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Abstract

We develop a measure of chronic joblessness among prime-age men and women in the United States—termed the *detachment rate*— that identifies those who have been out of the labor force for more than a year. We show that the detachment rate more than doubled for men since the early 1980s and rose by a quarter for women since 2000, though it is consistently considerably higher for women than men. We then explore the economic geography of labor market detachment to help explain its rise. Results show that the detachment rate increased more in places with weak local economies, particularly those that experienced a loss of routine production and administrative support jobs due to globalization and technological change. The loss of production jobs affected both men and women and was particularly consequential in the 1990s and the first decade of the 2000s, while the loss of administrative support jobs mostly affected women and was particularly severe in the 1980s and 1990s. Moreover, we find the rise in detachment was concentrated among older prime-age individuals and those without a college degree, and occurred less in places with high human capital.

JEL classification: E24, J21, J24, J61, O33, R12, R23
Key words: joblessness, labor force participation, local labor markets, job polarization, globalization, technological change, regional divergence

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"These forces [globalization and technological advances] have, among other things, eliminated large numbers of American manufacturing jobs over a number of decades, leaving many people—mostly men—unable to find new ones."

--*Council of Economic Advisors,* June 2016

"The erosion of [executive assistant] jobs that gave women without college degrees a career path happened in dribs and drabs but is as dramatic as the manufacturing decline."

--*The Wall Street Journal,* January 2020

I. INTRODUCTION

Troublingly, a growing number of Americans in the prime of their working lives are not working and have become completely detached from the labor market. Indeed, labor force participation has been declining since at least the late-1990s, even among prime-age individuals (Aaronson et al., 2014; Krueger, 2017; Abraham and Kearney, 2020). Moreover, joblessness more broadly—including those unemployed as well as those out of the labor force—among prime-age men has increased threefold since the 1980s (Austin, Glaeser, and Summers, 2018). Being out of work, especially for long periods of time, can be particularly damaging to workers' prospects, potentially causing skills to atrophy, reducing connections to job networks, leading to a stigma that may be hard to shake, and otherwise making it more difficult to reenter the labor market. Moreover, high geographic concentrations of joblessness can have negative consequences for communities, including high levels of poverty and government support, family dissolution, and a general fraying of an area's social fabric (Wilson, 1996; Autor, Dorn, Hanson, 2019). As such, chronic joblessness warrants special attention, though it has received relatively little in the literature.

In this paper, we study a particular form of chronic joblessness among prime-age men and women in the United States. We construct a measure of what we term *labor market detachment* which captures those who have been absent from the labor force for more than a year. This concept has generally not been singled out in the literature and studied as its own form of joblessness, which is important because it is not the same as being unemployed or out of the labor force in general, which mixes shorter stints with more prolonged periods of not working. Significantly, we show that labor market detachment has been on the rise for prime-age men since at least 1980 and for prime-age women since around 2000. Indeed, the share of prime-age men who have been out of the labor force for more than a year more than doubled from 4 percent to 9 percent between 1980 and 2015, before declining modestly from then until the pandemic hit in early 2020, as labor market conditions strengthened following the Great Recession. The share of prime-age women out of the labor force for more than a year is much higher than for prime-age men and fell from 27 percent to 16 percent between 1980 and 2000 as women's labor force participation increased, before climbing from 16 percent to 22 percent between 2000 and 2015. Further, we find that the rise in detachment was driven by a growing proportion of prime-age men and women who report being ill or disabled and, to a lesser extent, early retirement, pointing to a lack of economic opportunity as a potential contributor.

Indeed, while there is a cyclical component to labor market detachment, we argue its long-term rise is closely connected to persistent weakness in local economies, due in large part to globalization and technological change, which have put large swaths of people out of work in recent decades (Autor, Katz, and Kearney, 2006; Acemoglu and Autor, 2011). Import competition coupled with automation due to the proliferation of computers

and penetration of industrial robots have resulted in a significant and rapid decline in routine jobs, particularly routine manufacturing production-oriented jobs and clerical work (Autor, Dorn, and Hanson, 2013a, 2015, 2021; Pierce and Schott, 2016; Acemoglu and Restrepo, 2020; Dillender and Forsythe, 2022). This decline in the demand for labor has especially reduced job opportunities for the middle-skilled, leading to chronic joblessness for a segment of the population who might otherwise be willing and able to work.

The effects of globalization and technological change have hit some parts of the country much harder than others and have hit some workers harder than others. While for the United States as a whole, the share of workers employed in production jobs more than halved between 1980 and 2019, falling from 14 percent to 6 percent, many manufacturing towns around the country—places such as Martinsville, VA and Hickory, NC, where production jobs comprised roughly a third of all employment in 1980—lost two-thirds or more of their manufacturing bases over this period. Likewise, though the share of U.S. workers employed in administrative support jobs fell by about a third between 1980 and 2019—from 16 percent to 11 percent—areas with high concentrations of office-related work, including large urban areas such as Boston, New York City, and San Francisco, saw their shares of administrative support jobs cut in half.

At the same time these routine jobs have disappeared, mobility has plummeted in the United States, particularly among those without a college degree, reducing the ability for those who have lost their jobs to relocate to more favorable labor markets (Molloy, Smith, and Wozniak, 2011; Kaplan and Schulhofer-Wohl, 2017). Indeed, research has established a connection between the decline in labor market fluidity and internal migration in the United States since the early 1980s (Molloy et al., 2016, 2017). Of particular note,

in contrast to the regional adjustment that occurred in the United States for much of the 20th century, recent research shows that out-migration from areas experiencing economic downturns has decreased over the past four decades, severely limiting local labor market adjustment (Blanchard and Katz, 1992; Dao, Furceri, and Loungani, 2017; Faber, Sarto, and Tabellini, 2022). Those that did move—largely young college-educated individuals seeking career opportunities—increasingly located in the largest and most productive local areas rich in urban amenities (Diamond, 2016). Thus, much of the population has become increasingly less likely to move from places where labor demand has decreased to places where they might find jobs.

These two trends—the decline in routine jobs due to globalization and technological change and the broad reduction in mobility across the United States—have resulted in incomplete regional labor market adjustment in recent decades and contributed to economic divergence across space (Ganong and Shoag, 2017). Consequently, more and more people have become stuck in local economies without good job prospects for long periods of time, contributing to rising labor market detachment in the aggregate and large differences in detachment across space. For example, in parts of the country with persistently weak local economies—most notably, throughout the Appalachia region—more than a third of the prime-age population has been detached from the labor market for more than a year. Moreover, in Martinsville, VA—a manufacturing hub devastated by import competition from China—just 4 percent of prime-age men were out of the labor force for more than a year in 1980, a figure which rose to more than 17 percent by 2010 and has remained there since then. By contrast, while the majority of local areas have seen detachment rise in recent decades, areas that experienced solid economic growth and

regional reinvention, such as Austin, TX, Nashville, TN, Arlington, VA, and Boston, MA have seen a relatively small share of their prime age populations out of the labor force for more than a year since 1980.

While both men and women have seen a significant rise in labor market detachment in recent decades, the literature on joblessness has historically tended to focus on prime-age men, perhaps because of the historical dominance of men in manufacturing jobs (Council of Economic Advisors, 2016; Eberstadt, 2016; Austin, Glaeser, and Summers, 2018; Autor, Dorn, and Hanson, 2019; Charles, Hurst, and Schwartz, 2019). But roughly 30 percent of production jobs are held by women, and many female production workers have been displaced from the workforce in recent decades. Furthermore, routine office work has historically been conducted primarily by women—indeed, over 70 percent of administrative support jobs are held by women—and the proliferation of computers and other technology has reduced the demand for such work, pushing many prime-age women to the sidelines.

Our work on labor market detachment makes three main contributions. First, we provide a new measure of what we term the labor market *detachment rate*, which is different than other forms of joblessness such as unemployment and being out of the labor force for short periods of time. Second, despite the attention that out of work men have received, we show that labor market detachment is and has been even more significant for women, contributing to a nascent body of work examining gender differences in the effects of globalization and technological change (see, e.g., Cortés et al., 2024). Indeed, about 20 percent of prime-age women were out of the labor force for more than a year in 2019, including 15 percent of unmarried women without children, much higher than the 8 percent

share for prime-age men. Third, we examine the geography of labor market detachment, which serves two purposes. The first purpose is to show how detachment varies across space. While detachment has risen for men in most local labor markets since 1980, and for women since around 2000, we find a widening in the spatial distribution and corresponding increase in the geographic concentration of detachment. The second purpose is to use geographic variation in detachment rates to help explain why it has risen over time, and why it has risen more significantly in some places than others.

To preview our findings, by estimating fixed-effects regression models for the period 1980 to 2019 using a decadal panel of local labor markets, we show that detachment increased more in places with weak local economic conditions. Further, we find that places that experienced larger declines in routine jobs—specifically, production and administrative support jobs—saw larger increases in labor market detachment. These results suggest that the aggregate detachment rate has risen at least in part due to the rise of globalization and technological change, particularly when coupled with a general decline in mobility impeding worker relocation. Our geographic analysis also looks at regional differences in detachment by gender and over time. We find that the loss of production jobs affected both men and women alike and was particularly consequential in the 1990s and first decade of the 2000s as import competition and automation changed the manufacturing sector. The loss of administrative support jobs mostly affected women and was particularly consequential in the 1980s and 1990s with the proliferation of the personal computer. Moreover, the rise in detachment was concentrated among older prime-age individuals and those without college degrees, and, consistent with regional reinvention (Glaeser, 1995), occurred less in places with high human capital.

II. MEASURING LABOR MARKET DETACHMENT

To measure labor market detachment among the prime-age population in the United States, we first analyze data from the Annual Social and Economic Supplement of the Current Population Survey (CPS) (Flood, et al., 2023) before turning to the Decennial Census and American Community Survey (ACS) (Ruggles et al., 2024) for our analysis of spatial patterns in local labor markets. The CPS data provide annual nationally representative estimates of labor market outcomes through detailed surveys of more than 75,000 households, while the sample size varies between 1 percent and 5 percent of the U.S. population for the Decennial Census and ACS, making these data more suitable for detailed geographic analysis.

For context, we consider three forms of joblessness among those aged 25 to 54 from 1980 to 2019: unemployment, short-term non-participation—those out of the labor force for less than a year, and detachment—those out of the labor force for more than a year. Though our work builds on Austin, Glaeser, and Summers (2018), who analyze the rise of joblessness more broadly among prime-age men, we follow Hall (2018) by focusing on long-term non-participation as a distinct phenomenon from short-term non-participation or unemployment.[1] We remove students, members of the armed forces, and those living in group quarters from our analysis. Because the rise in labor market detachment largely reflects structural changes in the economy occurring over long periods of time, we focus on the four decades preceding the pandemic.

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[1] Coglianese (2018) shows that some of the decline in labor force participation of prime-age men occurring in the United States since the 1980s is due to a rise in temporarily spells out of the labor force. Our focus on long-term non-participation over several decades mitigates concerns around the influence of temporary movements. Indeed, our estimates of labor market detachment in the CPS and Decennial Census/ACS are remarkably similar.

Those that are out of the labor force for more than a year look different than the overall prime-age population, and indeed different than those experiencing short-term joblessness, as shown in Table 1. Three-quarters of the detached are women, a much higher proportion than they represent in other forms of joblessness. Compared to the total prime-age population, the detached are somewhat more likely to be Black, Hispanic, or foreign born. The detached also tend to be older and less educated than the prime-age population, the unemployed, and those out of the labor force for less than a year. Finally, while marriage rates are similar for the detached and the prime-age population, those that are detached have lower household income than average, as would be expected, and are less likely to be the head of a household but are somewhat more likely to have children.

A. The Detachment Rate

To calculate non-working rates, we express each form of joblessness as a share of the prime-age population in Figure 1. Not surprisingly, the unemployment rate moves in tandem with the business cycle, averaging about 5 percent over the period, but obeys no clear time trend. The share out of the labor force for less than a year shows a clear steady downward trend, falling from 5.4 percent in 1980 to around 2.7 percent by 2019. By contrast, the detachment rate steadily declined from around 16 percent in 1980 to about 11 percent in 2000, then climbed back to over 15 percent by 2015, when it began to move downward again.

We view the detachment rate as a complement to existing measures of labor underutilization such as the official U-1 to U-6 unemployment rates published by the Bureau of Labor Statistics. The broadest existing measures of labor underutilization—the U-5 and U-6 rates—include discouraged and marginally attached workers, which are both captured in the group we define as out of the labor market on a short-term basis.

Importantly, unlike the detachment rate, which has been rising over several decades largely for structural reasons, these official measures of labor underutilization are much more sensitive to the business cycle. As such, it is possible for an economy to have both low unemployment—as measured by the U-1 to U-6 rates—and high detachment. Indeed, this was the state of the U.S. economy in the years before the pandemic, though, as we show later, conditions varied substantially across space. Thus, factoring in the detachment rate along with existing measures of labor underutilization provides a more comprehensive understanding of labor market conditions.

The interpretation of movements in the detachment rate is complicated by the differences between the labor market experiences of men and women, particularly prior to the 2000s. Indeed, the decline seen through the 1990s in large part reflects the well-known trend of rising labor force participation among women that occurred during this time, as women's traditional roles at home, particularly as sole full-time family caregivers, began to change (Golden and Mitchell, 2017; Blau and Winkler, 2018). Figure 2 plots the three non-working rates for prime-age women and men separately. While unemployment tends to be higher for men than for women throughout the entire time series, the two other forms of joblessness are significantly higher for women than for men. The unemployment rate has a larger amplitude for men, varying from three to 10 percent compared to three to six percent for women, pointing to more significant cyclicality for men's unemployment around the business cycle. During periods when unemployment rises, the unemployed share tends to be about three to four percentage points higher for men than for women. The share of those out of the labor force for less than one year held steady at around two percent for men, but for women, the rate steadily declined from around 8 percent in 1980 to around

3 percent by 2019—thus, the decline in short-term non-participation for the overall population was driven by women.

As shown in Figure 3, the detachment rate is consistently higher for women than for men, clearly reflecting in large part the role that women have played at home and in raising families. Its decline between 1980 and 2000 reflects the structural increase in women's labor force participation that appears to have stopped around the year 2000 (Goldin and Mitchell, 2017; Blau and Winkler, 2018), a theme we will return to shortly. Over 25 percent of prime-age women were detached in 1980, before falling to 16 percent by 2000. From 2000 to 2015, as the rise in women's labor force participation stalled, the trend reversed, and the detachment rate for women increased from 16 percent to 22 percent. By contrast, the detachment rate for men steadily increased from around 4 percent in 1980 to a peak of 9 percent in 2015. After 2000, the detachment rates among prime-age men and women are parallel, tending to spike shortly after recessions and then ratcheting up after each cycle, contributing to an upward trend, and suggesting some sensitivity to the business cycle. The detachment rate shows a clear downward trend for both men and women beginning around 2015 as labor market conditions strengthened following the Great Recession.

