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Budget Model

Explaining the Rise in Prime Age Women's Employment

Summary: The economic costs of the COVID-19 pandemic were widely expected to fall disproportionally on women. Instead, the employment rate of prime age women recovered faster than men's and rose to its highest point in U.S. history in 2023. We show that the resilience of women's employment is driven by two long-term trends that predate the pandemic and continued through it: 1) the growing share of women who are college graduates, and 2) the rising labor force participation of college-educated mothers with young children.

Key Points

- The share of prime age women employed reached an all-time high of 75.3 percent over the last few months. This is almost one percentage point higher than its previous peaks in the spring of 2000 and just before the pandemic, and 6 percentage points higher than a decade ago.

- One reason for the high level of women's employment is increased educational attainment. Over the last two decades, the share of prime age women with a college degree rose from below 30 percent to more than 45 percent. Since college graduates are more likely to work, this raised the overall employment rate of prime age women, adding 2.7 percentage points since 2000.

- Another reason is that college-educated mothers of young children are more likely to be employed. The share of college graduates with a child under 10 who worked rose 10 percentage points from the early 2000s to 2023. Over the same period, the share who did not work because of family care responsibilities fell by 10 percentage points. These changes were largest for mothers of infants and toddlers and were only briefly interrupted by the pandemic.

- The child penalty – which measures the impact of having children on women's employment relative to men's – shrunk in the 1980s and 1990s for all women but diverged after 2000 for women with different levels of educational attainment. The penalty continued falling for mothers with a college degree but stalled for mothers who did not go to college.

Introduction

Earlier this year, the employment rate of prime working age women reached an all-time high, passing 75 percent for the first time in U.S. history. Defying widespread expectations that the COVID-19 pandemic would disproportionately harm the economic prospects of women, they have recovered faster than men and played a dominant role in the overall labor market recovery.

In a forthcoming working paper, we review the evolution of prime age women's employment over the last few decades and explain its recent rise. This brief summarizes and previews some of the findings from that ongoing work. We show that the current employment highs are a product of two long-term trends that predate the pandemic: 1) the rising share of women who are college graduates, and 2) a shrinking child penalty for college-educated mothers, who are increasingly likely to remain in the workforce after having a child.

Despite the severe disruptions to labor markets, schooling, and childcare caused by the pandemic, these trends continued and even accelerated after 2020. In the full working paper, we link their resilience to the grand gender convergence in labor market outcomes, drawing on the work of Claudia Goldin, who was recently awarded the 2023 Nobel Prize in economics. We present additional evidence from changes in the occupational mix of women's employment, discuss the impact of parental leave, and study the dynamics of child penalties in detail.

Background: Prime Age Women's Employment Since 1950

The entry of women into the workforce revolutionized the labor market in the second half of the 20th century but then stalled for two decades after 2000. Figure 1 plots the employment rate (also called the employment-population ratio) of prime age women over the past 75 years.[1] Between 1950 and 2000, the share of women ages 25 to 54 who worked rose from one third to nearly three quarters. The gap in employment rates between men and women closed from 60 percentage points in 1950 to 15 in 2000, and by the end of the century women made up nearly half of the workforce.

Figure 1. Employment Rate of Prime Age Women
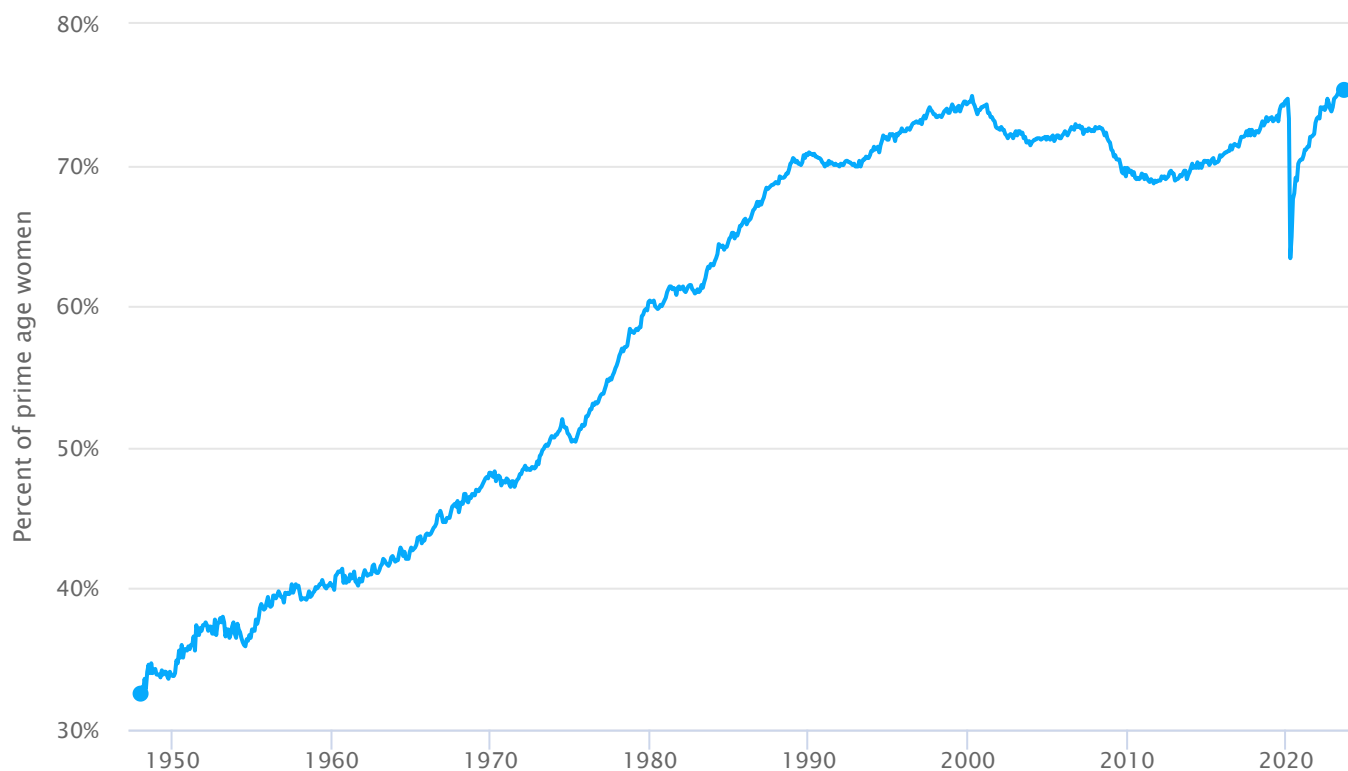
Notes: The figure shows the share of women ages 25 to 54 that is employed. The values are seasonally adjusted monthly estimates.

The same data for men ages 25 to 54 are shown in Appendix Figure A1.

