

Real-Time Labor Market Estimates During the 2020 Coronavirus Outbreak*

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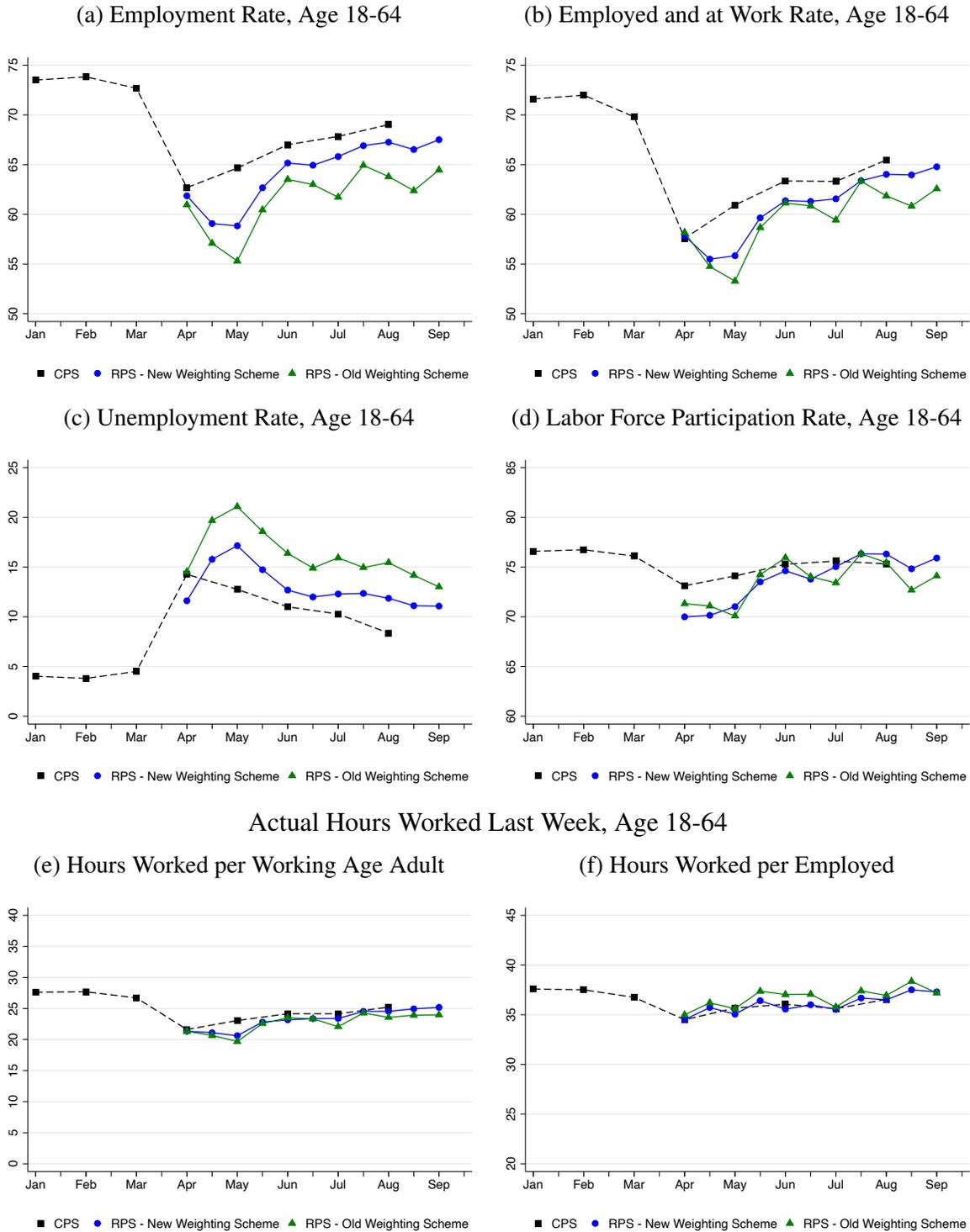
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Abstract

This addendum describes two modifications to the RPS implemented in wave 12. First, we adjust the phrasing and answer options of two questions, and adjust results from previous waves based on a parallel experimental survey. We also introduce a new weighting procedure. These explanations will be incorporated into the next draft released on October 9, 2020. Figure 1 displays the previous RPS series alongside the updated series, as well as the corresponding CPS estimates.

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Figure 1: Comparison between CPS and the RPS with the New and Old Weighting Scheme



1 Modification Across Survey Waves

We made two modifications to the RPS questionnaire in wave 12. The first modification centered around a question related to employed but absent respondents. Prior to wave 12, respondents were asked “Last week, did you have a job from which you were temporarily absent?” Starting with wave 12, we used an alternative phrasing, matching the CPS: “Last week, did you have a job, either full- or part-time? Include any job from which you were temporarily absent”.

Individuals who answered yes to this question are then asked a follow-up question to determine whether they are employed/absent or not employed. The second modification was a change in the answer options to this question.

1. “Vacation/personal days”, “Own illness/injury/medical problems”, and “Quarantine or self-isolation due to the Coronavirus Pandemic” instead of “Vacation/personal/sick days”.
2. “Other family obligations” was added as an answer option.

