

# How the relaxation in SNAP enrolment eligibility impacts self-employment within USA?

## Data Science for Economists

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# Motivation

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- Their primary goal (often) → earn enough so they can take home food for their family
- Was interested in finding out how their behavior would change if this aspect is taken care of (in the form of provision of food)?

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- It is the largest program working to fight hunger in America
- SNAP is targeted toward our most at-risk citizens, predominantly serving households with children, elderly or disabled members
- Federal eligibility for SNAP is limited to people with gross incomes up to 130% of the federal poverty line



# Research Question

- If individuals get eligible for SNAP, are they more likely to opt for self-employment (particularly opportunity-driven)?

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- Necessity entrepreneurship is generally thought of as business creation in the face of limited alternative opportunities.
- Opportunity entrepreneurship is generally thought of as business creation when there is an entrepreneurial opportunity.

# Operationalizing necessity and opportunity-driven entrepreneurship

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# Operationalizing necessity and opportunity-driven entrepreneurship

## Operationalizing necessity and opportunity-driven entrepreneurship <sup>1</sup>

- Individuals who are initially registered as unemployed before starting businesses are defined as being necessity entrepreneurs
- individuals who are wage/salary workers, enrolled in school or college, or are not actively seeking a job before starting businesses are defined as being opportunity entrepreneurs

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# Data

- IPUMS CPS basic monthly data from 1996-2020 has been used

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- IPUMS CPS basic monthly data from 1996-2020 has been used
- CPS matching has been performed to link the data for individuals across periods in order to provide panel data for estimation.



# Estimation Strategy

- I use a difference-in-difference (DID) strategy
- A November 2000 clarification of the SNAP federal guidelines gave states flexibility in implementation:
  - New interpretation of the statute allowed states to **raise the gross income limit to 200% of the Federal Poverty Line (FPL)** when determining eligibility for SNAP, up from the **previous level of 130%**

# Model

The difference-in-difference method that I propose is as follows:

$$Y_{ist} = \beta_0 + \beta_1 \text{Treat}_{it} + \beta_2 \text{Post}_{st} + \beta_3 \text{Treat}_{it} \text{Post}_{st} + \xi X_{it} + \nu_s + \eta_t + \gamma t \nu_s + \epsilon_{ist} \quad (1)$$

for individual  $i$  in state  $s$  at time  $t$ , where  $Y_{ist}$  is self-employment (or necessity-driven entrepreneurship or opportunity-driven entrepreneurship).

- “Treatment status:  $\text{Treat}_{it} = 1[\text{Inc}_{it} \leq \text{Thresh}_{st}]$  (uses a household’s combined income to determine eligibility)
- The variable  $\text{Post}_{st} = 1[t \geq \text{PolicyYear}_s]$ , indicates whether an observation is before or after the policy’s enacting
- The parameters  $\nu_s$  and  $\eta_t$  are state and year fixed effects,  $\gamma t \nu_s$  is a state-specific linear time trend, and  $X_{it}$  is a vector of covariates. The difference-in-difference estimator of the effect of the expansion is  $\beta_3$ .

# Basic regression results

```
. reg opentry Treat Post Treat.Post i.year i.statefip
note: 2021.year omitted because of collinearity.
```

Source	SS	df	MS	Number of obs	=	75,155
Model	139.106585	77	1.80657903	F(77, 75077)	=	12.56
Residual	10796.2374	75,077	.143802195	Prob > F	=	0.0000
				R-squared	=	0.0127
				Adj R-squared	=	0.0117
Total	10935.344	75,154	.145505814	Root MSE	=	.37921

  

opentry	Coefficient	Std. err.	t	P> t	[95% conf. interval]	
Treat	-.0021659	.015174	-0.14	0.886	-.0319069	.0275751
Post	-.0780338	.0253962	-3.07	0.002	-.1278103	-.0282573
Treat.Post	.0270847	.0170819	1.59	0.113	-.0063958	.0605651

Figure: Regression Results

Thank you!

# Appendix

State	Year and Type of Non-Cash Categorical Eligibility									
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Alabama	None									Broad
Alaska	Narrow									
Arizona	Narrow						Broad			
Arkansas	Narrow									
California	Narrow							Broad		
Colorado	Narrow									
Connecticut	Narrow							Broad		
Delaware	Broad									
District of Columbia	None									Broad
Florida	None		Narrow							Broad
Georgia	Narrow						Broad			
Guam	None							Broad		
Hawaii	Narrow									
Idaho	None							Broad		
Illinois	None									Broad
Indiana	Narrow									
Iowa	None									
Kansas	Narrow									
Kentucky	Narrow								Broad	
Louisiana	Narrow								Broad	
Maine	Broad									
Maryland	Broad									
Massachusetts	Broad									
Michigan	Broad									
Minnesota	Narrow					Broad				
Mississippi	None									Broad
Missouri	Narrow									

Figure: Categorical Eligibility

# Appendix

State	Year and Type of Expanded Categorical Eligibility									
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Montana	None								Broad	
Nebraska	None		Narrow							
Nevada	Narrow								Broad	
New Hampshire	Narrow								Broad	
New Jersey	Narrow									Broad
New Mexico	Narrow									Broad
New York	None							Broad		
North Carolina	Narrow									Broad
North Dakota	Broad									
Ohio	Narrow								Broad	
Oklahoma	Narrow								Broad	
Oregon	Broad									
Pennsylvania	Narrow								Broad	
Rhode Island	None								Broad	
South Carolina	Broad									
South Dakota	None					Narrow				
Tennessee	Narrow									
Texas	None	Broad								
Utah	Narrow									
Vermont	Narrow								Broad	
Virgin Islands	None								Broad	
Virginia	Narrow									
Washington	None			Broad						
West Virginia	Narrow								Broad	
Wisconsin	Narrow			Broad						
Wyoming	None									
Total Broad	8	9	9	11	11	12	13	15	29	39
Total Narrow	28	28	30	29	29	29	28	27	18	12
Total None	17	16	14	13	13	12	12	11	6	2
Total States	53	53	53	53	53	53	53	53	53	53

# Appendix

## 2021 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA

 PERSONS IN FAMILY/HOUSEHOLD	 POVERTY GUIDELINE
1	\$12,880
2	\$17,420
3	\$21,960
4	\$26,500
5	\$31,040
6	\$35,580
7	\$40,120
8	\$44,660
For families/households with more than 8 persons, add \$4,540 for each additional person.	

**Figure: 2021 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA**