10.1377/hlthaff.2015.1103.

THE OVERSUPPLY OF PRESCRIPTION PAIN KILLERS CONTINUES TO CONTRIBUTE TO THE OPIOID CRISIS

Heroin overdose deaths have been a persistent problem for several counties with dense metropolitan areas for a number of decades. The arrival of new prescription opioids in the late 1990s and their use in the treatment of chronic pain presented a new avenue for opioid misuse. In 1999, prescription opioids were already a becoming a problem in a handful of areas around the United States, but deaths from prescription opioid overdoses were widespread by 2015. Heroin followed suit, with overdose death rates spreading in areas that heavily overlap with prescription overdose deaths.

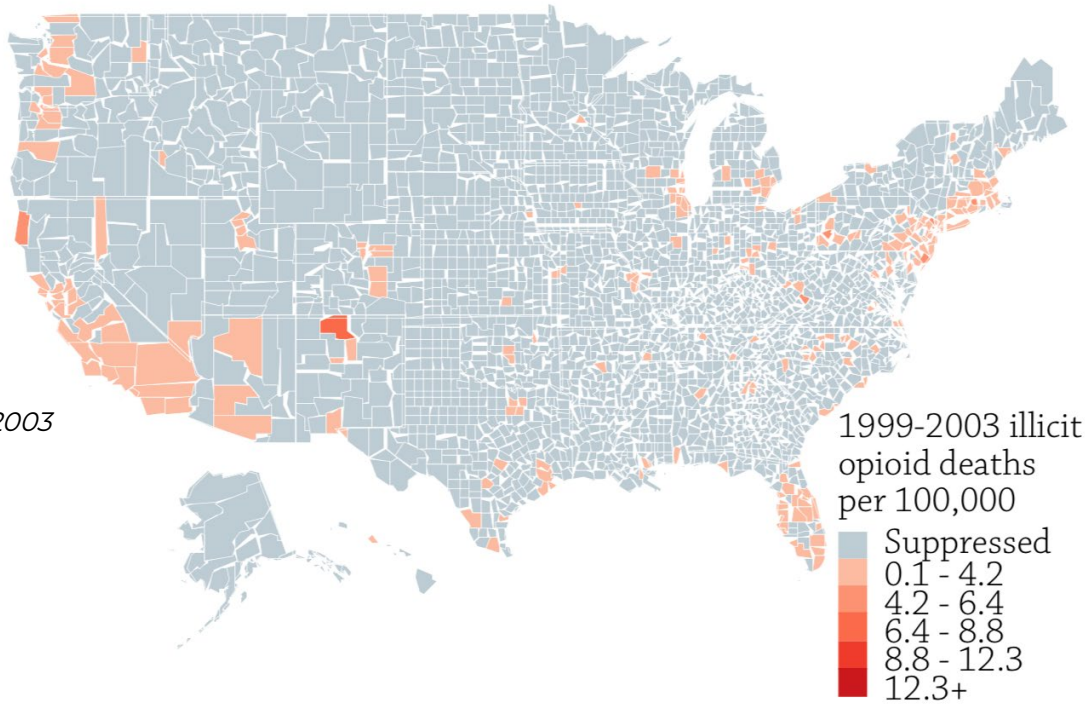
In the following maps, opioid overdose deaths are broken out into illicit and licit opioids. The illicit opioids category includes heroin and opium (and other synthetic opioids like fentanyl, which is increasingly manufactured and distributed illegally). The licit opioids category involves prescription opioids (including semisynthetic opioids like oral pain medication, and addiction treatment drugs like methadone).

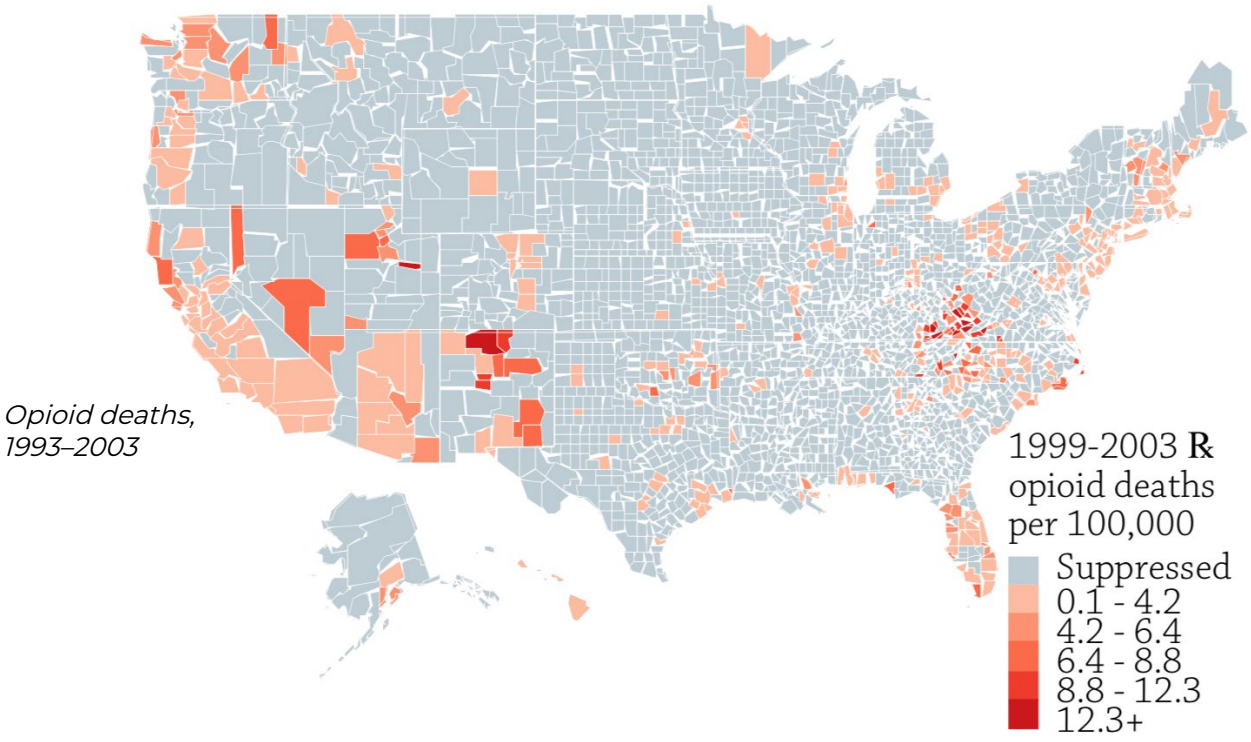
Broken down by sub-type of opioid, regional differences in type of opioid over- dose deaths become apparent. For example, synthetic opioid overdose death rates, like those from fentanyl and its derivatives, still remain largely concentrated in the eastern United States. Recent literature suggests that this might reflect a divide in the type of heroin distributed in the eastern and western United States. West of the Mississippi River, heroin is still largely found as black tar heroin, while in the eastern United States, heroin is mostly sold and distributed in white powder form.[41] This makes fentanyl and its derivatives, which are also commonly in white powder form, more easily disguisable as heroin and counterfeit pills in the eastern states.[42]

The maps of Figure 17 show single-year overdose death rates for 1999 and 2015 by state rather than by county for individual subtypes of opioids, as county level data are frequently obscured by suppression for confidentiality purposes when broken down by specific opioid types.

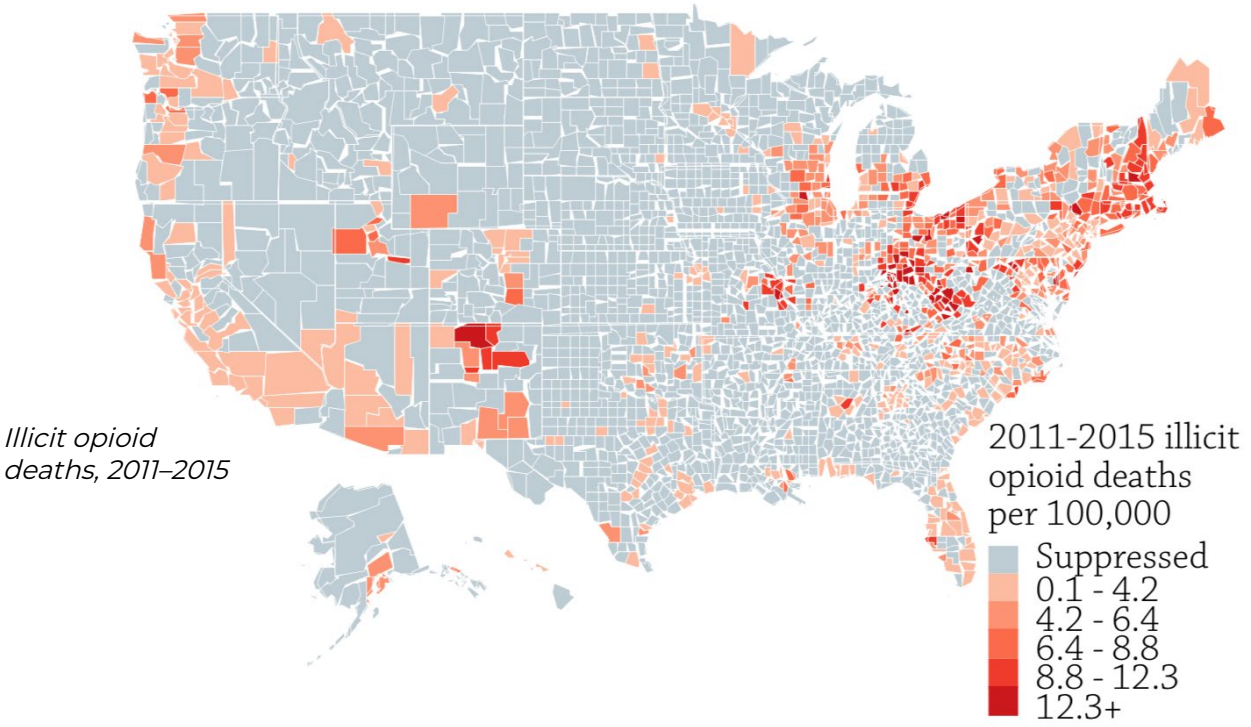
Figure 16. Licit and illicit opioid deaths, by county

Illicit opioid deaths, 1993-2003



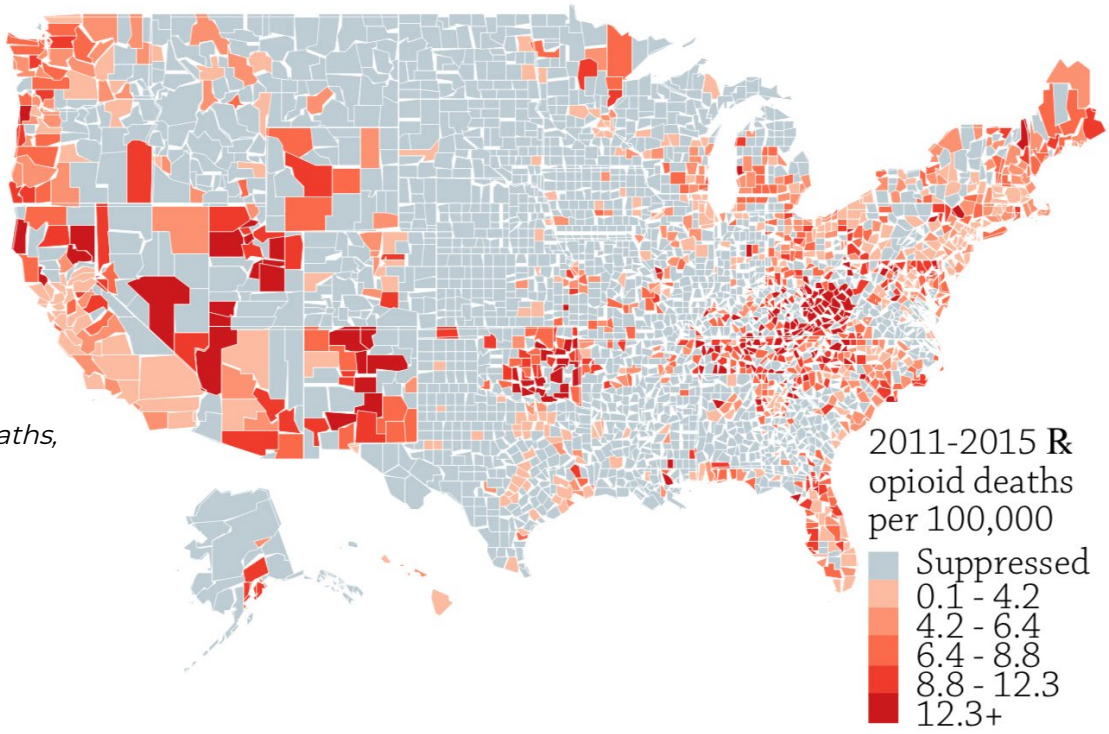


Opioid deaths, 1993–2003



Illicit opioid deaths, 2011–2015

Opioid deaths, 2011–2015

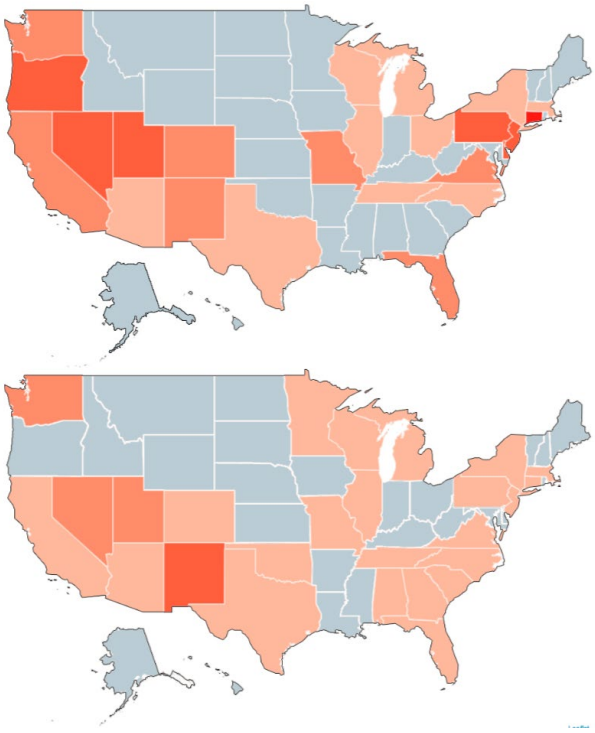


Source: CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html. Includes all deaths, unintended or otherwise.

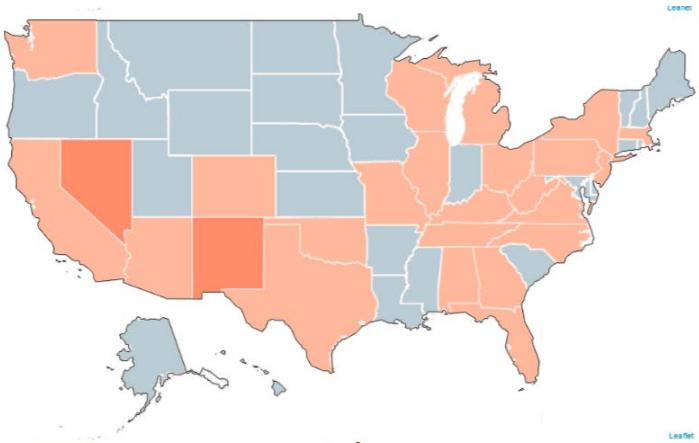
Figure 17. Opioid overdose deaths by type by state, 1999 and 2015

Heroin overdose deaths

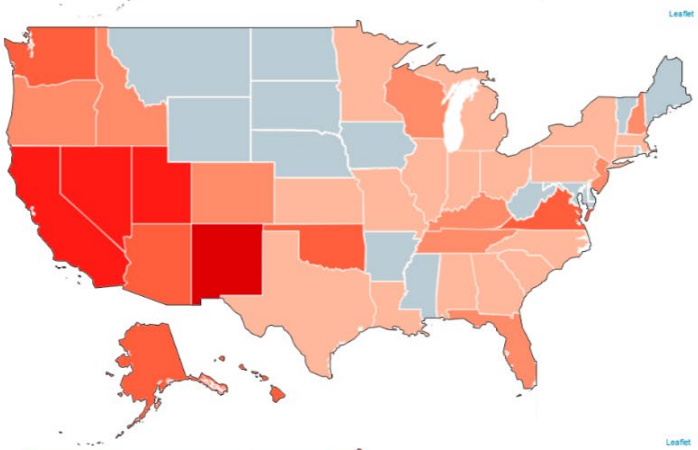
Methadone



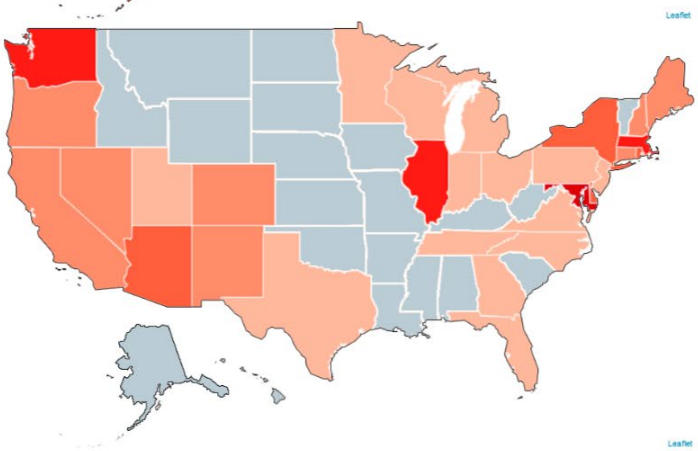
Other synthetic opioids (including fentanyl)



Prescription opioids



Unspecified opioids



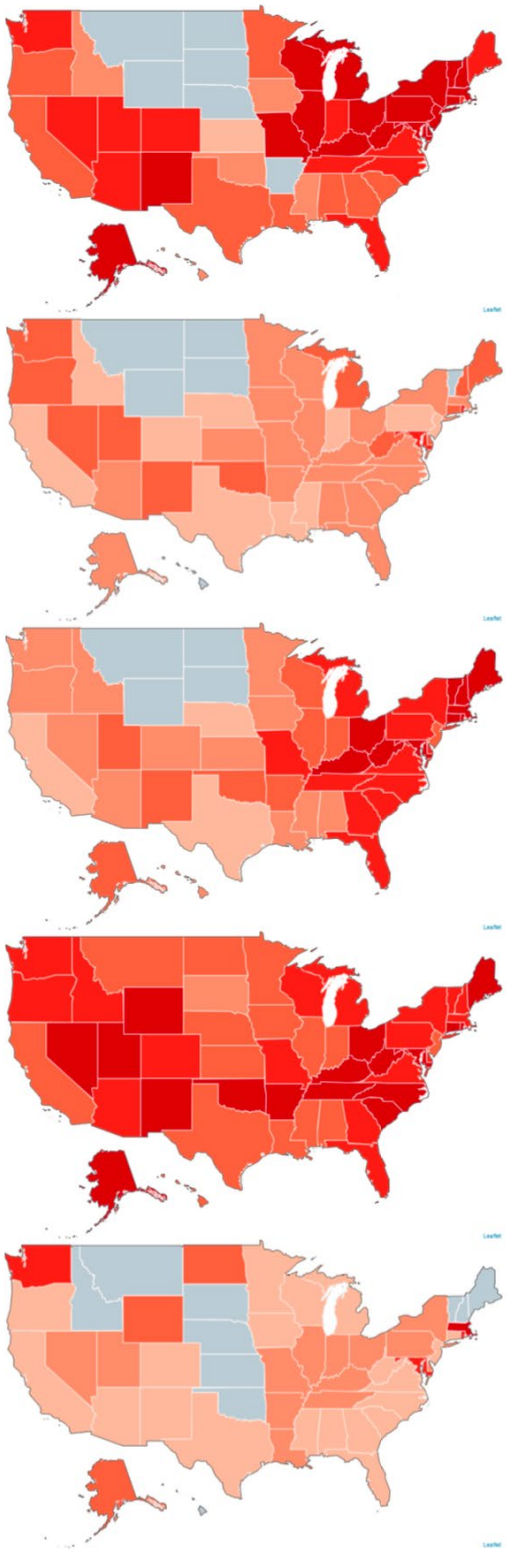
Heroin overdose deaths

Methadone

Other synthetic opioids (including fentanyl)

