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Article

How Has Covid-19 Affected Young Workers?

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Benjamin Cowan and Kairon Shayne Garcia

How Has Covid-19 Affected Young Workers?

INTRODUCTION

Covid-19 and its fallout have had a staggering effect on labor markets around the world. In April 2020, the unemployment rate rose to a post-WWII record high of 14.7 percent (+ 10.3 percentage points from April 2019) in the United States (Bureau of Labor Statistics 2020). One group of workers that has been of particular concern to policymakers is the young, likely owing to their relatively fragile financial situations as well as the potential for long-term scarring effects of reduced employment during the pandemic (Schwandt and von Wachter 2020; Gould and Kassa 2020). In this paper, we examine the effects of the pandemic recession on young workers, whom we define as being 21–30 years old, relative to older age groups. In doing so, we use the techniques of our companion paper, Cowan and Garcia (2021), which analyzes how employment has changed over the course of the pandemic for all workers by gender, race/ethnicity, and educational level. In this paper, we also examine how the experience of young workers has differed across categories within these classifications.

An important contribution of our approach is to compare how labor-market outcomes for individuals in several pre-pandemic months (February and April 2019 and February 2020) relate to outcomes in the post-pandemic months of April 2020 (when unemployment was at its highest point) and February 2021 (when the pandemic began to recede in the US). This allows us to see whether pandemic differences in outcomes vary in a meaningful way from pre-pandemic differences controlling for seasonal-

ity and pre-pandemic trends. We use data from the Current Population Survey (CPS), which the Bureau of Labor Statistics uses to track employment trends in the US over time.

Our analysis reveals that young workers were indeed initially more adversely affected, on average, than older age groups at the onset of the pandemic recession (April 2020). In particular, the gap in employment for 21–30-year-olds compared to 31–40-year-olds increased by about 3.5 percentage points in April 2020, which is about 5.5 percent of the pre-pandemic employment rate among young workers. This effect is almost fully

explained by the fact that young workers are disproportionately in occupations and industries that were most negatively affected by Covid-19, such as the food service industry. Once we control for industry and occupation differences, the aforementioned effect shrinks almost to zero.

More fortunately for young workers, by February 2021, the gap in employment relative to older workers had returned almost exactly to its pre-pandemic level. This is perhaps an encouraging sign that the US economy is already recovering to an extent that it is no longer hindering the labor-market prospects of young workers as a whole. However, this overall recovery masks differences within the group of young workers, some of whom have not made a full recovery. We find in particular that workers with lower educational levels—specifically those with only a high-school diploma or some college but no degree—experienced a larger initial drop in employment in April 2020, that this drop was not fully explained by their industry and occupation profile, and that the recovery of individuals with these educational levels by February 2021 had only been partial. This means that their employment gap relative to more educated young workers was still larger in February 2021 than it was prior to the pandemic.

Once we have controlled for educational levels and other factors, we do not find that the pandemic has widened the gap in employment outcomes by race/ethnicity and gender among young workers. These results are largely consistent with our prior work for the entire workforce (Cowan and Garcia 2021). We discuss the implications of our results in the Results section.

RELATED LITERATURE

Several studies show that the cyclicity of youth employment is stronger than that of older adults. Bell and Blanchflower (2011a) find that from 1970–2009 in OECD countries, youth (aged 16–24) employment rates change by 1.79 percent for each 1 percent change in adult (25–64) rates. In addition, they find that lower-educated youth were especially harmed by the Great Recession of 2008–9, partly because of their disproportionate share in the construction industry (Bell and Blanchflower 2011b). Hoynes et al. (2012) find similar results regarding the heightened cyclicity of youth employment since the 1970s using US data specifically.

Young workers, whose unemployment rate has been increasing faster than that of older workers over the past few decades, also experienced relatively high



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unemployment rates at the onset of the Covid-19 recession: in April 2020, when business closures, stay-at-home orders and social distancing measures were implemented, more than a quarter of 20–24-year-olds were unemployed (Inanc 2020). The author suggests that some of the challenges that exacerbate youths vulnerability during the pandemic include their disproportionate presence in industries (e.g., retail and hospitality) hit hardest by lockdown orders, inability to work from home due to the nature of their jobs, and major disruptions to the educational system in the US.

