Crashing without a Parachute: Racial and Educational Disparities in Unemployment during COVID-19

By
BRADLEY HARDY,
CHARLES HOKAYEM,
and
STEPHEN ROLL

The burden of the COVID-19 pandemic has not been shouldered equally by American families. Black and Hispanic communities have been hit the hardest, with the pandemic often exacerbating existing disparities. Using nationally representative data, we assess the economic and public health effects of the pandemic among different socioeconomic groups and whether typical sources of protection from economic insecurity are uniformly protective across the U.S. population. Within these sociodemographic groups, we also explore differences by education and industry. We find higher levels of employment loss among Blacks and Hispanics, those without college degrees, and frontline workers. We also find evidence that individuals and families are facing mental health episodes and are turning to costly alternative financial strategies to cope throughout the pandemic.

Keywords: COVID-19; pandemic; employment; economic instability; demographic disparities

The economic crisis brought forth by the COVID-19 pandemic has ushered in an era of economic insecurity for many families, businesses, and communities across demographic groups. Many Black and Hispanic families have absorbed a disproportionate share of this insecurity. Predating the pandemic, relatively low levels of savings and wealth among Black

Bradley Hardy is an associate professor in the McCourt School of Public Policy at Georgetown University. His publications include "Location Matters: Historical Racial Segregation and Intergenerational Mobility" and "Long-Run Analysis of Regional Inequalities in the U.S." His research focuses on labor economics, economic insecurity, and social welfare policy.

Charles Hokayem is the chief of the income statistics branch in the Social, Economic, and Housing Statistics Division at the U.S. Census Bureau. His research focuses on the role of survey nonresponse on income data quality and in measuring income, poverty, and inequality.

Correspondence: blh5@georgetown.edu

families (Hardy and Logan 2020; McIntosh et al. 2020) coupled with widening Black-white earnings inequality (Gould and Wilson 2020) have resulted in large disparities in readiness to withstand the reduced economic activity and subsequent job loss from COVID-19. This weakened position results in part from higher workforce participation rates within the low-wage labor market among minorities (Chandra 2000; Gould and Wilson 2020; Hardy, Smeeding, and Ziliak 2018), leading to less predictable work hours and income streams (Schneider and Harknett 2019).

Some features of the experience of many minority workers and families mirror that of less-educated workers in general, who are in turn more likely to be exposed to economic insecurity. Other aspects of exposure to the economic consequences of COVID-19 among Blacks likely reflect, in part, long-standing, structural economic conditions unique to Black families and communities (Hardy and Logan 2020; Hardy, Logan, and Parman 2018). And given that low-wage work is oftentimes frontline work, the inability of these workers to practice social distancing has likely contributed to Black Americans' disproportionately higher share of COVID-19 exposure and deaths (Benitez, Courtemanche, and Yelowitz 2020).

Given the magnitude of damage to public health and economic well-being, it is important to understand the short-term and medium-term consequences of the COVID-19 pandemic and ensuing economic crisis and how this impact differs across race/ethnicity, education, and industry. Many estimates of the short- and medium-term demographic differences in labor market outcomes do not account for education and industry; nor do they consistently compare outcomes for the same individuals over time. Furthermore, we know relatively little about mental health consequences or the strategies many families pursue to cope financially amid the pandemic. As a result, the effective delivery of pandemic-related economic policy solutions may be compromised, insofar as our diagnosis of the pandemic's impact is limited.

To help address this gap, we use two rich datasets to explore core questions of employment dynamics—examining both levels and changes in employment—across race, ethnicity, education, and industry. In so doing, we assess how the economic and public health shock from COVID-19 has impacted different socioeconomic groups and whether the typical sources of protection from economic insecurity, such as education, are uniformly protective across the U.S. population. We find evidence of widespread economic hardship across race and ethnicity as

Stephen Roll is an assistant professor of research at the Social Policy Institute and the Brown School at Washington University in St. Louis. His research centers on consumer financial programs and policies, specifically the ways in which nonprofit and public programs impact financial outcomes for lower-income or financially distressed households.

a result of the pandemic. Still, comparing across groups, the employment loss is deeper among Blacks and Hispanics, those without college degrees, and frontline workers. Once we account for factors such as education and industry, racial and ethnic gaps in the economic shock from COVID-19 remain, even amid lower reported levels of economic hardship. We also find evidence of potentially harmful coping strategies to the financial loss from the pandemic, including use of payday lending, overdrafted bank accounts, and blood plasma sales; Black and Hispanic respondents, especially Blacks, report higher rates of these activities to cope with the economic consequences of COVID-19 (see Table 3, later in the article).

This study will help to inform researchers and policymakers alike about how large-scale economic shocks persist and how such shocks may differentially affect adults across a broad socioeconomic spectrum. Our use of Current Population Survey data paired with data from the Socioeconomic Impacts of COVID-19 Survey facilitates an exploration that documents the short- and medium-term employment response to COVID-19, while allowing for a more qualitative assessment of how families have buffered the economic shock. This assessment includes an exploration of mental health consequences as well as the use of alternative financial mechanisms to maintain household financial stability.

Background on Employment and Earnings Responses to COVID-19

Several recent studies have documented diminished earnings and reduced employment resulting from the COVID-19 pandemic (e.g., Bartik et al. 2020; Moffitt and Ziliak 2020; Stevenson 2020). By many measures, the resulting economic crisis is most comparable to the Great Depression. Workers with fewer formal educational credentials experienced historically large drops in employment; some studies report that Black women experienced the largest job losses, relative to other groups (Moffitt and Ziliak 2020). This is consistent with early evidence, between March and July 2020, that job loss disproportionately mounted within the low-wage labor market (Bartik et al. 2020), most of which involves jobs that (1) cannot be completed at home (Dingel and Neiman 2020) and (2) rely on face-to-face contact (Montenovo et al. 2020). This reversed historic labor market gains made by women, including an overtaking of men as part of a higher overall proportion of economy-wide, nonfarm employment (Stevenson 2020). Many sectors where women disproportionately work, including health care, education, childcare, leisure, and hospitality, have begun to slowly recover after initial shutdowns throughout spring 2020. Still, one in four workers overall, and one in three minority workers, reportedly experienced an unemployment spell between February and May 2020 (Stevenson 2020).

A subset of studies focused on the economic consequences of COVID-19 have explored the effectiveness of the safety net response in the United States. Some aspects of the U.S. fiscal policy response lagged that of other Organisation for

Economic Co-operation and Development (OECD)–member countries, although economic aid provided at least partial insurance against job loss (Moffitt and Ziliak 2020). And evidence suggests that these transfer program expansions—particularly the enhanced federal unemployment assistance—did not disincentivize work (Altonji et al. 2020). Still, food hardship rose during the pandemic even amid increased economic aid that boosted food assistance, unemployment insurance, and provided one-time cash payments to many low- and middle-income households (e.g., Bauer 2020; Bitler, Hoynes, and Schanzenbach 2020).

Socioeconomically disadvantaged families—across race and ethnicity—have long faced a series of challenges and barriers to upward economic mobility predating the pandemic. These include higher poverty rates and lower earnings, along with lower levels of emergency savings and wealth. In turn, this translates into higher levels of food and housing insecurity. This insecurity is, in part, linked to the absence of financial buffers available to these families to respond to spells of joblessness. In the absence of a robust private or public safety net, economically disadvantaged families—including many minorities—exhibit larger, negative consumption responses to equivalent income shocks (Ganong et al. 2020), further demonstrating how economic shocks may impart more damage, on average, onto Black and minority households (Board of Governors of the Federal Reserve System 2020). Over the long term, higher-paying employment opportunities represent a primary pathway toward economic security, although these positions increasingly require postsecondary credentials such as a four-year college degree. And while children from socioeconomically disadvantaged families have partially closed postsecondary matriculation gaps, completion still lags for students from these households (Hardy and Marcotte 2020). One key component of our work is to better understand whether education provides some insurance against economic precarity for Black and Hispanic workers amid the COVID-19 pandemic and economic crisis.

Data and Methods

Our primary data source draws information on individual labor market outcomes from the Current Population Survey (CPS), administered by the U.S. Census Bureau for the Bureau of Labor Statistics. The CPS is a monthly survey of the U.S. labor force based on a multistage stratified random sample of sixty thousand households. This survey collects information on income, earnings, employment, and industry as well as demographic characteristics. It serves as the official source of U.S. monthly unemployment statistics. We leverage two unique features of the CPS survey design. First, the monthly frequency of the survey allows for a comparison of conditions in the months and year (2019) prior to the onset of COVID-19 in spring 2020 to conditions in the months during the pandemic. Second, the CPS has a less-used panel component—it is primarily a cross-sectional dataset designed to investigate issues related to the labor market, including employment, earnings, poverty, and inequality—allowing for cross-year comparison of

population-level outcomes over time. This panel feature is possible due to the rotating sample design of the CPS; respondents are in-sample for four months, out-of-sample for eight months, and then in-sample for four more months (e.g., Cameron and Tracy 1998; Ziliak, Hardy, and Bollinger 2011; Ziliak, Hokayem, and Bollinger 2020). By exploiting this feature, we construct a two-year panel spanning 2019 and 2020, enabling estimation of within-individual employment changes.[1] Our primary sample consists of individuals who are 18 to 64 years old. The panel enables a comparison of an individual from one month in 2019 to the same month in 2020 (e.g., January 2019 and January 2020, February 2019 and February 2020, and so on).

