

LABOR MARKET TRENDS AND OUTCOMES: WHAT HAS CHANGED SINCE THE GREAT RECESSION?

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It isn't news that most US workers, especially those without college degrees, saw stagnant wages over the past four decades, that inequality rose dramatically in this period, and that millions of prime-age workers left the labor market (Groshen and Holzer, 2019). Equally true, during the last dozen years, the US labor market experienced unusually wide swings in labor market conditions, which also affected workers' outcomes. As we experience the COVID-19 recession, this paper assesses how those two powerful influences (the long run trends and the recent business cycle) interacted in the US labor market, with particular focus on continuing disappointing trends for non-college workers.

On the one hand, the Great Recession of 2007-10 was a cataclysmic event for US workers, generating the worst declines in employment observed in nearly 80 years (since the Great Depression).¹ The recession was not only deep, but recovery from it also occurred quite slowly.² On the other hand, the recovery lasted the longest of any on record, resulting in the lowest US unemployment rates since the late 1960s. Indeed, by February 2020, we had nearly five years of unemployment at or below 5 percent, which is also the longest such period since the 1960s.

These labor market oscillations likely generated some lasting outcomes for workers, both negative and positive. The severe and long Great Recession had detrimental effects on workers that may have continued long into the recovery. Economists refer to these lasting effects as "hysteresis." On the other hand, a relatively tight labor market that lasts for many years can support higher wage growth and career opportunities, perhaps with differentially large impacts on less-educated workers.

Economists still debate the extent to which the labor market tightened during the recovery. Various forms of "hidden unemployment" persisted and wage growth was modest throughout most of it. Yet, both the length and depth of the recovery brought many workers back into the labor force who had otherwise left, and enabled many to enjoy several years of positive real wage growth.

In this paper, we examine wage and employment outcomes for prime-age US workers over the period 1979-2018, with particular emphasis on the later years. The years 2000-07 and 2007-18 constituted two full business cycles, with cyclical peaks in 2000 and 2007, a Great Recession trough in 2010, and another peak in 2018-19. We therefore present a range of employment outcomes for the years 1979, 2000, 2007, 2010, and 2018. We also contrast outcomes for workers with bachelor's degrees or above with outcomes for workers who finished high school at most (these constitute the "working class" in many analyses).³

After presenting these outcomes, we discuss the long-run market and institutional forces behind the most disturbing trends in the labor market. We consider the extent to which the Great Recession and

¹ The Great Recession began in late 2007 but worsened substantially in 2008-09. The economy began its recovery in mid-2009 but not in the labor market early 2010, since employment changes lags behind those in output.

² Unemployment peaked at about 10 percent in early 2010 and remained at or above 8 percent well into 2012.

³ Workers with some college but no degree are excluded when comparing outcomes for college and high school graduates.

subsequent recovery interacted with these forces, to generate longer-term improvement in some outcomes and further deterioration in others. We conclude by summarizing our findings and considering implications for future trends and policy.

I. Trends in Employment and Earnings Over Time

We now consider trends in three major employment outcomes for US workers: employment, overall real wages, and labor force participation. We will consider some outcomes over the entire 40-year period between 1979 and 2018, but with a particular focus on the years since 2007. We also consider outcomes for all workers, but with some particular attention to those without BA degrees, and how their outcomes differ from those of college graduates.

The three panels of Figure 1 present the trends since 1979 in employment-to-population ratios, labor force participation, and median real wages respectively. We focus on outcomes for the prime-age working population – i.e., ages 25-54. We adjust wages for inflation using the chain-weighted GDP deflator for personal consumption expenditures (PCE).⁴

The employment to population ratio (Figure 1a) follows the well-known peaks and troughs in business cycles over the past 40 years, especially during the Great Recession and afterwards. Overall employment rates rose until 2000, but declined a bit during the years 2000-18. Trends in labor force participation (Figure 1b) and real wages (Figure 1c) are somewhat less cyclical. Yet the decline in labor force participation during the Great Recession and its slow recovery afterwards are noteworthy. Regarding secular trends, labor force participation rose continuously until 2000 but declined a bit after that. We also note that median real wages rose only 18 percent over the entire 40-year period, with the most notable increases occurring in the late 1990s-early 2000s and the past five years.