The difficulties faced by young workers during Covid-19 are not confined to the US. Kikuchi, Kitao and Mikoshiba (2021) focus on Japanese data and again find that younger workers have been hit harder than older workers. This is consistent with the results in Hoehn-Velasco et al. (2021) for Mexican workers: In their study, the youngest individuals (15–29 years old) experienced the most substantial job loss due to the lockdown phase of the Covid-19 pandemic—but they were also the quickest to recover employment when lockdown orders were lifted.

Our contribution to the recent literature on Covid-19 and the labor-market outcomes of young worker is twofold. First, we isolate the effects of the pandemic on young workers relative to older workers by comparing employment outcomes after the onset of the pandemic to outcomes in the year leading up to it. We also examine how effects in the early (April 2020) part of the pandemic compare to effects in the late part of it (February 2021). Our second contribution is to examine how gender, race/ethnicity, and educational levels affect Covid-19-era employment for young workers specifically.

DATA

We use the Basic Monthly February (2019–2021) and April (2019–2020) CPS files to complete our analysis.¹ We show variable means by month for our young (aged 21–30) and full samples in Tables 1 and 2, respectively.

As discussed in Cowan and Garcia (2021), we focus on two measures of employment for our analysis: being “at work” (any work for pay or profit or at least 15 unpaid hours in a family business/farm) in the previous week as well as having worked full-time (at least 35 hours in all jobs) in the previous week. Individuals may be employed without having been at work in the previous week—these individuals are generally coded as “absent.” We do not group such individuals with those who were at work because, as noted in Montenegro et al. (2020), some workers who were temporarily laid off due to the pandemic appear to have been recorded as absent rather than laid off

(unemployed) by BLS surveyors. Thus, to avoid masking part of the disemployment effects of pandemic, we group absent workers with those who are unemployed or not in the labor force.

METHODOLOGY

In the first part of our analysis, we use our full sample (individuals 21 years of age and older) to examine the effects of Covid-19 on young workers relative to older workers. Our regression model allows us to formally compare how different worker characteristics affect the probability of (full-time) employment over time. February 2019 serves as the baseline (omitted) month. Thus, we compare how each characteristic, such as age, affects the probability of employment in each successive month *relative to its effect in February 2019*. In this way, we can examine whether effects in April 2020 (early pandemic) and February 2021 (late pandemic) differ significantly from what they were prior to the pandemic. Our regression equation is:

$$Y_{it} = X_i\alpha + \gamma_t + (X_i*Apr19)_i\beta_1 + (X_i*Feb20)_i\beta_2 + (X_i*Apr20)_i\beta_3 + (X_i*Feb21)_i\beta_4 + u_{it}^2$$

Y_{it} represents an indicator for either being “at work” or working full-time (at least 35 hours per week) in a particular month for individual i in month t . The vector X_i contains individual characteristics including dummies for age category, gender, race, Hispanic ethnicity, whether born in the US, presence of a disability, e.g., at least one limitation of the following types: hearing, seeing, cognitive, physical, mobility or personal care, whether married with a present spouse and its interaction with female, whether there are any children in the home and their interaction with female, veteran status, urban status, state of residence, and dummies for educational attainment, based on highest grade or degree completed. In some specifications, we also include dummies for occupation and industry.³

The coefficients β_1 and β_2 tell us how certain worker characteristics, e.g., those between ages 21 and 30, differentially affect employment in April 2019 and February 2020 respectively, relative to February 2019. Thus, for example, we can observe whether there is a pre-pandemic trend for young workers relative to older workers. The coefficients β_3 and β_4 tell us, for example, how young workers fare relative to older workers during the early pandemic (April 2020) and late pandemic (February 2021) compared with baseline (February 2019).

² All regressions throughout the paper are weighted by the final basic CPS person weights, and standard errors in all regressions are robust to heteroscedasticity.

