

# Frontloading the Unemployment Benefits: An Empirical Assessment

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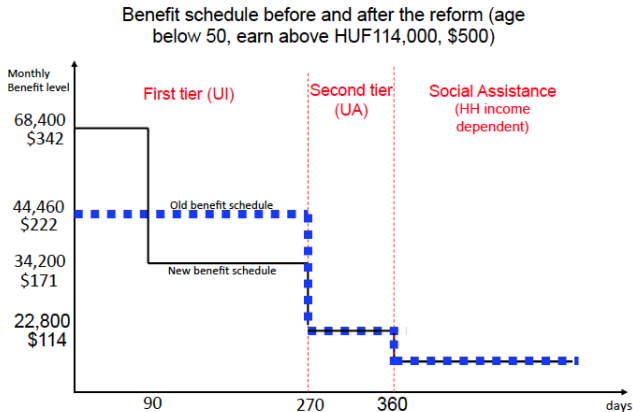
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# Motivation

- ▶ Unemployment: levels are high and spells are long.
- ▶ Policy makers focused on reducing duration of unemployment.
- ▶ Theory suggests that changing the benefit path changes may be appealing, but there is little empirical evidence.
- ▶ We show that frontloading the benefit scheme can get people back to work faster, with only a small increase (if any) in government expenses.

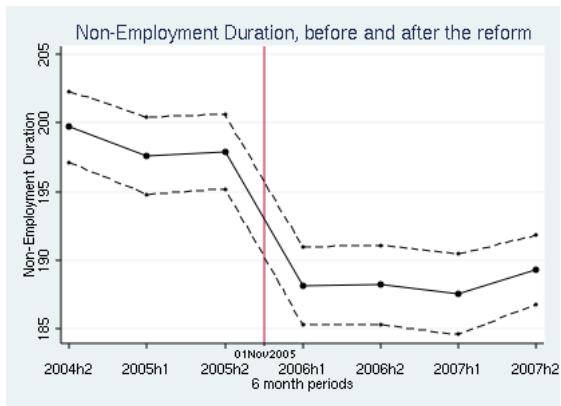
# Research Question

- ▶ Does frontloading the UI benefit substantially decrease unemployment duration?



Eligible for 270 days, base salary is higher than 114,000HUF

# Preview of Results



Note: Nonemployment duration is capped at 270 days.

# Outline of the Presentation

- ▶ Estimate the effect of frontloading on nonemployment duration by comparing UI claimants before and after the reform.
- ▶ Unfortunately, two policies were introduced at the same time:
  1. Frontloading the benefit path
  2. Voluntary reemployment bonus scheme
- ▶ We show some suggesting evidence that frontloading drives the effect of the reform rather than RB because
  - ▶ No systematic variation between RB take-up rate and the effect of the reform.

# Outline of the Presentation

- ▶ Literature
- ▶ Institutional details
- ▶ Data
- ▶ Identification strategy
- ▶ Results
- ▶ Discussion

# Literature

- ▶ There is extensive theoretical literature about the optimal benefit path (Shawell and Weiss, 1979; Hopenhayn and Nicolini, 1997; Werning, 2002).
  - ▶ But no empirical evidence on how benefit path changes behavior.
- ▶ Reemployment Bonus is an alternative way to motivate people to find a job.
  - ▶ Extensive literature on evaluating experiments in Illinois, New Jersey, Washington and Pennsylvania.
    - ▶ Somewhat mixed evidence, but most studies found small, or modest responses to reemployment bonus (see e.g. Robins and Spiegelman, 2003)
  - ▶ Hyun Ah Kim et. al. (2009) studies an RB program in South Korea and find no effect.
  - ▶ Van der Klauw and van Ours (2010) evaluate an RB policy offered to welfare recipients and find no effect.