We evaluated the impact of this modification by running two parallel surveys: one using the old form of both questions, and one using the updated questions. From this comparison we find that, with the new phrasing, more individuals report having a job despite also reporting that they did no work last week. Next, conditional reporting no work but having a job, more individuals were classified as employed and at work (as opposed to not being classified as a layoff).

For consistency, we use the difference in labor market outcomes between the two parallel surveys to adjust results from previous RPS surveys. To do so, we construct two variables. The first partitions the sample into three bins:

1. No work for pay or profit last week, reported having a job last week, classified as employed at work
2. No work for pay or profit last week, reported having a job last week, classified NOT as employed at work
3. Everyone else

The second variable partitions the sample into two bins:

1. Unemployed
2. Everyone else

There are six different combinations of these two variables. For each combination we take the ratio of the share of people from the new and old survey and use it as an additional adjustment factor in previous waves for a given realization before applying the actual weighting scheme.

2 Weighting

Prior to this update, we weighted our sample to match 2019 CPS shares based on age, relationships status and last year’s household income. One shortcoming of this weighting procedure is that using last year’s household income is not sustainable over the long run, since the distribution of 2020 household incomes will not be available from the CPS until September 2021 and the (coarse) 2019 household income distribution will not be a good approximation for 2020. Another shortcoming is that weighting based on only three variables left a significant amount of variability across other demographic variables between waves.

We now implement a new weighting procedure, and apply this procedure to all previous waves. We employ a raking algorithm (in particular we use the Stata routine `ipfweight`) to match the distribution of demographics in the CPS.¹ Starting with wave 8, we also asked respondents whether they did any work for pay or profit in the first full week of the previous month (if the survey is run at the beginning of the current month and corresponds to the CPS reference week) or the same month (for the second survey in a given month). We use this information to match the distribution of work for pay or profit status of the respective CPS as well as the joint distribution of this status with a similar set of demographics.²

Since we do not have the information of the employed at work status prior to wave 8, we cannot “target” employed and at work rates in our raking algorithm for these waves. We add an adjustment factor for these early waves as follows. In a first step, in wave 8, implement the full raking procedure described in the previous paragraph. Second, again in wave 8, add another adjustment factor such that the distribution of employment and joint distribution of other demographic characteristics matches the same distribution from step 1.³ After applying this adjustment factor, we choose weights for waves prior to wave 8 as described in the previous paragraph without including employed at work status at the respective previous CPS in the weighting scheme. To check how will this procedure works, we can compare our key statistics for waves 8-12 when using the actual weights including employed at work status at the respective previous CPS and the one with the adjustment factor. This procedure works well and we will comment on it in more detail when we discuss our results.

¹Specifically, we use sex, age (18-24, 25-34, ..., 55-64), race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, Other), education (less than high school, high school graduate or equivalent, some college but no degree, associate’s degree in college, bachelor’s degree, graduate degree), marital status (married + spouse present, divorced, never married, other), relationship status (spouse living in the same household, partner living in the same household, other), number of children (none, 1, 2, 3 or more), and the four major Census regions.

²Specifically, we use age (18-24, 25-34, ..., 55-64), race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, Other), education (less than high school, high school graduate or equivalent, some college but no degree, associate’s degree in college, bachelor’s degree, graduate degree), more broadly defined marital status (married + spouse present, never married, other), relationship status (spouse living in the same household, partner living in the same household, other), and the four major Census regions. We drop the number of children and use a more broadly defined marital status to ensure that each cell in the RPS has at least 30 observations.

³These demographics are sex, age(below 40, 40 or older), race (non-Hispanic White, other), education (less than an associate’s degree [including some college], associate’s degree or more), broad marital status (married + spouse present, other). Again, we can use only a restricted set of variables to ensure a sufficient sample size.

3 Results

Figure 1 compares our the CPS with the RPS using the new and old weighting scheme. The new weighting scheme displays less variability over time and the average level is closer to the CPS for all series other than labor force participation.

The lower variability stems from (i) conditioning the weighting scheme on more demographic characteristics, and thus more homogenous weighted samples across waves; (ii) conditioning on the employed at work status at the previous CPS, and thus controlling for selection based on recent employment history into our survey. On average, respondents are less likely to have worked for pay or profit at the previous CPS, though this pattern varies across waves.

The closer alignment between the two surveys stems can be attributed to the selection issue discussed under (ii) in the previous paragraph. In addition, the adjustment for the change in questions from the parallel wave 12 surveys contributes to a higher employment rate, lower unemployment rate and lower hours worked per employed rate—note that, by construction, this latter modification leaves the employed at work rate, labor force participation rate, and hours per employed unchanged.

Figure 2 compares our key statistics for waves 8-12 when using the actual weights including employed at work status at the respective previous CPS (RPS- New Weighting Scheme) and an alternative weighting scheme with the adjustment factor but not using the employed at work status at the respective previous CPS (RPS - WS Adj. Factor). With the exception of the second July wave, which has an above average employed at work rate at the previous CPS, the two weighting schemes closely resemble each other. This suggests that the procedure works well for waves prior to wave 8 as long as there was no strong selection into the survey based on recent employment, which we unfortunately cannot verify.

Figure 2: Comparing the New Weighting Scheme with the Adjustment Scheme for Waves 8-12

