This piece extends the analysis of *Aaronson, Daly, Wascher, and Wilcox (2019)*, published in the Spring 2019 edition of the Brookings Papers on Economic Activity, with updated data through the 2nd quarter of 2021. In this technical appendix, we describe our methodology and note where it differs from Aaronson et al. (2019).

We assess between-group gaps in unemployment rates during periods of hot labor markets, with the primary divergence in methodology being our focus on the prime-age cohort of 25–54 year-olds, rather than individuals aged 25–64. Unemployment rates for each of the gender-race and gender-education groups were calculated using Current Population Survey (CPS) microdata from 1980Q1 to 2021Q2, aggregated at a quarterly frequency and then seasonally adjusted. Hot and cold periods are based on historical series produced by the Congressional Budget Office (CBO) for the aggregate and non-cyclical rates of unemployment, with hot periods defined as quarters where the aggregate unemployment rate is below the non-cyclical rate or, in other words, when the aggregate gap is negative. We define cycles with quarterly break points according to NBER’s Business Cycle Dating Committee, with the exception where we follow Aaronson et al. in consolidating the 1980–1981 period into the 1981–1990 cycle due to its abbreviated length and limited recovery in unemployment prior to the 1981 recession.

The empirical model underlying Figures 3 and 4 of the post follows the form of Equation 2 of Aaronson et al., which regresses group unemployment gaps against 1) the aggregate gap between the overall unemployment rate and the non-cyclical rate, and 2) an interaction term of this aggregate gap and a dummy indicator specifying hot periods. The blue line in Figures 3 and 4 corresponds to the resulting sensitivity to the first aggregate unemployment gap term, while the red line highlights the hot period sensitivity, calculated as the cold slope plus the incremental coefficient from the interaction term.

Different from in Aaronson et al., we control for cycle-specific fixed effects, which control for the different average unemployment rate gaps across the business cycles. These seem to be at least partly attributable to the downward trend in the unemployment rate over this period. The regression lines displayed in Figures 3 and 4 are constructed based on the fixed effect estimated for the 2008–2020 cycle.

Finally we note that the analysis of the CPS microdata and published unemployment rates in this report and the discussion thereof does not account for the likely misclassification of workers’ employment status during the COVID-19 pandemic caused by the surge in reported workplace absences and temporary layoffs. In regard to our results presented here, this potential underestimate of the unemployed may disproportionately affect workers overrepresented in certain impacted industries, such as women, Black and Hispanic workers, and those with less education. In this case, the unemployment gaps discussed in our results may underestimate the true spike in joblessness for disadvantaged workers in 2020.
References