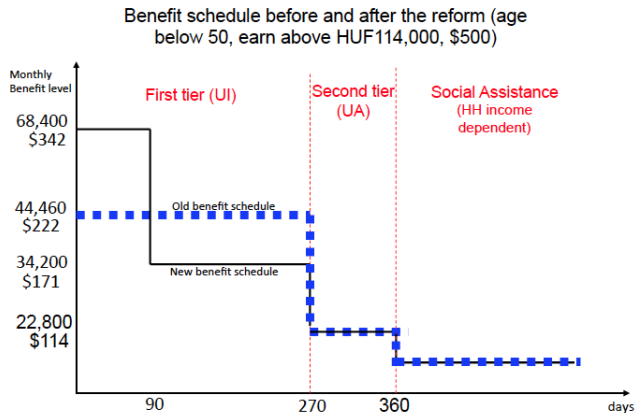
# The reform was introduced on November 1st, 2005

Those who claimed UI after November 1st, 2005 faced with two important differences:

1. The benefit path changed.
2. A voluntary reemployment bonus (RB) scheme was introduced.



# Benefit path before and after the reform (for high-income UI claimants)



Eligible for 270 days, base salary is higher than 114,000HUF

Note: Those who claimed UI benefit before February 1st, 2005 had longer eligibility of UA in the second tier.

# Reemployment Bonus

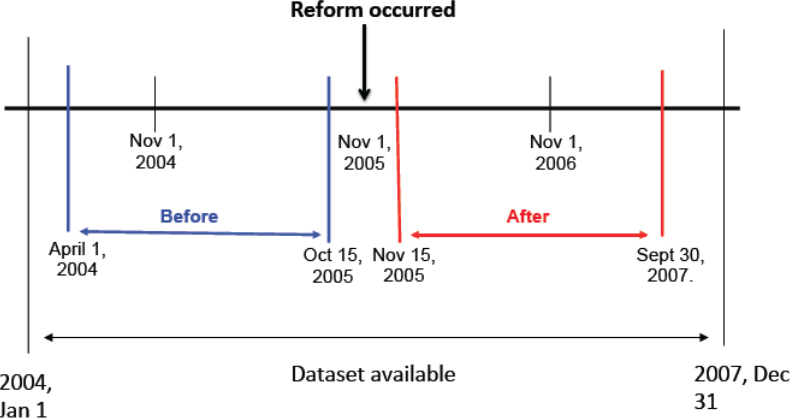
## 2. Reemployment Bonus (RB) in the first tier:

- ▶ If a UI claimant found a job with a **permanent contract** within 270 days, he was eligible to claim RB.
- ▶ The amount of RB was **half of the total benefits remaining** from the 270 days of eligibility.
- ▶ Claiming RB was voluntary, however, if it was claimed and paid, the entitlement for **the remaining insurance days were lost**.
- ▶ The RB was not paid out immediately.
  - ▶ RB users had to wait until their potential UI benefit exhaustion date (the date when the person would have exhausted her benefits if she had not found a job).
  - ▶ In addition to that, RB was paid out only if the claimant was able to keep his job until the pay-out day.

# Data

- ▶ We use the administrative data set that covers half of all UI benefit claimants in Hungary between 2004 and 2008.
- ▶ The sample was randomly selected based on date of birth.
  - ▶ People born on every 2nd day within a month are selected.
- ▶ We restrict our sample to
  - ▶ UI claimants between 25-49 years old
  - ▶ Eligible for 270 days of UI payment in the first tier
  - ▶ UI base is above the 70th percentile in 2005 (100,000 HUF)

# Definition of “Before” and “After”



# Summary Statistics

	before	after	diff	t-stat
female	42% (0.004)	44% (0.004)	0.17%	2.89
age	36.7 (0.06)	36.6 (0.06)	-0.18	-2.06
log earnings in 2002	11.08 (0.02)	10.92 (0.02)	-0.16	-5.52
log earnings in 2003	11.33 (0.017)	11.26 (0.017)	-0.07	-2.77
waiting period*	29.4 (0.45)	29.3 (0.51)	-0.12	-0.29
reemp bonus (1 tier) claimed	0	11% (0)	0.11	28.95
participate in training	0	3.4% (0.001)	0.03	22.47
inconsistent observations	2.2% (0.001)	2.1% (0.002)	-0.001	0.67
Number of observations**	14081	15849		

\* number of days between job loss and UI claim

\*\* for log earnings in 2002, 2003, 2004 there are some missing values.