Prescription opioids

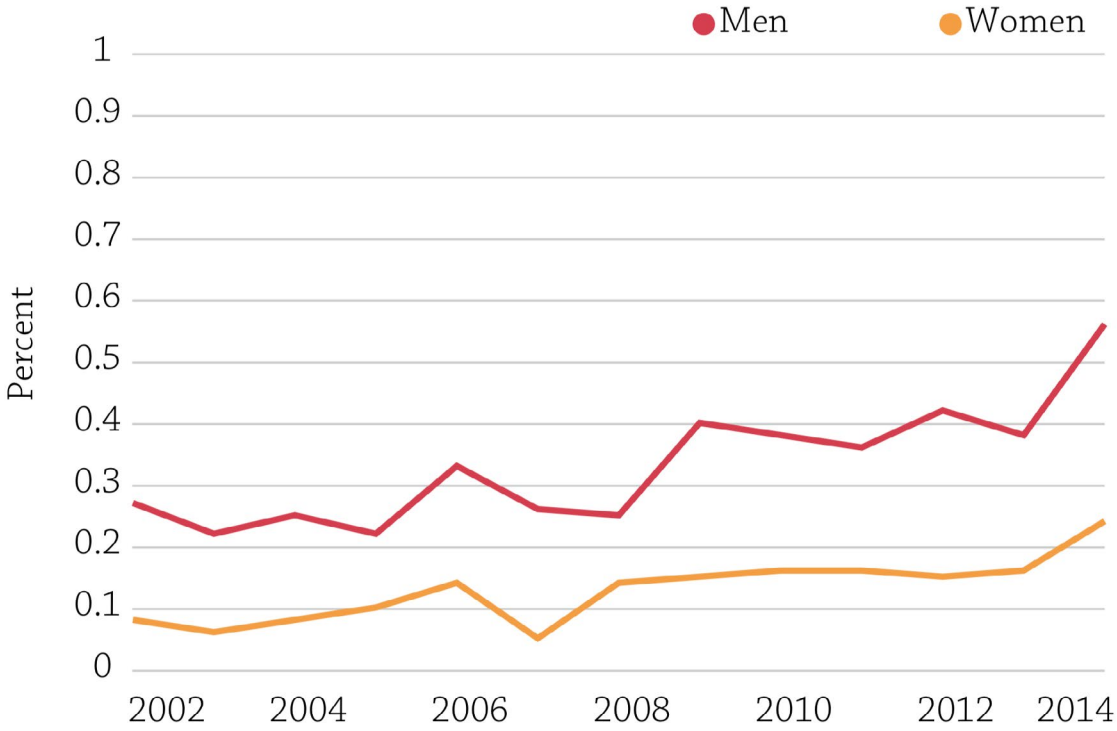
Unspecified opioids



Source: CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html. Includes all deaths, unintended or otherwise.

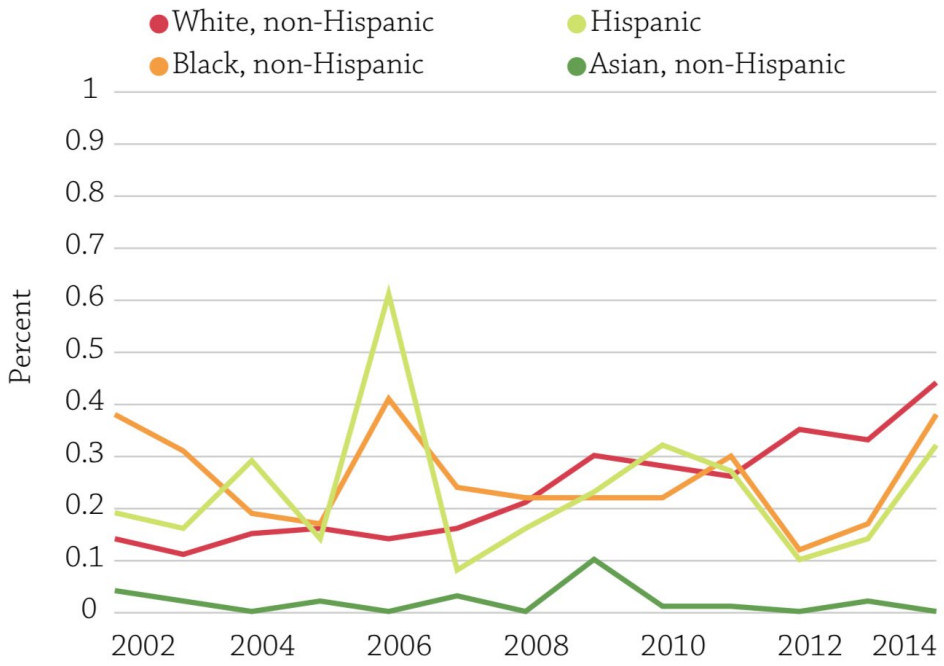
As prescription rates for opioids have declined, there has been a growing threat from illegal opioids, such as heroin and synthetic opioids like fentanyl. Heroin use is on the rise among both men and women (Figure 18). It is higher for men than women, and for non-Hispanic whites than Hispanics, non-Hispanic blacks, and non-Hispanic Asians. The spike in past-year heroin use among Hispanics and non-Hispanic blacks in 2006 may be due to noise in the data. However, the spike also corresponds with a known increase in the supply of fentanyl that occurred in 2006. Fentanyl is often disguised in heroin, and the NSDUH survey does not specifically ask about fentanyl. Similar spikes in usage, hospitalization, overdose deaths, and drug trafficking around 2006 can be seen in trend data throughout this report.

Figure 18. Heroin use in the past year by gender, ages 18 and older, 2002-2014



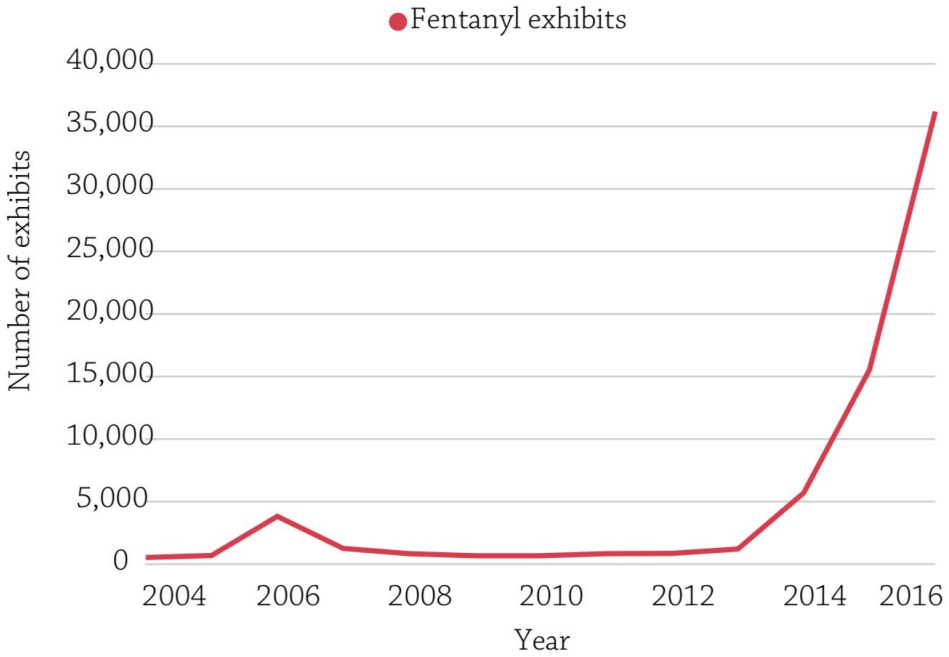
Source: Social Capital Project analyses of the National Survey on Drug Use and Health (NS- DUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and-health-nsduh-2002-2014-nid16959.

Figure 19. Heroin use in the past year by race, ages 18 and older, 2002-2014



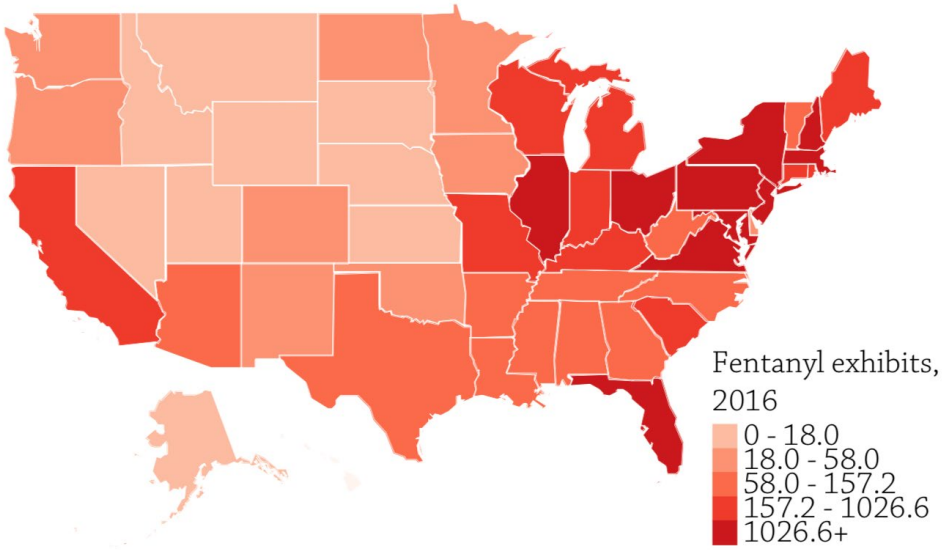
Source: Social Capital Project analyses of the National Survey on Drug Use and Health (NS- DUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and-health-nsduh-2002-2014-nid16959.

Figure 20. Fentanyl exhibits, 2004-2016



Source: Drug Enforcement Agency (DEA), National Forensic Laboratory Information System (NFLIS).

Figure 21. Fentanyl exhibits by state, 2016



Source: "2017 National Drug Threat Assessment," Drug Enforcement Agency, (2017): 59, accessed October 30, 2017, https://www.dea.gov/sites/de- fault/files/2018-07/DIR-040-17_2017-NDTA.pdf.

Because fentanyl is often disguised in a substance that resembles heroin or in counterfeit prescription pills, even though an addict may think they are buying a prescription opioid or their usual dosage of heroin from a street dealer, they might in fact be purchasing a drug that is extremely dangerous and 25 to 50 times more powerful than heroin.

Forensic labs around the nation have been tracking the rise of fentanyl in drug seizures. When law enforcement seizes drugs as part of a case against a drug trafficker, each separate container of similar-looking substances (boxes, sandwich bags, or otherwise) is recorded as an exhibit for that crime. When a laboratory receives these exhibits, they are analyzed for the type of drugs that they contain.

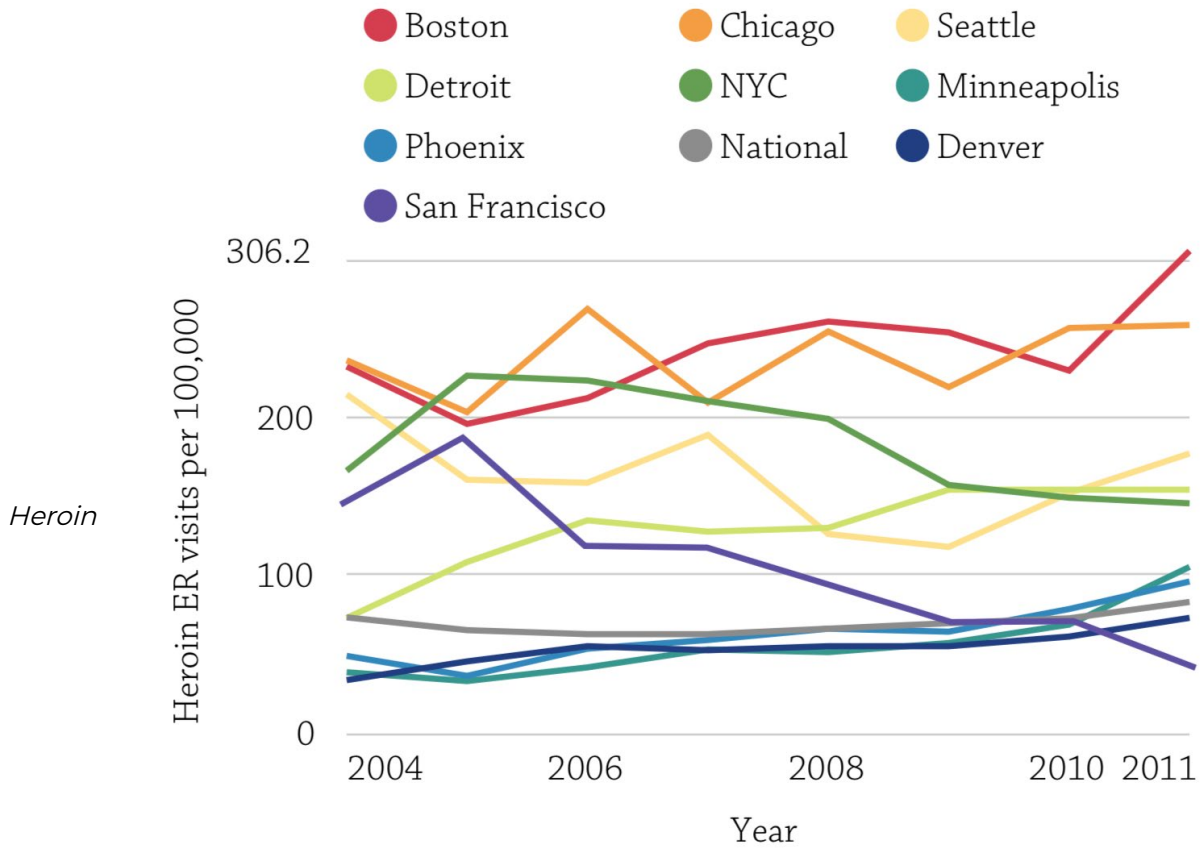
Prior to 2014 fentanyl rarely showed up in these exhibits (Figure 20). Around 2006, the supply of fentanyl in the U.S. illegal drug market temporarily increased, but it was traced to a single lab. After that lab was shut down, the surge went away. Since 2013, the number of exhibits identified as containing fentanyl by crime labs has skyrocketed. Seizures of drugs later found to contain fentanyl are heavily concentrated in the northeast where white powder heroin is more common, making it easier to disguise the fentanyl.

HOSPITALIZATION FOR OPIOID USE AND MISUSE HAS ALSO RISEN ACROSS GEOGRAPHIC, DEMOGRAPHIC AND SOCIOECONOMIC GROUPS

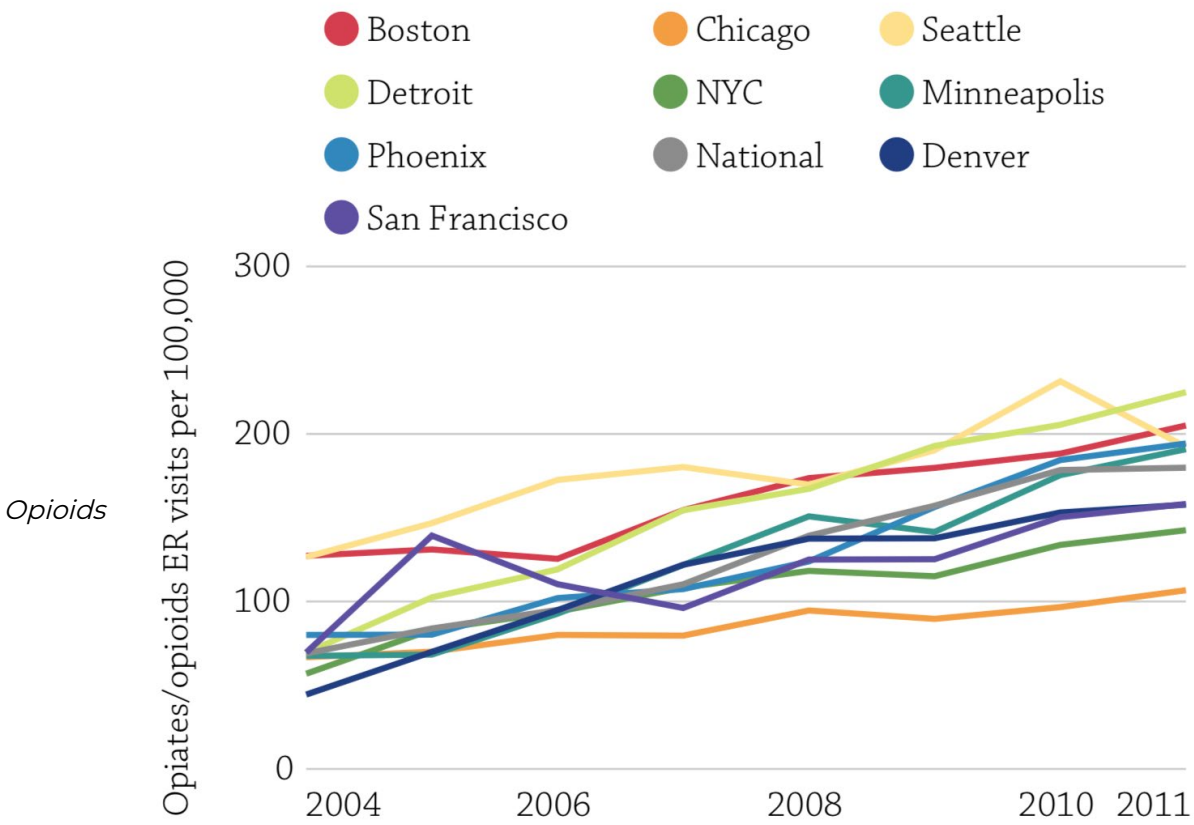
Heroin use and opioid prescription misuse resulting in emergency room visits have been rising in many states and their major metropolitan areas. In some cases, some metropolitan areas had an elevated emergency department visit rate even in 2004, when the data were first published (Figure 22).