Source: Bureau of Labor Statistics

The share of prime age women working peaked just below 75 percent in the spring of 2000 and then declined as the economy went into recession in 2001. It never recovered, and following the much deeper 2007-2009 recession, it fell consistently below 70 percent for the first time since the 1980s.[2]

After a decade of gradual recovery, the strong pre-pandemic labor market saw a surge in women's entry into the workforce in 2019 and early 2020. Over the year leading up to March 2020, the share of prime age women working jumped 1.3 percentage points, reaching 74.7 percent in February. However, these gains were quickly reversed by the pandemic.
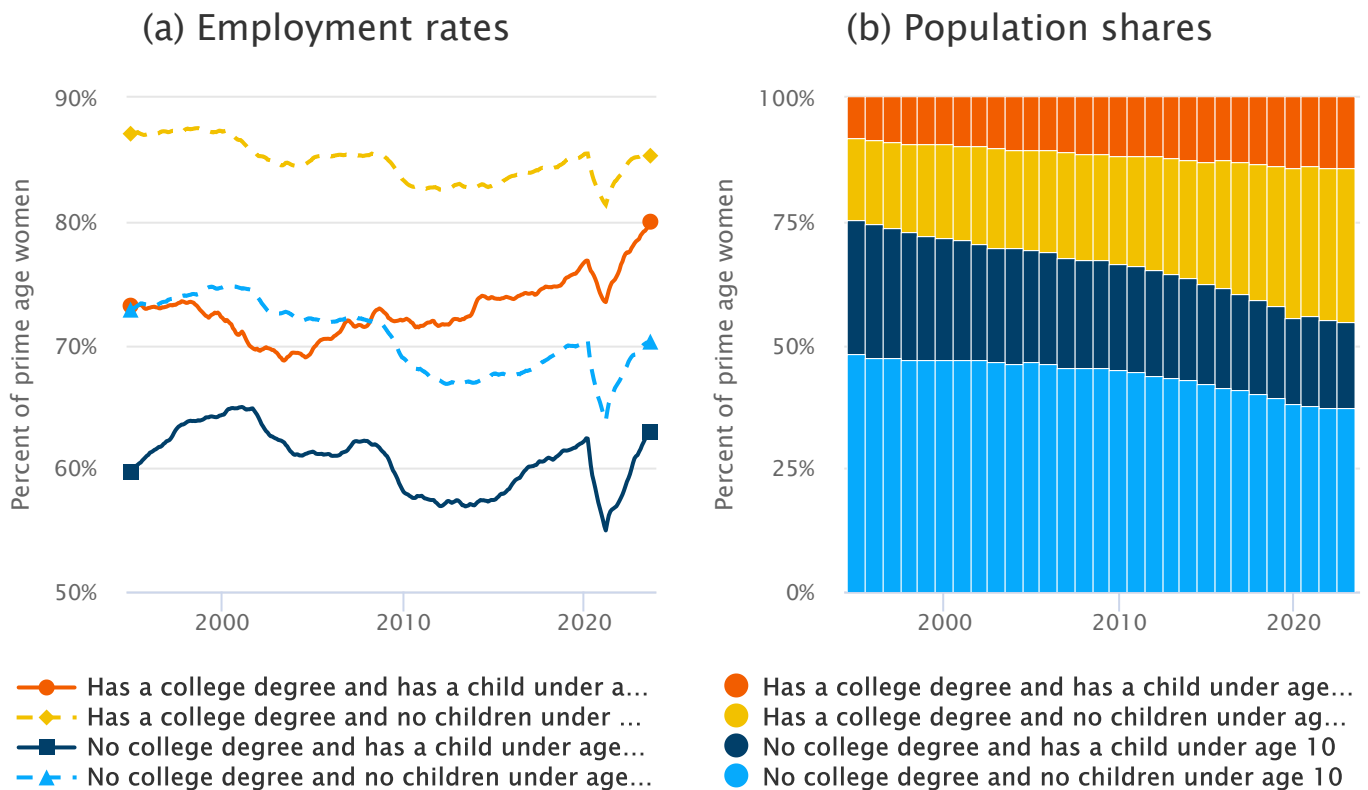
Employment rates initially decreased by similar amounts for prime age women and men, but women recovered faster.[3] Prime age women recovered to February 2020 levels by the beginning of 2023, more than six months before men. In the spring of 2023, women's employment rate passed its spring 2000 peak, rising above 75 percent for the first time.

Children, Education, and Work

To explain the recent evolution of women's employment, we analyze the prime age population along two dimensions that are central to women's labor market experience: motherhood and education. We focus on mothers with children under age 10, the ages at which caretaking responsibilities are most likely to prevent a mother from working.[4] We divide the population by education based on whether they have at least a four-year college degree or not. These divisions imply four groups of prime age women differentiated by whether they have a child under age 10 and whether they have a college degree.

Figure 2. Prime Age Women by Educational Attainment and Motherhood

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(a) Employment rates   (b) Population shares

Legend:
— ● — Has a college degree and has a child under a...
— ◆ — Has a college degree and no children under ...
— ■ — No college degree and has a child under age...
— ▲ — No college degree and no children under age...

● Has a college degree and has a child under age...
● Has a college degree and no children under ag...
● No college degree and has a child under age 10
● No college degree and no children under age 10

Notes: Panel (a) shows the share of women ages 25 to 54 in each group that is employed. The values are 12–month rolling averages of monthly estimates.
Panel (b) shows the distribution of women ages 25 to 54 across the four groups. The values are averages of monthly estimates for the 12–month period ending September of each year. This period is chosen to align with the latest available month of survey microdata, September 2023.
The same estimates for men ages 25 to 54 are shown in Appendix Figure A2.
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

Figure 2 shows the factors that determine the overall women's employment rate, broken down across these four groups. Panel (a) plots the employment rate within each of the four education/motherhood groups and panel (b) shows the share of prime age women in each group. To smooth over month-to-month noise and seasonal variation in group-level estimates, we plot 12-month averages of monthly estimates.[5]

Employment gaps by education and motherhood

Education and motherhood are associated with large differentials in women's labor market outcomes. Women with a college degree (the orange lines in panel (a) of Figure 2) are about 15 percentage points more likely to work than women without a degree (the blue lines). Mothers of young children (the solid lines) are about 10 percentage points less likely to work than women without children (the dashed lines).[6] This gap has shrunk recently for college-educated mothers, as we discuss in detail later in this brief.

These associations do not imply that education and motherhood are themselves the causes of differences in the likelihood of working. Both education and motherhood reflect choices made by women, and those choices may in turn reflect preferences towards work. For instance, if women with career aspirations are more likely to go to college, the employment rate of college graduates will be higher even if attending college itself has no effect on the likelihood of working. In that case, the choice to attend college is a signal of an underlying preference for work. On the other hand, the associations may be causal: the birth of a child leads some women to stop working despite preferring to work. We address these questions of interpretation at length in the full working paper.

Trends in employment rates

For three of the four education/motherhood groups, employment rates have generally followed the business cycle with no clear trend up or down since the 2001 recession. College graduates without children and women without a college degree (with or without children) never recovered from the 2001 downturn, and Figure 2(a) shows that their employment rates in 2023 were still below the highs reached in 2000. Relative to the pre-pandemic peak in February 2020, only non-college mothers have recovered; the share of women without children working remains slightly lower than before the pandemic.

College-educated mothers with young children – the solid orange line in Figure 2(a) – have followed a very different trajectory. Their employment rate increased steadily over the past two decades, rising from below 70 percent in the early 2000s to nearly 80 percent in 2023. It has also been less sensitive to the business cycle than other groups'. Strikingly, the 2007-2009 recession only temporarily halted its rise but did not reverse it, even as other groups' employment fell appreciably. Following the pandemic, college-educated mothers recovered faster than any other education/motherhood group, or any comparable group of men.

Trends in educational attainment

Women have attended and graduated from college at higher rates than men since at least the early 1980s, and over the last few decades women's educational attainment caught up to men's and then pulled far ahead.[7] As these new graduates finished school and entered working ages, the share of prime age women who had a college degree increased rapidly.

Figure 2(b) shows that the college-graduate share increased from less than a quarter in the 1990s to more than 45 percent in 2023 (combining college graduates with and without children). The college-graduate share increased among both mothers and women without children and rose especially rapidly in the 2010s, as the bulk of Millennials were entering prime working ages.

This has led to the emergence of a substantial gender gap in educational attainment. In 2002, the share of prime age women with at least a four-year degree equaled the share of men, with just under 30 percent of each sex having completed college. Over the next two decades, the share of women with a degree rose almost 16 percentage points, compared with only 9 percentage points for men.