# Nonemployment duration before and after the reform

$$\text{nonemployment}_i = \alpha + \beta_i \text{after}_i + \gamma X + \varepsilon_i$$

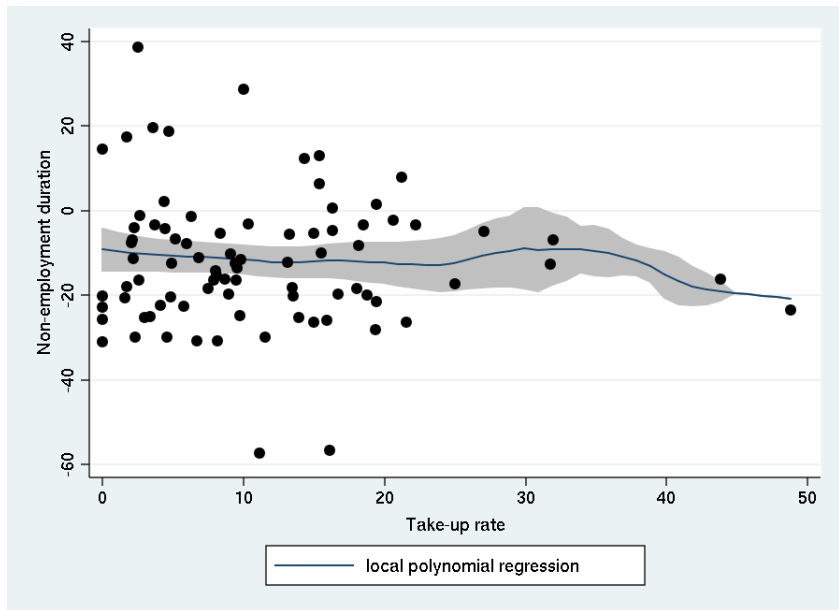
VARIABLES	(1) nonemployment <sup>+</sup> (days)	(2) nonemployment <sup>+</sup> (days)	(3) nonemployment <sup>+</sup> (days)
after	-10.40*** (1.087)	-10.93*** (1.08)	-11.78*** (1.122)
controls	no	yes	yes
location FE	no	no	yes
Observations	29,930	29,930	29,930
R-squared	0.003	0.035	0.05

Clustered standard errors by UI take-up locations in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>+</sup>nonemployment capped at 270 days

## The effect of the reform is not related to take-up rate



## Back-of-the-Envelope Calculations

- ▶ The cost of the reform was 22000 HUF (\$100) per UI claimant or 2 weeks of UI benefit
- ▶ Saving because of behavioral responses:
  - ▶ The reform decreased nonemployment duration by 10 days, or 1.5 weeks
  - ▶ The average reemployment wage was 0.9 of the previous wage, which is equivalent with 1.5 weekly benefits
  - ▶ The government collects 50% tax on this wage → equivalent with around 0.75 weeks of benefit
  - ▶ Altogether around  $1.5 + 0.75 = 2.25$  weeks of benefit



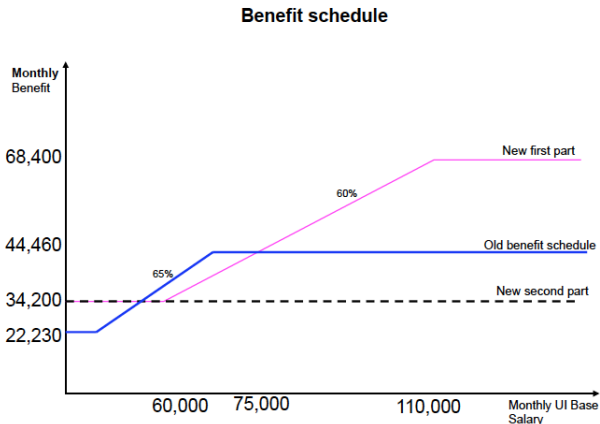
# Conclusion

- ▶ We provided empirical evidence on the effect of frontloading in Hungary.
- ▶ Our estimates suggest that frontloading has a big enough effect on behavior to be revenue neutral.
- ▶ Our estimated effect seems to be large compared to other comparable policies evaluated in the literature.
- ▶ One explanation for these large effects is that the drop in benefit induces big behavioral responses.
- ▶ This explanation is explored in a paper with Stefano DellaVigna and Johannes Schmieider.

# Appendix

## APPENDIX

# Benefit-wage schedule before and after

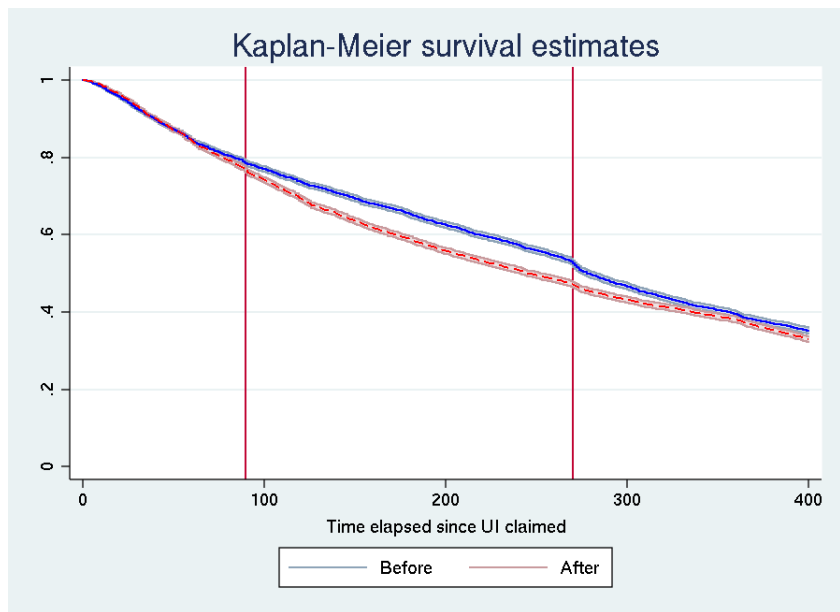


**UI Base:** average monthly salary in the last 4 calendar quarter before job loss. Only those months are considered in which the UI claimant worked during the whole month

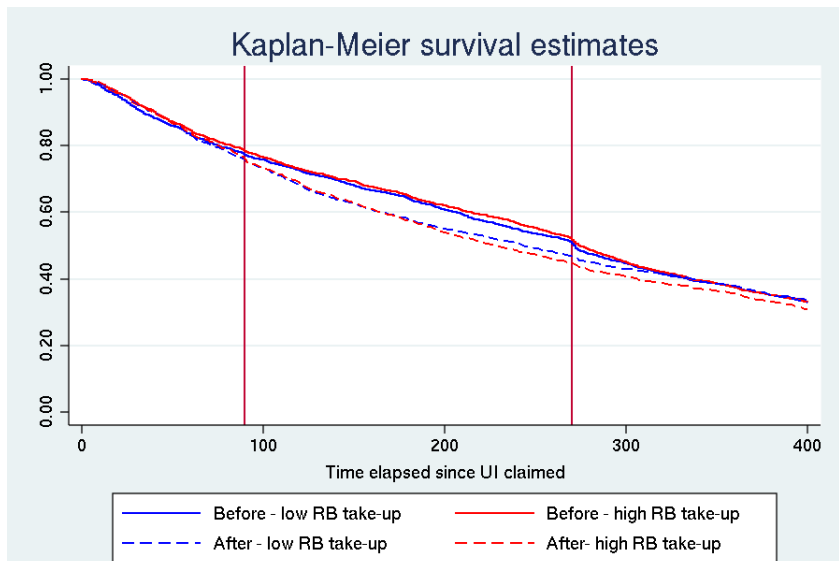
**Potential Duration:** Number of working days in the last 4 years divided by 5, max 270 days

Note: Conditional on being eligible for 270 days of UI.

## Analyzing the total effect of the reform



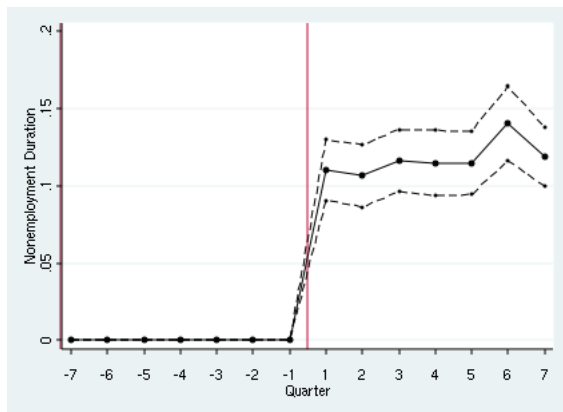
# The Effect of the reform by high take-up rate and low take-up rate locations