As with prescribing rates, opioid-related inpatient hospital stays are concentrated in Appalachia, the West, and New England (Figure 23).

Figure 22. Emergency room visits by metropolitan area by drug type: heroin and opioid medications, 2004-2011



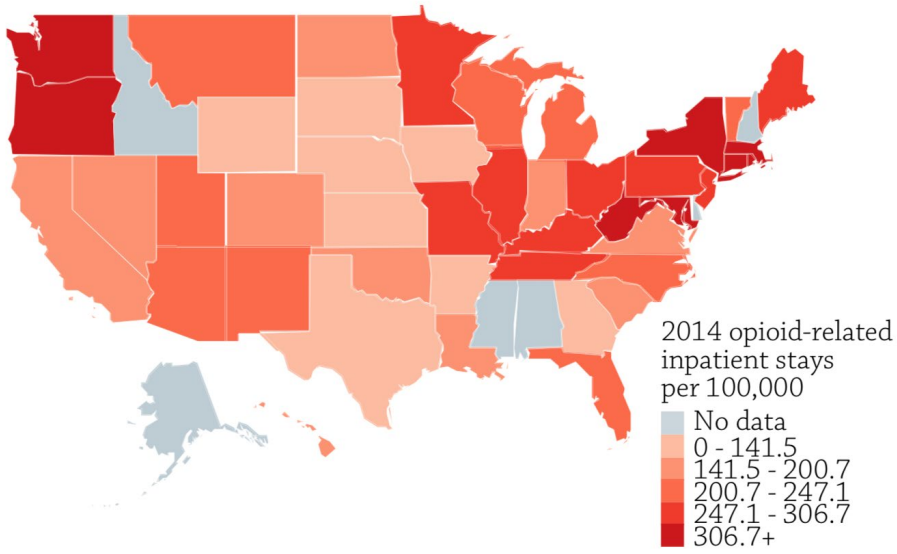
Heroin



Opioids

Source: Drug Abuse Warning Network (DAWN) 2004-2011, Substance Abuse and Mental Health Services Administration (SAMHSA). Accessed at https://www.datafiles.samhsa.gov/study-series/ drug-abuse-warning-network-dawn-nid13516.

Figure 23. Opioid- related inpatient hospital stays per 100,000, 2014

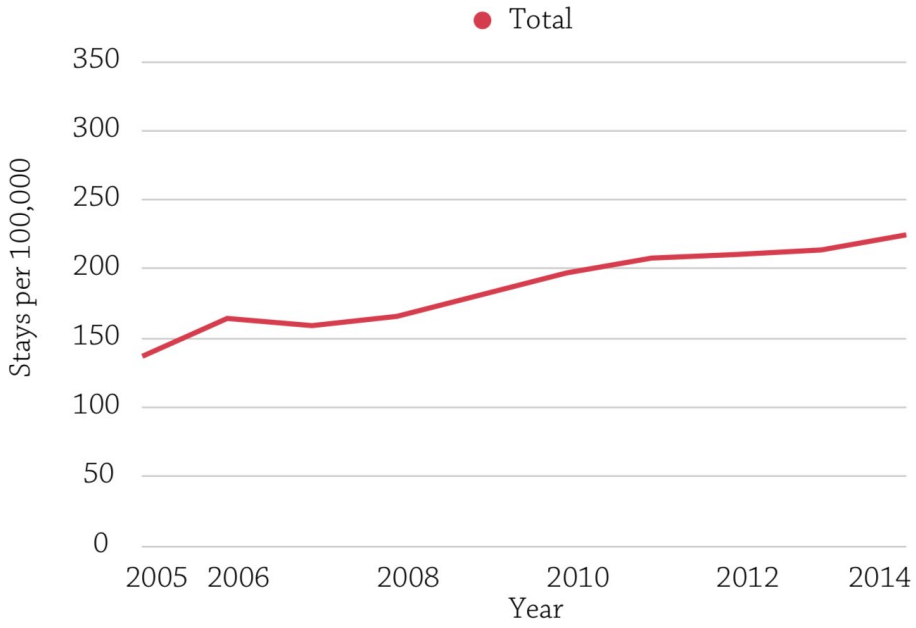


Source: "HCUP Fast Stats National and State-Level Trends in Opioid-Related Hospital Use, Rate of Inpatient Stays and Emergency Department Visits by Discharge Year," Healthcare Cost and Utilization Project (HCUP), accessed October 20, 2017, https:// www.hcup-us.ahrq.gov/faststats/OpioidUseServlet.

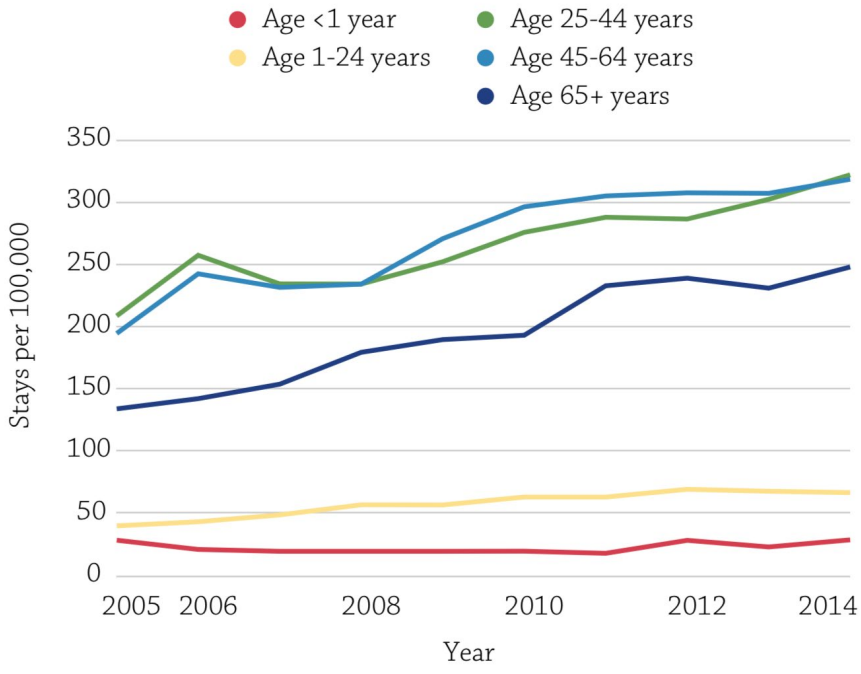
Inpatient hospital stays per 100,000 population related to opioids have also been on the rise for a number of years (Figure 24). In 2014, those aged 25-64 had the highest rates of inpatient stays, and lower income individuals and those in the large metropolitan areas had higher rates of stays than other groups from 2005-2014 (Figure 24). The bump from the 2006 fentanyl episode is evident in each of the charts, with some groups more affected than others.

Figure 24. Opioid- related inpatient hospital stays per 100,000, 2005-2014

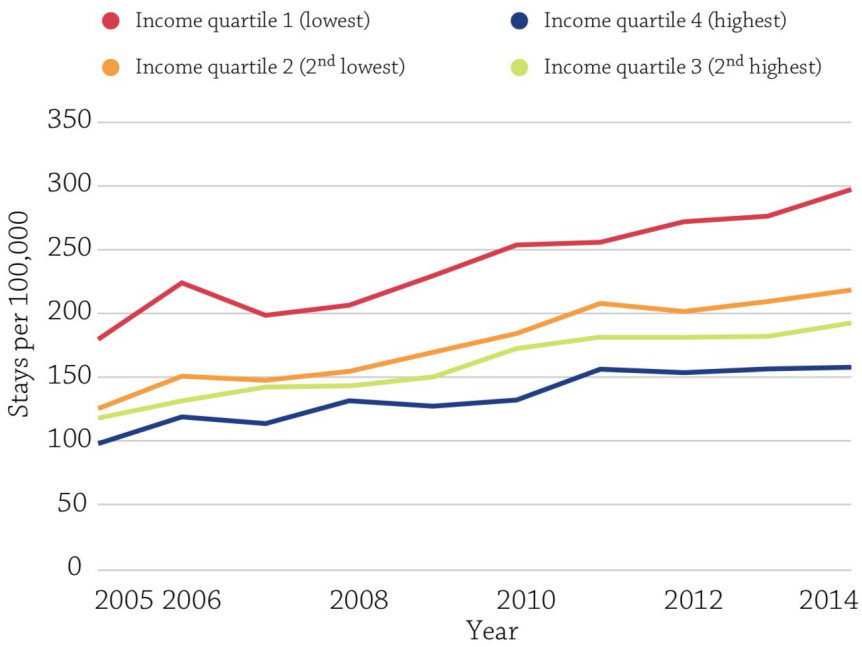
Total



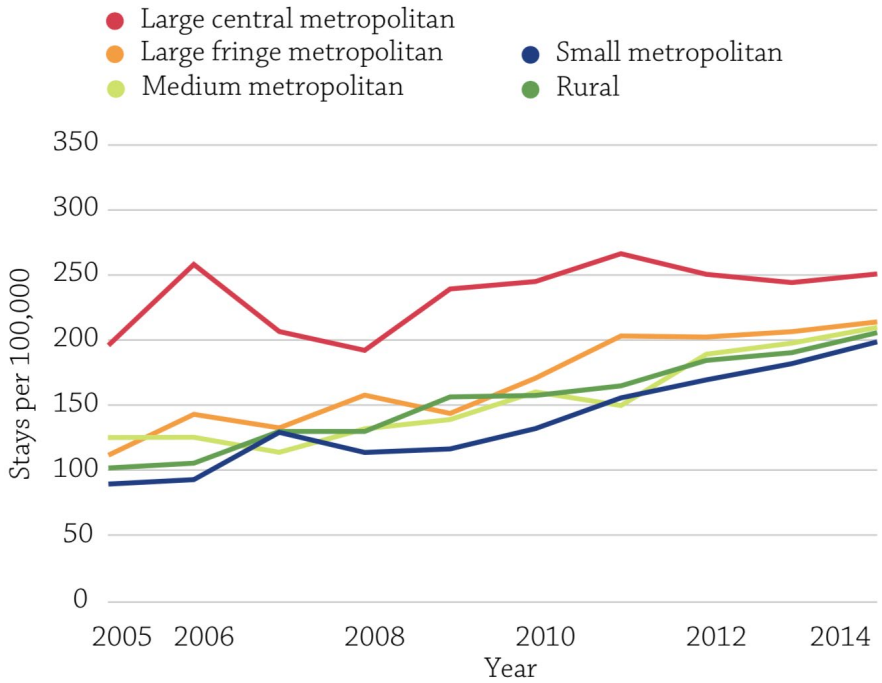
Age



Income



Type of county



Source: "HCUP Fast Stats National and State-Level Trends in Opioid-Related Hospital Use, Rate of Inpatient Stays and Emergency Department Visits by Discharge Year," Healthcare Cost and Utilization Project (HCUP), accessed October 20, 2017, https:// www.hcup-us.ahrq.gov/faststats/OpioidUseServlet.

