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The Impact of Essential Industry Designation on the Probability of Unemployment

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Research question:

- The goal of this study is to estimate the impact of essential industry designation on the probability of unemployment.

Review of the literature:

- "COVID-19 Employment Status Impacts on Food Sector Workers"

Results conclude that COVID-19 has significantly reduced the probability of workers remaining employed in food manufacturing and grocery stores. Positive relationship between COVID-19 infection rate and workers exiting the labor force.

- "Determinants of Disparities in Covid-19 Job Losses"

Observed that individuals with higher and lower education both have job security during the COVID-19 pandemic. Higher educated jobs translate well into remote work and most jobs requiring lower levels of education are in the essential industry. Also concluded that individuals working in essential industries faced a reduced chance to face unemployment

- "The Distributional Impacts of Early Employment Losses from COVID-19"

Presents a counter argument that using unemployment status is an understatement of the job loses during COVID-19. It ignores labor force participation and the workers who were only employed temporarily.

MODEL: $Pr(Y=1|X)=\Phi(\beta_1 X+\epsilon)$

Model Description

- Y = unemployment due to covid

    1 = unemployed | 0 = unemployed

- β_1 is the parameter estimates

- X = list of explanatory variables

    Essential industry gender, race, metropolitan status, married, children in house, education, state, age.

- ϵ = error term

- Φ = standard normal cumulative distribution

- Data was gathered from Current Population Survey (CPS)

- Merged essential industry classification from Blau et al. (2020)

Results

- From the regression results we can observe that both *education* variables are both significant and negative, supporting the conclusion that there was job security present for both higher educated and lower educated individuals.

- It is also important to overserve that *gender* and *race* variables are all significant and positive.

- It is interesting that metropolitan status had no effect on the probability of unemployment due to covid given that *urban* is not significant.

- Individuals that are *married* also have less of a chance to be unemployed due to covid versus individuals that are not married.

Marginal Effects Results

- Focusing on the main variable of interest, individuals in an **essential industry** actually had **less** of a probability to be unemployed due to covid when compared to individuals in a nonessential industry by about 9.6 percentage points.

- Although this will be elaborated more in the conclusion, we can see that this more narrow definition of unemployment follows suit with the reviewed literature "Determinants of Disparities in Covid-19 Job Losses". Although this more narrow definition of unemployment shows different results from the results in the study on individuals working in the food sector.

Definition of Unemployment Used in This Study

COVIDUNAW– whether the individual was unable to work during the previous four weeks due to their employer closing or losing business due to the COVID-19 pandemic.

Probit Regression Results

VARIABLES	(1) Covidunemp
essential_IND	-0.311***
	(0.0146)
female	0.122***
	(0.0134)
black	0.0753***
	(0.0235)
hispanic	0.207***
	(0.0204)
other_race	0.0930*
	(0.0508)
urban	0.0168
	(0.0198)
married	-0.134***
	(0.0158)
child	0.0268*
	(0.0148)
HS_educ	-0.0347*
	(0.0183)
hs_more	-0.356***
	(0.0170)
age	-0.000863
	(0.000540)
Constant	-0.386***
	(0.0579)
Observations	43,645
Controlled for state FE	YES

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Marginal Effects

VARIABLES	(1) Covidunemp
essential_IND	-0.0964***
	(0.00445)
Observations	43,645

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Controlled for state FE = yes

CONCLUSIONS AND POLICY IMPLICATIONS

It is important that we focus on why our marginal effects for essential industry are negative. We can understand that the demand for essential workers was very high given by the negative coefficient, but it is also incredibly important that we properly understand the definition of unemployment that we used in this study.

In this study, our definition of unemployment was strictly due to individuals being unable to work due to job and business closings due to the COVID-19 pandemic. This study focused primarily on industries classified as "essential", and these essential industries were permitted to remain open throughout the pandemic, and many of them did not shut down.

From this we can conclude that individuals working in an essential industry are less likely to face unemployment due to covid, and to be precise from our study, by about 9.6 percentage points when compared to individuals working in a nonessential industry.

A possible policy implication could be to broaden the classification of "essential" industries so that more firms and individuals can avoid facing unemployment.

Future research should include this more narrow definition of unemployment and possibly use the official definition to derive a difference between the two definitions.