³ There are 515 distinct occupations and 263 distinct industries among individuals in our sample. Occupation and industry codes are 4-digit codes that correspond to the individual's primary job in the previous week, if they had a job in the previous week. If the individual was not currently employed, their most recent job was used to code their occupation and industry.

¹ Data are obtained from IPUMS-CPS: Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles and J. Robert Warren. Integrated Public Use Microdata Series, Current Population Survey: Version 7.0 [dataset]. Minneapolis, MN: IPUMS, 2020. <https://doi.org/10.18128/D030.V7.0>

Table 1

Summary Statistics for the Young Sample (ages 21-30), by Survey Month

VARIABLES	(1) Feb-19	(2) Apr-19	(3) Feb-20	(4) Apr-20	(5) Feb-21
In the labor force	0.80	0.79	0.80	0.74	0.78
At work	0.73	0.74	0.74	0.55	0.69
Absent from work	0.02	0.02	0.02	0.05	0.02
Unemployed	0.04	0.04	0.04	0.14	0.07
Work hours last week	27.74	27.94	27.86	20.27	25.82
Rural	0.15	0.15	0.15	0.14	0.15
Female	0.50	0.50	0.50	0.50	0.50
White	0.73	0.73	0.73	0.73	0.73
Black	0.15	0.15	0.15	0.15	0.15
Asian	0.07	0.07	0.07	0.07	0.07
Other race	0.05	0.05	0.05	0.05	0.05
Married	0.23	0.23	0.22	0.22	0.21
Veteran	0.02	0.02	0.02	0.02	0.02
Children in household	0.23	0.24	0.21	0.21	0.21
Born in US	0.84	0.85	0.85	0.86	0.87
Hispanic ethnicity	0.21	0.22	0.22	0.22	0.22
Has disability	0.04	0.04	0.05	0.05	0.05
Less than high school diploma	0.07	0.07	0.06	0.06	0.06
High school diploma	0.27	0.28	0.28	0.27	0.28
Some college	0.34	0.34	0.33	0.34	0.32
College degree	0.25	0.25	0.26	0.27	0.27
Advanced degree	0.07	0.07	0.07	0.07	0.07
Observations	14,245	14,260	14,043	11,309	12,815

Notes: All numbers displayed are means weighted with final basic CPS person weights.

Source: IPUMS-CPS, University of Minnesota, www.ipums.org.

In the second part of our analysis, we run the same regression models as in our first analysis but this time, focus solely on the sample of 21–30-year-old individuals, meaning that, in this case, age dummies are excluded from the set of independent variables in the regressions. This will allow us to examine how the characteristics of gender, race/ethnicity, and educational attainment affect employment outcomes during the pandemic for young workers specifically. We focus on these characteristics given the attention they have received in the academic literature as well as popular media, e.g., Couch, Fairlie and Xu 2020; Shibata 2020; Long, Van Dam and Shapiro 2020; Weber and Fuhrmans 2020.

RESULTS

I. The Effects of the Pandemic on Young Workers as a Whole

For our first analysis, we present graphical results showing how coefficients for each age category—21–30, 41–50, 51–60, 61–70, and 71+, with 31–40 serving as the base category—interacted with April 2019, February 2020, April 2020, and February 2021 (February 2019 serves as the base month). 95 percent confidence intervals for these coefficients are also

shown. As in Cowan and Garcia (2021), we include two sets of results: one that shows results without industry and occupational fixed effects in the model, and one with these effects included. Doing this accounts for the fact that individuals from certain backgrounds may be disproportionately represented in occupations and industries that have been most affected by the Covid-19 crisis (Montenovo et al. 2020). The full set of regression results are available in the Online Appendix for this paper.