# The Role of the Reemployment Bonus

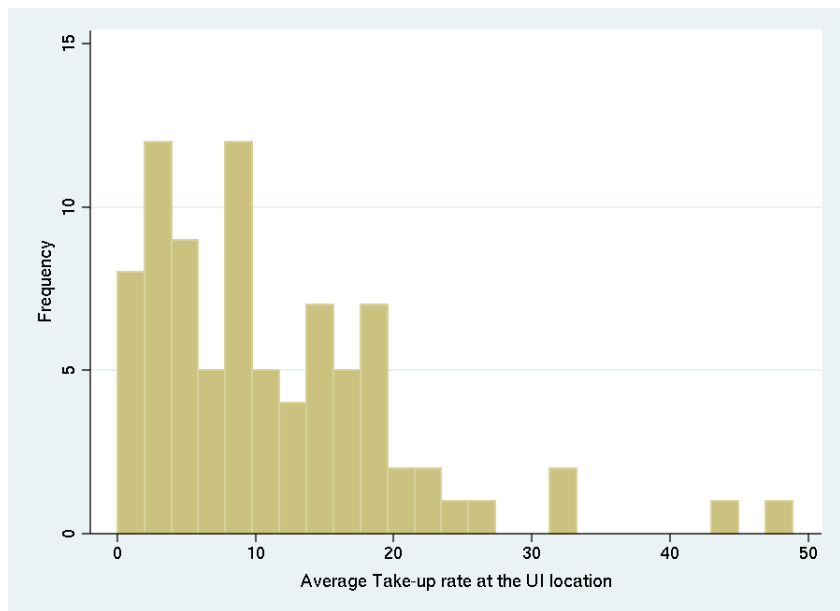
- ▶ Take-up rate varies a lot by location
  - ▶ UI offices with less than 30 UI claimants eligible for RB are dropped
  - ▶ 16% of the observations are lost
- ▶ We exploit this variation and show that lower take-up rate locations are affected in the same way by the RB.

# Reemployment Bonus Take-up Rate



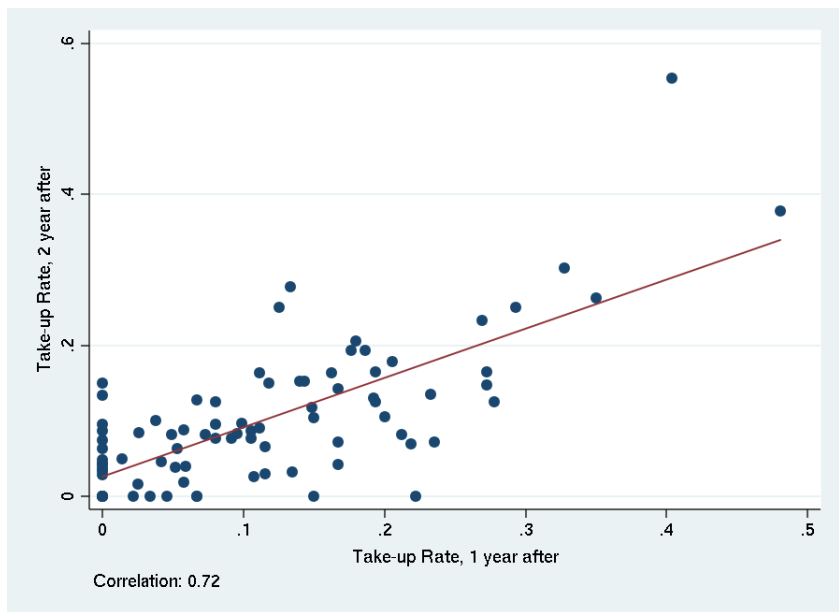
Conditional on finding a job within 270 days.