Detachment rates by education, race and ethnicity, and age are shown in Figure 4. More education is associated with lower detachment rates for both prime-age men and prime-age women. The sharpest increase in detachment is evident among those with only a high school diploma or less, where it tripled to over 14 percent between 1980 and 2019 for men and climbed from 23 to 32 percent between 2000 and 2019 for women. Those with a college degree have low detachment rates, and in fact the rate for college educated women

declined beginning in the mid-2000s, whereas it continued to increase for women without a college degree. Among prime-age men, the detachment rate looks very similar for White and Hispanic men, but it is higher for Black men than both groups. Detachment rates are similar for Black and White women, but considerably higher for Hispanic women. In terms of age, the detachment rate tends to be higher for older men and women compared to younger men and women.

All in all, while short-term joblessness held steady or declined for much of the past four decades, detachment was on a steady upward march for men from 1980 and for women from about 2000. However, much of the decline seen among women through 2000 can be traced to rising participation due to changing roles at home and in the workforce.

B. Categories of the Detached

The CPS asks respondents the main reason why they did not work during the past year. Respondents can choose from the following reasons: ill or disabled, taking care of home or family, could not find work, retired, and other.[2] There are some important caveats when examining detachment according to these reasons. First, the question posed to the CPS respondents is in relation to why the respondent has been out of work for more than a year, as opposed to whether the respondent has been *looking for work* and is therefore unemployed—information garnered from a different question. Respondents can say they were detached because they could not find work, but based on a separate question about unemployment, these same people said they were not looking for a job and were therefore out of the labor force. To reiterate, none of the detached by our definition are unemployed. Second, the reasons cited for being out of work for more than a year are not necessarily

[2] Attending school is also provided as a potential reason for being out of work, but as noted previously, we do not include students in our analysis.

exogenous, but rather may well be endogenous to losing a job or a lack of economic opportunity. For example, while some of those saying they were out of work due to a disability may be unable to hold job, others may say so due to a lack of employment prospects. Indeed, it has been well established in the literature that disability insurance applications and awards increase when labor market opportunities decline (Black, Daniel, and Sanders, 2002; Autor and Duggan, 2003; Charles, Li and Stephens Jr, 2018). Further, some people may leave the labor force and retire, or stay at home to take care of a family, if they cannot find a suitable job that pays a high enough wage to outweigh the opportunity cost of working. Thus, regardless of the reason given, the number of detached workers at any given time is expected to be sensitive to economic conditions.

Figure 5 shows the distribution of reasons men and women cited for detachment from 1980 to 2019. Disability is the largest reason by far among men, accounting for 8 in 10 in 1980 and just over 60 percent in 2019, and the second most cited reason for women, at 9 percent in 1980 and 24 percent in 2019. Among women, the most cited reason is taking care of home or family. In 1980, close to 9 of 10 detached women said that they were taking care of home or family, a share that declined to 64 percent in 2010 before creeping upward to two-thirds by 2019. There were almost no detached men in 1980 that were taking care of home or family, but there were 13 percent who said they were by 2019. Early retirement is cited by 13 percent of prime-age men in 2019 compared to 6 percent for women, both much larger shares than in 1980. Not being able to find work is cited by 6 percent of men in 2019, somewhat larger than in 1980, while this reason is less significant for women.

We decompose the detachment rate shown in Figure 3 by these five categories, shown in Figure 6. Each line represents the number of persons citing a particular reason

for not looking for work divided by the total prime-age population, so that adding up the lines in the chart yields the overall detachment rate. For example, in 2015, the detachment rate for men was about 9 percent: 5.9 percentage points of this 9 percent were accounted for by those that said that illness or disability was the main reason they were not looking for work, 1.0 percentage points were accounted for by those citing retirement, 1.1 percentage points were from those citing caring for home or family, 0.6 percentage points said they could not find work, and 0.4 percentage points cited other reasons.

It is striking that the disability component in Figure 6 for men and women is so similar. If anything, the rise in labor market detachment among those who cite illness or disability is more significant for women than men. While it may be tempting to think that disability is primarily cited by men who lose their blue-collar jobs, close to a third of production jobs are held by women. Indeed, the disability component of the detachment rate increased sharply in the 1990s for both women and men. The timing of this increase coincides with the trend of rising generosity of and easier access to Social Security Disability Insurance (SSDI) and falling employment rates and decreased labor force participation for those who report having a disability. There is evidence that many workers who lost their jobs beginning in the 1990s sought disability benefits (Black, Daniel, and Sanders, 2002; Autor and Duggan, 2003; Charles, Li, and Stephens, 2018), and this is likely to be reflected in this category of rising detachment. And, interestingly, the most significant contributor to the decline in detachment for both men and women between 2015 and 2019, when labor market conditions strengthened following the Great Recession, was the decline in the component attributable to illness or disability, as some of those detached were likely drawn into the labor market as wages rose and disability benefits became relatively less

attractive. Detachment for those who cite retirement has also steadily increased among prime-age men and women alike. This increase likely at least in part reflects people losing their jobs and not being able to reassimilate into the workforce, choosing instead to retire at a relatively young age.

Aside from the caretaker group, the detachment rates line up fairly closely between prime-age men and prime-age women. Clearly, detachment among women is higher than for men primarily due to the group of women who cite taking care of home and family for being out of work.

C. Women's Entry Into the Labor Force

The group of women who cite taking care of home or family for being out of work clearly drives the U-shape of the women's detachment rate. About 85 percent of detached women who are caretakers are married and 84 percent are mothers. The sharp downward trend in detachment from 1980 to 2000 reflects the entrance of married women and women with children into the labor force during this time (see, e.g., Turon, 2023). Indeed, unlike the other categories of detachment, these groups are less likely to include women who lost their jobs, or otherwise became detached for purely economic reasons, but rather represents a more complex group where a choice not to participate in the labor market is much more likely to play a significant role, particularly in the 1980s and 1990s.

Figure 7 plots the detachment rate for married and single women, with and without children, and the intersection of these groups. The detachment rate for women without children is considerably lower than for those with children, and it has much less of a U-shape, with a much flatter detachment rate from 1980 to 2000. The U-shape for women with children reflects the entrance of this group into the labor force during this time. A similar pattern emerges comparing single women to married women—single women have

a much lower and flatter detachment rate than married women. Indeed, single women without children has little U-shape and is upward sloping after the 1980s, pointing to an increase in detachment much sooner for this group than appears when looking at the aggregate detachment rate for all women. Single women with children saw a particularly sharp decline in detachment, coinciding with an increase in their labor force participation, likely due in large part to the 1996 welfare reform act which, among other things, increased work requirements for those receiving benefits and raised childcare funding, as well as the expansion of the Earned Income Tax Credit around this time (Juhn and Potter, 2006). In general, especially historically, married women are more likely to be tied to a spouse who is the primary wage earner, so they are more likely to be stuck in a local labor market with less mobility to search for a job, resulting in relatively higher detachment.

D. Why Has the Detachment Rate Risen?

All in all, aside from the women caretaker group, the detachment rate has risen among women since the 1990s and among men since the 1980s. There appears to be a growing group of people who have become displaced and absent from the labor market due to losing their jobs. We posit that the lack of economic opportunity, in part due to employment effects of trade and technology, when combined with a decline in geographic mobility, is a considerable contributor to this rise in detachment. Indeed, since the 1980s, the effects of trade and technology have profoundly reduced routine jobs that many in the labor force relied upon for gainful employment—particularly manufacturing jobs, but also clerical work (Autor, Katz, and Kearny, 2006; Acemoglu and Autor, 2011).

A comprehensive review of the literature by Abraham and Kearney (2020) concludes that globalization and technological change are the most important causal factors reducing the employment-to-population ratio in the United States in recent decades. As

globalization took hold, there was a significant decline in production employment as jobs were sourced overseas (i.e., the 'China Shock'), or as some industries lost out to other countries as trade become more liberalized. Further, automation and the integration of industrial robots into the production process reduced the need for production workers. Two-thirds of production jobs were held by men in 1980, so these trends affected both genders, but men disproportionately.

The rise of computers that started in the 1980s and accelerated in the 1990s reduced the need for clerical workers, which had a particularly large effect on women (Beaudry, Doms, and Lewis, 2010; Dillender and Forsythe, 2022). Such jobs involve cognitive tasks such as organizing information and basic number crunching, and include administrative work historically performed by secretaries, bookkeepers, and clerks. Indeed, roughly 80 percent of administrative support jobs were held by women in 1980, so such effects disproportionately affected women. It is worth noting that as women entered the labor force in large numbers in the 1980s and 1990s, it is possible that the decline in such clerical work left fewer job opportunities for potential entrants. Thus, the detachment rate for women may have declined further during this time were it not for the effects of computers on clerical work. We will provide evidence that this is indeed the case in the empirical section.

The effects of trade and technology on production work have been highly concentrated geographically, while the loss of clerical jobs has been more spread out since such jobs tend to be more diffused through the spectrum of industries. At the time these changes were reducing job opportunities, particularly in certain parts of the country, there has been a decline in geographic mobility, making it more difficult for people to move from places where jobs have declined to where they are more available (Molloy et al.,

2011, 2016, 2017; Kaplan and Schulhofer-Wohl, 2017; Dao, Furceri, and Loungani, 2017; Faber, Sarto, and Tabellini, 2022). This effect is important in and of itself, since it suggests that regardless of the source of local economic decline, whether it be trade and technology or something else, people in places with poor local economic conditions may have become more hindered over time from moving to places where jobs are more readily available. Indeed, we provide evidence that all of these economic forces are connected to labor market detachment in the empirical section by examining local labor markets.

III. THE GEOGRAPHY OF LABOR MARKET DETACHMENT

We next turn to the geography of labor market detachment. We use the Decennial Census for the years 1980, 1990, 2000, and 2010, and the American Community Survey (ACS) for the years 2015 and 2019 (Ruggles et al., 2024). We utilize commuting zones as our unit of geography (Autor and Dorn, 2013; Autor, Dorn, and Hanson, 2013a, 2013b, 2015, 2021; and Amior and Manning, 2018; Tolbert and Sizer, 1996; among others). Compared to other spatial units, commuting zones have several desirable properties. First, unlike states or counties, commuting zones represent the geographic area in which people tend to live and work, making this spatial unit well suited for studying employment patterns.[3] As such, we refer to commuting zones as local labor markets. Second, unlike metropolitan areas, commuting zones cover the entire geography of the United States, including the most rural parts of the country. Finally, commuting zones provide a time consistent spatial unit of analysis, which is important for analyzing patterns over time.

[3] Our analysis focuses on the period before the pandemic when remote work was uncommon. Indeed, Barrero, Bloom, and Davis (2023) report that the share of work done remotely rose steadily from about 2 percent in 1980 to 7 percent in 2019 before rising sharply to over 60 percent when the pandemic hit in 2020 and then settling in at a post-pandemic steady state of around 28 percent in 2023.

We follow the approach detailed in Dorn (2009) to construct local labor markets based on the 1990 definition of commuting zones but use updated crosswalks mapping PUMAs or county groups to commuting zones provided by McHenry (2022).[4] In some cases, mostly sparsely populated areas in the West, PUMAs or county groups cover a larger geographic area than the commuting zones to which they are mapped, resulting in duplicate estimates of detachment rates for some commuting zones in some years. Thus, while we utilize the full set of 741 commuting zones in the maps we present , we focus on a unique set of 637 commuting zones for our statistical analysis.[5]

Table 2 presents descriptive statistics describing the spatial distribution of labor market detachment overall and separately for men and women from 1980 to 2019. We find that the median overall detachment rate across local labor markets tracks the U.S. average shown in Figure 3 reasonably well, falling from 16.9 percent in 1980 to 11.5 percent in 2000 before rising to 14.1 percent by 2019. As with the nation, the patterns for men and women follow different paths. The median detachment rate for men was on a steady march up from 3.9 percent in 1980 to 9.4 percent in 2015 before easing slightly to 8.9 percent in 2019. By contrast, the median detachment rate for women fell from 29.6 percent in 1980 to 16.8 percent in 2000 as women's labor force participation reached a peak, then rose above 20 percent by 2015 before settling in at 18.9 percent in 2019.

Examining patterns of labor market detachment at the local level reveals that detachment among prime-age men rose in almost every local labor market in the United States over the past four decades, while detachment among women rose in nearly three-

[4] Available at https://wmpeople.wm.edu/site/page/pmchenry/crosswalksbetweenpumasandczs.

[5] Statistical results based on the full 741 commuting zones are qualitatively similar to the results presented in the paper based on 637 unique commuting zones.

quarters of local labor markets since 2000. Interestingly, however, while detachment fell at the national level overall and separately for men and women between 2015 and 2019 as labor market conditions strengthened, it held steady or continued to rise more than a third of local labor markets for women, and in half of local labor markets for men. Consistent with Yagan (2019), this pattern indicates the strengthening in labor market conditions seen nationally following the Great Recession was not shared equally across space.

We show detachment rates for the prime-age population by local labor market in 1980, 2000, and 2019 in a set of maps in Figure 8 and identify the places with the highest and lowest detachment rates over time in Table 3. Though there are many cross currents affecting the overall detachment rate, particularly high rates of detachment were consistently concentrated in the Appalachia region, especially parts of Kentucky and West Virginia. Indeed, most of the places with the highest detachment rates were located in these states. The South and Southwest, including parts of Arizona, New Mexico, Texas, Louisiana, Mississippi, Alabama, and Georgia, have also experienced high detachment in recent decades. Detachment rates tended to be lowest in the Northern Mountain states and upper Midwest, and to some extent in the Northeast. These maps indicate there is some degree of overlap in the geographic patterns over time, pointing to persistence of detachment across space. Indeed, the correlation coefficient between local detachment rates in 1980 and 2019 is 0.68 overall, 0.76 for men, and 0.51 for women.[6]

There has been a widening of the spatial distribution of labor market detachment over time, which suggests that detachment has become more geographically concentrated

[6] Little is known about the geography of women's labor force participation more generally. Fogli and Veldkamp (2011) argue that learning from local interactions was an important factor driving the differential entry of women into the labor force across the country.

in some places compared to others, particularly after 2000. The standard deviation of the men's detachment rate among local labor markets increased from around 2 percentage points in 1980 to nearly 5 percentage points by 2019. Among women, the spatial distribution narrowed slightly between 1980 and 2000 before increasing by 2019 but generally held between 5 and 6 percentage points over the full period. The decline in women's detachment between 1980 and 2000 was particularly concentrated along the coasts, in the Mountain states, and the upper Midwest. Indeed, by 2000, despite diverging trends, geographic patterns of detachment for women and men looked quite similar, with the highest concentrations clustered in the South and Southwest—especially in the Appalachia region. Between 2000 and 2019, labor market detachment increased for both women and men, though the correlation across local labor markets was only 0.27. While this positive correlation implies that places where detachment rose among men since 2000 also tended to see some increase among women, pointing to some common forces behind the rise, it also suggests that much of the rise in detachment among women and men occurred in different parts of the country.