Figure 3. Changes Since 2002 in Educational Attainment by Sex

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(a) Women   (b) Men
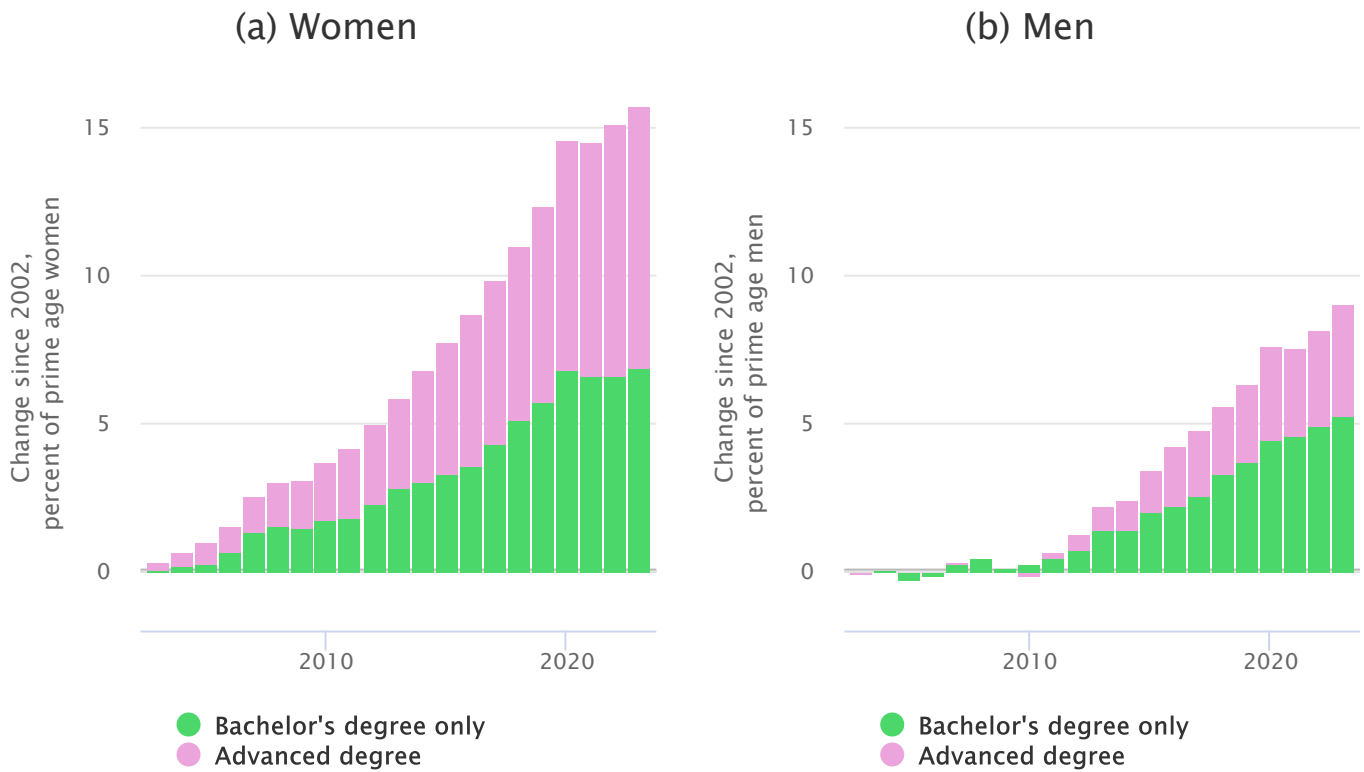
Notes: The figure shows the change since 2002 in the share of the population ages 25 to 54 that had either a Bachelor's or advanced degree, by sex. The values are averages of monthly estimates for the 12–month period ending September of each year. This period is chosen to align with the latest available month of survey microdata, September 2023.
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

The gender gap is even starker when we consider education beyond a four-year college degree, as in Figure 3. Between 2002 and 2023, the share of prime age women with an advanced degree rose about 9 percentage points, accounting for more than half of the rise in the overall college share. The share of men with an advanced degree increased less than 4 percentage points. Today, almost 18 percent of prime age women have an advanced degree, compared with 13.5 percent of men.

Contributions to the Rise in Women's Employment Rate

To quantify how the trends described above have affected the overall employment rate of prime age women, we use the fact that the overall rate in Figure 1 is a weighted average of the within-group rates in panel (a) of Figure

2, with weights equal to each group's population share from panel (b).[8] This implies that any change over time in the overall employment rate arises from one of two sources: changes in within-group rates or changes in the relative population size of each group.

Table 1 shows the contributions of each to changes in prime age women's employment rate. The first column decomposes the 0.8 percentage point increase since July 2000 – the month in which the 12-month average peaked before the 2001 recession.[9] The second column decomposes the 1 percentage point increase relative to the pre-pandemic peak in February 2020.

Table 1. Contributions to Changes in Prime Age Women's Employment Rate

Percentage points

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	July 2000 to September 2023	February 2020 to September 2023
Contribution of within-group employment rates	**-1.9**	**0.5**
Has a college degree		
Has a child under age 10	*1.1*	*0.4*
No children under age 10	*-0.2*	*0.0*
No college degree		
Has a child under age 10	*-0.6*	*0.1*
No children under age 10	*-2.2*	*0.0*
Contribution of changes in group population shares	**2.7**	**0.5**
Total change in employment rate	**0.8**	**1.0**

Notes: Contributions are calculated using a Fisher (chain-weighted) index. Values are based on the 12-month period ending in each month indicated.
Numbers in the table may not add up to totals because of rounding.
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

Between 2000 and 2023, within-group employment rate changes (panel (a) of Figure 2) lowered the overall employment rate by 1.9 percentage points on net. The nearly 10-percentage point rise in the share of college-educated mothers working during this period added 1.1 percentage points to the overall employment rate, but that was more than offset by the long-term decline in the share of non-college women who worked, which subtracted almost 3 percentage points between 2020 and 2023. Nevertheless, absent the rise in college-educated

women's employment, the overall employment rate would still be lower than 2000 by almost half a percentage point.

Shifts in the distribution of the population across the four groups (panel (b) of Figure 2) added 2.7 percentage points to prime age women's employment rate from 2000 to 2023.[10] The growing population share of high-education, high-employment women (and the corresponding fall in the share of low-education, low-employment women) accounts for all of this increase; changes in mothers' share play essentially no role. This means that women's rising educational attainment is by far the biggest contributor to the rise in their employment rate since the early 2000s. As discussed above, this does not necessarily mean that going to college caused women to work more. To the extent that college attendance is a reflection of preferences towards work, the rise in educational attainment is simply an index of women's expanding career expectations.

Patterns are similar for the post-pandemic period, with one major difference: employment of women without a college degree largely recovered from the downturn and is currently close to February 2020 levels. The share of college-educated mothers who worked rose almost 3 percentage points, adding 0.4 percentage points to the overall women's employment rate. The rising share of women with a college degree added another 0.5 percentage points to the overall rate. Hence, the strong recovery of women's employment from the COVID-19 recession reflects the same long-term trends that supported a rising employment rate before the pandemic.
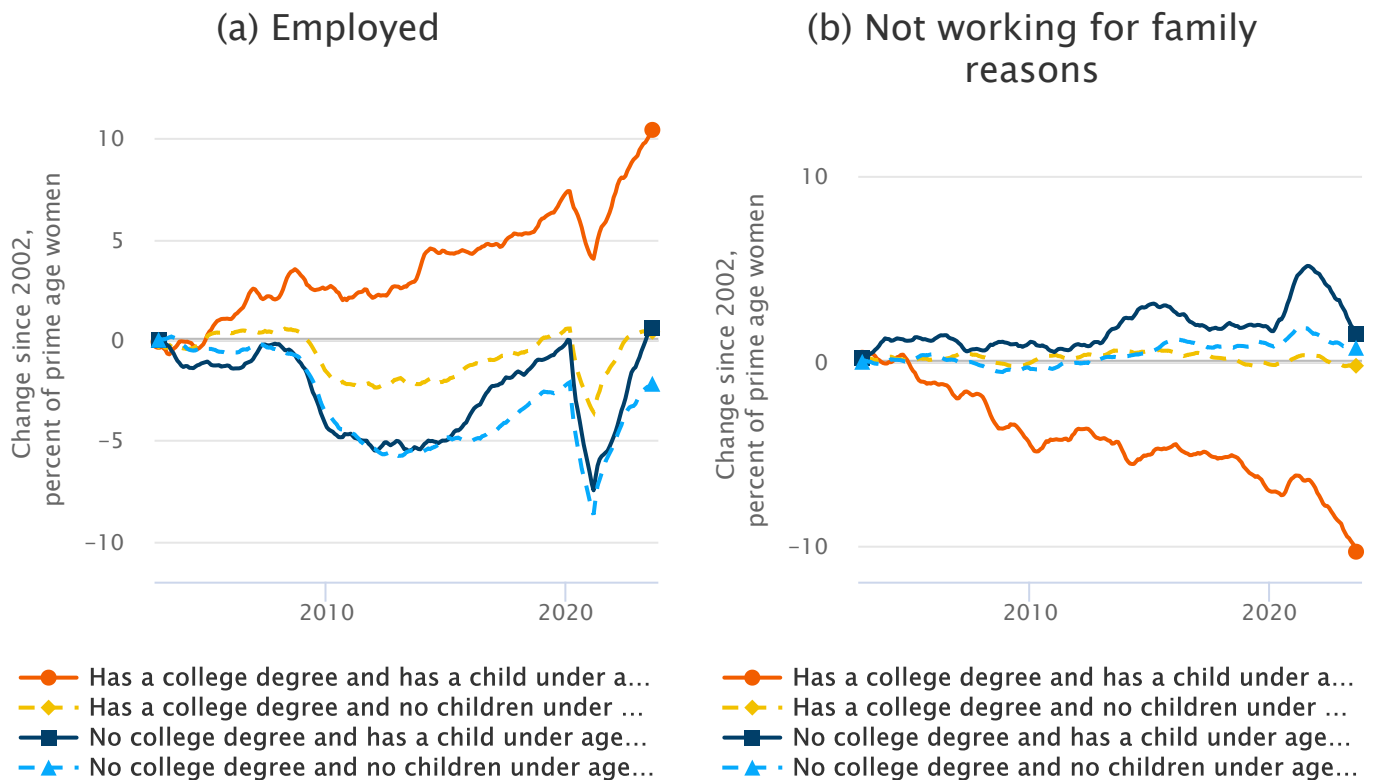
The Rise in College-Educated Mothers' Employment

Between 2002 and 2023, the employment rate of college-educated mothers with young children rose more than 10 percentage points, adding over a percentage point to the overall women's employment rate (see Table 1). Figure 4 shows that this remarkable rise in the share of highly educated mothers working was matched almost exactly by a fall in the share who did not work because they were caring for family full-time. Panel (a) plots the change since 2002 in the employment rate of each of the four education/motherhood groups, and panel (b) shows the change in the share of the population who reported not working for family reasons.[11]

Figure 4. Changes Since 2002 in the Labor Force Status of Prime Age Women

DOWNLOAD DATA

(a) Employed

(b) Not working for family reasons

Legend (Panel a):
- Has a college degree and has a child under a…
- Has a college degree and no children under …
- No college degree and has a child under age…
- No college degree and no children under age…

Legend (Panel b):
- Has a college degree and has a child under a…
- Has a college degree and no children under …
- No college degree and has a child under age…
- No college degree and no children under age…

Notes: Panel (a) shows changes relative to 2002 in the share of women ages 25 to 54 that is employed.
Panel (b) shows changes relative to 2002 in the share of women ages 25 to 54 that is not working because of family reasons. An individual is defined as not working for family reasons if they are neither employed nor looking for work, are not retired or disabled, and meet one of the following conditions: 1) their main activity is taking care of family or the household; 2) they didn't look for work because they couldn't arrange childcare, or 3) they didn't look for work because of family responsibilities.
The values are 12-month rolling averages of monthly estimates.
The figure does not show other possible labor force statuses, such as unemployment, retirement, disability, and school.
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

For mothers with a college degree, the employment rate change is essentially the mirror image of the change in family caregiving, plus some additional cyclical variation. Relative to 2002, the share of college-educated mothers not working for family reasons fell 1.9 percentage points by 2007 (compared with a 2 percentage point employment rate increase), 5.3 percentage points by 2017 (compared with a 5.3 percentage point employment rare increase), and 10.3 percentage points by 2023 (compared with a 10.5 percentage point employment rate increase).[12] This pattern is unique across the four education/motherhood groups. Strikingly, the share of college-educated mothers not working for family reasons barely increased during the pandemic, and the rate at which these women are shifting from family care to employment appears to have accelerated in the years since.

Figure 5. Labor Force Status of Prime Age Mothers with a College Degree by Child's Age: 2022-2023 vs. 2002-2003

DOWNLOAD DATA

Notes: Panel (a) shows the share of college-educated mothers ages 25 to 54 that is employed, by the age of their youngest child.

Panel (b) shows the share of college-educated mothers ages 25 to 54 that did not work because of family reasons, by the age of their youngest child. An individual is defined as not working for family reasons if they are neither employed nor looking for work, are not retired or disabled, and meet one of the following conditions: 1) their main activity is taking care of family or the household; 2) they didn't look for work because they couldn't arrange childcare, or 3) they didn't look for work because of family responsibilities.

The values are 24-month averages of monthly estimates: the darker lines with squares (labeled 2022-2023) show values averaged over October 2021 to September 2023; the lighter lines with triangles (labeled 2002-2003) show values averaged over calendar years 2002 and 2003. A 24-month average is used to reduce variability from small sample sizes.

The figure does not show other possible labor force statuses, such as unemployment, retirement, disability, and school. The same estimates for women without a college degree are shown in Appendix Figure A3.

Source: PWBM calculations from CPS data. Data obtained via IPUMS.

College-educated mothers with very young children have seen the greatest shift from family care to employment over the last two decades. Figure 5 breaks down the share of mothers working or engaged in family care by the age of their youngest child, comparing the early 2000s with today. Panel (a) plots the employment rate of mothers with children of different ages, and panel (b) plots the share who do not work because they are taking care of family. Two decades ago, mothers of infants and toddlers were about 20 percentage points less likely to be working than mothers of teenagers, and about 20 percentage points more likely to be out of work to take care of children. Since then, the likelihood that a mother of an infant is employed has increased 10 to 15 percentage

points, with corresponding declines in the likelihood that they are taking care of children full time. As shown by the flattening over time of the lines in Figure 5, differences in labor market outcomes by child's age have shrunk dramatically for college-educated women since the turn of the century.

Educational Attainment and the Employment Penalty for Motherhood

The patterns in Figure 5 point to mothers with newborns or very young children being the main drivers of college-educated mothers' rising employment. To establish more clearly how the dynamics around childbirth and work have changed in recent decades, we examine what happens to women's employment in the years immediately after they have a child. We use an event study approach that compares employment outcomes in the years just before and just after the "event" of childbirth, adjusting for any other factors that might affect mothers' employment. While event study models typically require longitudinal data that tracks the same individual over time, we instead use a synthetic (or "pseudo") event study method developed in a recent paper by Henrik Kleven, which can be applied to the same cross-sectional CPS data we use for the other figures in this brief.

To evaluate changes over time, we divide the years between 1983 and 2022 (the earliest and latest years for which we have complete data) into 5-year periods. For each 5-year period, we estimate a separate event study that describes how employment outcomes of new mothers differed from other prime age women with the same level of education. These estimates are plotted in Figure 6 for three of the five-year periods: the earliest (1983-1988), the midpoint between then and now (1998-2002), and the most recent five complete years (2018-2022). Panel (a) shows results for college-educated mothers and panel (b) shows results for mothers without a college degree. Appendix Figure A4 shows event study estimates for all five-year periods.