## RB take-up rate varies a lot by location



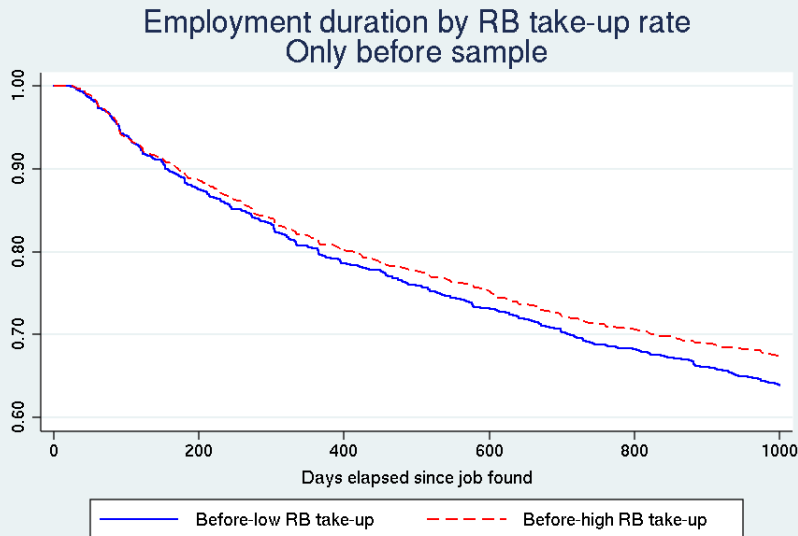


These differences are persistent



## Why does take-up rate vary?

Job stability may be different:



failure event is the first month when unemployed do not works

## The effect of RB does not vary with take-up rate

We run the following regression:

$$\text{nonemployment}_i = \alpha + \beta_{FL} \text{after}_i + \beta_{PreRB} \text{HIGH}_i + \beta_{RB} \text{HIGH}_i * \text{after}_i + \varepsilon_i,$$

where

- ▶  $\text{nonemployment}_i = \begin{cases} \text{nonemployment} & \text{if } \text{nonemployment} < 270 \\ 270 & \text{if } \text{nonemployment} \geq 270 \end{cases}$
- ▶  $\text{HIGH}_i$  is “high-take up rate” location dummy
  - ▶ More than 30 UI claimants eligible for RB after the reform
  - ▶  $\text{HIGH}_i = 1$  if local take-up rate is more than 16.2% (highest quartile take-up rate)
  - ▶  $\text{HIGH}_i = 0$  if local take-up rate is less than 4.6% (lowest quartile take-up rate)

# Estimation results

VARIABLES	(1) nonemployment <sup>†</sup> (days)	(2) nonemployment <sup>†</sup> (days)	(3) nonemployment <sup>†</sup> (days)
after	-10.97*** (1.215)	-8.505*** (2.712)	-10.07*** (2.777)
high		3.036 (3.929)	2.013 (3.526)
after*high		-3.944 (3.545)	-3.183 (3.752)
controls	no	no	yes
Observations	24,960	12,009	12,009
R-squared	0.003	0.003	0.036

Clustered standard errors by UI take-up locations in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

<sup>†</sup>nonemployment capped at 270 days

## Robustness check

We run the following regression:

$$\text{Nonemployment}_i = \alpha + \beta_{FL} \text{after}_i + \beta_{PreRB} \text{takeup}_i + \beta_{RB} \text{takeup}_i * \text{after}_i + \varepsilon_i$$

where,

- ▶  $\text{nonemployment}_i = \begin{cases} \text{nonemployment} & \text{if nonemployment} < 270 \\ 270 & \text{if nonemployment} \geq 270 \end{cases}$
- ▶  $\text{takeup}_i$  is the local level take-up rate

# Robustness check results

VARIABLES	(1) nonemployment* (days)	(2) nonemployment* (days)	(3) nonemployment* (days)	(4) nonemployment* (days)
after	-9.941*** (1.856)	-10.68*** (1.868)	-9.895*** (2.884)	-10.80*** (3.020)
takeup	-0.0558 (0.176)	-0.0689 (0.148)	0.301 (0.383)	0.347 (0.327)
after*takeup	-0.0896 (0.0993)	-0.0670 (0.104)	-0.0848 (0.344)	-0.0296 (0.365)
takeup^2			-0.00874 (0.00929)	-0.0102 (0.00733)
after*takeup^2			-0.000613 (0.00701)	-0.00152 (0.00743)
control	no	yes	no	yes
Observations	24,960	24,960	24,960	24,960
R-squared	0.004	0.034	0.004	0.034

Standard errors clustered at UI location level

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

\*nonemployment capped at 270 days

# Event Study for income