We supplement our CPS findings with less-often-measured responses and financial buffers to which families resort, from the longitudinal Socioeconomic Impacts of COVID-19 Survey, administered by the Social Policy Institute at Washington University in St. Louis. This survey was launched with the purpose of capturing the broader social and economic consequences of the COVID-19 pandemic. The survey sample for each wave was developed using quota sampling techniques to ensure that the sample represents U.S. demographic characteristics with respect to age, gender, race/ethnicity, and income. Additional checks on the sample indicate it is also representative in terms of state of residence and other key demographic and financial characteristics. The first wave of the survey was administered between April 27, 2020, and May 12, 2020; the second wave between July 30, 2020, and August 20, 2020; and the third wave between November 19, 2020, and December 17, 2020. Here, as in the CPS, we restrict the sample to 18- to 64-year-olds.

The risks faced by workers during the pandemic vary by whether they can carry out their work in-person or work from home. To distinguish between these two groups, we classify industries as frontline or nonfrontline based on an analysis by Dingel and Neiman (2020). Dingel and Neiman (2020) construct a work from home metric using prepandemic surveys from the Occupational Information Network to classify occupations at the two-digit NAICS (North American Industry Classification System) industry level as being able to do work entirely from home. Their metric gives the share of jobs in each two-digit industry that can be done from home.[2] We identify a frontline industry as having a share of 25 percent or less, while all other industries are considered nonfrontline. Examples of frontline industries include health care and social assistance, construction, and accommodation and food services; while examples of nonfrontline industries include professional, scientific, and technical services, information, and educational services.[3]

Our descriptive analysis calculates summary measures of unemployment and employment transitions from the CPS. We display trends in these outcomes by various demographic groups, including race and ethnicity, frontline/nonfrontline status, and education. We also display trends in two important groups defined by the combination of frontline status and race/ethnicity along with education and race/ethnicity. We supplement these descriptive statistics with regression modeling to control for demographic characteristics that impact unemployment and employment transitions. Using the Socioeconomic Impacts of COVID-19 Survey,

we show the impact of demographic characteristics on mental health, a household's financial situation, and the use of alternative financial instruments during the pandemic. With our analysis of both datasets, we present a snapshot of the economic impact of COVID-19 and the ways in which families have responded.

# Results from the CPS

Employment levels

We begin our discussion of results by providing an overview of cross-sectional unemployment trends from the CPS in the months immediately predating the onset of the global pandemic, and then tracing through the ensuing economic crisis up until April 2021 (last month of available data). Here and throughout the results that we report, our aims are to explore racial, educational, and industry differences in the economic response to the pandemic and economic crisis, and to better understand the short- and medium-term consequences of the crisis for different demographic groups.

Panel A of Figure 1 begins in January 2020 and shows the pronounced increase in unemployment from a historically low 4 percent (January) to a peak of 14.3 percent by April 2020, as the public health emergency took hold and many facets of social and economic activity were suspended.[4] Following the April peak, we observe a gradual improvement in the unemployment rate over time, although we know less regarding the nature of the job loss and whether job loss is concentrated among those who were previously employed this time last year— a point we explore in the next section. Overall unemployment falls precipitously until October 2020, at which point the unemployment rate holds fairly steady between 6 and 6.5 percent until spring 2021; April unemployment falls below 6 percent (5.85) for the first time during the pandemic.

In panel B, we begin to explore heterogeneity in the employment response to COVID-19. We find that distinguishing between frontline and nonfrontline worker status results in noticeably different levels and trajectories of unemployment. Frontline workers have higher levels of unemployment prior to the onset of the pandemic, owing to the higher proportion of low-wage occupational categories in which hours and employment are generally more unstable. Still, the rate of increase in unemployment is faster for frontline workers, rising from 4.9 to 16.3 percent between March and April, compared to an increase from 3.4 to 11.5 percent over the same period for nonfrontline workers. Looking across industry, nonfrontline unemployment rates fall continuously until October 2020, after which the trend in unemployment remains flat until January 2021, when there is a gradual decline to 4.3 percent by April 2021. Meanwhile, frontline worker unemployment falls to 6.7 percent by November 2020, rises to 7.5 percent by January 2021, and falls gradually to 6.6 percent by April 2021.

Across race and ethnicity (panel C), all groups experience a qualitatively large increase in unemployment between March and April 2020, and both Black and white respondents report a similar unemployment response of approximately 9

FIGURE 1
Unemployment by Select Characteristics

Panel A. Overall Unemployment

Panel B. Frontline

Panel C. Race/Ethnicity

Panel D. Education
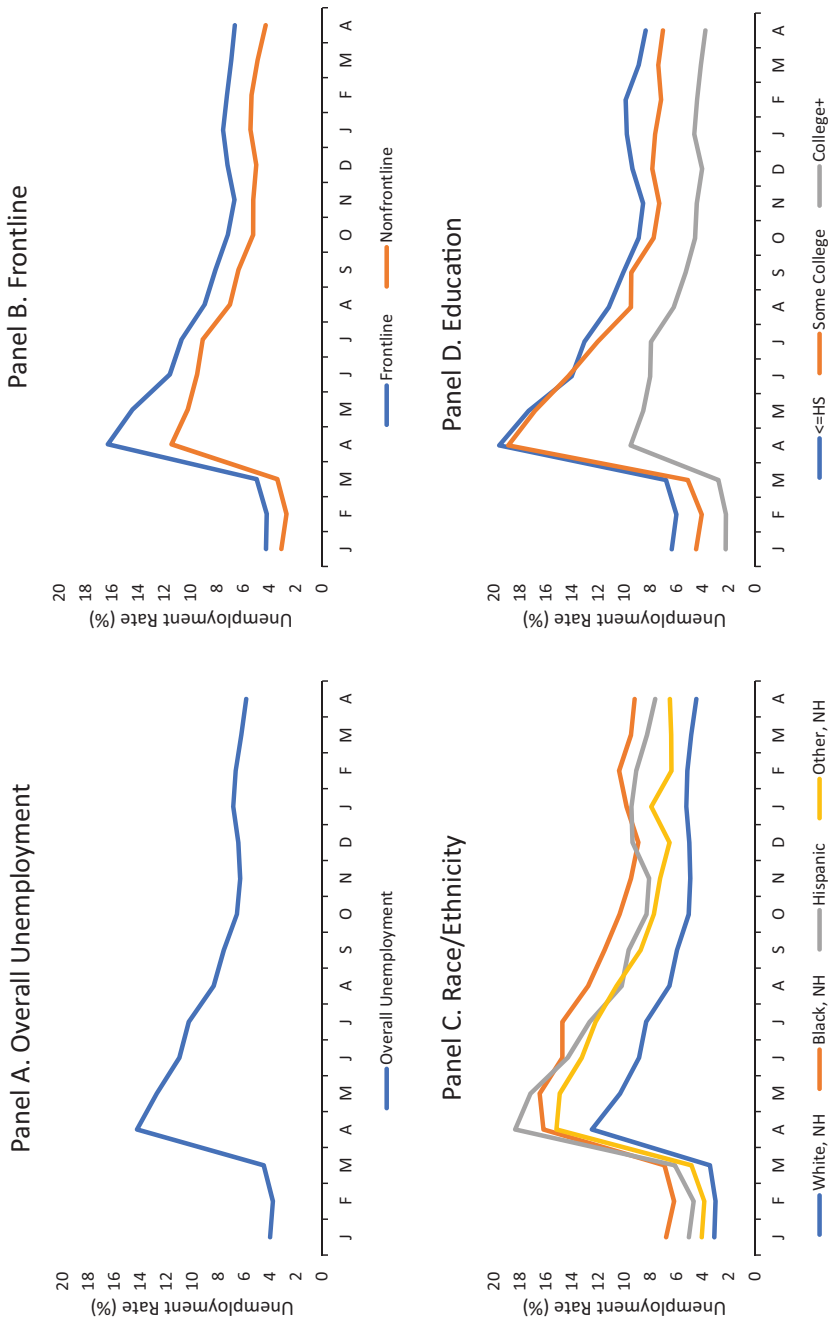
SOURCE: Authors' calculations of monthly CPS (January 2020–April 2021).

percentage points between March and April; however, Black worker unemployment was already at a higher 6.9 percent prior to the onset of the pandemic, compared to 3.4 percent for white workers. While Hispanic workers briefly report the highest unemployment rate, 18.3 percent (April 2020), Black workers overtake Hispanic workers for the highest unemployment rate by July. Related to this point, while unemployment has an overall improvement after April, Black unemployment appears to essentially plateau between June and July—with a relatively slow rate of improvement through November. Black unemployment falls by 40 percent between April and November 2020, compared to reductions of 55 and 60 percent for Hispanic and white workers, respectively. Black unemployment reaches a low of 8.9 in December 2020, before rising to 10.4 percent in February 2021 and receding slightly to 9.2 percent by April 2021. Hispanic unemployment follows a similar trend, although the unemployment reduction from April hits an initial low of 8.1 percent in November 2020. After a similar increase in unemployment through January 2021, Hispanic unemployment falls to 7.6 percent by April 2021.