These broad aggregate trends in employment, participation, and real wages mask considerable variation by education and gender over time. Figure 2 displays trends in median real wages separately for men and women, and for those with college (BA) degrees or more and those with high school or less. We do the same for labor force participation rates in Figure 3.

We present both sets of outcomes at five points in time: business cycle peaks in 1979, 2000, and 2007, the trough of the Great Recession in 2010, and the most recent cyclical peak in 2018. These comparisons enable us to infer just how much employment outcomes had deteriorated by 2010, and the extent to which they recovered in the subsequent eight-year expansion.

The panels in Figure 2 illustrate the following outcomes for US workers' median real wages:

- Over the past 40 years, but especially during the years 1979-2000, real wages grew rapidly for those with BAs but were flat for the “working class”, and rose substantially for women but not men;

⁴ Real wages decline a bit more rapidly over time if one deflates nominal wages with the Consumer Price Index for Urban Workers “research series” – CPI-U-RS – since the research series adjusts for some but not all of the overstatement of annual inflation in the traditional CPI. See Moulton et al. (2018) for a comparison of GDP and CPI deflators over time.

- During the recovery from the Great Recession, median real wages increased a bit for both men and women; and
- Wage increases were similar (about 2 percent) for college- and high school educated workers.

Importantly, the focus on the entire recovery period of 2010-18 masks some ongoing decline in the first four years of that period and larger increases afterwards.⁵

Overall, as seen in figure 2, earnings inequality has risen substantially in the past 40 years within gender groups but it has declined between them. Since the presence of less-educated men in the labor force has declined over time, these data likely overstate the extent of their wage growth.

We also know from published summary data that *nominal* wage growth (i.e., without adjusting for inflation) has been somewhat modest since the Great Recession; indeed, such increases barely ever rose much above 3 percent. But inflation has also remained unusually low throughout this time period, despite the recovery from the Great Recession.

These modest wage increases have thus translated into annual real wage increases of about 1 percent during the past five years, and the length of this expansion allowed such increases to accumulate over time and result in significant wage growth. And, as labor markets have been at least somewhat tight for a lengthy period, the relatively greater sensitivity of disadvantaged workers to the business cycle (Aaronson et al., 2019) has translated into greater wage increases for them. Minimum wages increases at the state and local levels no doubt added to real wage growth among the lowest-wage workers.⁶

But, over the entire 2010-18 period and for prime-age workers, wage growth was similar by educational group and was modest. Such increases did not even begin to offset the trends toward greater earnings inequality across skill groups in the past four decades.⁷

The three panels in Figure 3 illustrate the following labor force participation outcomes:

- Participation declined most over the past four decades for non-college-educated workers and men, while it has rose rapidly for women from 1979 to 2000;
- Participation declined somewhat for all workers from 2000 to 2007;
- Participation declined somewhat among college graduates or women, but by larger amounts for those without college and men, during the Great Recession; and
- Participation fully recovered for college graduates and women by 2018, but not for the working class and men overall.⁸

In all, these data indicate a secular trend towards less participation by non-college educated men, which was exacerbated by the Great Recession and from which they enjoyed little recovery afterwards. If

⁵ Secular increases in college enrollment and attainment among middle-skill students likely reduce the average skills and wages of both groups over time, but not the ratio of one to the other.

⁶ <https://www.ncsl.org/research/labor-and-employment/state-minimum-wage-chart.aspx>

⁷ The smaller declines within these two educational groups than in the aggregate data of Figure 1 suggests that wages of workers with some college might have increased by more than the high school and college groups. And larger wage increases for low-wage workers have probably occurred among youth, while our data focus on prime-age workers.

⁸ Again, focusing on the years just since 2014 would no doubt show greater increases.

anything, the data likely understate the true magnitude of this decline, because low-income minority men are under-represented in the civilian labor force data.⁹

In contrast, participation for women rose consistently in the 1980s and 1990s (and earlier), and has been uneven since then. Despite their recovery from the Great Recession, the trend toward higher participation of women in the late 20th century remains stalled in the 21st century.

II. What Explains These Trends in Labor Market Outcomes?

What accounts for the overall trends in earnings and labor force participation that we have documented, and also for different trends by gender and education? We first consider the secular and cyclical trends in earnings, which might partly drive the labor force participation trends that we discuss second.

A. Earnings Trends: Markets, Institutions, and Business Cycles

In a purely statistical sense, three factors appear to drive the stagnation of wages over the past forty years: 1) Declining productivity growth; 2) A decline in labor's share of productivity and income; and 3) A growing share of labor compensation accounted for by nonpecuniary benefits like health care. But explaining why each of these three trends has occurred is somewhat more challenging.

With the exception of the tech boom years (mid-1990s to mid-2000s), US productivity growth has been sluggish (Baily, 2015). And, though there has been some decoupling of worker compensation from productivity during this period, a strong correlation remains (Stansbury and Summers, 2018). Possible culprits include the aging workforce (Ozimek et al., 2017), too little R&D investment (Gruber, and Johnson, 2019), declining labor market fluidity (Molloy et al., 2016) and/or "secular stagnation" (Rachel and Summers, 2019).

Shifting distributions of productivity and income towards capital might be attributable to rising automation (Acemoglu and Restrepo, 2018), but also could reflect growing power of employers in both product and labor markets. While technology, globalization and deregulation in the 1980s and 1990s were seen as forces enhancing product market competition, rising product market concentrations since then might have offset those effects (Philippon, 2019), though the evidence on this point is mixed (Basu, 2019; Autor et al., 2017). Whether or not the monopsony power of employers has risen also remains unclear, though employer practices like noncompete and nondisclosure agreements might enhance it (Krueger and Posner, 2018). Finally, the growing share of worker compensation accounted for by health care no doubt reduces pecuniary worker compensation. While the increases in these shares over time are not higher in recent decades than before (Burtless and Milusheva, 2012), they clearly reinforce the other determinants of lower compensation growth described above.

⁹ Low-income black men, and especially those previously incarcerated, are undercounted in the Census and other surveys (Pettit, 2012). These groups have very low labor force participation rates, so their absence in the data lead participation rates of less-educated men to be understated. Casual or informal work among such men likely offset these trends, but only partially.

Whatever explains the overall stagnation in worker earnings, rising earnings inequality in virtually every dimension (except gender) has contributed as well to stagnant median earnings.¹⁰ The debates between those emphasizing labor market forces like skill-biased technical change (SBTC), globalization, and declining growth of the college-educated population versus those emphasizing weakening institutions like unions and federal minimum wages are well-known at this point (Groshen and Holzer, 2019). Even those emphasizing changes in the demand for and supply of college-educated workers in the market have noted the flattening of the ratio of college to high school wages since 2000, while inequality has risen within the higher-skilled group (Autor et al., 2020).

Still, a few new developments in the empirical literature on rising earnings inequality are noteworthy. For one thing, differences between firms account for more of the variance in employee earnings over time than in the past (Barth et al., 2014). At the same time, the rising capital intensity of “superstar” firms (Autor et al., 2017) and institutional developments might also limit the ability of workers to share in firm-level product market success. Another possibility is that information problems prevent employers from tapping into skills developed on the job by experienced non-college workers (Blair et al., 2020).

Beyond declining unionism, David Weil (2019) has called our attention to the growth in “fissured” workplaces – i.e., those in which different occupational groups under the same roof and at the same firm actually work for different employers. While we have limited data on this, it likely prevents many groups of workers from sharing in the product market success of firms who sell the goods and services they produce. It also reduces firm incentives to invest in educating or training their workers, to whom they now have little long-term commitment.

Strikingly, the common thread in all these explanations is that they are not likely to subside or reverse in the near future without direct policy action. The business cycle might exacerbate or counteract these forces, sometimes temporarily and sometimes more permanently, but they rarely change the broad trends.

How did the Great Recession and subsequent recovery affect earnings among less-educated workers? While the employment of non-college graduates appears more cyclically sensitive than that of college grads (Hoynes, 2002), the evidence suggests that wages of young college graduates might be somewhat more hurt when they enter the labor market in serious recessions (Altonji et al., 2014), with effects persisting for many years. This might be true at least partly because wage growth among these graduates depends more on work experience which the recession disrupts, as well as the quality of employer-employee matches which recessions impede as well.