Figure 6. Effect of First Child's Birth on Mother's Employment by Educational Attainment
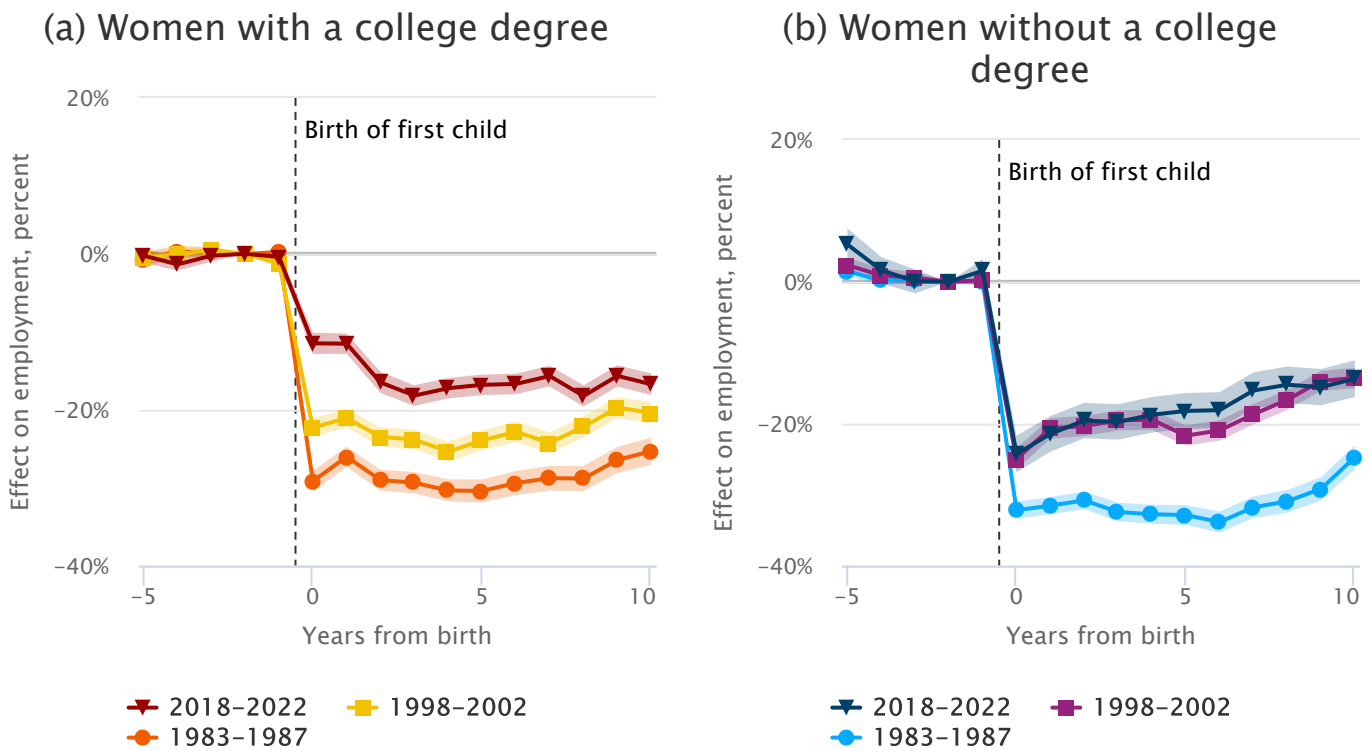
DOWNLOAD DATA

(a) Women with a college degree

(b) Women without a college degree

Notes: The figure shows the estimated effect of a first child's birth on the probability that a woman is employed, by education. The effect is estimated using the synthetic event study approach developed in Kleven (2023). The shaded areas are 95% confidence intervals based on robust standard errors.
The figure shows estimates for selected 5–year periods to highlight changes over time. Estimates for all 5–year periods since 1983–1987 and for men are shown in Appendix Figure A4.
Source: PWBM estimates from CPS data. Data obtained via IPUMS.

For women with and without a college degree, the likelihood of working falls sharply in the year of a first childbirth and remains depressed throughout the next ten years.[13] This pattern is specific to women: as can be seen in Appendix Figure A4, men are just as likely to work in the years after their first child's birth as in the years leading up to it.
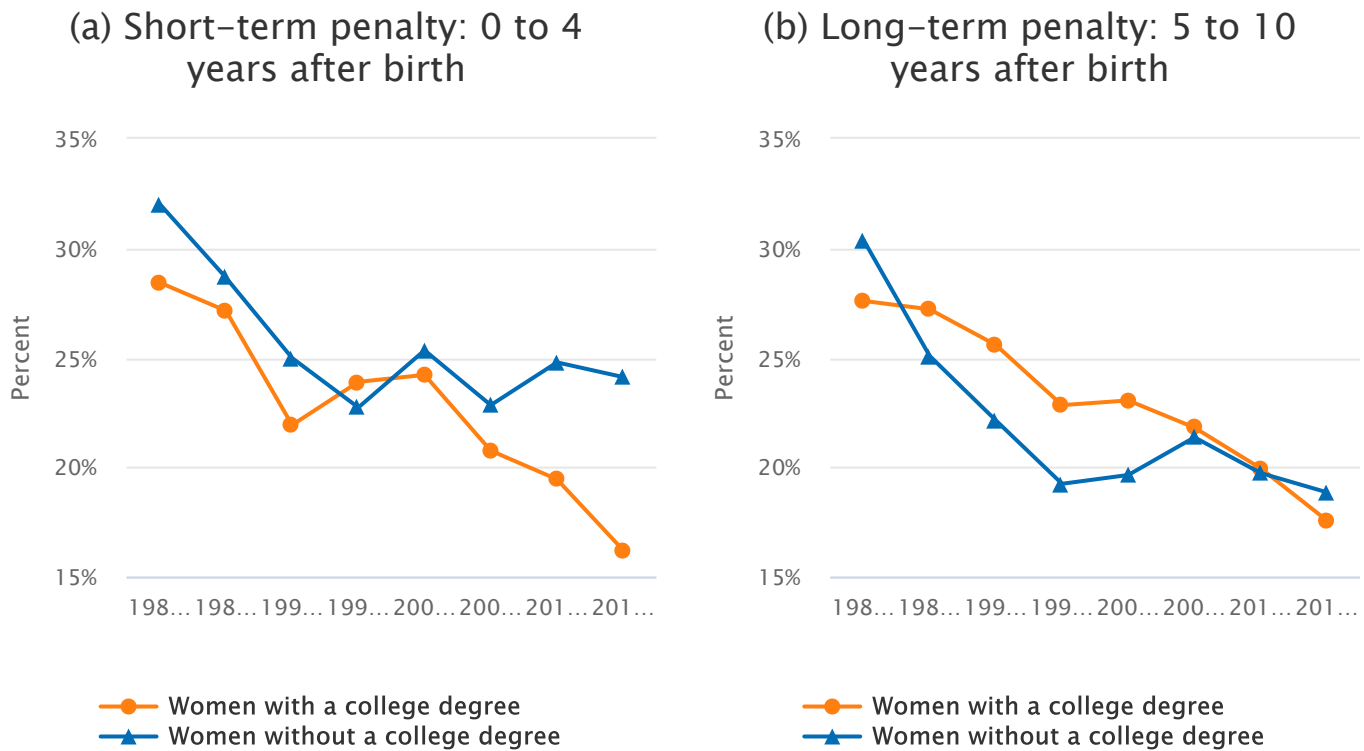
However, Figure 6 shows significant differences over time between more and less educated women. In the mid-1980s, the effect of childbirth on a mother's likelihood of working was similar for both groups. Over the next two decades, the employment loss associated with childbirth shrunk for both, but by about twice as much for women without a college degree. From the early 2000s to today, that pattern reversed: women without a degree saw essentially no change in employment loss, while women with a degree became substantially less likely to stop working after having their first child. The recent gains for college-educated women are particularly stark for the years immediately after childbirth.