Consistent with reports of an increasingly bifurcated economy wherein workers with fewer formal educational credentials have experienced weaker compensation packages and earnings growth (e.g., Autor, Katz, and Kearney 2008; Jaimovich and Siu 2012), college attainment appears to operate as a dividing line, descriptively comparable to race and ethnicity differences. College graduates experience a smaller increase in unemployment and at a slower rate than non-college-educated workers (panel C). Perhaps most striking is the relatively low premium in the COVID-19 context from postsecondary education without a college credential. Importantly, this coincides with well-documented socioeconomic inequality in college completion (e.g., Hardy and Marcotte 2020). This division could also reflect differences in worker power and agency across education groups. While no groups return to their pre-COVID-19 levels of unemployment, respondents with a college degree report unemployment levels of 3.8 percent by April 2021.[5]

In Figures 2 and 3, we examine how racial and ethnic inequality in the economic response to COVID-19 differs across industry (Figure 2) and education (Figure 3). It is well documented that Blacks hold, on average, fewer formal educational credentials, which in turn is related to higher participation in the low-wage work sector—which is more transitory and less likely to offer employment stability in the midst of the pandemic. At the same time, Blacks are more likely to experience labor market discrimination independent of observable credentials (Bertrand and Mullainathan 2004). Figure 2 demonstrates that racial and ethnic gaps in unemployment persist after accounting for industry—Black and Hispanic workers exhibit higher levels of unemployment across frontline and nonfrontline work. Still, it is worthwhile to note unemployment rates that are 1 to 3 percentage points lower upon comparing frontline and nonfrontline rates by race and ethnicity. Thus, industry may not eliminate racial and ethnic inequality, but nonfrontline workers appear to fare better in the midst of the pandemic and ensuing economic crisis.

FIGURE 2
Unemployment by Industry and Race/Ethnicity

Panel A. Frontline

Panel B. Nonfrontline
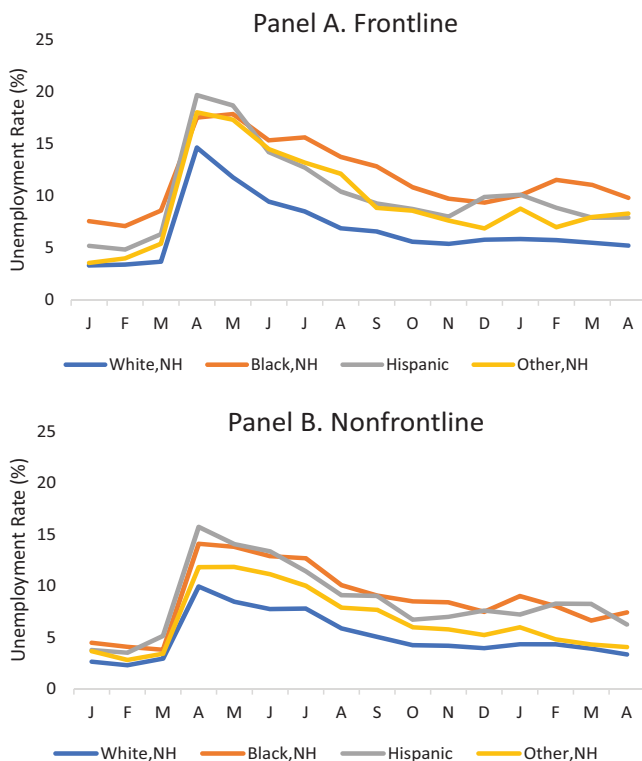
SOURCE: Authors' calculations of monthly CPS (January 2020–April 2021).

In Figure 3, we observe that—similar to panel D of Figure 1—much of the educational differences in employment response to COVID-19 occur between college-educated workers and those without college degrees. Unemployment is higher for workers—across race and ethnicity—with fewer educational credentials (panel A). Also, racial and ethnic gaps are wider across workers from different racial and ethnic groups when we examine trends for those with a high school diploma or less (panel A); racial and ethnic unemployment gaps begin to close for workers with college degrees (panel C). On the other hand, an interesting demographic pattern emerges in panel C, college-educated workers. Here, the short-term employment response to COVID-19 is highest for Hispanic workers and roughly similar for Black and white workers—increasing to approximately 9 and 10 percent in April 2020, respectively. In this case, the racial divergence, though somewhat subtle, occurs in the medium term between May and November 2020. Here, unemployment rates for white college-educated adults fall by 5.3 percentage points, whereas unemployment falls by less than 3.9 percentage points over the same period for Blacks. This is most noticeable between April and June 2020,

FIGURE 3
Unemployment by Education and Race/Ethnicity
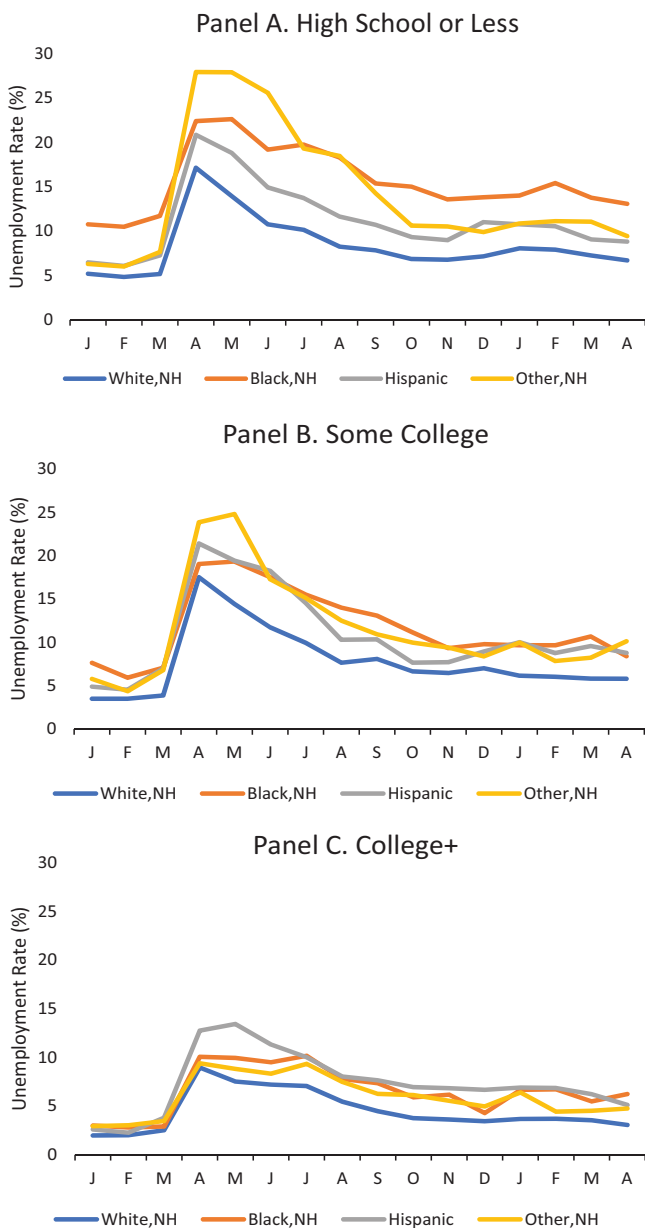
SOURCE: Authors' calculations of monthly CPS (January 2020–April 2021).

where Black unemployment hovers around 10 percent, compared to a reduction from approximately 9 percent (April 2020) to 7 percent (July 2020) for white college-educated adults.