But there is also evidence that the new technologies that limit the earnings of the “working class” – thereby generating SBTC – are more frequently implemented during recessions (Jaimovich and Siu, 2012); the disruption costs are lowered. Furthermore, we have clear evidence that firms raise worker education requirements during recessions, since college graduates are relatively more available than at

¹⁰ While gender differences are not a main focus of this paper, the decline in the gender earnings gap has largely been driven by rising relative education and earnings for them, as well as declining discrimination and product market shifts from manufacturing to services (Blau and Kahn, 2016).

other points in the business cycle; but the evidence also suggests that, as recovery from recessions occurs, at least some of the higher skill requirements remain in place (Hershbein and Kahn, 2018).

Did the lengthy recovery offset the losses for the less-educated? While disadvantaged workers did fairly well in the last five years (Aaronson et al., 2019), earnings growth overall during the recovery was tame, as we note above. Labor markets were less tight during the recovery than the unemployment rate suggested (Blanchflower, 2019). The flow of workers out of the labor force during the Great Recession, which we describe more fully below, generated a larger pool of potential workers to reenter as the labor market tightened, thereby reducing the pressure on employers to raise wages. All together, these factors likely explain the modest recent real wage growth for both college and high school prime-age workers.

B. *Labor Force Participation, Earnings and the Business Cycle*

As we note above, labor force participation of women rose consistently during the second half of the 20th century, though it dipped a bit after 2000. It also declined very modestly during the Great Recession, as we would expect, but fully rebounded to its 2007 levels by 2018.

In contrast, participation by less-educated men declined consistently over the past four decades, and especially during the Great Recession. It only partly recovered to its 2007 levels during the expansion. These developments reflect both the greater cyclical sensitivity of male employment – as they remain more heavily represented in cyclical industries like construction and manufacturing – and perhaps more long-term scarring as well from employment declines.

What accounts for different participation trends between women and men? The rising education and earnings potential of women compared to men no doubt has generated different “labor supply” responses – rising for women and falling for men, as we would expect if their labor supply “elasticities” (measuring effects of wages on willingness to work) are positive.¹¹

At the same time, it seems unlikely that relative wage opportunities, and movements up and down their respective “labor supply” functions, explain all of these differences. For women, decreasing marriage rates and rising single parenthood no doubt contributed to their greater need to work, even at low wages. And changes in income support policies – including both welfare reform and the rise of the Earned Income Tax Credit in the 1980s and 1990s – raised incentives to work among low-income women. Increasing work among women would likely be even higher, had the US adopted more “family friendly” policies, like child care assistance and paid family leave, which are more available in other countries whose female labor supply has continued to rise (Black et al., 2017).

Similarly, declining work among less-educated men cannot be fully explained by their stagnant or declining wages (Binder and Bound, 2019). For African-American men, criminal records and perhaps

¹¹ Historically, full-time work among prime-age men was widely regarded as socially mandated. But the withdrawal of so many non-college prime-age men from the workforce in recent decades (Eberstadt, 2016; Krueger, 2017), as their earnings deteriorated, clearly indicate increases over time in their labor supply “elasticities,” as discretion about whether and how much to work among men has grown more acceptable.

child order arrears reduce labor force participation (Holzer et al., 2006; Eberstadt, 2016). More broadly, poor health and disability among less-educated men reduce work effort, only partly through dependence on Disability Insurance (Krueger, 2017). Geographic imbalances in labor market strength – exacerbated by declining manufacturing employment after 2000 (Autor et al., 2016) and the reduced geographic mobility of workers (Austin et al., 2018) – further contribute to declining work among blue-collar workers and especially “working class” men in recent years.

Given these forces, it is not surprising that labor force participation (particularly for men) remained lower during the recovery from the Great Recession in those geographic areas hit hardest by the downturn (Yagan, 2018), as “hysteresis” suggests. The scarring and deteriorating skills and networks that occur as a result of lengthy periods of nonwork (Krueger et al., 2014) seem to hurt men the most.

Conclusion

Three disappointing labor market trends over the past forty years are widely known: median real earnings were stagnant, inequality between workers with and without college degrees dramatically increased, and less-educated prime-age men left the labor force. At the same time, gender inequality in both earnings and labor force activity declined.