We highlight some examples of the evolution of detachment rates across space in Figure 9. With more than a third of prime-age individuals not working and absent from the labor market, detachment rates in Pikeville, KY and Welch, WV consistently ranked among the highest in the nation since at least the early 1980s. Like much of the Appalachian region, these places have been in long-term economic decline with dwindling job opportunities, due in part to the deterioration of the coal industry that started around this time. Detachment rates for prime-age men in these persistently weak places rose from between 12 and 18 percent in 1980 to around 30 percent in 2010 and remained high after

that. Among women in these areas, detachment held at persistently high levels of around 40 percent until declining modestly more recently.

The connection between local economic conditions and labor market detachment can be demonstrated further by highlighting local labor markets disproportionately exposed to trade and technology shocks. Martinsville, VA is a manufacturing town ranking among the top quintile of hardest hit areas by the 'China Shock' (Autor, Dorn, and Hanson, 2013b). When jobs disappeared in places like this, the local economy went into decline, leading to rising detachment. Focusing on men, the detachment rate in Martinsville, VA was around 4 percent in 1980 but rose sharply to nearly 18 percent by 2010 and has remained elevated. Much of the rise in Martinsville took place in the first decade of the 2000s, when import competition from China was particularly damaging to production jobs. Similarly, Mount Pleasant, MI is an auto manufacturing hub with among the highest exposure to industrial robots in the country (Acemoglu and Restrepo, 2020). Though not as severe as the 'China Shock,' detachment rates in Mount Pleasant started to become elevated in the first decade of the 2000s as industrial robots were increasingly installed in factories. What's even more remarkable is the persistently high detachment in both of these areas long after the initial shock hit, pointing to impediments to geographic mobility.

By contrast, detachment rates in Austin, TX and Bismarck, ND followed a similar trend to the U.S. overall but tended to be lower and did not rise nearly as much. While Austin experienced broad-based growth, Bismarck benefitted from an oil and natural gas boom that helped drive detachment down to extremely low levels after 2010.

IV. EMPIRICAL ANALYSIS OF LOCAL LABOR MARKETS

The job-reducing effects of globalization and technological change, when combined with the decline in geographic mobility, have resulted in rising labor market detachment in the aggregate, and more concentrated detachment in some places than others. To examine the relationship between local economic conditions and labor market detachment, we estimate fixed-effects regression models using four decades of data to assess the extent to which a local area's labor market characteristics are associated with the rise in detachment. Our empirical strategy focuses on tying detachment rates and their change at the local labor market level to the decline in job availability driven by trade and technology, as well as to generally weak local economic conditions.

Our analysis builds from recent research utilizing local labor markets to examine the economic effects of globalization and technological change (see, e.g., Autor and Dorn, 2013; Autor, Dorn, and Hanson, 2013a, 2015, 2021; Amior and Manning, 2018; Tuzemen, 2019; Acemoglu and Restrepo, 2020; among others). Identification in these models relies on variation *within* local labor markets, which accounts for a wide array of unobserved location-specific factors that can confound comparisons across space, such as potential agglomeration economies, the presence of urban or natural amenities, and social or cultural norms that drive initial differences in the level of detachment.

We estimate the following local labor market fixed effects regression model:

$$\text{DETACH}_{it} = \beta_1 \ln\_\text{EMP}_{it} + \beta_2 \text{UNR}_{it} + \beta_3 \text{PROD}_{it} + \beta_4 \text{ADMIN}_{it} + \beta_5 \text{HC}_{it} + \boldsymbol{\gamma}\mathbf{X}_{it} + \sigma_i + \varepsilon_{it}$$

where DETACH_{it} is the detachment rate in local labor market i in time t, with t = 1980, 1990, 2000, 2010, and 2019. EMP_{it} represents total employment, UNR_{it} is the unemployment rate, PROD_{it} is the share of workers in production jobs, ADMIN_{it} is the

share of workers in administrative support jobs, and HC_{it} is the region's human capital stock. We also include a number of local labor market controls in the vector $\mathbf{X}_{it}$ that may change over time at different rates across commuting zones, including the share of the population that is Black, Hispanic, or foreign born, and the average age of the commuting zone's population. Finally, σ_i is a fixed effect at the local labor market level and ε_{it} is an error term We compute and report robust standard errors clustered at the local labor market level. Since labor market detachment looks different between women and men, we estimate our regression models overall, separately by gender, and for various subgroups in an effort to provide a deeper understanding of the rise of labor market detachment.

Seminal work by Blanchard and Katz (1992) on regional labor market adjustment documents a convergence in regional unemployment rates after economic shocks despite persistent differences in job growth across regions as people moved for better opportunities. However, more recent research by Dao, Furceri, and Loungani (2017) identified a weakening in regional labor market adjustment due to reduced mobility and other frictions that have emerged in recent decades. As such, we include variables measuring both total employment and unemployment, EMP_{it} and UNR_{it}, in our model to broadly capture prospects for people to find jobs in the local labor market. In the specification above, total employment is expressed in natural logs to allow for interpretation of the coefficient estimate as the relationship between job growth and the detachment rate. All else equal, we would expect places with more substantial job growth to have lower detachment. The unemployment rate provides an additional measure of overall labor market conditions not captured by job growth such as persistent slack in the local labor market driven at least in part by a lack of geographic mobility. To the extent

that frictions exist that result in incomplete labor market adjustment, we would expect rising unemployment to be associated with rising detachment, holding job growth constant.

The $PROD_{it}$ and $ADMIN_{it}$ variables capture job availability in two broad categories of routine jobs that have been severely curtailed due to globalization and technological change: production jobs and administrative support jobs. While these categories do not capture every job affected by trade and technology, they are large categories of routine jobs directly connected to the displacement effects of trade, including import competition and outsourcing, and technological change, such as automation due to computerization and the penetration of industrial robots. We scale these types of routine jobs by total employment to adjust for size. The separate inclusion of the $PROD_{it}$ and $ADMIN_{it}$ variables in our regression models allow us to pick up differences between types of routine jobs, which differ in importance between genders, particularly due to the historical overwhelming share of administrative support jobs held by women.

Finally, we include a measure of the region's human capital stock, HC_{it}, as the share of the adult population with a college degree, which serves multiple purposes. A large body of research in urban and regional economics has established that skilled regions tend to be more vibrant, create human capital spillovers that make all workers more productive, and are better able to reinvent themselves when hit with an economic shock, leading to more economic opportunity (Rauch, 1993; Glaeser, 1995; Glaeser, Scheinkman, and Shleifer, 1995; Simon, 1998; Glaeser and Siaz, 2004; and Abel and Gabe, 2011). This variable also helps control for the mix of workers in a local labor market, as detachment is concentrated among the lower skilled. All in all, consistent with the regional reinvention hypothesis, we expect labor market detachment to be less prevalent in places with high human capital.

Next, we turn to our main empirical results, before presenting some important differences over time and across demographic groups.

A. Main Results

Table 4 presents our main results. Estimates for the overall detachment rate are shown in Column (1), while results for men and women are shown in Columns (2) and (3), respectively. Across all specifications, we find a strong connection between job growth and the detachment rate, suggesting that overall job prospects in a local labor market are an important determinant of labor market detachment. All else equal, results suggest that a one percent decline in a local labor market's employment is associated with a 0.04 percentage point rise in the detachment rate. For perspective, this finding implies that job loss of ten percent in a local area over a decade—which was not unusual among declining regions during this period—was associated with an increase in the detachment rate of 0.37 percentage point. Moreover, we find a positive relationship between an area's unemployment rate and detachment rate, consistent with frictions in labor market adjustment. Indeed, the overall detachment rate rises by 0.09 percentage point when the unemployment rate in a local labor market increases by one percentage point. We find a similar pattern when analyzing men and women separately, with women being affected slightly more: a one percent decline in a local labor market's employment is associated with a 0.03 percentage point increase in the detachment rate for men and a 0.05 percentage point increase for women. Likewise, a one percentage point increase in a local area's unemployment is associated with a 0.08 percentage point increase in the detachment rate for men and a 0.10 percentage point increase for women.

Results also suggest that globalization and technological change have contributed to the rise in labor market detachment. Holding general job availability constant, we find

that the overall detachment rate increases by 0.26 percentage point and 0.52 percentage point when the share of workers in production jobs and administrative support jobs falls by one percentage point, respectively. Of note, however, there are some important differences between men and women. We find that the rise in men's detachment is related to the loss of routine production jobs, though not administrative support jobs, consistent with recent research connecting the struggles of men with declining employment opportunities in the manufacturing sector (Autor, Dorn, and Hanson, 2019; Charles, Hurst, and Schwartz, 2019). A one percentage point decline in a local labor market's production share is associated with a 0.26 increase in men's detachment rate. By contrast, we find that the rise in women's detachment is related to both the loss of production jobs and the loss of administrative support jobs. Indeed, a one percentage point decline in a local labor market's production share is associated with a 0.28 percentage point rise in women's detachment rate—slightly *larger* than the impact for men—while a one percentage point decrease in a local labor market's share of administrative support jobs increases women's detachment rate by a whopping 1.16 percentage points.

We also find that areas that increased their human capital stock experienced a smaller rise in detachment over the past four decades. All else equal, the detachment rate is 0.20 percentage points lower for each percentage point increase in a region's human capital stock. However, the apparent benefits of being in a skilled region are larger for women. The decline in the detachment rate for men is just 0.08 percentage point when a region's human capital stock increases by one percentage point, while the corresponding decline in women's detachment is 0.31 percentage point. Taken together, these results are consistent with research emphasizing the importance of human capital to modern regional

economies, in part because skilled regions are better able to adapt to economic change through reinvention (Glaeser, 2005; Gagliardi, Moretti, and Serafinelli, 2023).

As discussed earlier, labor market detachment is more nuanced for women than men due to the changing roles at home and in the workforce that have occurred over the past four decades. In particular, a large but declining proportion of detached women indicate they are out of work due to responsibilities of taking care of home or family. Correspondingly, the increase in women's labor force participation during the 1980s and 1990s was largely driven women who are married or have children. Thus, we might expect to see differences between single women and married women, and women with and without children, if such situations make women less likely to be affected by economic forces, which may have been more consequential in the 1980s and 1990s when participation increased. Table 5 shows regression results for all women in Column (1) compared to married and single women with children in Columns (2) and (3) and married and single women without children in Columns (4) and (5). Despite the complexities involved, our main results generally hold when analyzing these different groups of women. Specifically, more substantial job growth is associated with less detachment and—except for married women with children, whose participation may be more inelastic—places with higher unemployment have generally seen a rise in detachment. Turning to job types, the availability of routine production jobs has a significant effect on women's detachment but much less so for single women with children, while the availability of routine administrative jobs appears to have been particularly important for the detachment of married women. Across all specifications, women in high human capital regions experienced a smaller rise in detachment over the past four decades.

B. Timing

Our baseline models combine data for the past four decades into a single regression, but it is also useful to examine the time dimension of the long-term rise in labor market detachment. Indeed, research examining the 'China Shock' has shown that import competition started in the 1990s and then accelerated in the first decade of the 2000s before plateauing after 2010 (Autor, Dorn, and Hanson, 2013a, 2015, 2021). Moreover, the diffusion of personal computers began in earnest in the 1980s before becoming ubiquitous by the end of the 1990s, though new software adoption continued into the 21st Century (Beaudry, Doms, and Lewis, 2010; Dillender and Forsythe, 2022). Likewise, the penetration of industrial robots in the United States increased sharply from the early 1990s well into the 2000s (Acemoglu and Restrepo, 2020). Given the differences in the intensity of import competition and diffusion of technologies over time, our estimation results are likely to vary over time.

Table 6 presents fixed-effects regression results separately by decade for the 1980s, 1990s, 2000s, and 2010s, where each decadal regression uses data from only the endpoints of each period (e.g., 1980 and 1990 for the 1980s). Estimates for the overall detachment rate are shown in Column (1), while results for men and women are shown in Columns (2) and (3), respectively. The results of this decadal analysis are broadly consistent with our main results: local labor market conditions and the amount of human capital in a region are important factors related to the rise of labor market detachment in each decade. However, we find that overall job growth tends to have a stronger connection to detachment in later decades, especially during the 2010s when the U.S. economy was in a decade long strong expansion following the Great Recession. Of note, the sign on the unemployment rate variable is positive and significant in nearly every case except in the 2010 to 2019 period,

where it becomes negative and significant. Unlike other decades, the unemployment rate declined substantially in nearly every local labor market during the U.S. expansion, even in places with weak or no job growth. We interpret this as evidence that people were more likely to move to places with stronger growth and more job opportunities during this time, reducing the number of the detached. Indeed, there is evidence that the long-term decline in geographic mobility plateaued around 2010 in part because there was a pickup in people moving for job-related reasons (Malloy, Smith, and Wozniak, 2017; Jia, Molloy, Smith, and Wozniak, 2023).

It is interesting that although detachment rates were falling for women in the 1980s and 1990s, our results show that the detachment rate was still inversely related to the change in production and administrative support jobs at the local level during this time. That is to say, detachment generally fell less in places where there were greater declines in the availability of these jobs. This supports the notion that during the 1980s and 1990s, more women would have entered the labor force and fewer would have been detached were there more of these types of jobs available. Indeed, the loss of routine jobs was affecting detachment for men and women alike during the 1980s and 1990s, though that is not obvious when looking at aggregate time series data.[7]

To summarize the time dimension of how the loss of routine jobs is correlated with detachment, Figure 10 plots the coefficient estimate for the production share and administrative support share variables in the 1980s, 1990s, 2000s, and 2010s by gender. We find that the loss of production jobs affected both men and women and was particularly

[7] In regressions not shown, we find that this relationship holds for all groups of women, including married women and women with children, groups where the aggregate detachment rate fell most, though the effects of the availability of administrative support and production jobs had less consequential effects on some groups of women at some times.

consequential in the 1990s and first decade of the 2000s as import competition and automation changed the manufacturing sector. By contrast, the loss of administrative support jobs mostly affected women, and was particularly severe in the 1980s and 1990s with the proliferation of the personal computer. This finding is consistent with recent research by Dillender and Forsythe (2022), who show that while the diffusion of the personal computer initially displaced workers in routine clerical jobs, the employment effects dissipated over time as such workers upgraded their skills to complement the adoption of technology.

C. Demographic Differences by Education and Age

To get a deeper understanding of who has been affected by the rise of labor market detachment, we perform separate analyses for those with and without college degrees shown in Table 7, as well as for younger (aged 25-39) and older (aged 40-54) prime-age individuals shown in Table 8. In both tables, estimates for the overall detachment rate are shown in Columns (1) and (4), while results for men and women are shown in Columns (2) and (3) and (5) and (6), respectively. While our main findings generally hold across regression models, our analysis suggests the rise in detachment due to weak local economic conditions was particularly severe for those without a college degree and older prime-age individuals.