Across race and ethnicity, unemployment rates are unambiguously higher for less-educated groups. If anything, more convergence occurs in unemployment between demographic groups for those with some postsecondary education. By the end of the sample period, April 2021, the Black-white unemployment gap is roughly double for the most (6.2 percent versus 3.0 percent) and least educated (13.1 percent versus 6.7 percent). The unemployment shock from COVID-19 is disproportionately borne by workers with less education; and among these, Black and Hispanic workers fare worst of all. It is also interesting that racial groups, across education and industry, broadly follow the same trend—although with timing that varies by one to two months and unemployment level differences over time.
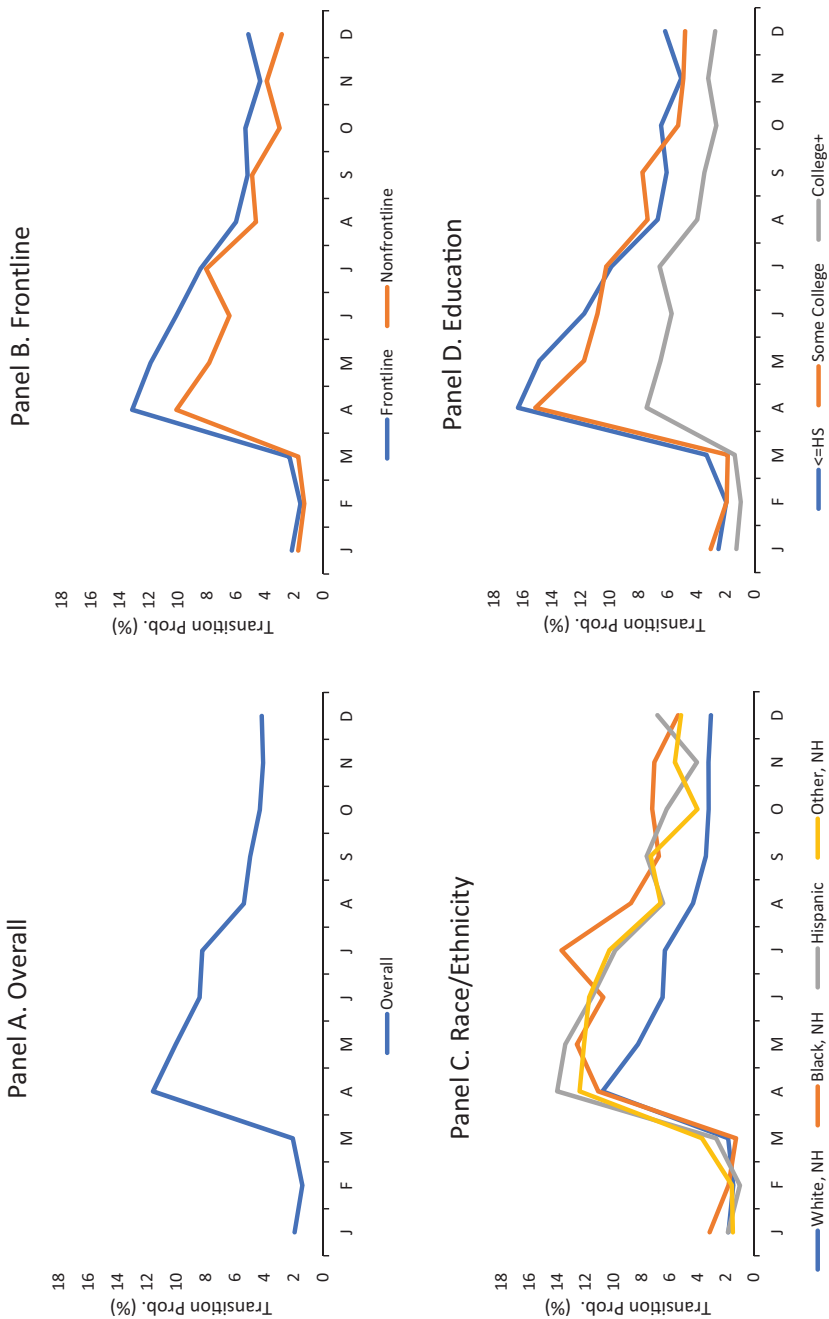
Employment transitions

Having reported on cross-sectional unemployment trends, we move next to examining the employment effect over a one-year period, as the pandemic's economic impact takes hold. This analysis utilizes the panel data component of the CPS, enabling us to better ascertain how the employment situation has changed for the *same* labor force participants—some of whom were already experiencing economic hardship or insecurity in the year predating the pandemic. In the results that follow, we compare the employment situation for respondents by tabulating the year-over-year change on a monthly basis. Figure 4 reports the average rate of transition from employment to unemployment between 2019 and 2020, by month. Here, the employment-to-unemployment transition largely mirrors the pattern in cross-sectional unemployment results that we showed in Figures 1 to 3.

Some of the differences in Figures 4 and 1 occur in the medium term, comparing fall 2020 to fall 2019. In this case, some evidence exists of backsliding economically, as there is a spike in transitions into unemployment—or, at a minimum, a leveling off in the trend reduction in unemployment transition. This is apparent for nonfrontline workers in panel B, Blacks and whites in panel C, and college-educated workers in panel D.[6] In the transition out of work into joblessness in Figure 5 across industry type, a more complicated economic situation emerges. Nonfrontline workers experience a fall 2020 joblessness transition across all racial and ethnic groups between October and November 2020. That is, the average year-to-year transition from work into joblessness rises from October (2019–2020) to November (2019–2020). Interestingly, by December 2020, nonfrontline workers who were employed prior to the pandemic—white and Black alike—have largely recovered. These transitions from employment to unemployment also help to demonstrate that joblessness derives from formerly employed jobseekers who have been displaced as a result of the pandemic.

Across education, we observe (Figure 6) the same employment improvement with rising education levels as in Figure 3 for the cross-sectional CPS analysis.

FIGURE 4

Employment (2019) to Unemployment (2020) Transition by Select Characteristics

SOURCE: Authors' calculations of monthly CPS (January 2019–December 2020).

FIGURE 5
Employment (2019) to Unemployment (2020) Transition by Industry and Race/Ethnicity
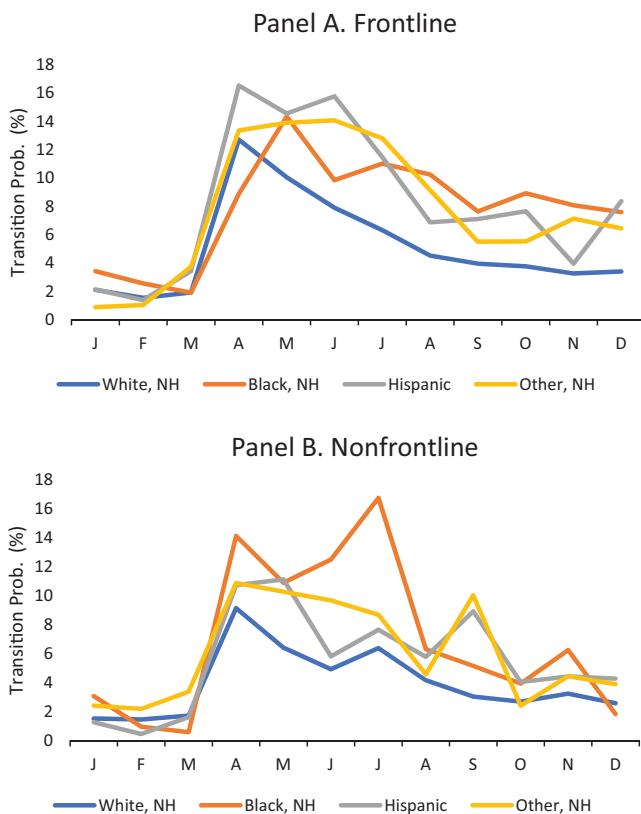
SOURCE: Authors' calculations of monthly CPS (January 2019–December 2020).

This series of results, as with the full set of employment transitions, provides evidence across education and race that the short- and medium-term progress in the economy slows down through November 2020. This is especially apparent for college-educated respondents, where all groups experience either no change or an increase in the average year-to-year transition into joblessness between October (2019–2020) and November (2019–2020). Black and white college-educated respondents do experience a reduction in the transition into unemployment during December 2020. The overall path of the employment-to-unemployment transition improves across education categories from April to May 2020 peaks. Still, this masks the fall 2020 disruptions among less-educated Blacks from September to November 2020 (high school or less) and Hispanics from August to October 2020 (some college).

The results from the CPS-based cross-sectional and panel-data analysis portray individuals and families coping within a distressed economy since spring

FIGURE 6
Employment (2019) to Unemployment (2020) Transition by
Education and Race/Ethnicity

Panel A. High School or Less

Panel B. Some College

Panel C. College+
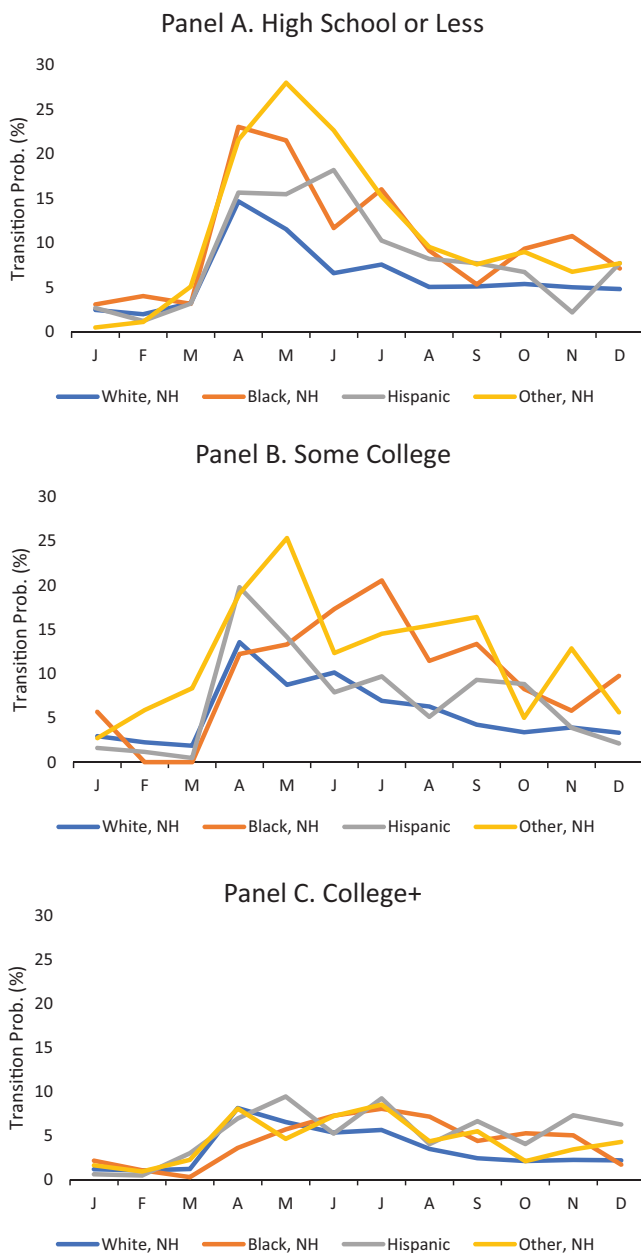
SOURCE: Authors' calculations of monthly CPS (January 2019–December 2020).