Figure 7 presents these trends more comprehensively. For each five-year period since 1983, we calculate the child penalty for motherhood, defined as the difference in the employment effect of having a child between fathers

and mothers (see the notes to Figure 7 for a summary of how the penalty is calculated). A larger positive penalty means that women's employment falls by more relative to men's after a child is born. Panel (a) plots the short-term penalty – the effect over the first five years after childbirth – and panel (b) plots the long-term penalty – the effect over the subsequent six years.

Figure 7. The Child Penalty by Educational Attainment

DOWNLOAD DATA

(a) Short–term penalty: 0 to 4 years after birth

(b) Long–term penalty: 5 to 10 years after birth

- ● Women with a college degree
- ▲ Women without a college degree

Notes: The figure shows the child penalty on employment over time, by education. A child penalty is defined as the effect of having a child on women relative to men. The short–term penalty shows the effect over the first five years after a first child's birth; the long–term penalty shows the effect over years 5 to 10 after a birth.
Following the approach of Kleven (2023), the penalty on employment is estimated in three steps:
1) The effect of having a child on the probability of working over time is estimated separately for women and for men, using the synthetic event study approach developed by Kleven (2023). Appendix Figure A4 shows all event study estimates used to calculate child penalties
2) The estimated effects are divided by the probability of working in the absence of children. This gives the proportional (percentage) change in employment as result of having a child.
3) The penalty is calculated as the difference in this change between men and women, averaged over the years following a child's birth.
A larger positive penalty means that women's employment falls by more relative to men's after having child.
*Source*: PWBM estimates from CPS data. Data obtained via IPUMS.

During the 1980s and 1990s, both the short- and long-term child penalty fell faster for women without a college degree than for those with. By around 2000, the short-term penalty was close to 23 percent for both groups. The long-term penalty was similar for college-educated women, but almost 4 percentage points lower for women without a degree. Over the following two decades, however, trends in the child penalty diverged. For college-

educated women, the decline in both short- and long-term penalties accelerated, while penalties for women without a degree remained essentially flat. As the education gap in the long-term penalty closed, an opposite gap opened up in the short-term penalty. For the most recent period, the short-term penalty is 16 percent for college-educated women, compared with 24 percent for non-college women.

Appendix: Additional Figures

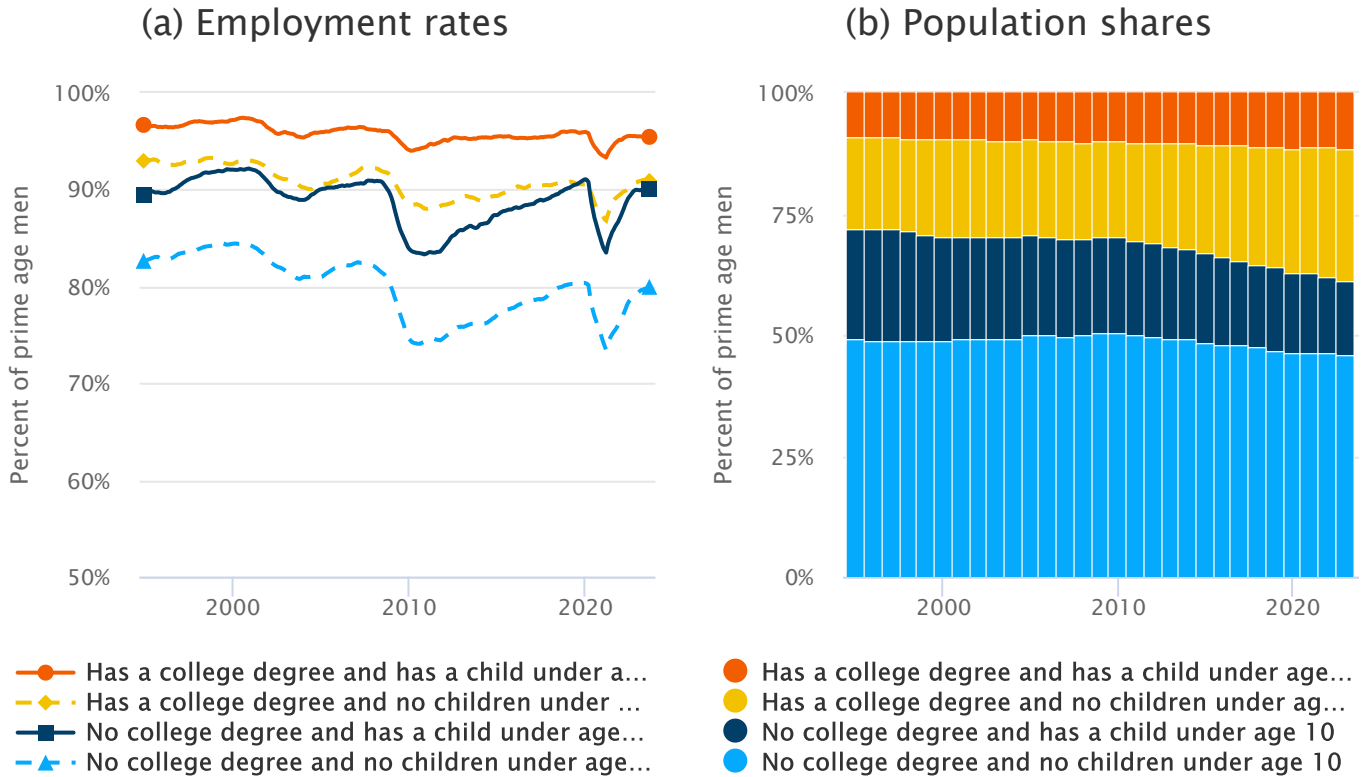Figure A1. Employment Rate of Prime Age Men

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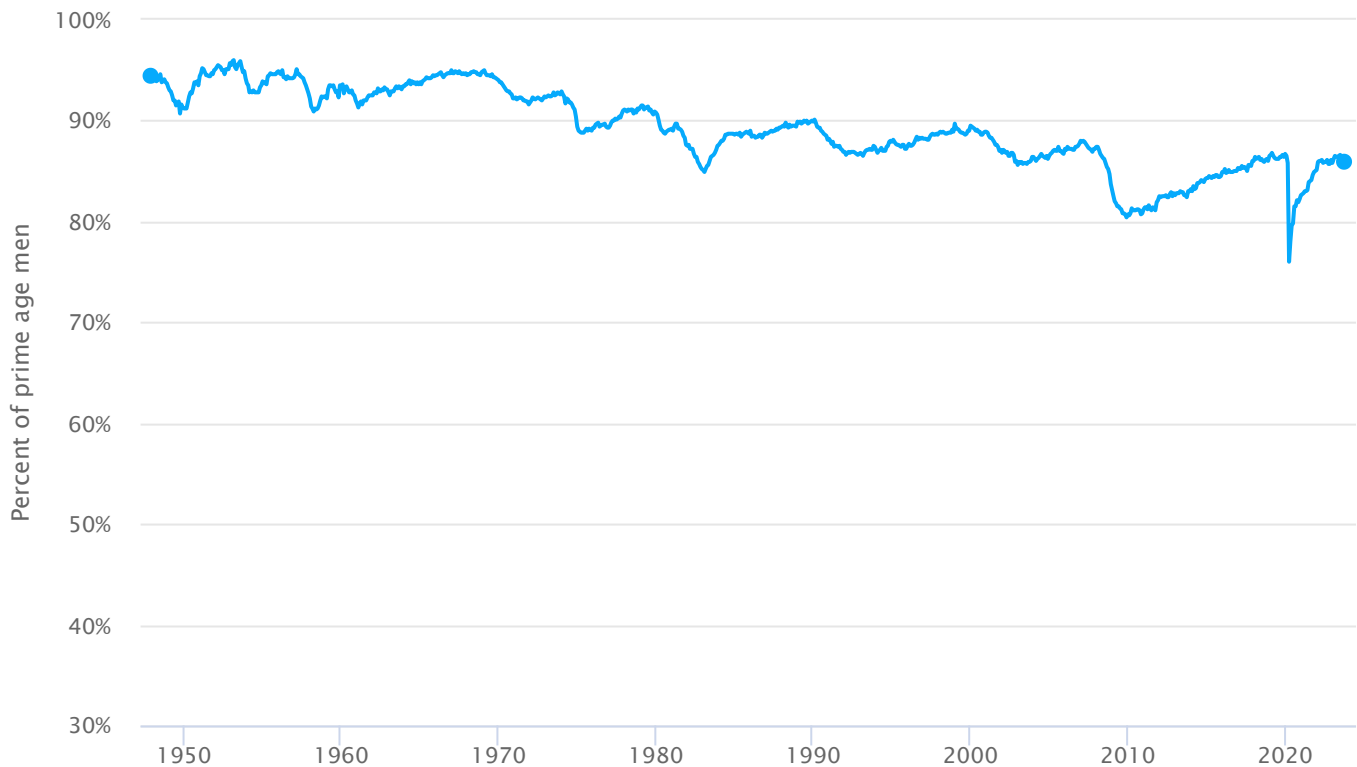
Notes: The figure shows the share of men ages 25 to 54 that is employed. The values are seasonally adjusted monthly estimates.
The vertical axis range is extended downward to facilitate comparison with Figure 1.
Source: Bureau of Labor Statistics