THE OPIOID CRISIS WILL AFFECT THE NEXT GENERATION FOR YEARS TO COME

An opioid-related addiction, overdose, or death is far from an isolated event. Many lives are affected by the devastation caused by these drugs. Families struggle to keep their loved ones alive through treatments and interventions. Children are affected directly, making this crisis multigenerational.

Reports of young children overwhelming foster care systems are pouring out of states like Ohio, which since 2010, have witnessed an increase of nearly one-fifth in the number of children placed with relatives or in foster care.[43] Between 2009 and 2014, the percent of children nationwide with parental alcohol or drug use as a factor in out-of-home placement rose from 29.4 percent to 35.1 percent, according to written testimony provided to the U.S. Senate Committee on Finance in February 2016 by Nancy Young, the Director of Children and Family Futures (Figure 25).[44] Young also testified that, between 2009 and 2014, parental drug abuse showed the largest increase (from 22.1 percent to 29.7 percent) of any reason for a child to be removed from a home.

Rising rates of neonatal abstinence syndrome (NAS), the diagnosis of a newborn that is physiologically dependent on drugs or alcohol and will go through withdrawals, are generally driven by the opioids that their mothers are dependent on while pregnant.[45] About half of babies who are exposed to opioids during pregnancy will experience NAS.[46]

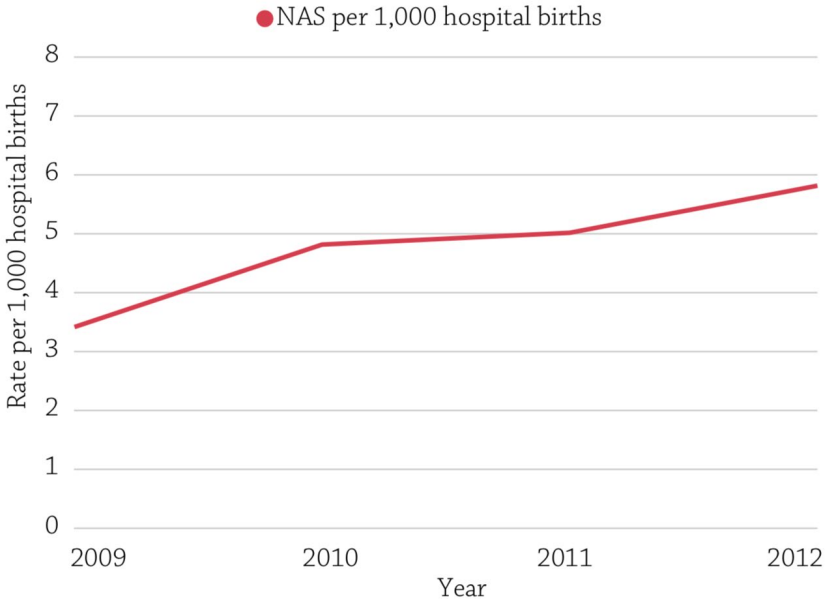
Figure 25. Percent of children with parental alcohol or drug use as factor in out-of-home placement, 2009-2014

Source: "Examining the Opioid Epidemic: Challenges and Opportunities," 114th Congress (2016) 30 (statement of Nancy K. Young, Director, Children and Family Futures, Inc.): 7, https://www.finance. senate.gov/imo/media/doc/23feb2016Young.pdf.

New England and the South have the highest rates of NAS per 1,000 hospital births. In 2013, according to a CDC study, NAS incidence per 1,000 hospital births was highest in Vermont (33.3) and West Virginia (33.4).[47] In 2012, Maine had a similar level (30.4), but data were not available for 2013.

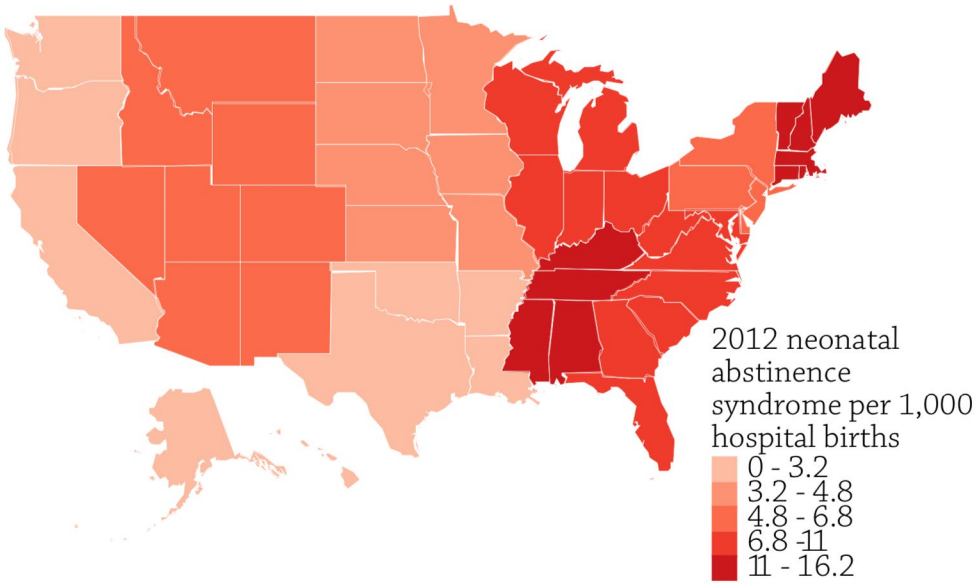
Increasing numbers of children entering foster care, living with grandparents, or entering the world dependent on opioids will have consequences for decades to come. Many dealing with the childhood trauma of a parent addicted to opioids have suffered severe physical and mental distress, and some researchers speculate that the damage may be behind the recent rise in suicides among children and teenagers.[48]

Figure 26. Incidence of neonatal abstinence syndrome (NAS) per 1,000 hospital births, 2009-2012



Source: "Examining the Opioid Epidemic: Challenges and Opportunities," 114th Congress (2016) 30 (statement of Nancy K. Young, Director, Children and Family Futures, Inc.): 7, https://www.finance. senate.gov/imo/media/doc/23feb2016Young.pdf.

Figure 27. Incidence of neonatal abstinence syndrome (NAS) per 1,000 hospital births by region, 2012



Source: Stephen W. Patrick et al., "Increasing Incidence and Geographic Distribution of Neonatal Abstinence Syndrome: United States 2009-2012," Journal of Perinatology 35, no. 8 (August 2015): 650-655, https://www.ncbi.nlm.nih.gov/ pmc/ articles/PMC4520760/pdf/nihms672061.pdf.

LOOKING FORWARD

With rising overdose death rates driven by heroin and fentanyl, most indicators suggest that the worst of the crisis has yet to pass.[49] Data from 2016 indicate that overdose deaths from synthetic opioids like fentanyl have surpassed those from heroin, rising to over 19,000 deaths.[50] Heroin abuse continues to rise. Abuse of prescription opioids appears to be falling, along with opioid prescription rates, but slowly, and deaths from the category of opioids that includes prescription pain relievers continue to rise.

Beyond the proximal factors contributing to the opioid crisis, there is the question of why some people succumb to addiction and some do not. As we have seen, there are regular patterns in the national picture of opioid use, abuse, and death; some people and places are more vulnerable to addiction than others. This is true of other forms of despair as well. The special evilness of opioids is that they offer practically no quarter to those who are most vulnerable to addiction. For opioid addicts, compared to others dependent on drugs, "the recovery period is longer and the chance of relapse is higher."[51] One study interviewed 109 patients following discharge from residential addiction treatment and found that over nine in ten reported a relapse, with nearly six in ten of those occurring in the first week.[52]

Successfully combatting the opioid crisis will require that we better understand the sources of despair and vulnerability that lead to addiction. As Christopher Caldwell poignantly notes:

> Calling addiction a disease usefully describes certain measurable aspects of the problem—particularly tolerance and withdrawal. It fails to capture what is special and dangerous about the way drugs bind with people's minds. Almost every known disease is something people wish to be rid of. Addiction is different. Addicts resist known cures—even to the point of death. If you do not reckon with why addicts go to such lengths to continue suffering, you are unlikely to figure out how to treat them. This turns out to be an intensely personal matter.[53]

Preliminary evidence suggests that a focus on economic sources of despair is unlikely to be productive.[54] In ongoing work, the Social Capital Project is examining whether social disrepair provides a more useful way of thinking about "deaths of despair," including first and foremost deaths from opioid overdoses. Above, we documented dramatically higher rates of opioid overdose mortality among single men who have no more than a high school education as compared with their married counterparts. That difference hints that being embedded within social relationships may protect against addiction or make treatment more successful, though the evidence is only suggestive.[55]

There is much more to understand about the opioid crisis, its causes, and the way out of it. But one thing is clear: we are many years into this national public health emergency, and we are not winning the battle.