While there is a small negative relationship between job growth and the rise of detachment among the college educated, the magnitude of the relationship jumps sharply and becomes statistically significant in all cases for those without a college degree. Likewise, the magnitude of the estimated relationship is roughly twice as large for older workers compared to younger workers. Similar results hold for the unemployment rate, with the estimated relationship large and significant only for those without a college degree

and older prime-age individuals. These findings are broadly consistent with recent research by Autor, Dorn, and Hanson (2021) showing that the modest out-migration from regions hit by the 'China Shock' occurred only among young prime-age adults aged 25-39, mitigating potential employment and earnings effects.

In terms of the change in routine jobs, we find that the loss of production jobs resulted in more detachment for all kinds of workers; again, however, the magnitude of the estimated relationship tends to be significantly higher for those without a college degree, and, to a lesser extent, older prime-age individuals. Further, results suggest that the change in detachment due to the loss of administrative support jobs was more important for older women without a college degree.

A similar pattern of results holds when considering the connection between a region's human capital stock and the rise in labor market detachment. Interestingly, being in a skilled region—and all the economic vitality that brings—is particularly important for those without a college degree. By contrast, while important, the magnitude of the estimated relationship between a region's human capital stock and the rise in labor market detachment does not appear to differ much between younger and older prime-age individuals.

V. CONCLUSION

In recent decades, the United States has become geographically divided as some parts of the country have flourished while other areas have stagnated and even declined. This paper contributes to a growing literature documenting the regional divergence that has occurred in the United States since the early 1980s due to the uneven geographic effects of globalization and technological change. We add to this literature by studying chronic

joblessness among prime-age men and women, a topic that has received relatively little attention in the literature. To do so, we construct a new measure of labor market detachment and show that the rate of detachment for prime-age men more than doubled between 1980 and 2015 and rose by a quarter for prime-age women between 2000 and 2015, before declining modestly for both genders until the pandemic hit as labor market conditions strengthened following the Great Recession.

While much of the literature on globalization and technological change focuses on the adverse labor market consequences for men, we show that both men and women in the prime of their working lives have seen a significant rise in labor market detachment in recent decades. Indeed, we find that labor market detachment tends to be higher for prime-age women than men, even for single women without children. Moreover, once the long-term increase in women's labor force participation peaked, we show that the rise in detachment among prime-age men and women was remarkably similar since the mid-1990s and largely driven by a growing proportion of prime-age individuals who report being ill or disabled and, to a lesser extent, early retirement, consistent with lack of economic opportunity playing a key role.

Focusing on local labor markets, we show that the detachment rate varies considerably across space and that the long-term rise in labor market detachment has not been a uniform phenomenon. While detachment rose in most local labor markets since the early 1980s, we find a widening in the spatial distribution and corresponding increase in the geographic concentration of detachment over the past four decades. Further, we find that detachment increased more in places with weak local economic conditions, particularly places that experienced large declines in routine production and administrative

support jobs. Interestingly, the loss of production jobs affected both men and women and was particularly consequential in the 1990s and first decade of the 2000s as import competition and automation changed the manufacturing sector. The loss of administrative support jobs mostly affected women and was particularly severe in the 1980s and 1990s with the proliferation of the personal computer. Moreover, the rise in detachment due to weak local economies was concentrated among older prime-age individuals and those without college degrees. Consistent with other research, our work also points to the importance of a region's human capital stock in adapting to economic shocks as places with more human capital generally experienced smaller increases in labor market detachment over the study period.

While this research documents and advances our understanding of the long-term rise in labor market detachment, it does have some limitations. Further research that more directly connects globalization and technological change to labor market detachment would be a useful extension. For example, incorporating direct measures of import competition, outsourcing, automation, and the diffusion of new technologies such as personal computers or industrial robots would be a step forward. In addition, moving from a descriptive empirical analysis to one that allows for a causal interpretation would sharpen our understanding of the precise displacement effects of these powerful economic forces. Overcoming the challenging measurement and identification issues for such analysis is left for future research.

Still, it is clear from our work that the long-term rise in labor market detachment has become a significant economic and social problem in the United States. Indeed, when unemployment was historically low and labor market conditions were widely viewed as

strong just before the pandemic hit, we estimate that more than one in seven people in the prime of their working lives had become completely detached from the labor market, with the detachment rate exceeding one in three prime-age people in some parts of the country. Ongoing changes in the economy—whether from adaptation to climate change, declining reliance on fossil fuels, or the introduction of new technologies such as Artificial Intelligence—have the potential to further displace large numbers of workers within the United States.

The high geographic concentration of labor market detachment coupled with the decline in mobility that has occurred in recent decades points to place-based economic development as a potential policy intervention. While many urban economists and regional scientists have historically been skeptical of such policies, an increasing recognition of the frictions that limit the ability of displaced workers to switch jobs or move to locations with better economic opportunity has led to a reconsideration of the merits of place-based economic development (Bartik, 1991, 2020; Austin, Glaeser, and Summers, 2018). Moreover, promising new research has demonstrated that place-based policies such as providing state hiring subsidies to firms can help distressed regions without shifting economic activity away from more productive places (Hyman et al., 2023). By analyzing local labor markets, this research provides a better understanding of the economic geography of rising labor market detachment and, hopefully, encourages policymakers to consider new approaches aimed at addressing this perhaps underappreciated source of difficulty faced by a rising number of Americans.

REFERENCES

Aaronson, Stephanie, Tomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher. 2014. "Labor Force Participation: Recent Developments and Future Prospects," *Brookings Papers on Economic Activity*, Spring, pp. 197-255.

Abel, Jaison R., and Todd M. Gabe. 2011. "Human Capital and Economic Activity in Urban America," *Regional Studies*, Vol. 45, No. 8, pp. 1079-90.

Abraham, Katherine G. and Melissa S. Kearney. 2020. "Explaining the Decline in the U.S. Employment-to-Population Ratio: A Review of the Evidence," *Journal of Economic Literature*, Vol. 58, No. 3., pp. 585-643.

Acemoglu, Daron and David H. Autor. 2011. "Skills, Tasks, and Technologies: Implications for Employment and Earnings," in Ashenfelter, O., Card, D. (eds.), *Handbook of Labor Economics*, Vol. 4, Amsterdam: Elsevier-North Holland, pp. 1043-1171.

Acemoglu, Daron and Pascual Restrepo. 2020. "Robots and Jobs: Evidence from US Labor Markets," *Journal of Political Economy*, Vol 128, No. 6, pp. 2188-2244.

Amior, Michael and Alan Manning. 2018. "The Persistence of Local Joblessness," *American Economic Review*, Vol. 108, No. 7, pp. 1942-1970.

Austin, Benjamin, Edward Glaeser, and Lawrence Summers. 2018. "Jobs for the Heartland: Place-Based Policies in 21st Century America," *Brookings Papers on Economic Activity*, Spring, pp. 151-232.

Autor, David H. and David Dorn. 2013. "The Growth of Low Skill Service Jobs and the Polarization of the U.S. Labor Market," *American Economic Review*, Vol. 103, No. 5, pp. 1553-1597.

Autor, David H., David Dorn, and Gordon H. Hanson. 2013a. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," *American Economic Review,* Vol. 103, No. 6, pp. 2121-2168.

Autor, David H., David Dorn, and Gordon H. Hanson. 2013b. "The Geography of Trade and Technology Shocks in the United States," *American Economic Review Papers & Proceedings*, Vol. 103, No. 3, pp. 220-225.

Autor, David H., David Dorn, and Gordon H. Hanson. 2015. "Untangling Trade and Technology: Evidence from Local Labour Markets," *The Economic Journal*, Vol. 125, May, pp. 621-646.

Autor, David H., David Dorn, and Gordon H. Hanson. 2019. "When Work Disappears: Manufacturing Decline and the Falling Marriage Market Value of Young Men," *American Economic Review: Insights*, Vol. 1, No. 2, pp. 161-178.

Autor, David H., David Dorn, and Gordon H. Hanson. 2021. "On the Persistence of the China Shock," *Brookings Papers on Economic Activity*, Fall, pp. 381-447.

Autor, David H. and Mark Duggan. 2003. "The Rise in the Disability Rolls and the Decline in Unemployment," *The Quarterly Journal of Economics*, Vol. 118, No. 1, pp. 157-205.

Autor, David H., Lawrence F. Katz, and Melissa S. Kearney. 2006. "The Polarization of the U.S. Labor Market," *American Economic Review,* Vol. 96, No. 2, pp. 189-94.

Barrero, José María, Nicholas Bloom, and Steven J. Davis. 2023. "The Evolution of Work from Home," *Journal of Economic Perspectives*, Vol. 37, No. 4, pp. 23-50.

Bartik, Timothy J. 1991. *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, MI: W.E. Upjohn Institute.

Bartik, Timothy J. 2020. "Using Place-Based Jobs Policies to Help Distressed Communities," *Journal of Economic Perspectives*, Vol. 34, No. 3, pp. 99-127.

Beaudry, Paul, Mark Doms, and Ethan Lewis. 2010. "Should the Personal Computer Be Considered a Technological Revolution? Evidence from U.S. Metropolitan Areas," *Journal of Political Economy*, Vol. 118, No. 5, pp. 988-1036.

Black, Dan, Kermit Daniel, and Seth Sanders, 2002. "The Impact of Economic Conditions on Participation in Disability Programs: Evidence from the Coal Boom and Bust," *American Economic Review*, Vol. 92, No. 1, pp 27-50.

Blanchard, Olivier Jean and Lawrence F. Katz. 1992. "Regional Evolutions," *Brookings Papers on Economic Activity*, Spring, pp. 1-76.

Blau, Francine D. and Anne E. Winkler. 2018. "Women, Work, and Family," in Averett, S., Argys, L., Hoffman, S. (eds.), *The Oxford Handbook of Women and the Economy*, Oxford University Press, pp. 395-424.

Charles, Kerwin Kofi, Erik Hurst, and Mariel Schwartz. 2019. "The Transformation of Manufacturing and the Decline in U.S. Employment," *NBER Macroeconomics Annual*, Vol. 33, pp. 307-372.

Charles, Kerwin Kofi, Yiming Li, and Melvin Stephens Jr. 2018. "Disability Benefit Take-Up and Local Labor Market Conditions," *Review of Economics and Statistics*, Vol. 100, No. 3, pp. 416-423.

Coglianese, John. 2018. "The Rise of In-and-Outs: Declining Labor Force Participation of Prime-Age Men," Working Paper, November.

Cortés, Patricia, Ying Feng, Nicolas Guida-Johnson, and Jessica Pan. 2024. "Automation and Gender: Implications for Occupational Segregation and the Gender Skill Gap," NBER Working Paper No. 32030, January.

Council of Economic Advisors. 2016. "The Long-Term Decline in Prime-Age Labor Force Participation," Washington: White House.

Dao, Mai, Davide Furceri, and Prakash Loungani. 2017. "Regional Labor Market Adjustment in the United States: Trend and Cycle," *Review of Economics and Statistics*, Vol. 99, No. 2, pp. 243-257.

Diamond, Rebecca. 2016. "The Determinants and Welfare Implications of U.S. Workers' Diverging Location Choices by Skill: 1980-2000," *American Economic Review* Vol. 106, No. 3, pp. 479-524.

Dillender, Marcus and Eliza Forsythe. 2022. "Computerization of White Collar Jobs," NBER Working Paper No. 29866, March.

Dorn, David. 2009. "Essays on Inequality, Spatial Interaction, and the Demand for Skills," Thesis Appendix: Data Contributions, Dissertation University of St. Gallen, No. 3613.

Eberstadt, Nicholas. 2016. *Men Without Work*. Conshohocken, PA: Templeton Press.

Faber, Marius, Andres P. Sarto, and Marco Tabellini. 2022. "Local Shocks and Internal Migration: The Disparate Effects of Robots and Chinese Imports in the U.S." NBER Working Paper No. 30048, May.

Feintzeig, Rachel. 2020. "The Vanishing Executive Assistant," *The Wall Street Journal*, January 18.

Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles, J. Robert Warren, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Megan Schouweiler, and Michael Westberry. IPUMS CPS: Version 11.0 [dataset]. Minneapolis, MN: IPUMS, 2023. https://doi.org/10.18128/D030.V11.0.

Fogli, Allessandra and Laura Veldkamp. 2011. "Nature or Nurture? Learning and the Geography of Female Labor Force Participation," *Econometrica*, Vol. 79, No. 4, pp. 1103-1138.

Gagliardi, Luisa, Enrico Moretti, and Michel Serafinelli. 2023. "The World's Rust Belts: The Heterogeneous Effects of Deindustrialization on 1,993 Cities in Six Countries," NBER Working Paper No. 31948, December.

Ganong, Peter and Daniel Shoag. 2017. "Why Has Regional Convergence in the U.S. Declined?" *Journal of Urban Economics*, Vol. 102, pp. 76-90.

Glaeser, Edward L. 2005. "Reinventing Boston: 1640-2003," *Journal of Economic Geography*, Vol. 5, No. 2, pp. 119-153.

Glaeser, Edward L. and Albert Saiz. 2004. "The Rise of the Skilled City," *Brookings-Wharton Papers on Urban Affairs*, pp. 47-94.

Glaeser, Edward L., Jose A. Scheinkman, and Andrei Shleifer. 1995. "Economic Growth in a Cross-Section of Cities," *Journal of Monetary Economics*, Vol. 36, No. 1, pp. 117-143.

Goldin, Claudia, and Joshua Mitchell. 2017. "The New Life Cycle of Women's Employment: Disappearing Humps, Sagging Middles, Expanding Tops," *Journal of Economic Perspectives*, Vol. 31, No. 1, pp. 161–82.

Hall, Robert E. 2018. Comment on "Jobs for the Heartland: Place-Based Policies in 21st Century America," *Brookings Papers on Economic Activity*, Spring, pp. 240-244.

Hyman, Benjamin, Matthew Freedman, Shantanu Khanna, and David Neumark. 2023. "Firm Responses to State Hiring Subsidies: Regression Discontinuity Evidence from a Tax Credit Formula," Working Paper, January.

Jia, Ning, Raven Molloy, Christopher Smith, and Abigail Wozniak. 2023. "The Economics of Internal Migration: Advances and Policy Questions," *Journal of Economic Literature*, Vol.61, No. 1, pp. 144-180.

Juhn, Chinhui and Simon Potter. 2006. "Changes in Labor Force Participation in the United States," *Journal of Economic Perspectives*, Vol. 20, No. 3, pp. 27-46.

Kaplan, Greg and Sam Schulhofer-Wohl. 2017. "Understanding the Long-Run Decline in Interstate Migration," International Economic Review, Vol. 58, No. 1, pp. 57-94.

Krueger, Alan B. 2017. "Where Have All the Workers Gone? An Inquiry into the Decline of U.S. Labor Force Participation," *Brookings Papers on Economic Activity*, Spring, pp. 1-66.

McHenry, Peter. 2022. *Crosswalk Between PUMAs and CZs*, available at https://wmpeople.wm.edu/site/page/pmchenry/crosswalksbetweenpumasandczs.

Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2011. "Internal Migration in the United States," *Journal of Economic Perspectives*, Vol. 25, No. 3, pp. 173-196.

Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2017. "Job Changing and the Decline in Long-Distance Migration in the United States," *Demography*, Vol. 54, pp. 631-653.

Molloy, Raven, Christopher L. Smith, Riccardo Trezzi, and Abigail Wozniak. 2016. "Understanding Declining Fluidity in the U.S. Labor Market," *Brookings Papers on Economic Activity*, Spring, pp. 183-237.

Pierce, Justin R. and Peter K. Schott. 2016. "The Surprisingly Swift Decline of US Manufacturing Employment," *American Economic Review*, Vol. 106, No. 7, pp. 1632-1662.

Rauch, James E. 1993. "Productivity Gains from Geographic Concentration of Human Capital: Evidence from the Cities," *Journal of Urban Economics*, Vol. 34, No. 3, pp. 380-400.

Ruggles, Steven, Sarah Flood, Matthew Sobek, Daniel Backman, Annie Chen, Grace Cooper, Stephanie Richards, Renae Rodgers, and Megan Schouweiler. IPUMS USA: Version 15.0 [dataset]. Minneapolis, MN: IPUMS, 2024. https://doi.org/10.18128/D010.V15.0.

Simon, Curtis J. 1998. "Human Capital and Metropolitan Employment Growth," *Journal of Urban Economics*, Vol. 43, No. 2, pp. 223-243.

Tolbert, Charles M. and Molly Sizer. 1996. "US Commuting Zones and Labor Market Areas: A 1990 Update," Economic Research Service Staff Paper 9614.

Turon, Hélène. 2023. "The Labor Supply of Mothers," in Zimmermann, K.F. (eds.) *Handbook of Labor, Human Resources and Population Economics*, Springer, Cham, pp. 1-37.

Tuzemen, Didem. 2019. "Disappearing Routine Occupations and Declining Prime-Age Labor Force Participation," KC Fed Research Working Papers No. 19-03, November.

Wilson, William J. 1996. *When Work Disappears: The World of the New Urban Poor*, New York: Alfred A. Knopf.

Yagan, Danny. 2019. "Employment Hysteresis from the Great Recession," *Journal of Political Economy*, Vol. 127, No. 5, pp. 2505-2558.

Table 1: Demographics of the Non-Working, 1980-2019 Pooled

	Prime-Age Population	Unemployed	Out of LF - Short Term	Detached
Men	49%	58%	30%	24%
Women	51%	42%	70%	76%
Black	12%	21%	13%	15%
White	82%	73%	81%	78%
Hispanic	13%	16%	14%	17%
Foreign Born	19%	20%	19%	23%
Ages 25-39	53%	61%	62%	47%
Ages 40-54	47%	39%	38%	53%
High School or Below	46%	61%	52%	64%
Some College	25%	24%	27%	20%
Bachelors or Higher	29%	15%	21%	16%
Head of Household	53%	52%	40%	37%
Married	64%	47%	64%	65%
Parent w/ Children (Any Age)	58%	52%	62%	63%
Median Household Income	$76,710	$48,998	$61,433	$45,135

Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters. Share foreign born is estimated using the 1994-2019 period due to data availability. Median household income is expressed in 2019 constant dollars.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

Table 2: Spatial Distribution of Detachment Rates Over Time, 1980-2019

Overall	1980	1990	2000	2010	2015	2019
Max	37.7	33.5	33.9	35.1	36.9	36.0
P90	21.6	15.6	16.7	20.0	21.5	20.3
P75	19.2	13.6	14.1	16.9	18.6	17.3
Median	**16.9**	**11.2**	**11.5**	**13.9**	**15.1**	**14.1**
P25	15.2	9.0	9.3	11.2	11.9	11.3
P10	13.5	7.9	7.2	8.6	9.5	9.1
Min	9.6	4.9	4.7	4.1	6.2	4.2
Range	28.1	28.6	29.2	31.1	30.6	31.8
SD	3.6	3.8	4.1	4.7	4.9	4.8
Men	1980	1990	2000	2010	2015	2019
Max	17.7	17.9	28.9	31.1	37.3	32.5
P90	6.9	7.0	10.2	15.6	16.5	15.9
P75	5.5	5.7	8.2	11.7	12.9	12.0
Median	**3.9**	**4.2**	**5.9**	**8.5**	**9.4**	**8.9**
P25	2.5	2.9	4.4	6.4	6.8	6.7
Min	1.8	2.2	3.4	4.6	5.1	4.5
P10	1.0	1.1	1.7	1.1	1.6	0.8
Range	16.7	16.8	27.1	30.0	35.7	31.7
SD	2.2	2.4	3.3	4.5	4.9	4.6
Women	1980	1990	2000	2010	2015	2019
Max	58.2	48.4	39.7	42.4	41.5	44.6
P90	36.5	24.5	22.9	25.6	28.5	26.8
P75	32.6	21.0	19.7	22.3	24.3	23.0
Median	**29.6**	**17.9**	**16.8**	**18.9**	**20.2**	**18.9**
P25	26.5	15.0	13.9	15.2	16.7	15.4
P10	24.1	13.1	10.9	12.0	13.1	12.1
Min	17.6	8.5	7.5	5.6	6.3	4.9
Range	40.6	39.9	32.3	36.8	35.1	39.7
SD	5.5	5.2	5.1	5.6	5.8	5.7

Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters. Based on 637 local labor markets.

Sources: U.S. Census Bureau, Decennial Census (1980, 1990, 2000, 2010) and American Community Survey (2015, 2019); IPUMS.

Table 3: Local Labor Markets with Highest and Lowest Detachment Rates, 1980 and 2019

Highest and Lowest Detachment Rates - Overall

Local Area	1980	Local Area	2000	Local Area	2019
Hazard, KY	37.7	Hazard, KY	33.9	Welch, WV	36.0
Pikeville, KY	35.7	Pikeville, KY	33.1	Pikeville, KY	33.7
Welch, WV	35.5	Welch, WV	32.6	Gallup, NM	32.1
Jackson, KY	35.3	Jackson, KY	30.2	Corbin, KY	29.9
Corbin, KY	33.3	Corbin, KY	28.1	Hazard, KY	29.6
Big Stone Gap, VA	32.7	Middlesborough, KY	27.8	Spencer, WV	29.5
Beckley, WV	32.4	Big Stone Gap, VA	26.7	Big Stone Gap, VA	28.8
Middlesborough, KY	30.4	Bluefield, WV	25.1	Lexington, TN	28.2
Summersville, WV	28.3	Beckley, WV	23.5	Demopolis, AL	27.8
Bluefield, WV	27.9	Somerset, KY	22.4	Laurel, MS	27.2
Cedar Rapids, IA	11.5	Hutchinson, MN	5.4	Grand Forks, ND	5.8
Minneapolis, MN	11.3	Worthington, MN	5.4	Norfolk, NE	5.7
Rochester, MN	11.1	Willmar, MN	5.3	Grafton, ND	5.7
Raleigh, NC	10.9	Owatonna, MN	5.3	Fergus Falls, MN	5.6
Gunnison, CO	10.9	Rochester, MN	5.3	Milbank, SD	5.6
Lincoln, NE	10.7	Brookings, SD	5.2	Aberdeen, SD	5.6
Hickory, NC	10.7	Redwood Falls, MN	5.1	Gettysburg, SD	5.6
Columbia, MO	10.3	Marshall, MN	4.9	Iowa City, IA	5.4
Madison, WI	9.7	Mankato, MN	4.7	Fargo, ND	4.5
Reno, NV	9.6	Sioux Falls, SD	4.7	Mankato, MN	4.2

Highest and Lowest Detachment Rates - Men

Local Area	1980	Local Area	2000	Local Area	2019
Hazard, KY	17.7	Hazard, KY	28.9	Gallup, NM	32.5
Corbin, KY	15.8	Pikeville, KY	26.8	Pikeville, KY	31.1
Jackson, KY	15.7	Welch, WV	25.0	Welch, WV	27.6
Pikeville, KY	14.0	Jackson, KY	24.7	Demopolis, AL	26.9
Middlesborough, KY	13.2	Corbin, KY	22.9	Corbin, KY	26.6
Big Stone Gap, VA	12.6	Big Stone Gap, VA	22.1	Hazard, KY	25.2
Welch, WV	11.9	Middlesborough, KY	21.2	Greenville, MS	24.2
Beckley, WV	10.8	Bluefield, WV	19.2	Lexington, TN	23.8
Somerset, KY	10.5	Somerset, KY	16.3	Atmore, AL	23.4
Poplar Bluff, MO	10.5	Campbellsville, KY	16.2	Big Stone Gap, VA	23.3
Dodge City, KS	1.2	Jamestown, ND	2.3	Iowa City, IA	2.6
Garden City, KS	1.2	Marshall, MN	2.3	Fargo, ND	2.5
Torrington, WY	1.2	Appleton, WI	2.2	Sioux Falls, SD	2.4
Casper, WY	1.2	Provo, UT	2.2	Bismarck, ND	2.2
Hutchinson, MN	1.2	Rochester, MN	2.2	Austin, MN	1.7
Rock Springs, WY	1.1	Redwood Falls, MN	2.2	Brookings, SD	1.5
Gillette, WY	1.0	Spencer, IA	2.1	Mitchell, SD	1.5
Rochester, MN	1.0	Mankato, MN	2.0	Kansas City, KS	1.0
Soda Springs, ID	1.0	Sioux Falls, SD	1.8	Torrington, WY	0.8
Cody, WY	1.0	Sioux Center, IA	1.7	Gillette, WY	0.8

Highest and Lowest Detachment Rates - Women

Local Area	1980	Local Area	2000	Local Area	2019
Welch, WV	58.2	Welch , WV	39.7	Welch, WV	44.6
Hazard, KY	57.4	Pikeville , KY	39.2	Spencer, WV	39.9
Pikeville, KY	56.8	Hazard , KY	38.7	Pikeville, KY	36.1
Jackson, KY	54.5	Jackson , KY	35.6	Big Stone Gap, VA	34.1
Beckley, WV	53.5	Middlesborough , KY	34.3	Hazard, KY	33.9
Big Stone Gap, VA	52.6	Corbin , KY	33.1	Port Angeles, WA	33.7
Corbin, KY	50.6	Laredo , TX	32.1	Waycross, GA	33.6
Summersville, WV	47.4	Beckley , WV	31.7	Crossett, AR	33.4
Middlesborough, KY	47.2	Big Stone Gap town, VA	31.4	Corbin, KY	33.1
Bluefield, WV	45.9	Summersville town, WV	31.4	Jackson, KY	32.5
Arlington, VA	20.9	Fairmont, MN	8.3	Little Falls, MN	7.6
Minneapolis, MN	20.7	St. Cloud, MN	8.1	Rochester, MN	7.5
Charlotte, NC	20.6	Pierre, SD	8.1	Aberdeen, SD	7.4
Lincoln, NE	19.7	Mitchell, SD	8.1	Gettysburg, SD	7.4
Greensboro, NC	19.7	Worthington, MN	8.1	Fairmont, MN	7.3
Columbia, MO	18.8	Redwood Falls, MN	8.0	Milbank, SD	7.2
Raleigh, NC	18.3	Owatonna, MN	7.9	Worthington, MN	7.0
Madison, WI	17.9	Marshall, MN	7.7	Fergus Falls, MN	7.0
Hickory, NC	17.8	Mankato, MN	7.7	Fargo, ND	6.9
Reno, NV	17.6	Sioux Falls, SD	7.5	Mankato, MN	4.9

Sources: U.S. Census Bureau, Decennial Census (1980, 2000) and American Community Survey (2019); IPUMS.

Table 4: Fixed-Effects Regression Results, 1980-2019

	(1)	(2)	(3)
	All		
VARIABLES	Overall	Men	Women
ln_Employment	-3.746 ***	-2.595 ***	-4.516 ***
	(0.439)	(0.329)	(0.754)
Unemployment Rate	0.087 ***	0.076 ***	0.095 ***
	(0.021)	(0.019)	(0.034)
Production Share	-0.262 ***	-0.263 ***	-0.284 ***
	(0.030)	(0.021)	(0.053)
Admin Share	-0.523 ***	0.129 ***	-1.163 ***
	(0.042)	(0.034)	(0.071)
Human Capital Stock	-0.197 ***	-0.081 ***	-0.310 ***
	(0.020)	(0.018)	(0.036)
Within R-squared	0.185	0.686	0.398
Observations	3,185	3,185	3,185
Number of LLM	637	637	637

Note: Dependent variable is the detachment rate. Regression models also control for local labor market demographic factors such as share Black, share Hispanic, share foreign born, and average age. Robust standard errors clustered at the local labor market level are repoted in parentheses. *** denotes significant at the 1 percent level, ** denotes significant at the 5 percent level, and * denotes significant at the 10 percent level.

Table 5: Fixed-Effects Regression Results, Married v Single Women With and Without Children, 1980-2019

	(1)	(2)	(3)	(4)	(5)
	All				
VARIABLES	Women	Women-Married-Child	Women-Single Child	Women-Married-No Child	Women-Single No Child
ln_Employment	-4.516 ***	-4.095 ***	-2.957 ***	-4.441 ***	-1.967 **
	(0.754)	(0.938)	(0.971)	(0.872)	(0.818)
Unemployment Rate	0.095 ***	0.027	0.215 ***	0.111 **	0.192 ***
	(0.034)	(0.044)	(0.046)	(0.051)	(0.049)
Production Share	-0.284 ***	-0.226 ***	-0.049	-0.284 ***	-0.307 ***
	(0.053)	(0.066)	(0.060)	(0.059)	(0.051)
Admin Share	-1.163 ***	-1.289 ***	-0.641 ***	-1.144 ***	-0.304 ***
	(0.071)	(0.090)	(0.093)	(0.090)	(0.094)
Human Capital Stock	-0.310 ***	-0.313 ***	-0.082 *	-0.340 ***	-0.238 ***
	(0.036)	(0.048)	(0.046)	(0.045)	(0.043)
Within R-squared	0.398	0.386	0.065	0.358	0.192
Observations	3,185	3,185	3,185	3,185	3,185
Number of LLM	637	637	637	637	637

Note: Dependent variable is the detachment rate. Regression models also control for local labor market demographic factors such as share Black, share Hispanic, share foreign born, and average age. Robust standard errors clustered at the local labor market level are repoted in parentheses. *** denotes significant at the 1 percent level, ** denotes significant at the 5 percent level, and * denotes significant at the 10 percent level.