Figure 1 shows how the experience of workers of various ages differs in each period between February 2019 and February 2021. The baseline (omitted) group of individuals is those who are 31–40 years old. Before focusing in on the youngest individuals (21–30), we note a few things about older individuals. First, the experience of other prime-age working individuals (41–50 and 51–60) differs little from that of 31–40-year-olds either before (April 2019 and February 2020) or after (April 2020 and February 2021) the pandemic. Second, the oldest individuals (61–70 and 71+), who have much lower baseline probabilities of employment given that many have retired, experience an increase in employment relative to 31–40-year-olds at the onset of the pandemic (April 2020). However, this is purely a result of their industries and occupations being less affected by pandemic; once these are

Table 2

Summary Statistics for the Full Sample (age 21+), by Survey Month

VARIABLES	(2) Feb-19	(4) Apr-19	(6) Feb-20	(8) Apr-20	(10) Feb-21
In the labor force	0.65	0.65	0.65	0.62	0.63
At work	0.61	0.61	0.61	0.49	0.57
Absent from work	0.02	0.02	0.02	0.05	0.02
Unemployed	0.02	0.02	0.02	0.09	0.04
Work hours last week	23.95	24.28	24.09	18.76	22.27
Rural	0.17	0.17	0.17	0.17	0.17
Female	0.52	0.52	0.52	0.52	0.52
Age 21-30	0.19	0.19	0.18	0.18	0.18
Age 31-40	0.18	0.18	0.18	0.18	0.18
Age 41-50	0.17	0.17	0.17	0.17	0.16
Age 51-60	0.18	0.18	0.17	0.18	0.17
Age 61-70	0.15	0.15	0.16	0.16	0.16
Age 71+	0.13	0.13	0.14	0.14	0.14
White	0.78	0.78	0.78	0.78	0.78
Black	0.13	0.13	0.13	0.13	0.13
Asian	0.06	0.06	0.06	0.06	0.06
Other race	0.03	0.03	0.03	0.03	0.03
Married	0.54	0.53	0.54	0.55	0.53
Veteran	0.08	0.08	0.08	0.07	0.07
Children in household	0.39	0.39	0.38	0.39	0.38
Born in U.S.	0.81	0.81	0.81	0.81	0.81
Hispanic ethnicity	0.16	0.16	0.16	0.16	0.16
Has disability	0.12	0.13	0.13	0.12	0.12
Less than high school diploma	0.10	0.10	0.09	0.09	0.09
High School diploma	0.28	0.28	0.28	0.27	0.28
Some college	0.27	0.28	0.27	0.27	0.26
College degree	0.22	0.22	0.23	0.23	0.23
Advanced degree	0.13	0.12	0.13	0.13	0.13
Observations	89,036	89,084	88,167	76,368	81,942

Notes: All numbers displayed are means weighted with final basic CPS person weights.

Source: IPUMS-CPS, University of Minnesota, www.ipums.org.

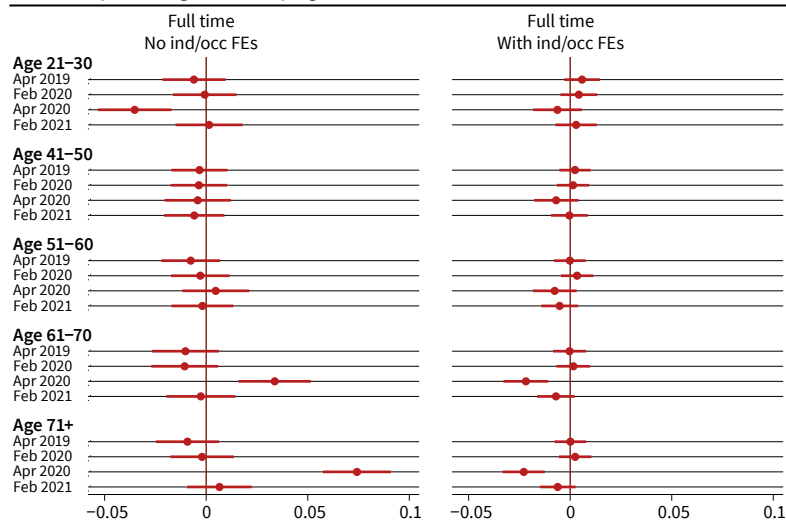
controlled for, the likelihood of employment for the oldest shrinks relative to the age 31–40 group. This is consistent with some older workers leaving employment temporarily to reduce their risk of contracting Covid-19. By February 2021, the gap in employment between older individuals and the base group had returned to its pre-pandemic (February 2019) level.