SOURCE NOTES

- **Figure 1. Age-adjusted overdose death rates, 1968-2016**
  Centers for Disease Control and Prevention (CDC). Includes all deaths, unintended or otherwise. National Vital Statistics System data produced using CDC WONDER's Multiple Cause of Death Module: 1999-2016 (https://wonder.cdc.gov/mcd.html). National Vital Statistics System downloadable Multiple Cause of Death files: 1968-78 and 1979-1998 (https://www.cdc.gov/ nchs/data_access/vitalstatsonline.htm). Provided by CDC staff to Social Capital Project.

  Note from source: "The multiple cause data for 1972, 1981 and 1982 are based on sample data. For 1972, it is a 50 percent sam- ple for the entire U.S. For 1981-1982, it is a 50 percent sample for 19 registration areas [out of a current 54] and 100 percent for the rest. Figures are weighted accordingly. Underlying cause ICD-10 codes for years 1999-2016: X40-X44, X60-X64, X85, Y10-Y14. Multiple cause ICD-10 codes for years 1999-2015: T40.1-T40.4, T40.6. Underlying cause ICD-9 codes for years 1979- 1998: E850–E858, E950.0–E950.5, E962.0, E980.0–E980.5. Multiple cause ICD-9 codes for years 1979-1998: 965.0. Underly- ing cause ICDA-8 codes for years 1968-1978: E850–E859, E950.0–E950.3, E962, E980.0–E980.3. Multiple cause ICDA-8 codes for years 1968-1978: 965.0."

- **Figure 2a. National age-adjusted overdose deaths by opioid type, 1999-2016**
  Age-adjusted rates shown from CDC. Includes all deaths, unintended or otherwise. CDC WONDER (https://wonder.cdc.gov).

  The 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) multiple cause-of-death (MCD) codes for opioids include the

- following: T40.0, T40.1, T40.2, T40.3, T40.4, or T40.6. Of these, opium (T40.0), heroin (T40.1), and methadone (T40.3) have their own individual specific codes (https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6450a3.htm?s_cid=mm6450a3_w). (We exclude opium from our analyses, as deaths from opium overdoses are exceedingly rare.) Natural and semisynthetic opioids (T40.2), however, are a collection of prescription opioids that can include morphine, oxycodone, hydrocodone, and a range of other medications. This is true of synthetic opioids other than methadone (T40.4) as well, including fentanyl and tramadol. Finally, other and unspecified narcotics (T40.6) include opioids that are unidentified. Estimates for T40.6, "Other and unspecified narcotics," not listed for 2016. Social Capital Project staff calculations done with July 2016 Bridged-Race Population Estimates provided by Census to CDC to obtain 2016 overdose deaths per 100,000.

  Complicating the issue, some deaths from opioid overdoses can be misclassified, not only because they may be unidentifiable, but because some opioids may metabolize similarly (https://www.cdc.gov/mmwr/volumes/65/wr/mm655051e1.htm), such as morphine and heroin. Furthermore, in many cases, an overdose can occur from more than one opioid, so the trends in overdose death rates by opioid type are not mutually exclusive.

  In addition, accuracy of counting opioid overdose deaths by type of opioid significantly depends on the judgment of state or local medical examiners and coroners when writing up the death certificate. In many cases, the underlying causes of death are not obvious unless an autopsy or a toxicology report is ordered, which present costs and personnel problems (http://www.slate. com/articles/technology/future_tense/2017/08/the_opioid_epidemic_might_be_even_worse_than_we_realize.html).

- **Figure 2b. Age-adjusted overdose deaths in Utah by opioid type, 1999-2016**
  Age-adjusted rates shown from CDC. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999- 2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 2c. National provisional overdose death counts by opioid type, January 2015 to February 2018**
  Preliminary data for population estimates from CDC. Data for overdose deaths for 12 months ending in each month indicated from Provisional Drug Overdose Death Counts, NVSS, accessed at https://www.cdc.gov/nchs/nvss/ vsrr/drug-overdose-data.htm.

- **Figure 2d. Provisional overdose death counts in Utah by opioid type, January 2015 to February 2018**
  Preliminary data for population estimates from CDC. Data for overdose deaths for 12 months ending in each month indicated from Provisional Drug Overdose Death Counts, NVSS, accessed at https://www.cdc.gov/nchs/nvss/ vsrr/drug-overdose-data.htm.

- **Figure 3a. Geographic spread of unintentional opioid overdose deaths, by county, 1979-83 to 2011-15**
  CDC, Compressed Mortality File (CMF) 1979-1998 and Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/cmf-icd9.html and http://wonder.cdc.gov/mcd-icd10.html. From previous Social Capital Project opioid post.

- **Figure 3b. Opioid overdose deaths in Utah, by county, 2012-2016**
  Source: Age-adjusted rates shown from CDC. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 4a. Opioid overdose deaths by age group, 1999 and 2015**
  Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html. Deaths by aggregated five-year age groups.

- **Figure 4b. National opioid overdose deaths by age group, 1999-2016**
  Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 4c. Opioid overdose deaths in Utah by age group, 1999-2016**
  Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 5. Opioid overdose deaths by type of opioid and gender**
  Crude rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 6a. Opioid overdose deaths by race, by educational attainment, and by marital status, 1999 and 2015**
  Social Capital Project staff calculations, crude rates shown. CDC. Includes all deaths, unintended or otherwise. Mortality files accessed at https://www.cdc.gov/nchs/data_access/vitalstatsonline.htm. Deaths among age 25 and older by race and opioid overdose type aggregated from CDC's mortality flat files for 1999 and 2015. To obtain the rates for each specific group, death rates were calculated per 100,000 by comparing total deaths age 25 and older in each group against the total population of each group as measured by CDC's bridged-race population estimates: Bridged-Race Population Estimates, United States July 1st res- ident population by state, county, age, sex, bridged-race, and Hispanic origin. Compiled from 1990-1999 bridged-race intercen- sal population estimates (released by NCHS on 7/26/2004); revised bridged-race 20002009 intercensal population estimates (released by NCHS on 10/26/2012); and bridged-race Vintage 2015 (2010-2015) postcensal population estimates (released by NCHS on 6/28/2016). Available on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/bridged-race-v2015. html on Aug 8, 2017.

  Deaths among age 25 and older by educational attainment and marital status aggregated from CDC's mortality flat files for 1999 and 2015. To obtain the rates for each specific group, death rates were calculated per 100,000 by comparing total deaths in each group against the total population age 25 and older of each group as measured by Census population estimates from July 1st of 1999 and 2015, which were cross tabulated in DataFerrett to isolate specific subgroups by educational attainment and marital status. Educational attainment and marital status were pulled from the Current Population Survey Basic Monthly Survey for July. Accessed at http://dataferrett.census.gov/.

- **Figure 6b. Opioid overdose deaths by race, Utah vs U.S., 1999-2016**
  Age-adjusted rates shown. Includes all deaths, unintended or otherwise. CDC, Multiple Cause of Death (MCD) 1999-2016 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

- **Figure 7. Opioid overdose death rates by gender, educational attainment, and marital status, 2015**
  See note for Figure 6a.

- **Figure 8. Source of pain relievers among prescription abusers in the past year, 2005-2014**
  Social Capital Project analyses of the National Survey on Drug Use and Health (NSDUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and- health-nsduh-2002-2014-nid16959. Some of the variables shown are combinations of the options for responses.

  "Unknown" and "other" were combined into a single category; "one doctor" and "more than one doctor" were combined into a single category; "wrote fake prescription" and "stole from doctor office" were combined into one category.

- The NSDUH is one of the few surveys that asks individuals to self-report their illicit drug use and prescription misuse, and is likely undercounting the population of drug users for a number of reasons, including that transient populations are excluded from the survey. Yet it remains one of the only sources of data on the current population of drug users.

  Prior to the 2015 survey, NSDUH used the term "nonmedical pain reliever use," but more recent surveys use the term "misuse of pain relievers," a concept more relevant to opioid use disorder. From 2015 to 2016, NSDUH data show that among those aged 12 or older, estimates of opioid misuse declined from 4.7 percent to 4.4 percent (see Table A. 11B). The majority of that decline is due to a decline in pain reliever misuse; the difference between the 2015 and 2016 estimate for heroin use in the past year was not statistically significant.

- **Figure 9. Opioid overdose deaths by number of drugs involved, 2014**
  CDC, National Vital Statistics Reports, Vol. 65, No. 10, December 20, 2016, Table 5 (https://www.cdc.gov/nchs/data/nvsr/ nvsr65/nvsr65_10.pdf). Includes all deaths, unintended or otherwise. Data pulled from the text on death certificates to identi- fy specific drugs. The source above notes that: "Drug overdose deaths are identified using underlying cause-of-death codes X40–X44, X60–X64, X85, and Y10–Y14. Deaths may involve other drugs in addition to the referent drug (i.e., the one listed). Deaths involving more than one drug (e.g., a death involving both heroin and cocaine) are counted in both totals (i.e., as a referent drug and as an "other" drug)."

- **Figure 10. Type of nonmedical opioid use in the past year, ages 18 and older, 2002-2014**
  Social Capital Project analyses of the National Survey on Drug Use and Health (NSDUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and- health-nsduh-2002-2014-nid16959. Prescription pain reliever abuse in this period is technically nonmedical pain reliever use which is used to describe individuals who use prescription pain relievers in an amount or method not prescribed by physicians. From 2002-2014, NSDUH asked questions related to nonmedical pain reliever use before switching in 2015 to identifying "mis- use of pain relievers." Illicit opioid use other than heroin use is unavailable. See note for Figure 8 for additional information.