The Great Recession affected earnings and labor force trends in a number of ways. The recession itself expanded skill-biased technical changes, raising employer skill demands and relative rewards for those with college degrees. The lengthy recovery afterwards helped raise earnings, even more among low-wage (often young) workers than others. But increases in the last five years mostly just offset declines earlier in the recovery, generating muted overall wage growth; and real wages overall grew by roughly the same amounts for the college- and high-school-educated among prime-age workers.

Labor force activity also declined sharply for both men and high school workers during the Great Recession, and recovered very little. Meanwhile, participation declined less for women and college graduate and rebounded during the recovery. Longer-term negative effects on men and high school graduates likely reflect “hysteresis” effects. And, while not hurt as much by the recession, the recent lack of labor force growth among women is troubling; it likely indicates a need for better policies to balance work and family life, such as subsidized childcare and paid family leave.

What does the future hold? During the downturn we are now entering, recent improvements in wages and labor force participation will likely end or even be partially reversed. In addition, automation and globalization in the coming decades will continue to challenge the employment circumstances of workers, both with and without college degrees. Many may suffer displacement and/or declining wages, along with labor market withdrawal.

Policy steps to mitigate these shocks and to reverse the disappointing 40-year trends in labor market outcomes include strengthening our public higher education and workforce systems to improve workers’ abilities to adapt by retraining, and giving workers more voice in the workplace might also improve their abilities to retain their jobs and retrain when their workplaces automate. Additional ways to “make work pay” for lower wage workers – such as the EITC or “wage insurance” – might also be important. Finally, improving our labor market data is critical for managing policy and helping employers and workers to make the best decisions possible to thrive in a changing economy.

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Figure 1. Trends in Aggregate Employment Outcomes: 1979-2019