Figure A2. Prime Age Men by Educational Attainment and Fatherhood

DOWNLOAD DATA

(a) Employment rates

(b) Population shares

Legend (left panel):
- Has a college degree and has a child under a...
- Has a college degree and no children under ...
- No college degree and has a child under age...
- No college degree and no children under age...

Legend (right panel):
- Has a college degree and has a child under age...
- Has a college degree and no children under ag...
- No college degree and has a child under age 10
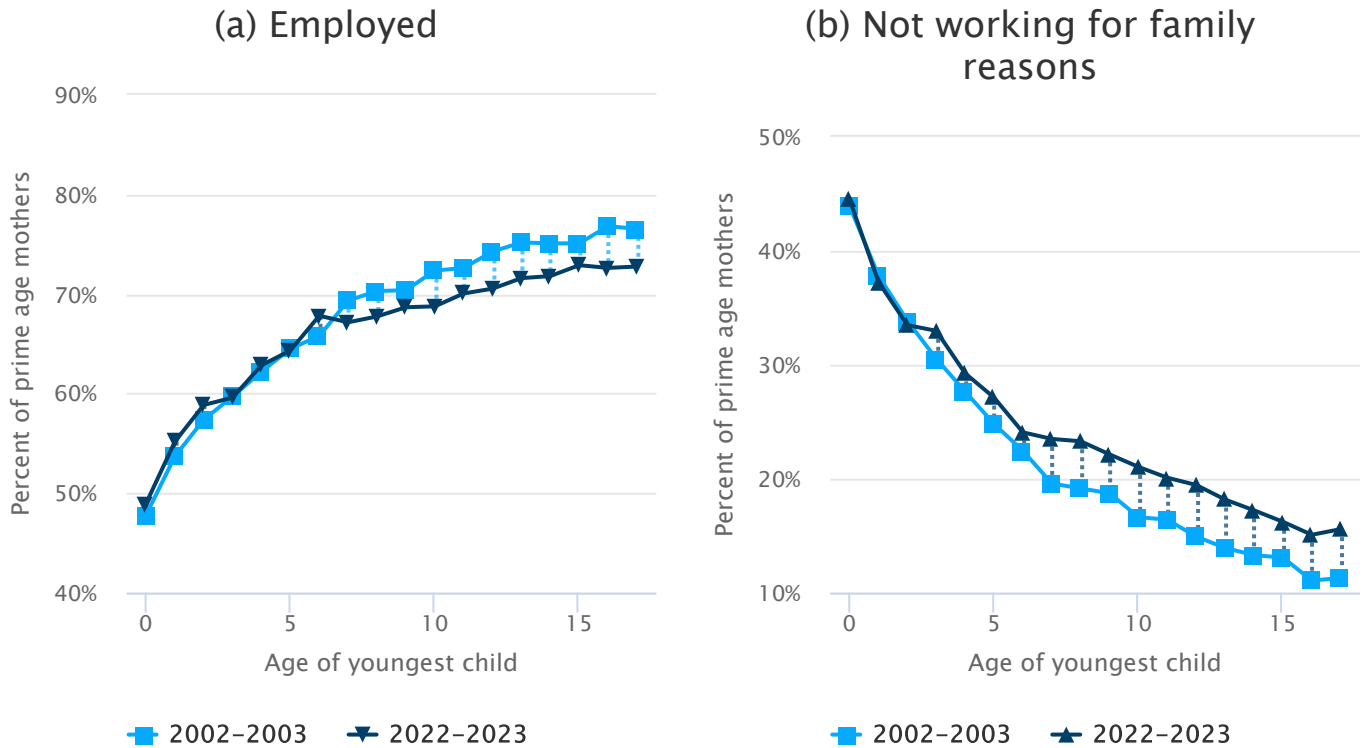- No college degree and no children under age 10

Notes: Panel (a) shows the share of men ages 25 to 54 in each group that is employed. The values are 12-month rolling averages of monthly estimates. The vertical axis range is extended downward to facilitate comparison with Figure 2. Panel (b) shows the distribution of men ages 25 to 54 across the four groups. The values are averages of monthly estimates for the 12-month period ending September of each year. This period is chosen to align with the latest available month of survey microdata, September 2023.
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

Figure A3. Labor Force Status of Prime Age Mothers Without A College Degree by Child's Age: 2022-2023 vs. 2002-2003

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Notes: Panel (a) shows the share of non-college mothers ages 25 to 54 that is employed, by the age of their youngest child.

Panel (b) shows the share of non-college mothers ages 25 to 54 that did not work because of family reasons, by the age of their youngest child. An individual is defined as not working for family reasons if they are neither employed nor looking for work, are not retired or disabled, and meet one of the following conditions: 1) their main activity is taking care of family or the household; 2) they didn't look for work because they couldn't arrange childcare, or 3) they didn't look for work because of family responsibilities.