- **Figure 11. Opioid prescriptions per 100, 2006-2016**
  "Table 1. Total number and rate of opioid prescriptions dispensed, United States, 2006-2016," U.S. Prescribing Rate Maps, CDC, last modified July 31, 2017, https://www.cdc.gov/drugoverdose/maps/rxrate-maps.html.

- **Figure 12a. Opioid prescriptions per 100, by county, 2016.**
  "U.S. County Prescribing Rates, 2016," CDC, last modified July 31, 2017, https://www.cdc.gov/drugoverdose/maps/rxcoun- ty2016.html.

- **Figure 12b. Opioid prescriptions per 100 in Utah, by county, 2016**
  "U.S. County Prescribing Rates, 2016," CDC, last modified July 31, 2017, https://www.cdc.gov/drugoverdose/maps/rxcoun- ty2016.html.

- **Figure 13. Total expenditures for opioid prescriptions by insurance type, 1999-2012**
  Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insur- ers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 827, https://doi.org/10.1377/ hlthaff.2015.1103.

  The Medical Expenditure Panel Survey (MEPS) pharmaceutical price index uses 2009 as the base year. Self or family includes out of pocket spending. Other private insurance includes worker's compensation or other unclassified insurance, such as automobile, homeowner's, and liability insurance; and insurance from other miscellaneous or unknown sources. This chart was reproduced using data provided to the Social Capital Project by the authors of the original study.

- **Figure 14. Total morphine milligram equivalents (MME) by payer type, 1999-2012**
  Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insurers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 827, https://doi.org/10.1377/ hlthaff.2015.1103. See figure 13 for additional information.
- **Figure 15. Opioid expenditures by age group and Medicare or Medicaid recipiency, 1999-2012**
  Chao Zhou, Cutis S. Florence, and Deborah Dowell, "Payments for Opioids Shifted Substantially to Public and Private Insur- ers While Consumer Spending Declined, 1999-2012," Health Affairs 35, no. 5 (May 2016): 827, https://doi.org/10.1377/ hlthaff.2015.1103. See figure 13 for additional information.
- **Figure 16. Licit and illicit opioid deaths, by county, 1999-2003 and 2011-2015.**
  CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC WONDER Online Database. Accessed at http://wonder.cdc.gov/mcd- icd10.html. Includes all deaths, unintended or otherwise.

  County-level estimates show crude opioid death rates for the 1999-2003 and 2011-2015 periods, as broken down in our previous post on the opioid crisis. By combining years, rates are suppressed for fewer counties. Unlike the previous post, all in- tents—suicide, homicide, accident, and undetermined—are included. The data for many counties are suppressed for confiden- tiality reasons when the number of opioid deaths is small for a given county. As such, when breaking down licit and illicit opioid overdose deaths, some data are lost. The data also exclude MCD code T40.6 for unspecified opioids, as it is unclear whether the death resulted from a licit or illicit opioid. MCD codes T40.0, T40.1, and T40.4 are categorized as illicit opioids, including opium and heroin, and other synthetic opioids like fentanyl, increasingly manufactured and distributed illegally. MCD codes T40.2 and T.40.3 are categorized as licit opioids, including prescription pills like oxycodone, and methadone. The categorizing of fentanyl as licit or illicit is indeterminable from death certificate data.
- **Figure 17. Opioid overdose deaths by type by state, 1999 and 2015**
  CDC, Multiple Cause of Death (MCD) 1999-2015 on CDC Wonder Online Database. Accessed at http://wonder.cdc.gov/mcd- icd10.html. For state-level data, it is possible to narrow in on single-year estimates, in this case 1999 and 2015, for different types of opioid-related overdose deaths without loss of much data to suppression. All intents—suicide, homicide, accident, and undetermined—are included. Overdose deaths by type are broken down by MCD codes T40.1 (heroin), T40.2 (natural/semi- synthetic opioids), T40.3 (Methadone), T40.4 (synthetic opioids other than methadone), and T40.6 (unspecified narcotics).
- **Figure 18. Heroin use in the past year by gender, ages 18 and older, 2002-2014**
  Social Capital Project analyses of the National Survey on Drug Use and Health (NSDUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and- health-nsduh-2002-2014-nid16959. Illicit opioid use other than heroin use is unavailable. See note for Figure 8 for additional details.
- **Figure 19. Heroin use in the past year by race, ages 18 and older, 2002-2014**
  Social Capital Project analyses of the National Survey on Drug Use and Health (NSDUH-2002-2014), Substance Abuse and Mental Health Data Archive, accessed September 5, 2017, https://datafiles.samhsa.gov/study/national-survey-drug-use-and- health-nsduh-2002-2014-nid16959. Illicit opioid use other than heroin use is unavailable. See note for Figure 8 for additional details.
- **Figure 20. Fentanyl exhibits, 2004-2016**
  Data was provided to the Social Capital Project by Drug Enforcement Agency staff.

  The National Forensic Laboratory Information System (NFLIS) collects data on these exhibits from the network of forensic laboratories across the country. The Drug Enforcement Administration (DEA) and other agencies then use the data to identify key threats. The data

- are regularly revised as more exhibits are tested by laboratories and results are reported to NFLIS; in some cases the testing requires a significant amount of time. Ultimately, measuring illegal drug trafficking based on NFLIS exhibits likely understates the magnitude of the fentanyl trade.

- **Figure 21. Fentanyl exhibits by state, 2016.**
  "2017 National Drug Threat Assessment," Drug Enforcement Agency, (2017): 59, accessed October 18, 2018, https://www.dea. gov/docs/DIR-040-17_2017-NDTA.pdf.

- **Figure 22. Emergency room visits, by metropolitan area by drug type: heroin and opioid medications, 2004-2011**
  Drug Abuse Warning Network (DAWN) 2004-2011, Substance Abuse and Mental Health Services Administration (SAMHSA). Accessed at https://www.datafiles.samhsa.gov/study-series/drug-abuse-warning-network-dawn-nid13516.

  Emergency department visits are specifically drawn from the subgroup of ER visits based on drug misuse and abuse, including illicit drug visits, nonmedical use of pharmaceuticals, alcohol-related visits, and underage drinking. Rates per 100,000 are based on the population of the national and selected metropolitan statistical areas for each respective year.

  Between 2004 and 2011, DAWN collected information about emergency department visits, and particularly for drug misuse. A redesign spearheaded by the National Center for Health Statistics combining several hospital, ambulatory, and discharge surveys into one dataset called the National Hospital Care Survey is expected in the future.

- **Figure 23. Opioid-related inpatient hospital stays per 100,000, 2014**
  "HCUP Fast Stats National and State-Level Trends in Opioid-Related Hospital Use, Rate of Inpatient Stays and Emergency De- partment Visits by Discharge Year," Healthcare Cost and Utilization Project (HCUP), accessed October 20, 2017, https://www. hcup-us.ahrq.gov/faststats/OpioidUseServlet.

- **Figure 24. Opioid-related inpatient hospital stays per 100,000, 2005-2014**
  "HCUP Fast Stats National and State-Level Trends in Opioid-Related Hospital Use, Rate of Inpatient Stays and Emergency De- partment Visits by Discharge Year," Healthcare Cost and Utilization Project (HCUP), accessed October 20, 2017, https://www. hcup-us.ahrq.gov/faststats/OpioidUseServlet.

  Community level income is based on the median household income of the patient's ZIP Code of residence. HCUP defines quar- tiles so that the total U.S. population is evenly distributed

  Patient location is determined based on the National Center for Health Statistics (NCHS) six-category, county-level scheme. Large central metropolitan: Counties in metropolitan statistical areas (MSAs) of 1 million or more population that contain the entire population of the largest principal city of the MSA, have their entire population contained in the largest principal city of the MSA, or contain at least 250,000 inhabitants of any principal city of the MSA. Large fringe metropolitan (suburbs): Counties in MSAs of 1 million or more population that did not qualify as large central metropolitan counties. Medium metro- politan: Counties in MSAs of populations of 250,000 to 999,999. Small metropolitan: Counties in MSAs of population less than 250,000. The rural category is a combination of micropolitan and noncore counties. Micropolitan: Counties in micropolitan statistical areas. Noncore: Nonmetropolitan counties that did not quality as micropolitan. See the "Data Notes & Methods" link in the source for more information.

- **Figure 25. Percent of children with parental alcohol or drug use as factor in out-of-home placement, 2009-2014**
  "Examining the Opioid Epidemic: Challenges and Opportunities," 114th Congress (2016) (statement of Nancy K. Young, Director, Children and Family Futures, Inc.): 7, https://www.finance.senate.gov/imo/media/doc/23feb2016Young.pdf.

- **Figure 26. Incidence of neonatal abstinence syndrome (NAS) per 1,000 hospital births, 2009-2012**
  Stephen W. Patrick et al., "Increasing Incidence and Geographic Distribution of Neonatal Abstinence Syndrome: United States 2009-2012," Journal of Perinatology 35, no. 8 (August 2015): 650-655, https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC4520760/pdf/nihms672061.pdf.
- **Figure 27. Incidence of neonatal abstinence syndrome (NAS) per 1,000 hospital births by region, 2012**
  Stephen W. Patrick et al., "Increasing Incidence and Geographic Distribution of Neonatal Abstinence Syndrome: United States 2009-2012," Journal of Perinatology 35, no. 8 (August 2015): 650-655, https://www.ncbi.nlm.nih.gov/pmc/articles/ PMC4520760/pdf/nihms672061.pdf.

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