2020. After state and local governments called for a cessation of economic activity throughout March and April 2020, some forms of activity began to reemerge. However, it is important to note that the partial recovery from job loss does not necessarily reflect a recovery of the same jobs per se, and, as our evidence shows, the pandemic imposed substantial and uneven economic harm across demographic groups and industry. Blacks and Hispanics, frontline workers, and those with less than a college degree are among those reporting, on average, higher unemployment levels during the pandemic and longer periods of joblessness.
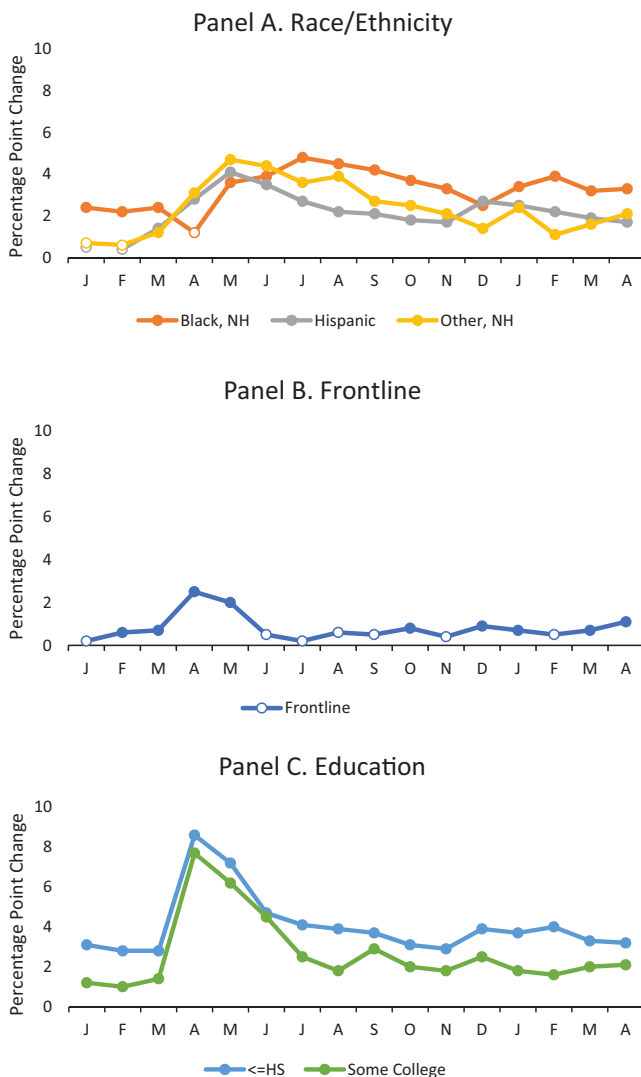
Regression analysis

The descriptive analysis thus far relies on summary unemployment measures and highlights the impact of the pandemic by race/ethnicity, industry, and education. To account for the simultaneous effect of demographic characteristics, we present monthly estimates of a linear probability model of unemployment on race, frontline status, and education while controlling for other observables.[7] This modeling is not intended to identify causal effects. Figures 7 through 10 present select estimated coefficients from the model.

Figure 7 plots the estimated coefficients of interest from the model: race/ethnicity (panel A), frontline (panel B), and education (panel C).[8] After controlling for observable factors, we find a persistent racial, industry, and education disparity in unemployment outcomes. Both Blacks and Hispanics experience higher unemployment relative to whites (omitted group) consistently throughout the pandemic by anywhere from 2 to 4 percentage points between March 2020 and April 2021. In panel B, frontline workers exhibit 2 to 2.5 percent higher unemployment relative to nonfrontline (omitted group) at the outset of the pandemic, over April and May 2020. Ultimately, frontline unemployment gaps diminish in magnitude throughout the core months of the pandemic and hold at or around 1 percent higher relative to nonfrontline workers for the remainder of the pandemic. Finally, in panel C, we observe noticeably higher levels of unemployment for the relatively less educated compared to those with college degrees or more (omitted group). From a peak of 8.6 percentage points higher (high school or less) and 7.7 percentage points higher (some college) in April 2020, unemployment gaps persist and remain throughout the pandemic up until April 2021. After the initial peak, unemployment gaps for high school or less range from 3.9 percentage points higher (relative to whites) in April 2020 to 3.2 percentage points higher in April 2021. Moreover, unemployment gaps for those with some postsecondary education (some college) are almost indistinguishable in June 2020. By July 2020, gaps emerge between those with some postsecondary education (compared to college+) and those without; unemployment gaps for some postsecondary education span 2.5 percentage points (July 2020) to 2 percentage points (April 2021).

In Figure 8, we explore differences in unemployment by race and ethnicity, beginning in panels A and B by depicting the regression coefficients from the interaction of education and race/ethnicity and in panel C depicting regression coefficients from the interaction of frontline and race/ethnicity.[9] Here, we want

FIGURE 7
Unemployment Model

Panel A. Race/Ethnicity

Black, NH ⬤ Hispanic ⬤ Other, NH

Panel B. Frontline

Frontline

Panel C. Education

<=HS ⬤ Some College

SOURCE: Authors' calculations of monthly CPS (January 2020–April 2021).
NOTE: This figure displays select estimates of a monthly linear probability model of unemployment on race, frontline status, education, and other demographic characteristics. Omitted categories in the model include white race, nonfrontline, and college+ education. Each panel plots the estimated coefficients for race, frontline, and education. The interpretation of each estimate should account for each omitted group. Full estimation results are in online Appendix Table A1. Closed points represent estimates that are statistically significant at 5 percent or better. Open points represent estimates that are not statistically significant at 5 percent.

FIGURE 8
Unemployment Model with Race/Ethnicity Interactions
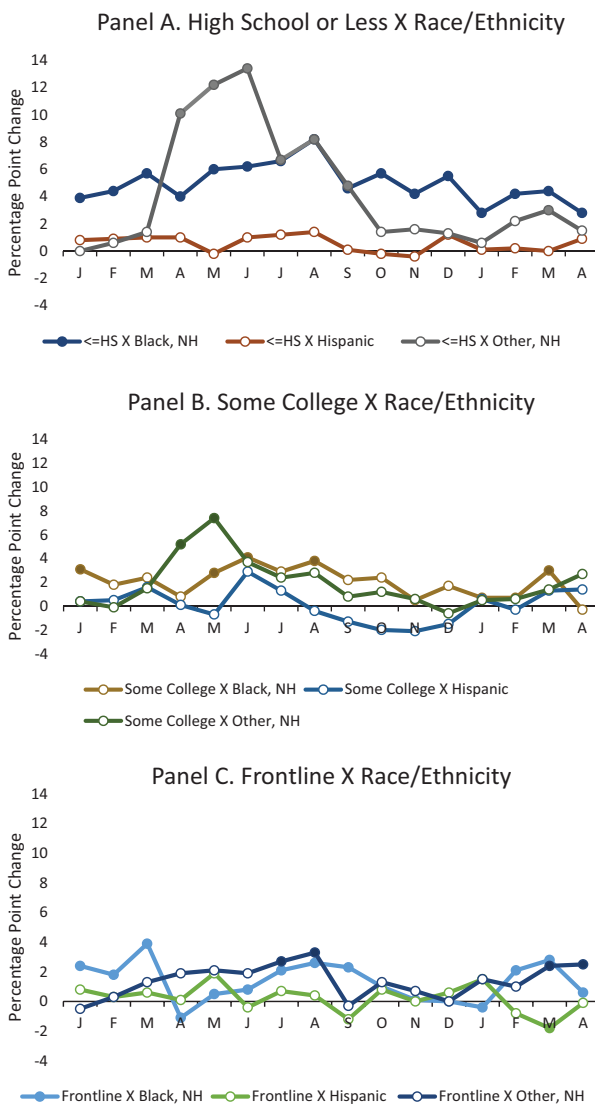
Panel A. High School or Less X Race/Ethnicity

—●—<=HS X Black, NH   —○—<=HS X Hispanic   —○—<=HS X Other, NH

Panel B. Some College X Race/Ethnicity

—○—Some College X Black, NH   —○—Some College X Hispanic
—●—Some College X Other, NH