Table 6: Fixed-Effects Regression Results by Decade, 1980-2019

	(1)	(2)	(3)
VARIABLES	Overall	Men	Women
	1980s		
ln_Employment	-5.413 ***	-2.400 ***	-7.373 ***
	(0.795)	(0.332)	(1.568)
Unemployment Rate	-0.011	0.093 ***	-0.061
	(0.050)	(0.026)	(0.099)
Production Share	-0.138 ***	-0.038 **	-0.268 ***
	(0.049)	(0.019)	(0.096)
Admin Share	-0.743 ***	-0.084 **	-1.347 ***
	(0.089)	(0.034)	(0.177)
Human Capital Stock	-0.678 ***	-0.050 ***	-1.277 ***
	(0.056)	(0.017)	(0.109)
	1990s		
ln_Employment	-0.448	-2.534 ***	1.725 **
	(0.558)	(0.695)	(0.839)
Unemployment Rate	0.191 ***	-0.328 ***	0.651 ***
	(0.048)	(0.068)	(0.072)
Production Share	-0.391 ***	-0.269 ***	-0.529 ***
	(0.028)	(0.029)	(0.045)
Admin Share	-0.101 **	0.273 ***	-0.488 ***
	(0.041)	(0.059)	(0.066)
Human Capital Stock	-0.243 ***	-0.136 ***	-0.350 ***
	(0.020)	(0.024)	(0.033)
	2000s		
ln_Employment	-4.598 ***	-4.621 ***	-4.235 ***
	(0.907)	(1.184)	(1.566)
Unemployment Rate	0.064 **	0.089 **	0.044
	(0.032)	(0.040)	(0.047)
Production Share	-0.346 ***	-0.351 ***	-0.329 ***
	(0.042)	(0.050)	(0.061)
Admin Share	-0.032	0.053	-0.119
	(0.054)	(0.070)	(0.080)
Human Capital Stock	-0.052 *	-0.044	-0.063
	(0.029)	(0.036)	(0.045)
	2010s		
ln_Employment	-10.198 ***	-8.678 ***	-11.362 ***
	(1.382)	(1.434)	(2.101)
Unemployment Rate	-0.233 ***	-0.203 ***	-0.263 ***
	(0.051)	(0.056)	(0.076)
Production Share	-0.024	-0.117	0.072
	(0.087)	(0.106)	(0.116)
Admin Share	-0.066	-0.062	-0.085
	(0.062)	(0.078)	(0.096)
Human Capital Stock	-0.082 ***	-0.104 ***	-0.063
	(0.031)	(0.035)	(0.050)
1980s Within R-squared	0.869	0.381	0.876
1990s Within R-squared	0.475	0.722	0.592
2000s Within R-squared	0.665	0.677	0.393
2010s Within R-squared	0.157	0.124	0.102
Observations	1,274	1,274	1,274
Number of LLM	637	637	637

Note: Dependent variable is the detachment rate. The 1980s covers the 1980 to 1990 period, the 1990s covers the 1990 to 2000 period, the 2000s covers the 2000 to 2010 period, and the 2010s covers the 2010 to 2019 period. Regression models also control for local labor market demographic factors such as share Black, share Hispanic, share foreign born, and average age. Robust standard errors clustered at the local labor market level are repoted in parentheses. *** denotes significant at the 1 percent level, ** denotes significant at the 5 percent level, and * denotes significant at the 10 percent level.

Table 7: Fixed-Effects Regression Results, College v Non-College, 1980-2019

	(1)	(2)	(3)	(4)	(5)	(6)
	College			Non-College		
VARIABLES	Overall	Men	Women	Overall	Men	Women
ln_Employment	-0.205	-0.296	-1.076 *	-4.757 ***	-3.091 ***	-5.538 ***
	(0.326)	(0.269)	(0.602)	(0.510)	(0.387)	(0.842)
Unemployment Rate	0.011	-0.006	0.017	0.082 ***	0.092 ***	0.075 **
	(0.021)	(0.018)	(0.036)	(0.024)	(0.021)	(0.038)
Production Share	-0.090 ***	-0.059 ***	-0.077 **	-0.322 ***	-0.296 ***	-0.366 ***
	(0.019)	(0.017)	(0.037)	(0.034)	(0.025)	(0.059)
Admin Share	-0.142 ***	0.000	-0.427 ***	-0.616 ***	0.107 ***	-1.322 ***
	(0.032)	(0.033)	(0.059)	(0.049)	(0.040)	(0.080)
Human Capital Stock	-0.040 **	-0.008	-0.078 ***	-0.134 ***	-0.017	-0.223 ***
	(0.016)	(0.015)	(0.030)	(0.024)	(0.021)	(0.042)
Within R-squared	0.024	0.198	0.224	0.157	0.692	0.288
Observations	3,185	3,185	3,185	3,185	3,185	3,185
Number of LLM	637	637	637	637	637	637

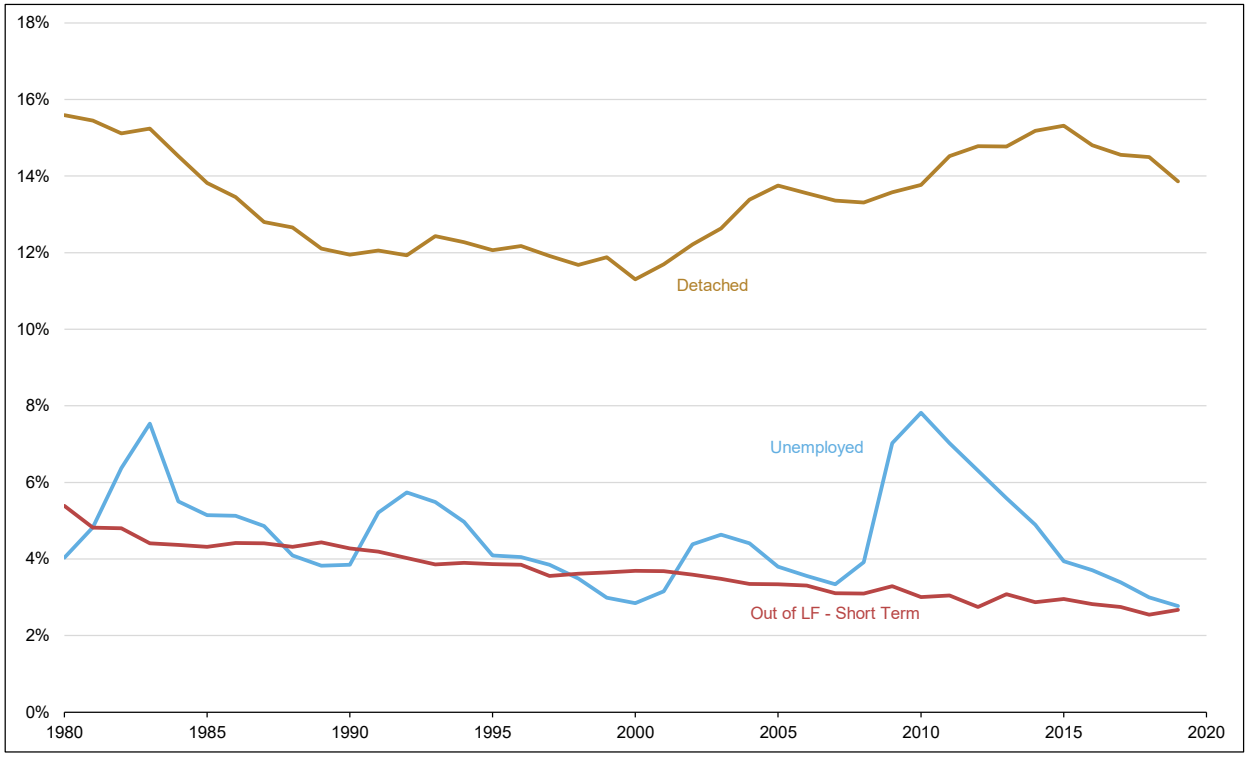
Note: Dependent variable is the detachment rate. Regression models also control for local labor market demographic factors such as share Black, share Hispanic, share foreign born, and average age. Robust standard errors clustered at the local labor market level are repoted in parentheses. *** denotes significant at the 1 percent level, ** denotes significant at the 5 percent level, and * denotes significant at the 10 percent level.

Table 8: Fixed-Effects Regression Results, Younger v Older, 1980-2019

	(1)	(2)	(3)	(4)	(5)	(6)
	Younger (25-39)			Older (40-54)		
VARIABLES	Overall	Men	Women	Overall	Men	Women
ln_Employment	-2.799 ***	-2.028 ***	-3.029 ***	-5.372 ***	-3.493 ***	-7.042 ***
	(0.452)	(0.368)	(0.788)	(0.571)	(0.420)	(0.959)
Unemployment Rate	0.035	0.009	0.065 *	0.116 ***	0.118 ***	0.105 **
	(0.024)	(0.024)	(0.039)	(0.026)	(0.024)	(0.041)
Production Share	-0.223 ***	-0.218 ***	-0.248 ***	-0.255 ***	-0.268 ***	-0.272 ***
	(0.031)	(0.024)	(0.054)	(0.034)	(0.026)	(0.060)
Admin Share	-0.433 ***	0.058	-0.942 ***	-0.704 ***	0.096 **	-1.461 ***
	(0.044)	(0.041)	(0.074)	(0.050)	(0.042)	(0.083)
Human Capital Stock	-0.192 ***	-0.071 ***	-0.31 ***	-0.183 ***	-0.070 ***	-0.290 ***
Within R-squared	0.126	0.564	0.312	0.244	0.544	0.455
Observations	3,185	3,185	3,185	3,185	3,185	3,185
Number of LLM	637	637	637	637	637	637

Note: Dependent variable is the detachment rate. Regression models also control for local labor market demographic factors such as share Black, share Hispanic, share foreign born, and average age. Robust standard errors clustered at the local labor market level are repoted in parentheses. *** denotes significant at the 1 percent level, ** denotes significant at the 5 percent level, and * denotes significant at the 10 percent level.

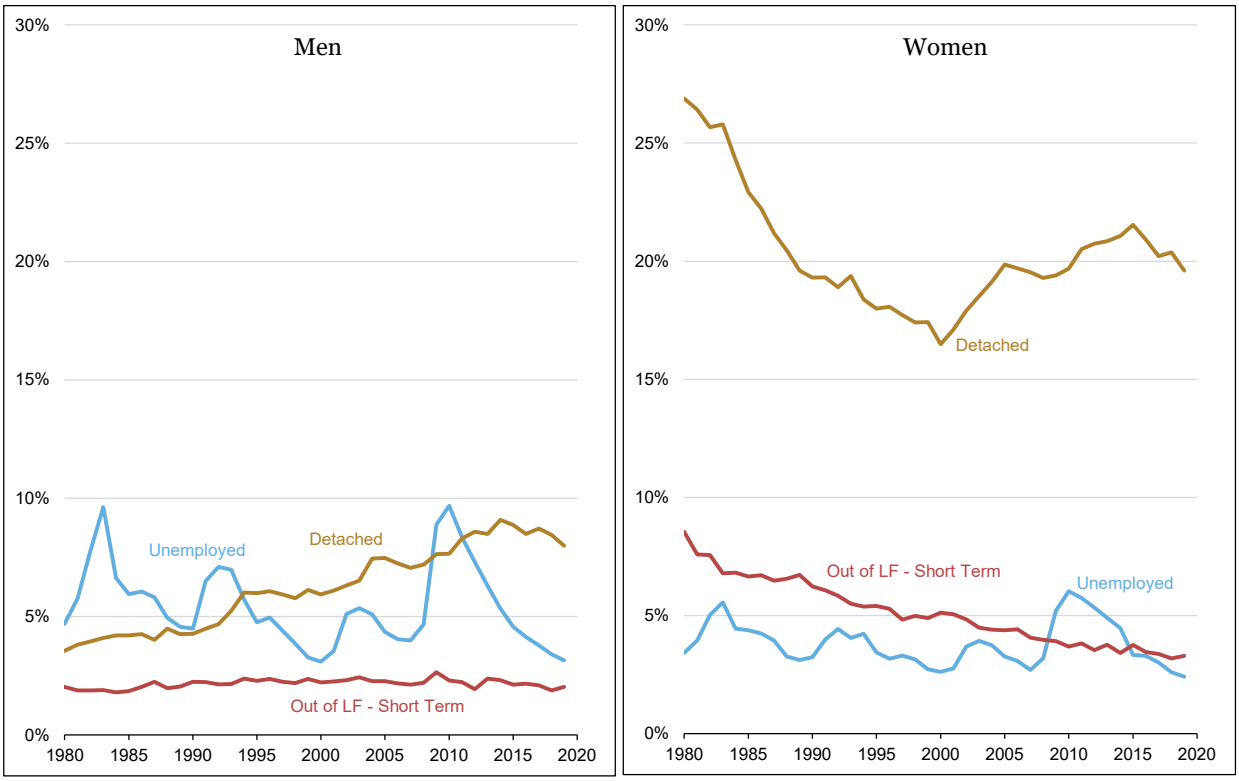
Figure 1: Non-Working Rates, 1980-2019



Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

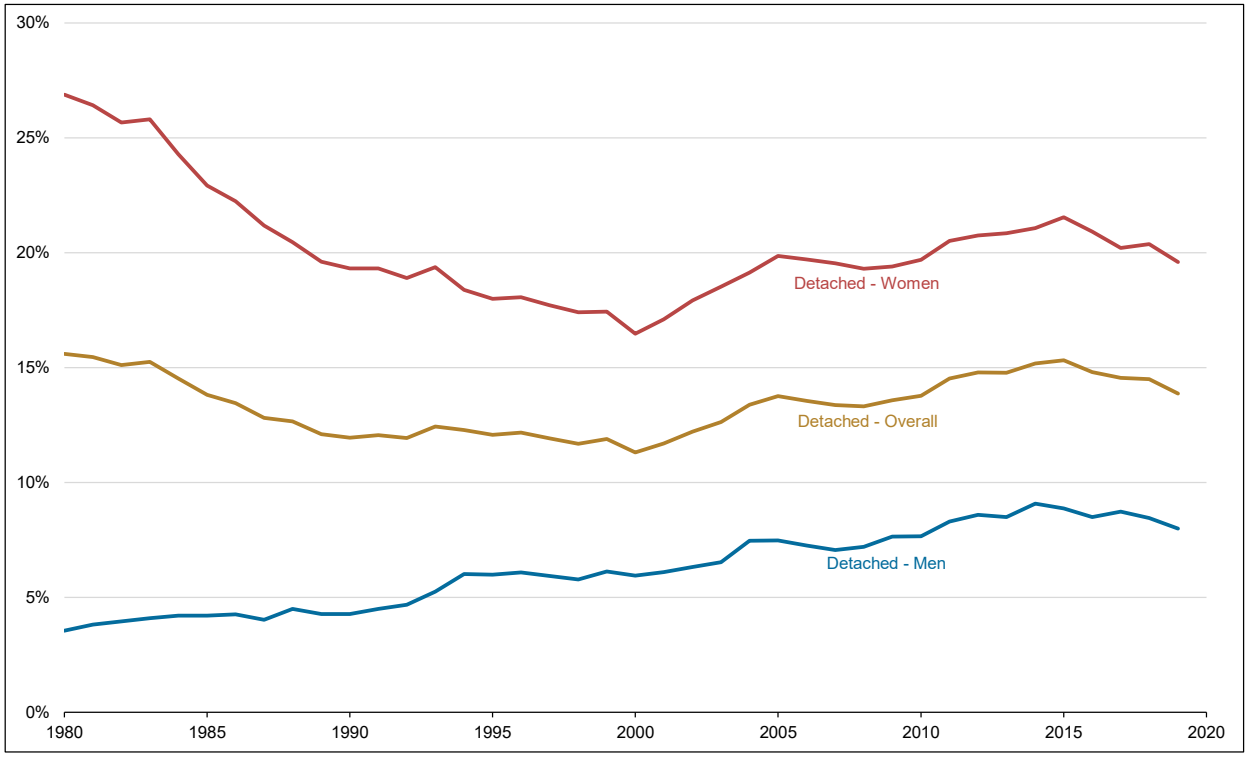
Figure 2: Non-Working Rates of Men and Women, 1980-2019



Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

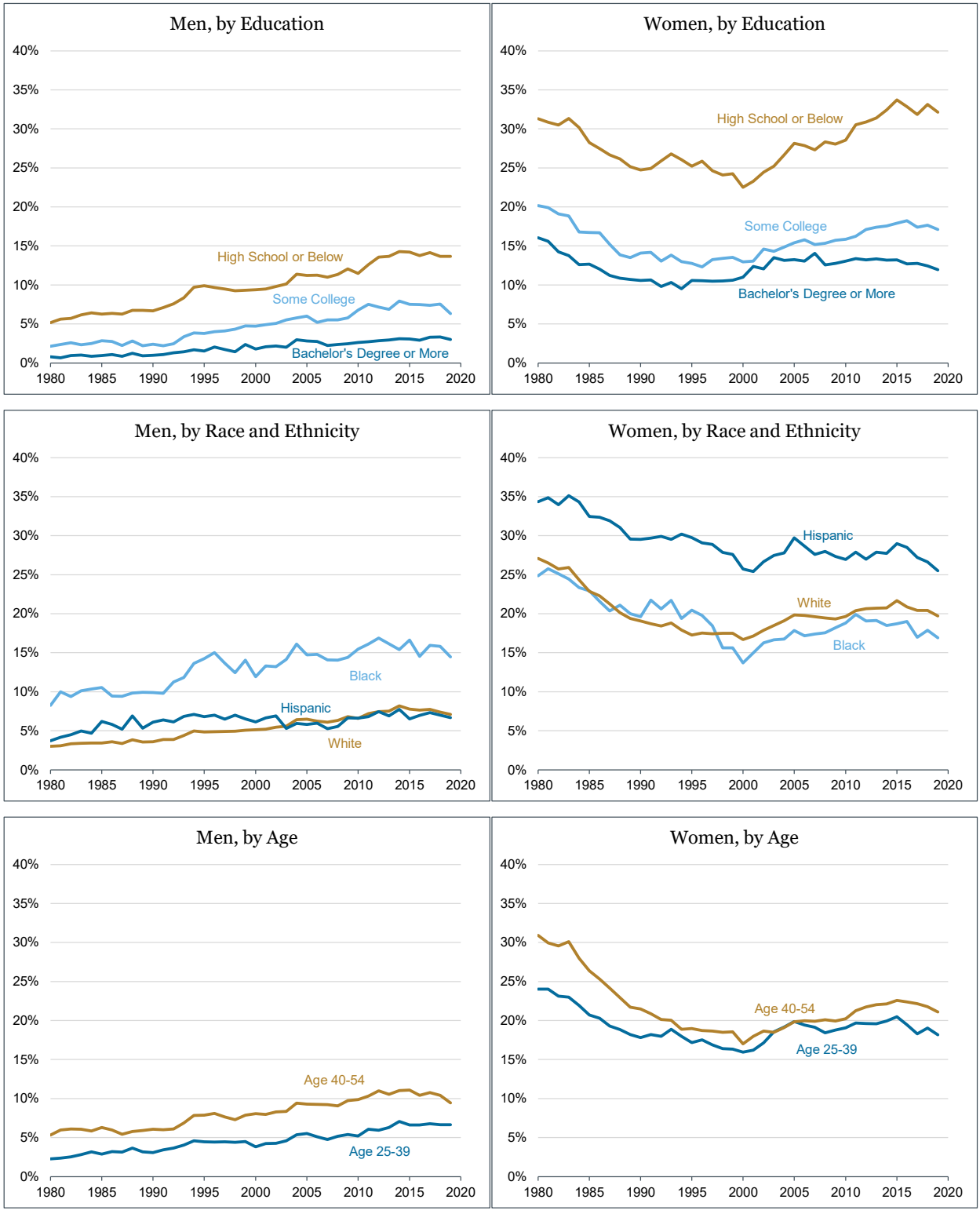
Figure 3: Detachment Rates, Overall and for Men and Women, 1980-2019



Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

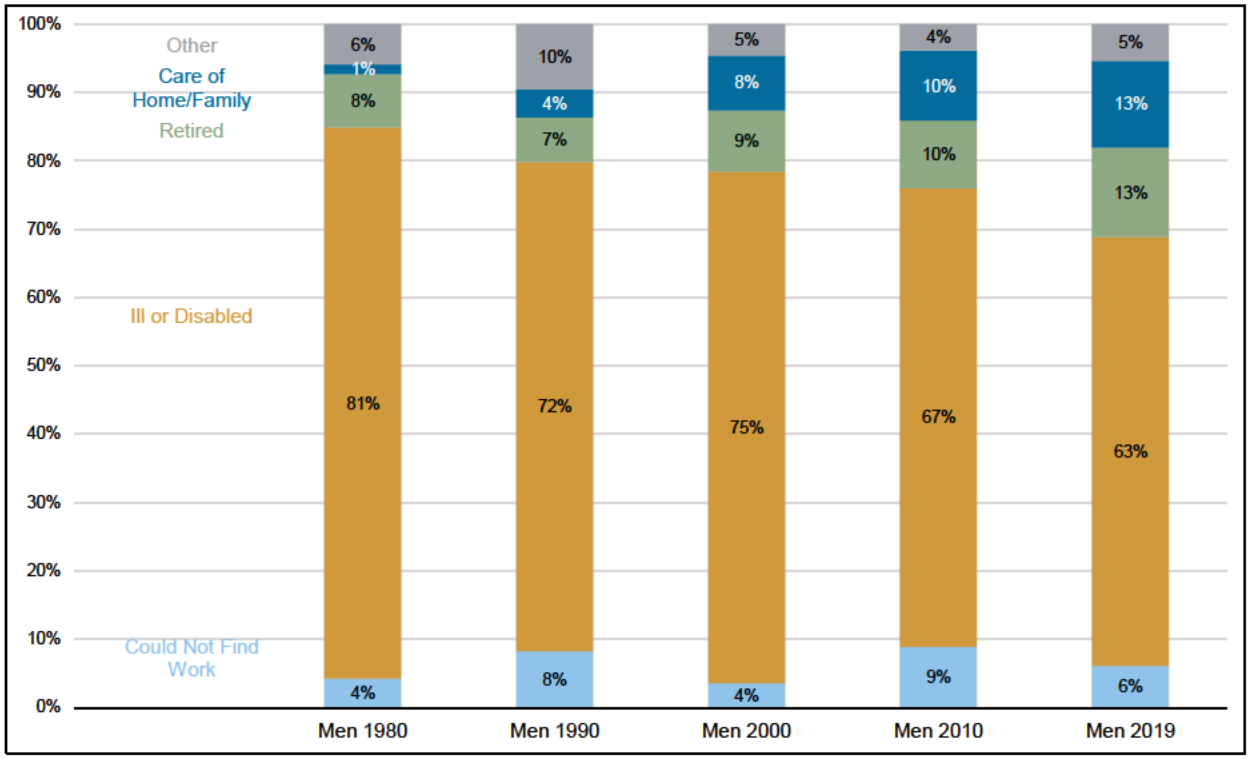
Figure 4: Detachment Rates by Education, Race and Ethnicity, and Age, 1980-2019