The values are 24-month averages of monthly estimates: the darker lines with squares (labeled 2022-2023) show values averaged over October 2021 to September 2023; the lighter lines with triangles (labeled 2002-2003) show values averaged over calendar years 2002 and 2003. A 24-month average is used to reduce variability from small sample sizes.
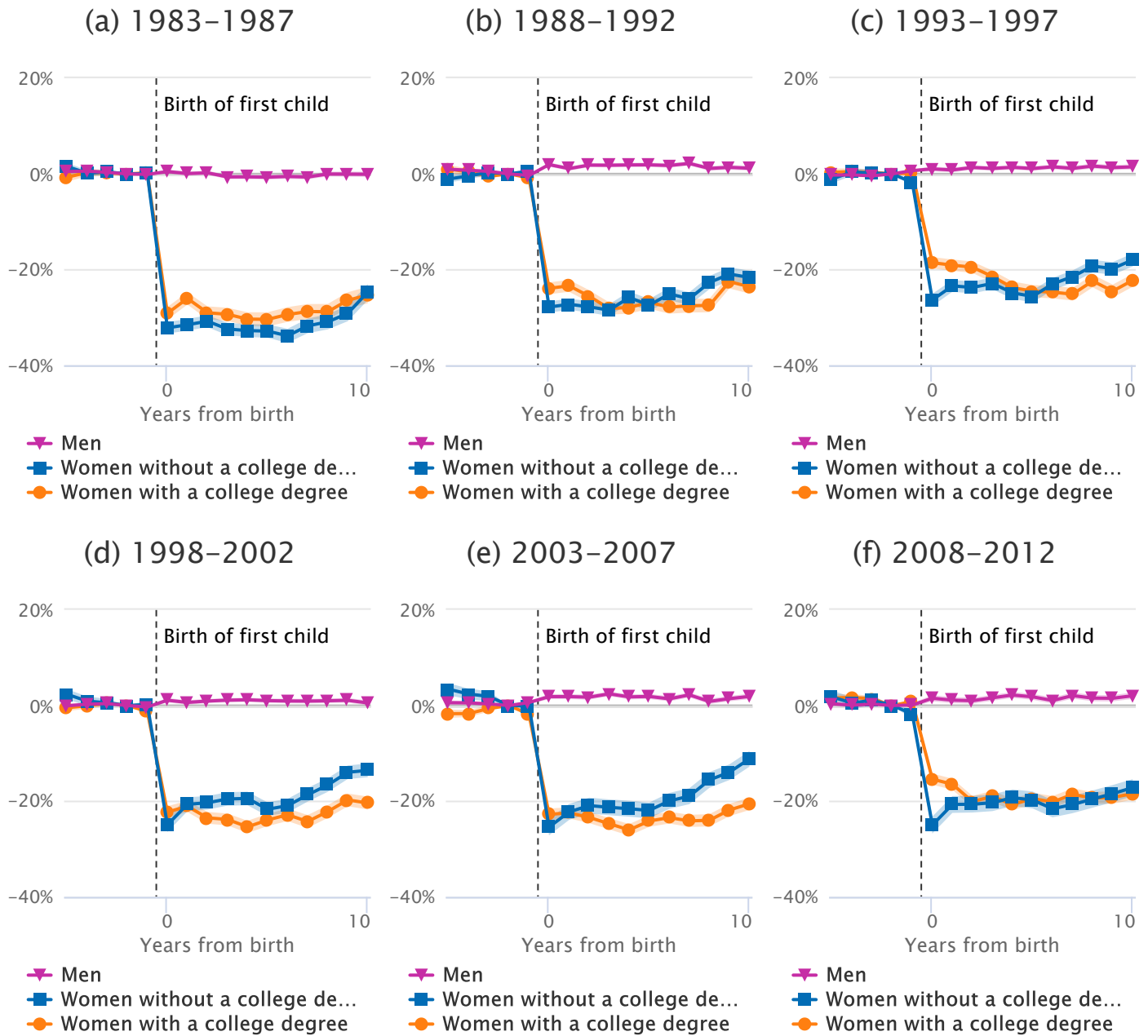
The figure does not show other possible labor force statuses, such as unemployment, retirement, disability, and school.
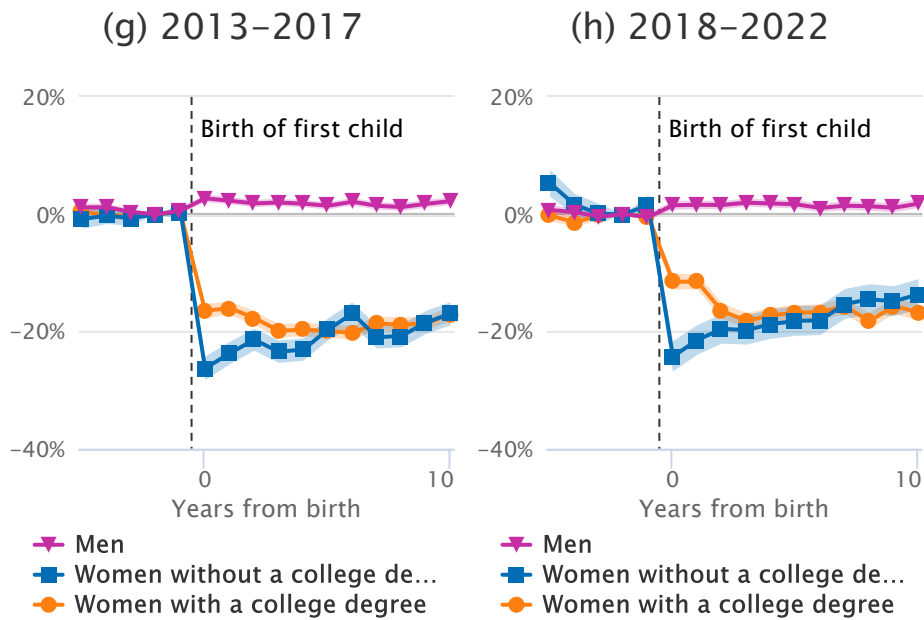
Source: PWBM calculations from CPS data. Data obtained via IPUMS.

Figure A4. Effect of First Child's Birth on Parent's Employment: Synthetic Event Study Estimates

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(g) 2013–2017   (h) 2018–2022

Notes: The figure shows the estimated effect of a first child's birth on the probability that an individual is employed in each time period, by sex and education. Estimates for men are not split by education because child birth is a non-event for men regardless of education.

The effect is estimated using the synthetic event study approach developed by Kleven (2023). The shaded areas are 95% confidence intervals based on robust standard errors.

These estimates are used to calculate the child penalty over time, shown in Figure 7.

Source: PWBM estimates from CPS data. Data obtained via IPUMS.

This analysis was produced by *Alex Arnon*, *Aidan O'Connell*, *Jesús Villero*, and *Youran Wu*. *Mariko Paulson* prepared the brief for the website.

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1. The employment rate or employment-population ratio equals the number of persons employed divided by the population. Throughout this brief, we focus on the prime age population (ages 25 to 54), for three reasons: 1) Prime age employment is relatively unaffected by population aging, which has a large effect on the overall employment rate. 2) Education is usually completed by age 25, so only a small portion of this population is in school full-time. 3) Prime working age years roughly correspond to the ages at which women have young children they may need to care for. ↵

2. The seasonally adjusted employment rate of prime women dipped to 69.9 percent at several points in the early 1990s but did not remain below 70 percent. ↵

3. In previous recessions, employment rates generally fell significantly more for men than for women. ↵

4. We identify parent-child relationships using family interrelationship variables constructed by IPUMS. ↵

5. Population shares in Figure 2(b) are plotted at annual frequency because monthly changes in the underlying population estimates are generally trivial except in months when revisions are introduced. The values are averages of monthly estimates for the 12-month period ending September of each year. This period is chosen to align with the latest available month of survey microdata, September 2023. ↩

6. Notably, employment rates of prime age men do not exhibit exactly the same patterns. While men with a college degree also work at higher rates, the pattern over parenthood is reversed: fathers of young children are more likely to be working than similarly educated men without children. See Appendix Figure A1(a), which reproduces Figure 2(a) for men. This stark difference between mothers and fathers underscores the role of children in women's career choices and in the remaining employment gap relative to men. ↩

7. There is no clear single explanation for why women are more likely to attend college than men (as opposed to just attending at the same rates). Research has highlighted a number of factors that likely contribute: women might be better equipped with the skills necessary to succeed in college; women may have greater incentive to enroll given worse labor market opportunities for women without a college degree than men; or women may receive greater non-labor market returns to college than men. In practice, a combination of all these and other factors is likely at play. ↩

8. More precisely, the 12-month rolling average of the employment rate in Figure 1 is a weighted average of the group-specific employment rates in panel (a) of Figure 2, which are 12-month rolling averages. ↩

9. Because the 12-month average peak value includes 11 months in which the employment rate was lower than the one-month peak value, the 12-month average peak is lower than the one-month peak. The 12-month average peak value in July 2000 was 74.4 percent, half a percentage point less than the one-month (seasonally adjusted) peak of 74.9 percent in April. ↩

10. Because a change in one group's share necessarily changes another group's change, the contributions of different groups cannot sensibly be disentangled from one another, so only the net effect is shown in Table 1. ↩

11. An individual is defined as not working for family reasons if they are neither employed nor looking for work, are not retired or disabled, and meet one of the following conditions: 1) their main activity is taking care of family or the household; 2) they didn't look for work because they couldn't arrange childcare, or 3) they didn't look for work because of family responsibilities. ↩

12. Values for 2007 and 2017 are averages for the 12 months ending in December; the values for 2023 are averages for the 12 months ending September. ↩

13. The persistence of the decline in employment is driven in part by subsequent childbirths. ↩