Panel C. Frontline X Race/Ethnicity

—●—Frontline X Black, NH   —○—Frontline X Hispanic   —●—Frontline X Other, NH

SOURCE: Authors' calculations of monthly CPS (January 2020–April 2021).
NOTE: This figure displays select estimates of a monthly linear probability model of unemployment on race, frontline status, education, other demographic characteristics, in addition to education × race and frontline × race interactions. Omitted categories in the model include white race, nonfrontline, and college+ education. Panels A and B show the education × race interaction while panel C shows the frontline × race interaction. The interpretation of each estimate should account for each omitted group. Full estimation results for education × race interaction are in online Appendix Table A2, while results for frontline × race interaction are in online Appendix Table A3. Closed points represent estimates that are statistically significant at 5 percent or better. Open points represent estimates that are not statistically significant at 5 percent.

to gain a better understanding of the role of educational differences—and the labor market experiences that credentials proxy for—as potential mechanisms helping to drive racial disparities in labor market outcomes during the pandemic. We find that Blacks with a high school diploma or less, compared to the omitted category of white college-educated workers, face unemployment rates on the margin from 5.7 percentage points (April 2020) to 8 percentage points (August 2020) higher; these gaps are statistically significant and remain through April 2021. Black frontline workers experience higher unemployment relative to whites by 2 to 4 percentage points throughout August and September 2020 during the pandemic, and once more in February 2021. While less-educated Hispanic respondents do not exhibit this type of persistent, strong link between education and unemployment, respondents who are neither Black nor Hispanic do in fact exhibit elevated unemployment, on the order of 10 (April 2020) to 13 (June 2020) percentage points during the beginning months of the pandemic that appears to largely dissipate by October 2020. The most qualitatively meaningful gaps are with high school or less educated respondents, and less so for those with postsecondary education below college attainment (panel B). Moving to panel C, we explore the intersection of race with frontline worker status. Here, if anything, we find that initial unemployment gaps for Black frontline workers largely disappear at the onset of the pandemic, although these reappear throughout August to September 2020 (2.3 to 2.6 percentage points), and February to March 2021 (2.1 to 2.8 percentage points) relative to nonfrontline white workers. Throughout the models we summarize in Figures 7 and 8, educational credentials and Black race loom large—separately and nonseparably—as consistent predictors of elevated unemployment.

In Figure 9, we report select coefficients from transition regressions that estimate the predictors of moving from employment to unemployment in the same month over a two-year period.[10] Looking at relationships spanning January 2019 and January 2020 to December 2019 and December 2020, we are able to exploit the panel dimension of the CPS to assess whether and how adults who *were* employed in 2019 fared during the pandemic. We generally find that these transition models corroborate the cross-sectional unemployment trends and cross-sectional unemployment regressions that we report in Figures 1 through 8. Black adults exhibit 6.5 (July 2020) to 3 percentage points (November 2020) higher likelihoods of transitioning into unemployment than whites. As was the case in the cross-sectional regression models, high school or less–educated adults are 9 percentage points (April 2020) to 2.5 percentage points (December 2020) more likely to transition out of work, relative to their college-educated counterparts. A less consistent relationship exists between frontline status and higher unemployment throughout 2020.

Figure 10 estimates employment transition models with interactions between race and ethnicity, and both educational attainment and frontline industry status. Panels A and B depict select coefficients from race/ethnicity and education interactions, while panel C depicts the race/ethnicity and frontline status interaction.[11] Here, we find that Blacks with a high school diploma or less experienced a qualitatively large 14.3 and 10.7 percentage point higher rate of

FIGURE 9
Employment (2019) to Unemployment (2020) Transition Model

Panel A. Race/Ethnicity

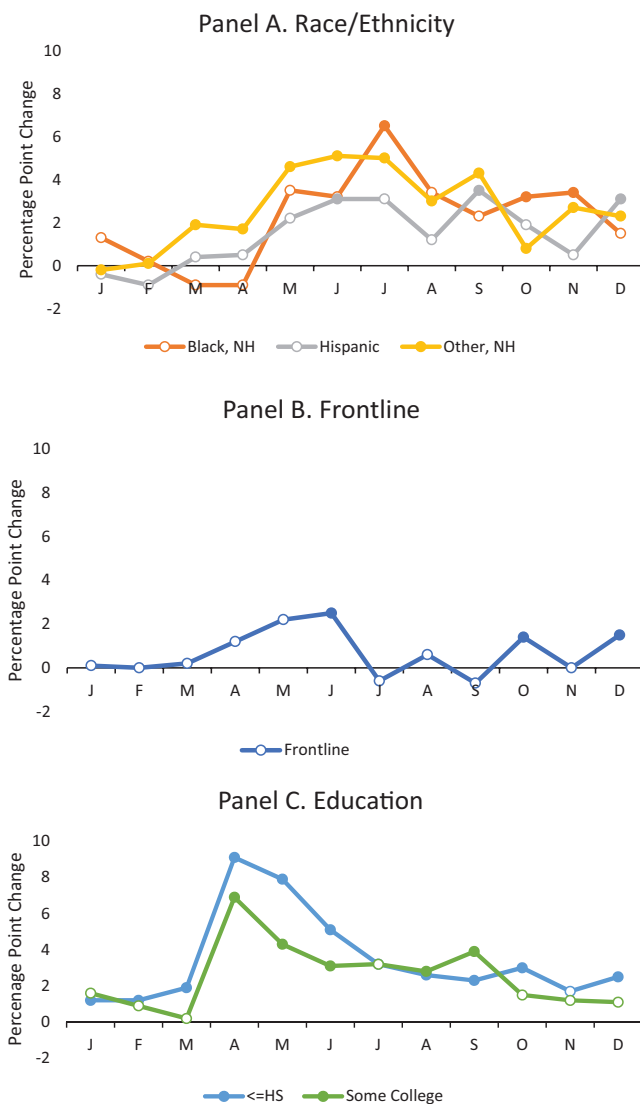Panel B. Frontline

Panel C. Education

SOURCE: Authors' calculations of monthly CPS (January 2019–December 2020).
NOTE: This figure displays select estimates of a monthly linear probability model of the transition from employment in 2019 to unemployment in 2020. Model variables include race, frontline status, education, and other demographic characteristics. Omitted categories in the model include white race, nonfrontline, and college+ education. Each panel plots the estimated coefficients for race, frontline, and education. The interpretation of each estimate should account for each omitted group. Full estimation results are in online Appendix Table A4. Closed points represent estimates that are statistically significant at 5 percent or better. Open points represent estimates that are not statistically significant at 5 percent.

FIGURE 10
Employment (2019) to Unemployment (2020) Transition Model with Race Interactions
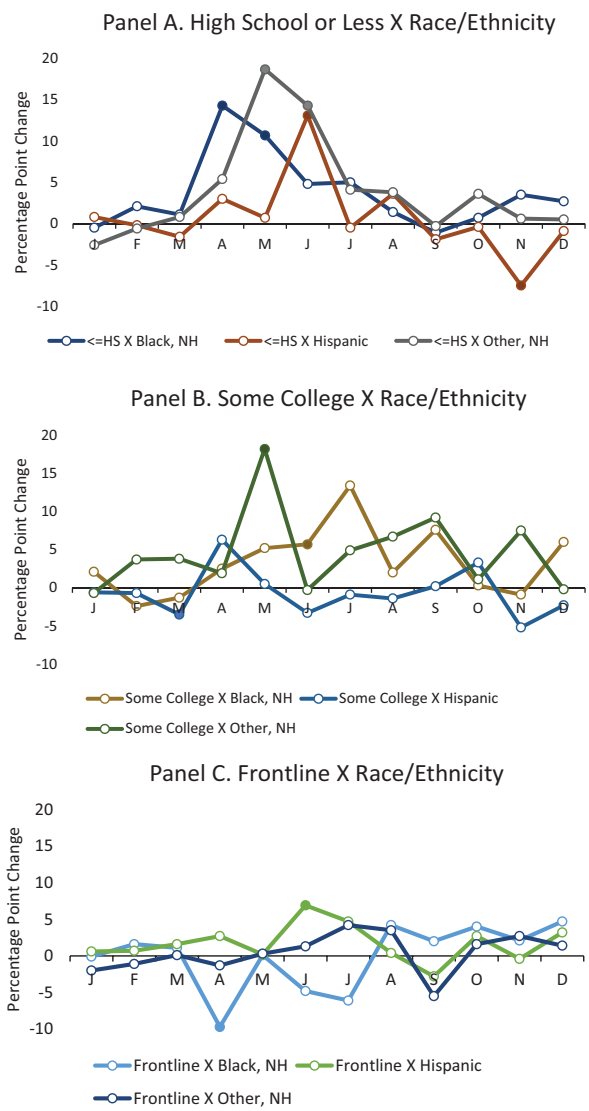
Panel A. High School or Less X Race/Ethnicity

—○— <=HS X Black, NH   —○— <=HS X Hispanic   —○— <=HS X Other, NH

Panel B. Some College X Race/Ethnicity

—○— Some College X Black, NH   —○— Some College X Hispanic
—○— Some College X Other, NH

Panel C. Frontline X Race/Ethnicity

—○— Frontline X Black, NH   —○— Frontline X Hispanic
—○— Frontline X Other, NH

SOURCE: Authors' calculations of monthly CPS (January 2019–December 2020).
NOTE: This figure displays select estimates of a monthly linear probability model of the tran-sition from employment in 2019 to unemployment in 2020. Model variables include race, frontline status, education, other demographic characteristics, in addition to education × race and frontline × race interactions. Omitted categories in the model include white, nonfrontline, and college+ education. Panels A and B show the education × race interaction, while panel C shows the frontline × race interaction. The interpretation of each estimate should account for each omitted group. Full estimation results for education × race interaction are in online Appendix Table A5, while results for frontline × race interaction are in online Appendix Table A6. Closed points represent estimates that are statistically significant at 5 percent or better. Open points represent estimates that are not statistically significant at 5 percent.

transition into unemployment (relative to white, college-educated adults) over April to May 2020. Hispanic adults with a high school diploma or less, as well as those who identify as neither Black nor Hispanic, experience a similar increased unemployment transition within the same season—June 2020 for Hispanics and May to June 2020 for other race adults. Race-ethnicity interactions with front-line status yield very little in the way of a discernable pattern of transitioning into unemployment.

Results from the Socioeconomic Impacts of COVID-19 Survey

As an extension of our CPS-based analysis, we aim to explore how families adjust to joblessness and reduced work hours amid COVID-19 to finance basic needs such as food, clothing, and shelter. While the CPS facilitated our assessment of the short- and medium-term employment response to COVID-19, the Socioeconomic Impacts of COVID-19 Survey allows for a deeper qualitative lens with which we can explore how individuals and families have coped with the economic shock, including mental health status and the use of alternative financial services. Combining results from this survey with our CPS-based employment information, we are able to more fully characterize the economic response to COVID-19 and how it differs across demographics and industry.

Mental health responses to COVID-19

Tables 1 through 3 depict the results of ordinary least squares (OLS) regressions estimating socioeconomic predictors across a range of mental health and financial well-being outcomes. First, in Table 1, we estimate the socioeconomic predictors of mental health impacts across waves 2 and 3 of the Socioeconomic Impacts of Covid-19 Survey using a linear probability model. Individuals could report major impacts, minor impacts, or no impacts, and the results are only available in waves 2 and 3 of the survey.[12] Specifically, our dependent variable tracks whether the individual reports a negative impact on mental health (major or minor). We find that Black respondents are anywhere from 5.3 percentage points (wave 2) to 12.3 percentage points (wave 3) less likely to report major or minor mental health impacts related to COVID-19. Blacks may be less likely to acknowledge a mental health episode (e.g., Satcher 2001), suggesting that these and other surveys may understate the severity of mental health disorders among Blacks. Relatedly, research on happiness by Graham (2017) finds that Blacks are far more likely to report optimism amid economic insecurity. Respondents with fewer formal educational credentials are relatively more likely to have their mental health negatively impacted due to COVID-19. And frontline status has no statistically significant impact on reported mental health.

TABLE 1
Mental Health Model

	Any Impact Mental Health (major or minor impact = 1)	
	Wave 2	Wave 3
Frontline	.007	−.001
	(.017)	(.018)
Black, non-Hispanic	−.053*	−.123***
	(.025)	(.026)
Hispanic	.021	.014
	(.023)	(.023)
Other race, non-Hispanic	−.051	−.086**
	(.027)	(.028)
High school or less	.100***	.050*
	(.020)	(.021)
Some college	.103***	.041*
	(.020)	(.021)
Not married	−.004	−.006
	(.018)	(.019)
Child present	.028	.040*
	(.018)	(.019)
Age	−.005***	−.005***
	(.001)	(.001)
Female	.053**	.063***
	(.016)	(.017)
Constant	.646***	.708***
	(.032)	(.035)
Observations	3,823	3,598
R-squared	.030	.039

SOURCE: Authors' calculations using Socioeconomic Impacts of COVID-19 Survey (waves 2–3).

NOTE: This table reports the estimates of a linear probability model of experiencing a negative impact on mental health (major or minor) due to COVID-19. Model variables include frontline status, race, education, and other demographic characteristics. Each wave is collected during these dates: July 30–August 20 (wave 2), and November 19–December 17 (wave 3). Robust standard errors in parentheses.

*$p < .1$. **$p < .05$. ***$p < .01$.

Alternative financial responses to COVID-19

Tables 2 and 3 depict OLS estimates of the demographic, education, and industry predictors of household financial conditions and alternative financial service usage. Table 2 describes the socioeconomic predictors of household financial conditions being altered due to COVID-19.[13] Here, Black respondents face a larger impact—from .718 (wave 1) to .532 (wave 3)—on household financial

TABLE 2
Financial Situation Impacted by COVID-19 Model

	Financial Situation		
	Wave 1	Wave 2	Wave 3
Frontline	.133	−.109	−.012
	(.076)	(.076)	(.077)
Black, non-Hispanic	.718***	.668***	.532***
	(.111)	(.108)	(.110)
Hispanic	.051	.084	.095
	(.096)	(.098)	(.099)
Other race, non-Hispanic	.217	−.111	−.132
	(.118)	(.117)	(.121)
High school or less	−.024	−.162	−.055
	(.084)	(.087)	(.089)
Some college	−.032	−.013	.309***
	(.084)	(.087)	(.089)
Not married	.164*	.464***	.204*
	(.078)	(.078)	(.080)
Child present	.169*	.291***	.477***
	(.077)	(.080)	(.083)
Age	−.013***	−.018***	−.014***
	(.003)	(.003)	(.003)
Female	−.262***	−.264***	−.447***
	(.070)	(.071)	(.073)
Constant	5.064***	5.458***	5.383***
	(.135)	(.142)	(.151)
Observations	3,874	3,826	3,710
R-squared	.022	.043	.043

SOURCE: Authors' calculations using Socioeconomic Impacts of COVID-19 Survey (waves 1–3).
NOTE: This table reports the estimates of a regression model of the impact of COVID-19 on the household financial situation. Respondents provide an answer to a question about the extent to which the household financial situation has been impacted by the pandemic, ranging from –5 to 5. The regression dependent variable translates this response to a 0 to 10 scale. Model variables include frontline status, race, education, and other demographic characteristics. Each wave is collected during these dates: April 27–May 12 (wave 1), July 30–August 20 (wave 2), and November 19–December 17 (wave 3). Robust standard errors in parentheses.
$*p < .1.$ $***p < .01.$

conditions. Unmarried adults are also more likely to report adverse household financial consequences across waves 1 (.164), 2 (.464), and 3 (.204). Weaker associations between relatively less-educated adult respondents emerge. Ultimately, these models largely help to characterize the disproportionate financial shock borne by many Black households throughout the pandemic. Interestingly, families

TABLE 3

Alternative Financial Services Model

	Auto Title			Payday Loan			Pawned Item			Sold Blood Plasma			Overdrafted Bank Account		
	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
Frontline	.053**	.002	.006	.012	.021	.073***	.034	.034	.054*	.029	.020	.060*	.019	.007	.086***
	(.018)	(.019)	(.018)	(.018)	(.019)	(.021)	(.019)	(.022)	(.024)	(.020)	(.023)	(.024)	(.022)	(.025)	(.025)
Black, non-Hispanic	.006	.080**	.043	.110***	.096***	.094**	.104***	.110***	.043	.073*	.121***	.053	.139***	.088*	.026
	(.025)	(.026)	(.026)	(.026)	(.027)	(.030)	(.027)	(.031)	(.034)	(.029)	(.033)	(.033)	(.032)	(.035)	(.036)
Hispanic	.066**	.018	.028	.043	.074**	.116***	.067**	.076**	.045	.006	.030	.054	.086**	.039	-.023
	(.022)	(.024)	(.024)	(.023)	(.025)	(.028)	(.024)	(.028)	(.031)	(.025)	(.030)	(.031)	(.028)	(.032)	(.033)
Other race, non-Hispanic	.027	.002	-.040	-.045	-.007	-.016	-.047	-.024	-.077*	-.042	-.010	-.055	-.052	-.035	-.080*
High school or less	.017	.045*	.032	.030	.052*	-.029	-.009	.007	-.067*	.032	-.002	.018	.054*	.034	-.025
	(.020)	(.021)	(.021)	(.020)	(.022)	(.024)	(.021)	(.025)	(.027)	(.022)	(.026)	(.027)	(.024)	(.028)	(.029)
Some college	.012	.044*	.085***	.005	.028	-.016	-.061**	-.056*	-.094***	-.009	-.020	.012	-.026	-.058*	-.071*
	(.020)	(.021)	(.021)	(.020)	(.022)	(.025)	(.021)	(.025)	(.028)	(.022)	(.026)	(.027)	(.024)	(.028)	(.029)
Not married	.066***	.093***	.093***	.046*	.089***	.074***	.054**	.102***	.086***	.012	.074**	.119***	.066**	.058*	.109***
	(.018)	(.019)	(.019)	(.018)	(.020)	(.022)	(.019)	(.022)	(.025)	(.020)	(.024)	(.025)	(.023)	(.025)	(.026)
Child present	.091***	.110***	.132***	.078***	.190***	.166***	.060**	.114***	.159***	.083***	.195***	.138***	.071**	.192***	.197***
	(.018)	(.020)	(.020)	(.018)	(.020)	(.023)	(.019)	(.023)	(.026)	(.020)	(.024)	(.025)	(.022)	(.026)	(.027)
Age	-.005***	-.007***	-.007***	-.003***	-.008***	-.010***	-.005***	-.010***	-.009***	-.005***	-.009***	-.010***	-.007***	-.010***	-.010***
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Female	-.061***	-.098***	-.107***	-.075***	-.069***	-.117***	-.077***	-.052**	-.118***	-.057**	-.074***	-.109***	-.014	-.066**	-.050*
	(.016)	(.017)	(.017)	(.016)	(.018)	(.020)	(.017)	(.020)	(.023)	(.018)	(.022)	(.022)	(.020)	(.023)	(.024)
Constant	.277***	.367***	.386***	.232***	.362***	.556***	.327***	.537***	.627***	.297***	.529***	.544***	.387***	.632***	.641***
	(.031)	(.034)	(.036)	(.032)	(.036)	(.041)	(.034)	(.040)	(.046)	(.035)	(.043)	(.046)	(.039)	(.046)	(.049)
Observations	3,958	3,921	3,801	3,956	3,923	3,805	3,952	3,912	3,798	3,962	3,921	3,801	3,960	3,924	3,805
R-squared	.040	.058	.074	.027	.086	.094	.033	.077	.073	.025	.078	.069	.036	.076	.081

SOURCE: Authors' calculations using Socioeconomic Impacts of COVID-19 Survey (waves 1–3).

NOTE: This table reports the estimates of a linear probability model of using alternative financial services in the past three months by service. Model variables include frontline status, race, education, and other demographic characteristics. Each wave is collected during these dates: April 27–May 12 (wave 1), July 30–August 20 (wave 2), and November 19–December 17 (wave 3). Robust standard errors in parentheses.

*$p < .1$. **$p < .05$. ***$p < .01$.

with children present felt a negative household financial consequence from COVID-19, and one that appears to rise throughout the pandemic, as evidenced by an increasing effect (.169 to .477) between waves 1 and 3.

Finally, Table 3 describes the socioeconomic predictors of financial coping strategies during COVID-19 using a linear probability model. Specifically, respondents were asked whether they had (1) taken out an auto title loan, (2) taken out a short-term payday loan, (3) pawned an item because cash was needed, (4) sold blood plasma for money, or (5) overdrafted a bank account or wrote a check for more than what was in the bank account. Across three waves of data, interesting patterns emerge.[14] Frontline workers were 5.3 percentage points more likely than nonfrontline workers to take out an auto title loan during wave 1. While Blacks and Hispanics were more likely in some—although not most—waves to take out these loans, individuals without college degrees were generally more likely to take out auto title loans. Most consistently, unmarried adults and those with children were more likely to pursue auto title loans as a financial coping strategy. Moving to short-term payday loans, a more consistent linkage emerges with socioeconomic characteristics. Blacks exhibit the highest and most consistent association with payday loan usage; Hispanics, unmarried adults, and those with children also experience a higher likelihood of using payday loans as a coping strategy. Frontline workers, interestingly, are more likely to use payday loans only in wave 3. Women are less likely to use any of these alternative financial coping strategies, including payday loans.

Blacks are more likely to pawn items to shore up finances, particularly across waves 1 and 2. Interestingly, respondents with some postsecondary education are actually less likely to pawn items relative to their college-degree-holding counterparts. And a consistent theme continues across financial coping outcomes for unmarried adults and those with children, who both are relatively more likely to pawn items. As was the case for auto title loans and payday loans, women are less likely to pawn items as a financial coping strategy. These patterns persist for selling blood plasma and overdrafting checking accounts. Here as before, Black and Hispanic respondents, as well as unmarried adults and those with dependent children, all utilize these alternative strategies to cope financially—and with potentially damaging consequences for their long-term financial standing and credit rating. Interestingly, across most of the outcomes explored, education does not stand out as a relatively important predictor of these financial outcomes. While waves exist when educational characteristics are strong predictors of financial outcomes, we find that race and ethnicity—and in particular Black race—negatively predicts financial outcomes. Likewise, men, those who are married, and adults without children appear to fair better throughout the pandemic on these margins.

Conclusion and Policy Implications

Our results from the CPS demonstrate that many groups—especially Blacks and Hispanics, those without a four-year college degree, and frontline workers—have experienced an economic and mental health "crash," and the findings of the

Socioeconomic Impact of COVID-19 Survey suggest that many of these same families lack an adequate "parachute" in the absence of sustained economic policy interventions and relief. We find that racial and ethnic gaps in unemployment persist after accounting for industry—Black workers exhibit higher levels of unemployment between frontline and nonfrontline work. In addition, much of the educational difference in employment response to the pandemic occurs between college-educated adults and those without college degrees. While Black individuals report a lower impact on mental health, they experience a larger impact on their household financial situation during the pandemic. These families were more likely to seek out alternative financial services that include payday loans, pawning items, and selling blood plasma to cope amid the COVID-19 pandemic. Many such approaches to solving financial emergencies effectively represent choosing among a set of qualitatively bad alternatives.

When we look back upon the economic consequences of the COVID-19 pandemic, many families will bring multiple types of scarring with them into the future as a result of their experiences starting in March 2020. An expansive social sciences literature documents potential long-term social, health, and economic consequences from exposure to job loss and income shocks (e.g., Charles and Stephens 2004; Currie et al. 2010; Eliason and Storrie 2009; Stevens 1997), although the results of these studies are not generalizable to a global pandemic. As such, they may represent a lower bound on the intragenerational and intergenerational economic mobility consequences. Similarly, our analysis may understate economic hardship, insofar as the results could suffer from a downward nonresponse bias in which the most socioeconomically disadvantaged potential respondents do not participate in the survey (e.g., Heffetz and Reeves 2020; Rothbaum and Bee 2020).

The economic crisis related to COVID-19 was due in large part to mortality- and morbidity-induced reductions in work participation, health risk avoidance, government restrictions on social and economic activity, and virus abatement strategies that resulted in pent up potential consumption. Policymakers—whether at the time of this writing amid the pandemic, or when faced with similar circumstances in the future—may benefit from considering at least two tranches of economic relief. First, many individuals, families, businesses, and local governments require economic relief to make up for the unprecedented and sustained decline in consumption. Second, the economic, social, and mental health scarring from the pandemic may persist beyond the public health emergency. Accordingly, economic relief, including in-kind assistance to address housing and food insecurity, along with health care subsidies to address pandemic-related shocks to physical and mental health, will be required in the months ahead, and perhaps for years into the future beyond the time of this writing. The evidence on the economic hardship that has taken place recommends such action to help society reach and maintain full economic potential.

Supplemental Material

Supplemental material for this article is available online.

Notes

1. Our monthly CPS data come from IPUMS-CPS available at https://cps.ipums.org/cps/. We use IPUMS-CPS generated ID variables for constructing the two-year panels spanning 2019 and 2020. Flood et al. (2020) provide more information about IPUMS-CPS and the process of linking adjacent CPS years.

2. They show a high correlation of their metric with early estimates of the share of workers who actually worked from home during the onset of the pandemic.

3. The eight frontline industries consist of Mining, Quarrying, and Oil and Gas Extraction (NAICS 21); Health Care and Social Assistance (NAICS 62); Manufacturing (NAICS 31-33); Transportation and Warehousing (NAICS 48-49); Construction (NAICS 23); Retail Trade (NAICS 44-45); Agriculture, Forestry, Fishing, and Hunting (NAICS 11); and Accommodation and Food Services (NAICS 72). The remaining two-digit NAICS industries constitute nonfrontline industries.

4. Our unemployment definition matches the Bureau of Labor Statistics definition of identifying individuals in the labor force who do not have a job in the week prior to the CPS monthly survey interview.

5. Online Appendix Figure A1 shows unemployment trends by family structure (marital status, presence of children, and single parent).

6. Online Appendix Figure A2 shows the employment-to-unemployment transition by family structure (marital status, presence of children, and single parent).

7. These observables include marital status, age, gender, and presence of children.

8. Figure 7 full estimation results appear in online Appendix Table A1.

9. These interactions are each added to the baseline model used for Figure 7. Full estimation results for panels A and B are in online Appendix Table A2. Full estimation results for panel C are in online Appendix Table A3.

10. The full estimation results for these figures can be found in online Appendix Tables A4 through A6.

11. Full estimation results for panels A and B are in online Appendix Table A5. Full estimation results for panel C are in online Appendix Table A6.

12. This mental health indicator is based on the Kaiser Family Foundation's Health Tracking Poll.

13. Respondents provide an answer to a question about the extent to which the household financial situation has been impacted by the pandemic, ranging from –5 to 5. The regression dependent variable translates this response to a 0 to 10 scale.

14. Recall each wave is administered during these dates: April 27–May 12 (wave 1), July 30–August 20 (wave 2), and November 19–December 17 (wave 3).

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