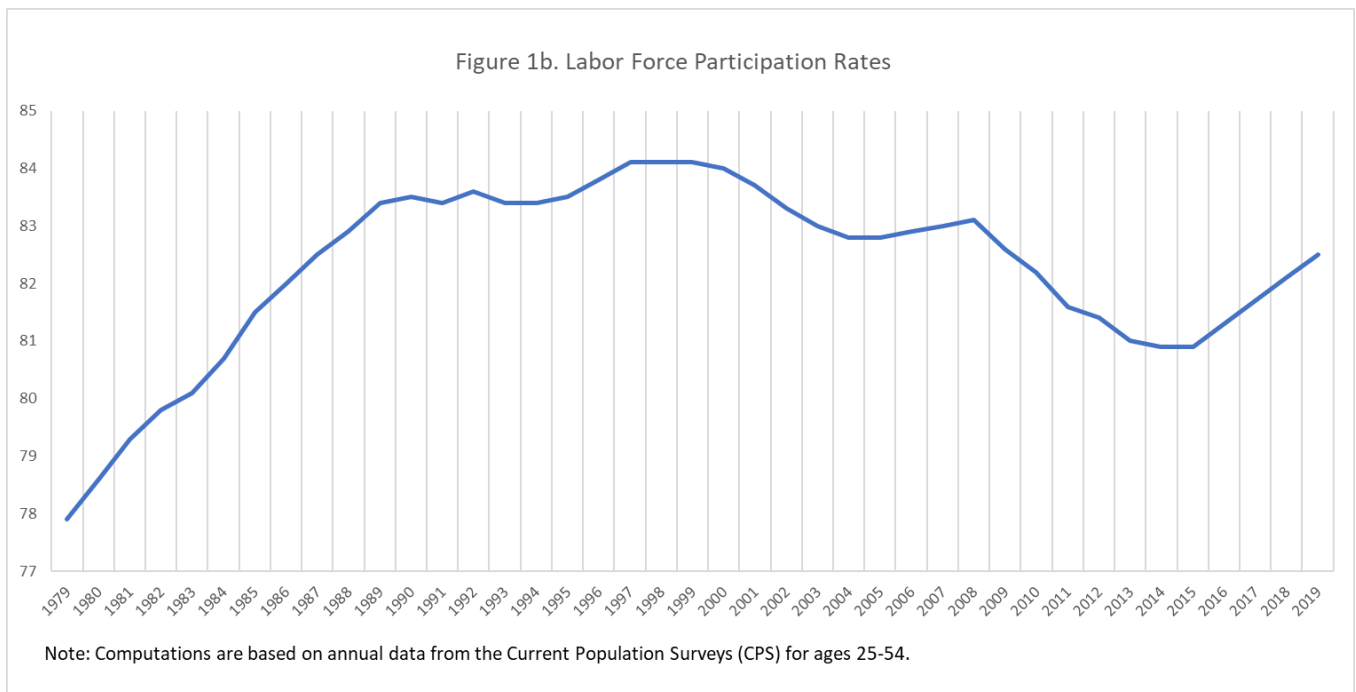
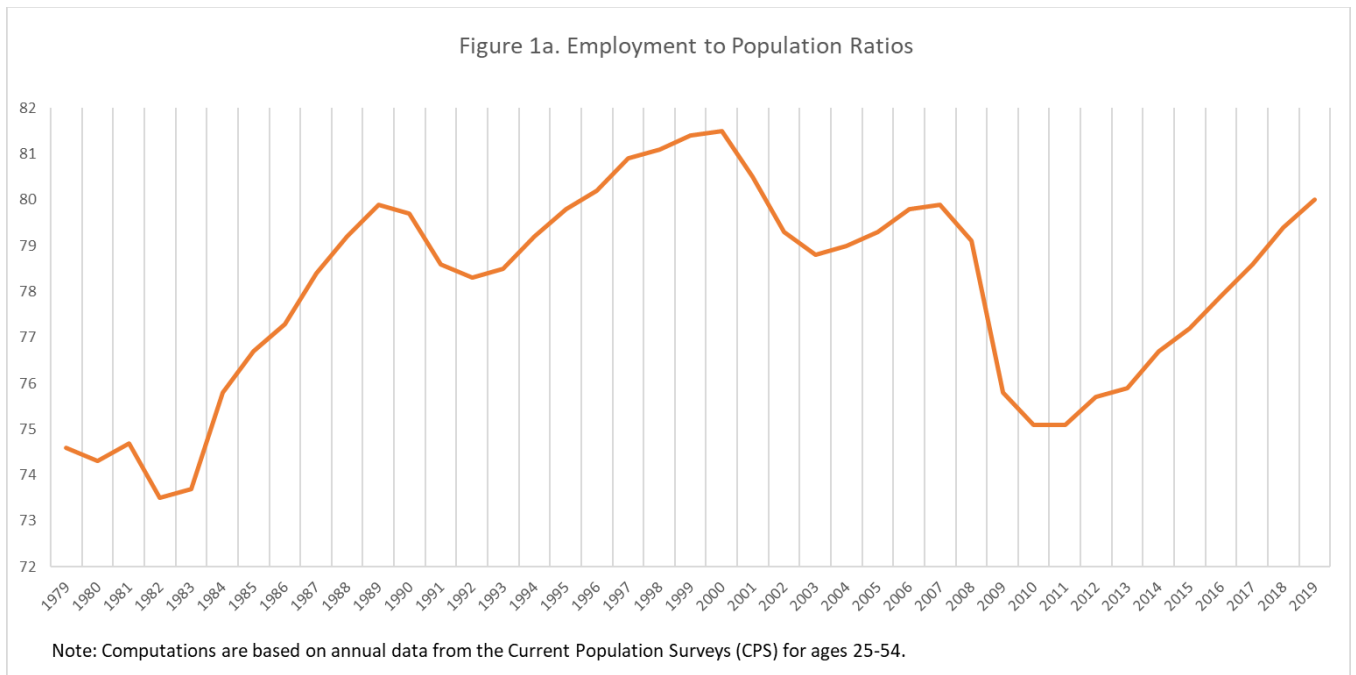
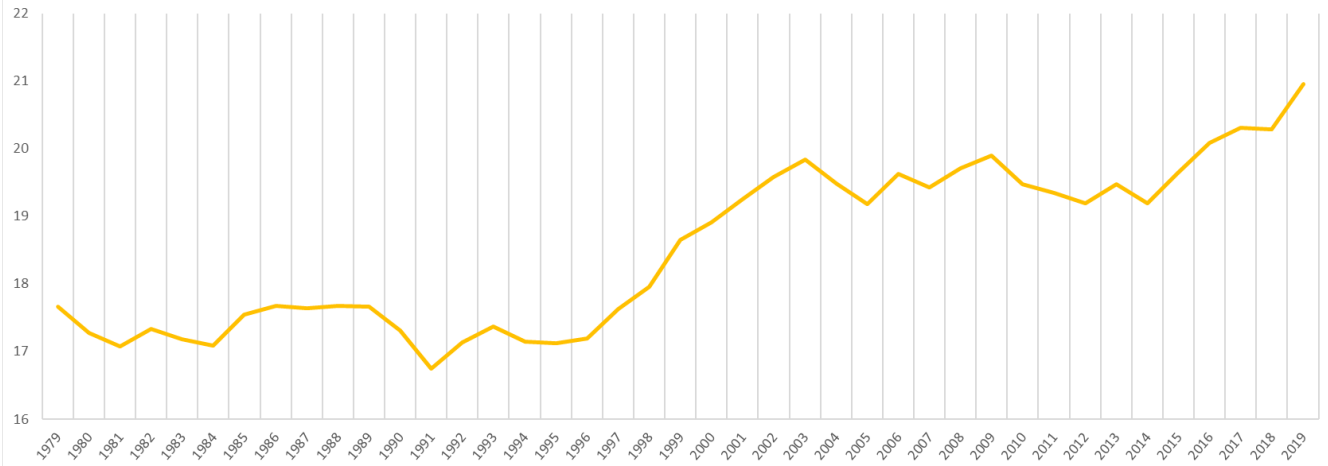
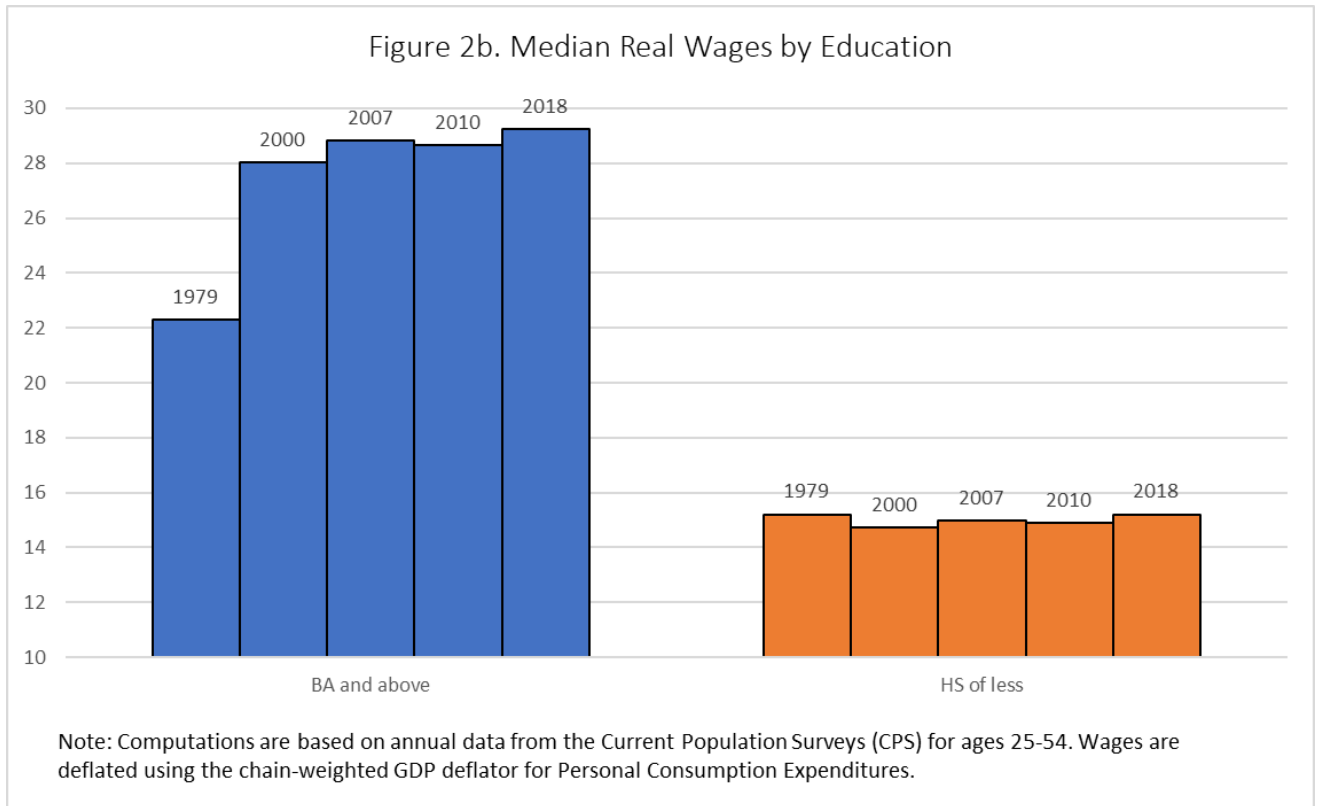
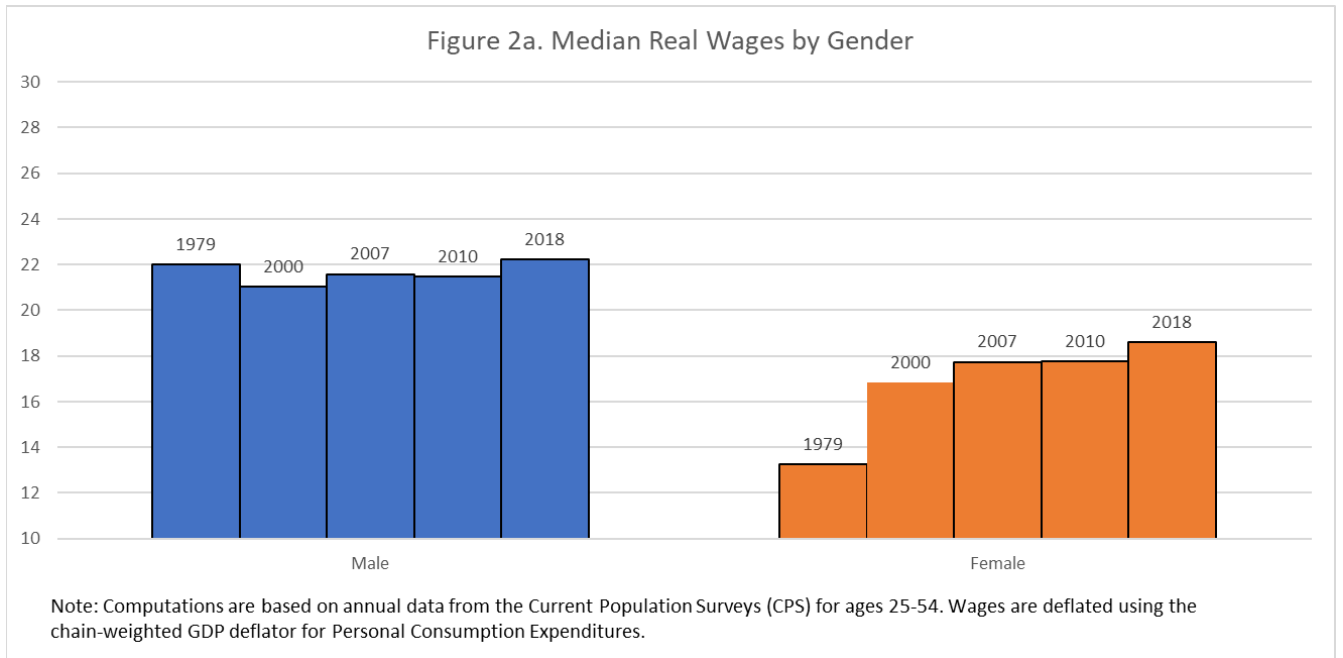


Figure 1c. Median Real Hourly Wages



Note: Computations are based on annual data from the Current Population Surveys (CPS) for ages 25-54. Wages are deflated using the chain-weighted GDP deflator for Personal Consumption Expenditures.

Figures 2. Median Real Hourly Wages by Gender and Education: Selected Years



Figures 3. Labor Force Participation Rates by Gender and Education: Selected Years