We now focus on the youngest individuals in our sample. In the two periods we measure after February 2019 but prior to the pandemic (April 2019 and February 2020), there is very little if any difference relative to baseline for the young. This indicates that younger individuals were not trending away from older ones in terms of employment before the pandemic arose. This is in contrast to what happens in April 2020, when 21–30-year-olds experience a 3.5 percentage point decline in their likelihood of employment relative to 31–40-year-olds. This is apparent on the left side

of Figure 1 (without controlling for industry/occupation effects). On the right side of the figure, which shows what happens when industry/occupation effects are included in the model, we see that this gap is reduced to almost zero. This strongly suggests that young workers had an unfavorable industry/occupation profile as far as the pandemic was concerned: industries and occupations in which young workers were strongly represented were hit harder by the early pandemic.

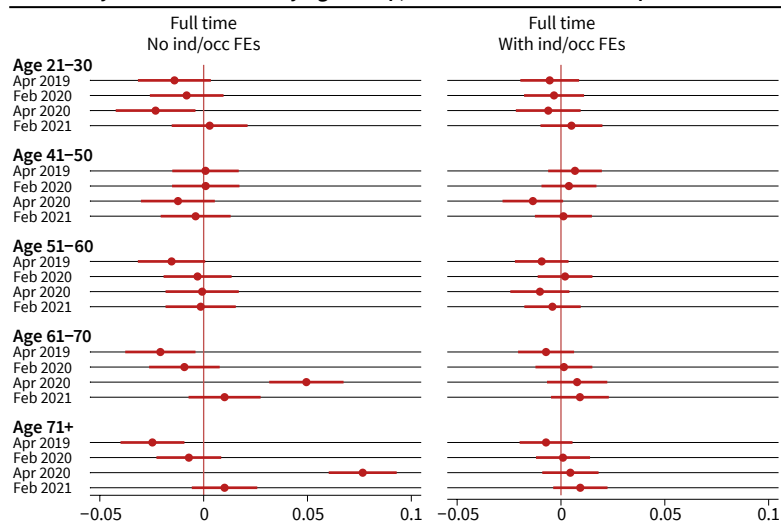
As seen in Figure 1, by February 2021, the gap in employment between young and older individuals had returned to its February 2019 baseline level. This suggests that some combination of economic recovery in initially hard-hit industries/occupations and young worker movement from one industry/occupation to another has offset the initially disproportional effects of the pandemic on young workers, at least in terms

Figure 1
Probability of Being at Work by Age Group, CPS Cross-Sectional Sample



Notes: Based on Table A.1 in the Online Appendix. February 2019 is the base month. The omitted age category is individuals who are aged 31-40. Point estimates and 95% confidence intervals displayed.
Source: IPUMS-CPS, University of Minnesota, www.ipums.org; Figures based on authors' regressions. © ifo Institute

Figure 2
Probability of Full-Time Work by Age Group, CPS Cross-Sectional Sample



Notes: Based on Table A.2 in the Online Appendix. February 2019 is the base month. The omitted age category is individuals who are aged 31-40. Point estimates and 95% confidence intervals displayed.
Source: IPUMS-CPS, University of Minnesota, www.ipums.org; Figures based on authors' regressions. © ifo Institute

of whether a person is employed. In Figure 2, we show age effects pertaining to *full-time* employment (rather than any employment) over time. The results are qualitatively similar to what we find for any employment.

II. The Effects of the Pandemic on Young Workers of Different Types

We now turn our attention to how the pandemic recession has affected young workers in terms of their gender, race/ethnicity, and educational attainment. These results are displayed for the probability of employment in Figures 3, 4 and 5, respectively (full-time employment results are not shown for the sake of brevity but are similar to their “any employment” counterparts and are available upon request).

