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The impact of remote workers on unemployment during the COVID pandemic

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Research Question:

- What is the impact of remote workers on the probability of being unemployment?

Model: $UE_{it} = \alpha_0 + \gamma_1 Remotework_i + \gamma_2 Race_i + \gamma_3 Gender_i + \gamma_4 Educ_i + \gamma_4 Age_i + u_i$

- The traditional standard of unemployment (*UE*) is first used then an unemployment measure based on inability to work to due to COVID-19
- *UE* equals 1 if individual is unemployed, *UE* equals 0 if otherwise
- *Race*, *Gender*, *Education*, and *Age* are control variables that may affect an individual's probability of becoming unemployed
- *Remotework* is the variable of interest while *u* is the random error term

Literature Review:

- Brynjolfsson & Horton found that between February and March of 2020, over one third of the labor force switched to remote work resulting in about half of American workers now working from home
- Fairlie, Couch, & Xu find that unemployment rates rose faster for Latin-Americans than for Blacks or Whites in April 2020
- Gezici's regressions conclude that Black and Hispanic women still experience a significantly higher probability of losing their jobs, even when employed in industries with highly teleworkable jobs

Average Marginal Effects May19 — Number of obs = 46,343
Model VCE : OIM
Expression : Pr(unemployed), predict()
dy/dx w.r.t. : remotework black asian hispanic other_race female associates bachelors PhD

Delta-method

	dy/dx	Std.Err.	Sig
remotework	-0.048	0.004	***
black	0.023	0.002	***
asian	-0.005	0.004	
hispanic	-0.003	0.002	
other_race	0.016	0.005	***
female	0.002	0.002	
associates	-0.004	0.003	
bachelors	-0.006	0.002	***
PhD	-0.014	0.008	*

Average Marginal Effects May20 — Number of obs = 45,702
Model VCE : OIM
Expression : Pr(unemployed), predict()
dy/dx w.r.t. : remotework black asian hispanic other_race female associates bachelors PhD

Delta-method

	dy/dx	Std.Err.	Sig
remotework	-0.226	0.007	***
black	0.028	0.005	***
asian	0.023	0.006	***
hispanic	0.022	0.004	***
other_race	0.024	0.010	**
female	0.036	0.003	***
associates	0.008	0.006	
bachelors	-0.023	0.004	***
PhD	-0.091	0.014	***

Average Marginal Effects May20 — Number of obs = 46,411
Model VCE : OIM
Expression : Pr(covidunemploy), predict()
dy/dx w.r.t. : remotework black asian hispanic other_race female associates bachelors PhD

Delta-method

	dy/dx	Std.Err.	Sig
remotework	-0.300	0.009	***
black	0.016	0.007	**
asian	0.016	0.009	*
hispanic	0.050	0.006	***
other_race	0.035	0.014	**
female	0.058	0.004	***
associates	0.006	0.008	
bachelors	-0.028	0.005	***
PhD	-0.042	0.014	***

Caption: The tables show the marginal effects from probit regression results for both *unemployment* and *covidunemploy*. Regression results were achieved by a merged dataset of CPS (Current Population Survey) microdata and ONET. The *unemployed* dependent variable for May19 and May20 (two top graphs) were taken from the survey and numbered 39,332 and 39,490 individuals, respectively. The two years are nearly equal due to the fact that more people reported being retired from work in May19 and then more experienced workers reported being unemployed in May20. The *covidunemploy* dependent variable is used in May20 with 14,051 individuals reported being unable to work due to the COVID-19 pandemic. White people are used as the reference category for race and individuals with a high school diploma of less are used as for education. Average effect is described with standard error and significance noted.

Results: The marginal effects results show remote workers to have a decreased probability of being unemployed by 4.8 percentage points in May19, however, they have an even lower likelihood of being unemployed at 22.6 percentage points one year later. When we use *covidunemploy*, the probability of remote workers being unemployed decreases by 30 percentage points! Still yet, there are winners and losers during the pandemic. We observe African-Americans in May20 to have an increased probability of being unemployed by 2.8 percentage points – compared to Whites. But when *covidunemploy* is taken into account, we see their probability of being unemployed is increased by only 1.6 percentage points. We also observe Hispanics to have insignificant results in May19 which means they did not experience any negative impact. However, in May20 we see Hispanics have an increased likelihood of being unemployed by 2.2 percentage points – compared to Whites which is in line with existing research. We encourage future research to examine the COVID-19 pandemic's impact on various socioeconomic classes in hopes of better understanding the triggers of unemployment.