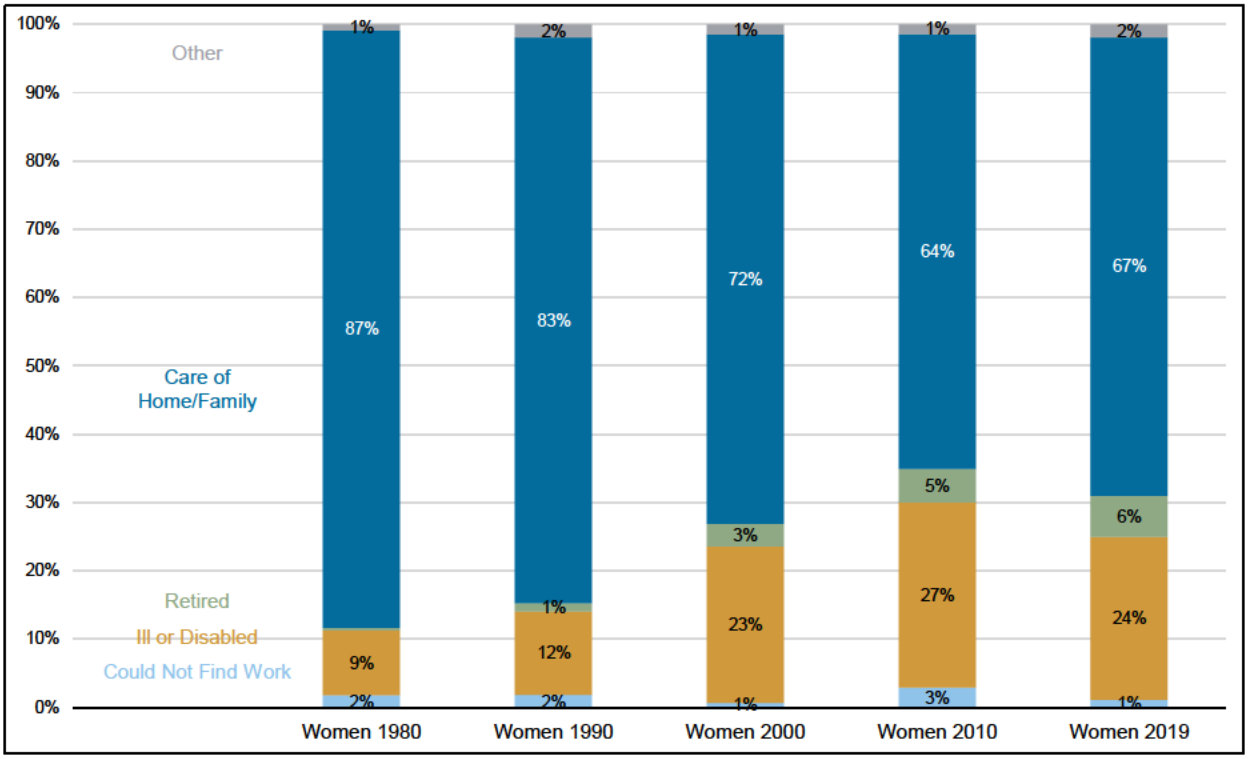


Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

Figure 5: Reasons for Detachment of Men and Women, 1980-2019

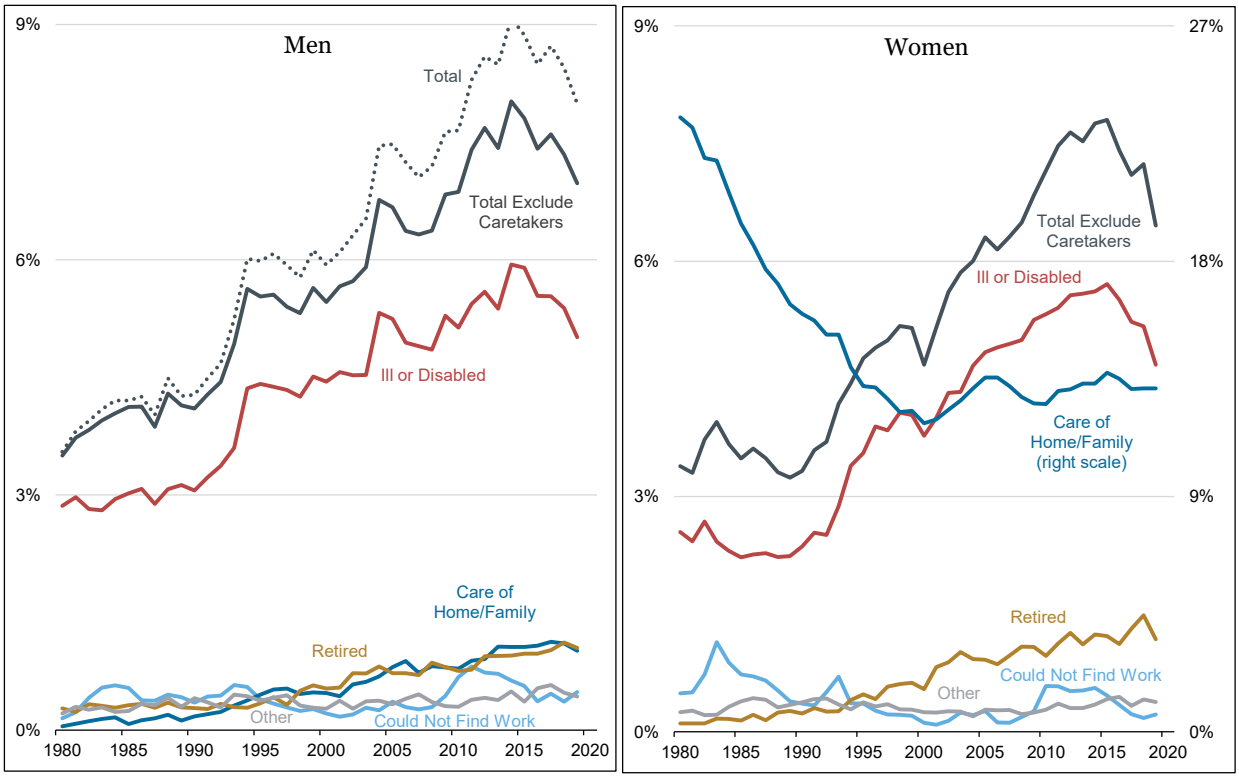




Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

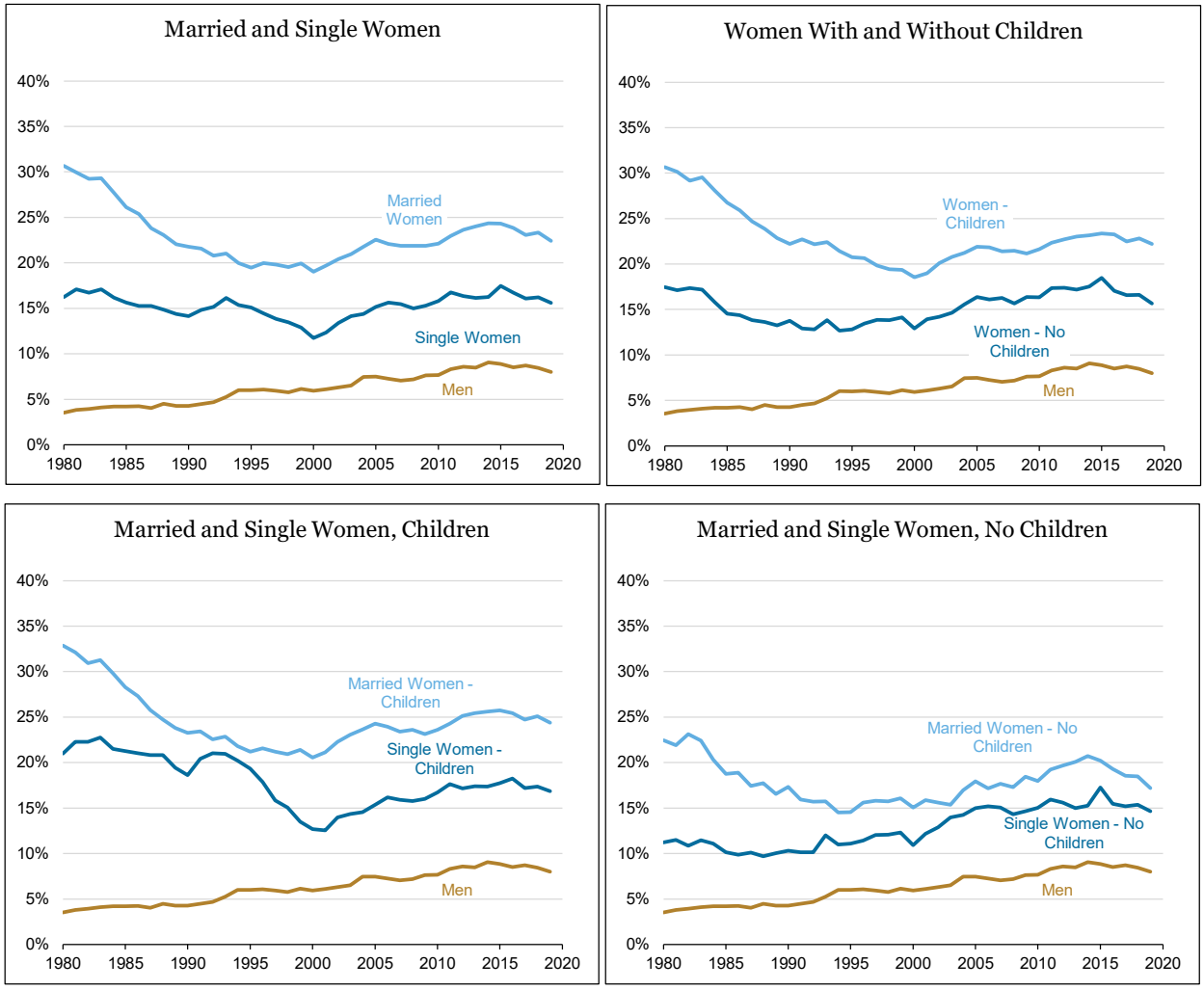
Figure 6: Components of Detachment Rate for Men and Women, 1980-2019



Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

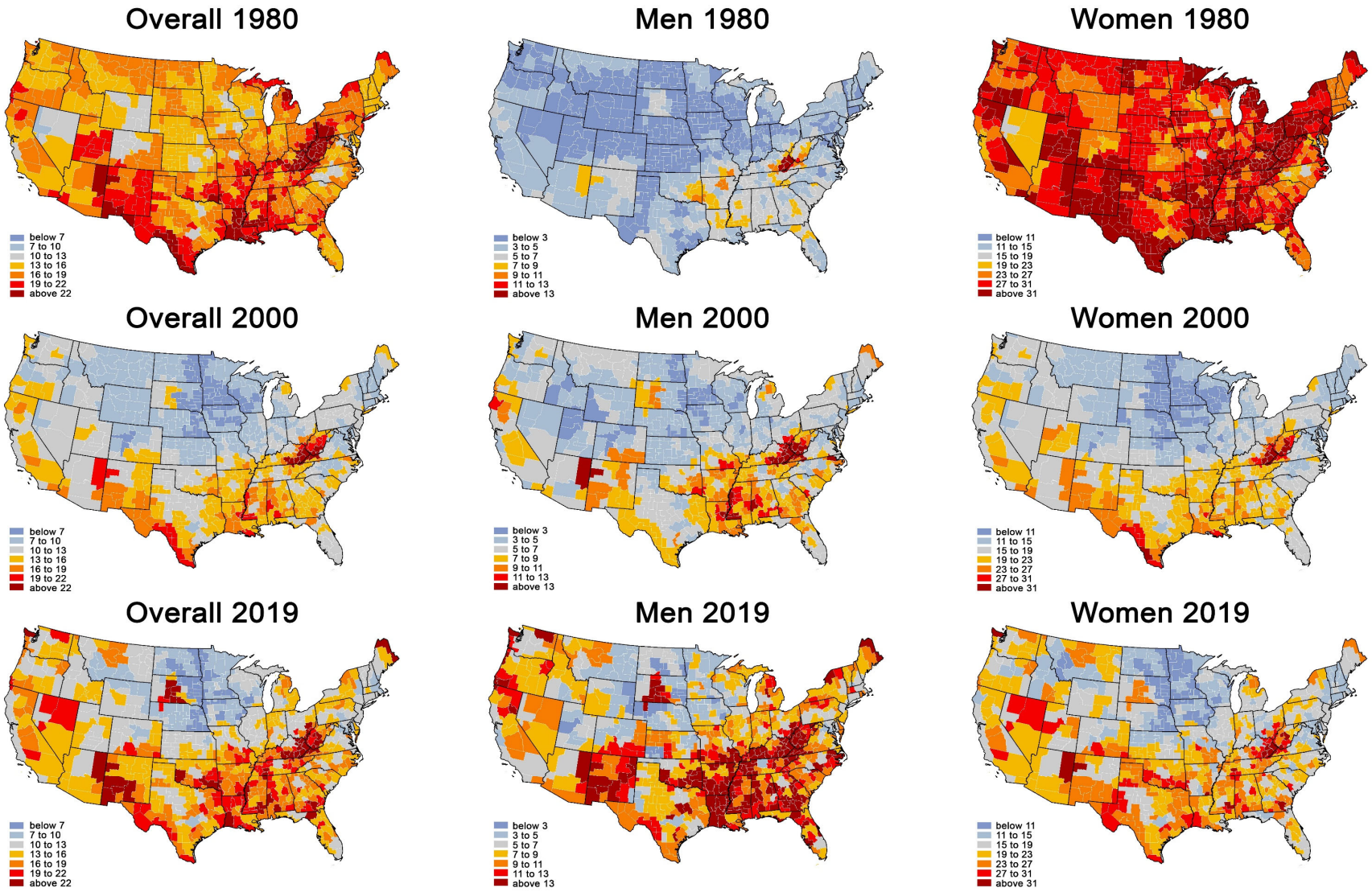
Figure 7: Detachment Rates for Married and Single Women With and Without Children, 1980-2019



Note: Sample restricted to the prime-age (25-54) population and excludes students, members of the armed forces, and those living in group quarters.

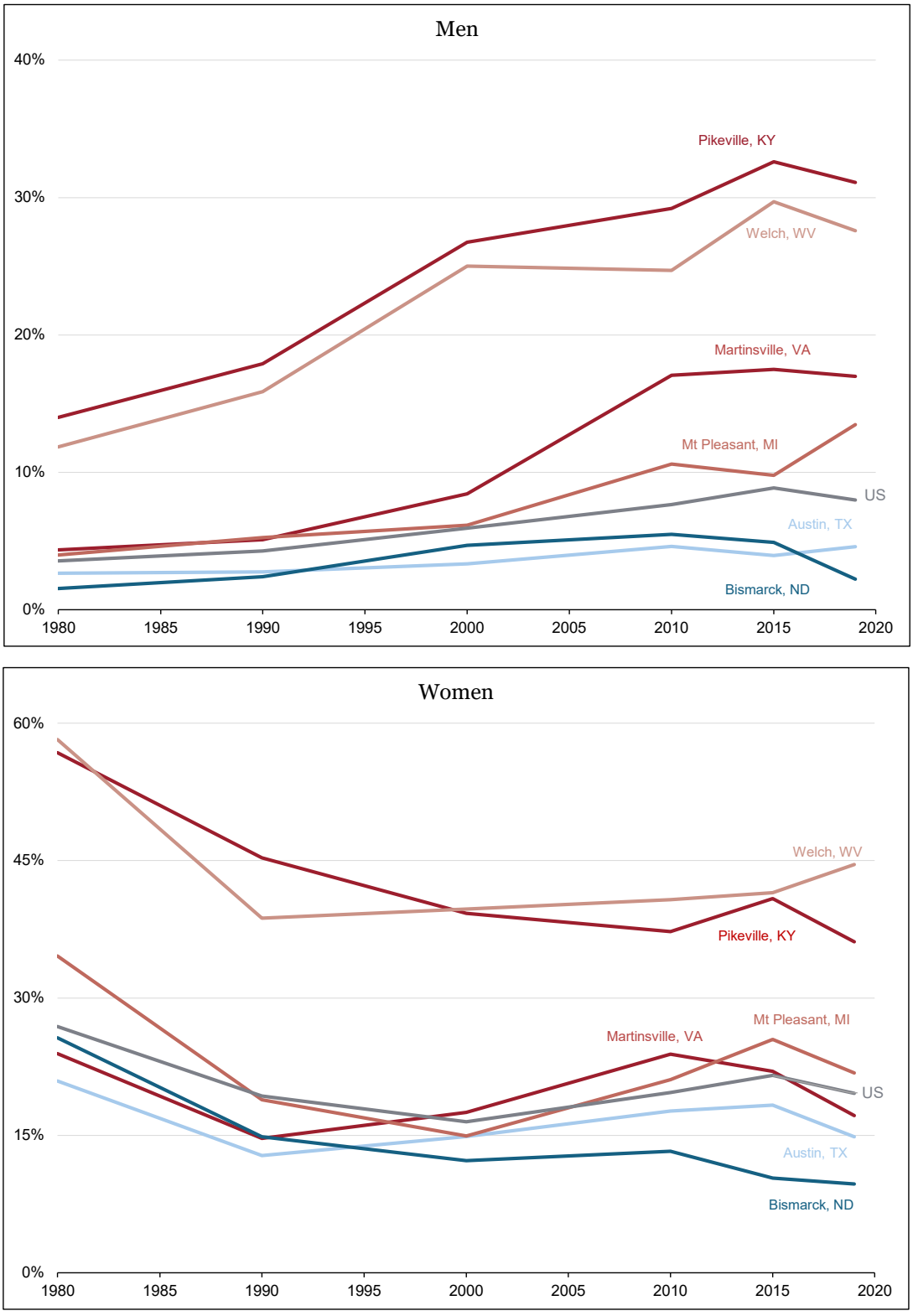
Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); IPUMS.

Figure 8: The Evolution of Local Labor Market Detachment, Overall and for Men and Women, 1980, 2000, and 2019



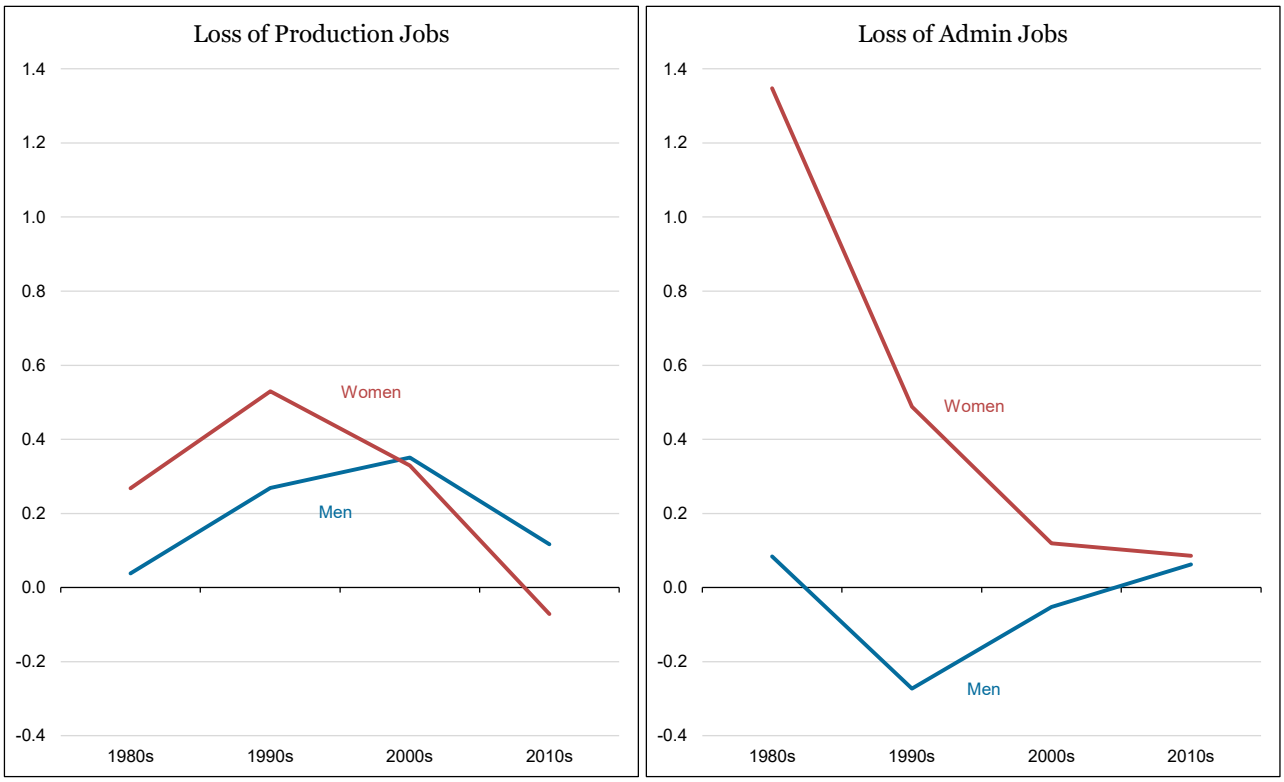
Sources: U.S. Census Bureau, Decennial Census (1980, 2000) and American Community Survey (2019); IPUMS.

Figure 9: Patterns of Detachment Over Time in Selected Local Labor Markets, 1980-2019



Sources: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement (1980-2019); Decennial Census (1980, 1990, 2000, 2010); and American Community Survey (2015, 2019); IPUMS.

Figure 10: Estimated Increase in Detachment Rate Due to One Percentage Point Decline in Production and Admin Share for Men and Women



Note: This figure plots the coefficient estimates on the Production Share and Admin Share variables by decade reported in Table 6. The 1980s covers the 1980 to 1990 period, the 1990s covers the 1990 to 2000 period, the 2000s covers the 2000 to 2010 period, and the 2010s covers the 2010 to 2019 period.