Figure 3 shows how employment differs for females relative to males from before to during the pandemic. We also interact an indicator for female with “married” and “children in the household” to see if those factors affect women differently than men over the course of our sample period. Among this group of young individuals (21–30 years old), we do not find evidence that single, childless women had a different pandemic experience from single, childless men (whether industry/occupation controls are included or not). Furthermore, being married or having children in the household does not have a significantly different effect on women than it does on men in any period following the February 2019 baseline. We stress, however, that what is shown in these figures are effects relative to baseline differences: it is certainly the case that married women and women with children are less likely to be employed than similarly situated men at baseline. We simply find that those gaps do not change over the course of our sample period, including during the pandemic.

In Figure 4, we consider how black, Asian and “other race” individuals compare to whites and how Hispanic individuals compare to non-Hispanic ones.⁴ With only a few exceptions, we do not find statistically different effects in any period for these groups relative to their respective base group. We note, however, that our confidence intervals tend to be fairly wide (especially without industry/occupation controls) for these groups owing to their relatively small sample sizes. Again, this only shows that baseline differences, which are substantial in some cases, such as for black individuals, across race/ethnicity categories have not changed significantly from before to during the pandemic.

Our last analysis focuses on the experience of young individuals according to educational attainment. We consider those with less than a high-school diploma, a high-school diploma only, some college but no degree, and a 4-year college degree (the omitted group is individuals with advanced degrees, the highest category). Figure 5 shows the results. In the two periods before the pandemic, individuals with a high-school diploma and those with some college did not experience a deterioration in their relative employment compared with the most highly educated group. However, these two groups saw a stark drop in their relative employment rate in April 2020 by between 11 and 12 percentage points, without accounting for industry/occupation effects. This is roughly two-thirds of the February 2019 “at work” gap between these groups and the highest educated group, a very large effect. The industry/occupation profile of these groups

⁴ The “other race” category in this analysis includes many groups combined due to relatively small sample sizes among each of them. They include American Indian/Aleut/Eskimo, Hawaiian/Pacific Islander, and many categories in which the respondent marks more than one race. Altogether, this category makes up about 3 percent of our sample.

explains only about half of these effects (see the right side of Figure 5).

It is worth noting that the least-educated group (less than a high-school diploma) also see a relative employment drop in April 2020, but it is smaller (6.5 percentage points), not statistically significant at the 5 percent level, and fully explained by industry/occupation effects. These results are consistent with Montenegro et al. (2020), who find unemployment in the wake of the onset of COVID increases most for these “middle” educational categories (high-school diploma and some college). This may partly be a result of workers in the lowest educational category being more likely to be designated as “essential” in the early part of the pandemic than workers with a somewhat higher level of education (Blau, Koebe and Meyerhofer 2021).

Concerningly, in February 2021, the gap for those with only a high-school diploma—who make up about 28 percent of our sample—was still 5.6 percentage points higher than it was prior to the pandemic. In contrast to the early-pandemic situation, this late-pandemic gap is almost fully explained by industry/occupation differences. This longer-run effect of the pandemic would be especially concerning if it were causing workers human capital to depreciate and/or leave the labor force due to discouragement (Dinerstein et al. 2020). It is possible that some of these workers have used the pandemic recession as an opportunity to further their formal education or other training, perhaps contributing to the effect we find in February 2021 (Yahoo Finance 2020). What the full long-term consequences of the disproportionate burden the pandemic and the policy responses to it have placed on workers in these lower-educational categories remains to be seen.

CONCLUSION

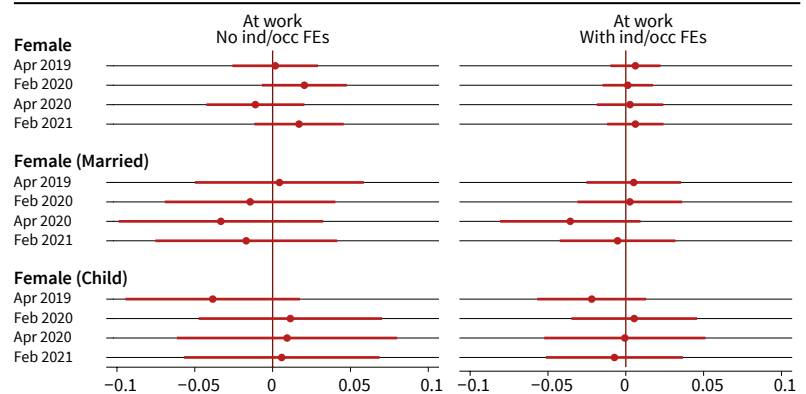
We analyze the plight of young workers during the Covid-19 pandemic in the United States. We draw two major conclusions from this analysis: First, there was a temporary downturn in employment of young individuals as a whole relative to older people at the onset of the pandemic (April 2020), but this change had disappeared by the later stages of the pandemic (February 2021). Second, among young individuals, those with lower (but not the lowest) educational levels experienced an acute negative employment effect during the early pandemic that had not fully disappeared by February 2021.

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Figure 3

Probability of Being at Work by Gender, Young (Age 21–30) Sample

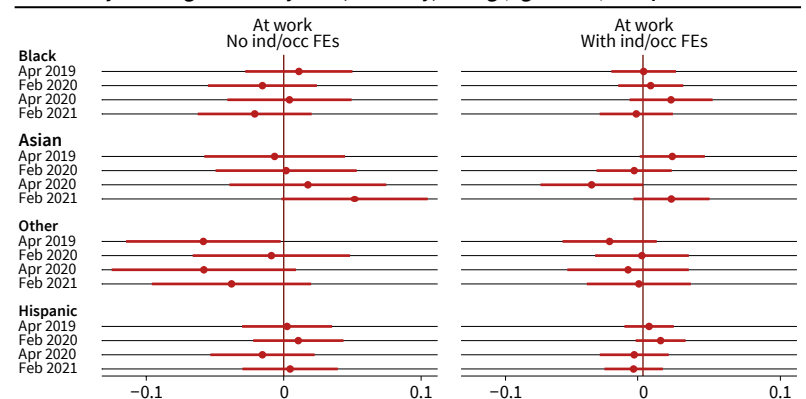


Notes: Based on Table A.3 in the Online Appendix. February 2019 is the base month. Point estimates and 95% confidence intervals displayed.

Source: IPUMS-CPS, University of Minnesota, www.ipums.org; Figures based on authors' regressions. © ifo Institute

Figure 4

Probability of Being at Work by Race/Ethnicity, Young (Age 21–30) Sample

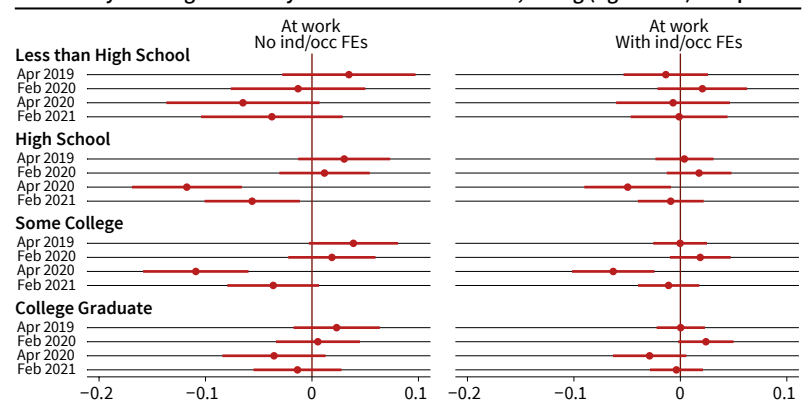


Notes: Based on Table A.3 in the Online Appendix. February 2019 is the base month. For the first three groups, “white” is the omitted category; for Hispanic, non-Hispanic is the omitted category. Point estimates and 95% confidence intervals displayed.

Source: IPUMS-CPS, University of Minnesota, www.ipums.org; Figures based on authors' regressions. © ifo Institute

Figure 5

Probability of Being at Work by Educational Attainment, Young (Age 21–30) Sample



Notes: Based on Table A.3 in the Online Appendix. February 2019 is the base month. Advanced degree is the omitted category. Point estimates and 95% confidence intervals displayed.

Source: IPUMS-CPS, University of Minnesota, www.ipums.org; Figures based on authors' regressions. © ifo Institute

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