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Estimating the Effects of Extended Unemployment Insurance Benefits during the Great Recession: Evidence from Kentucky

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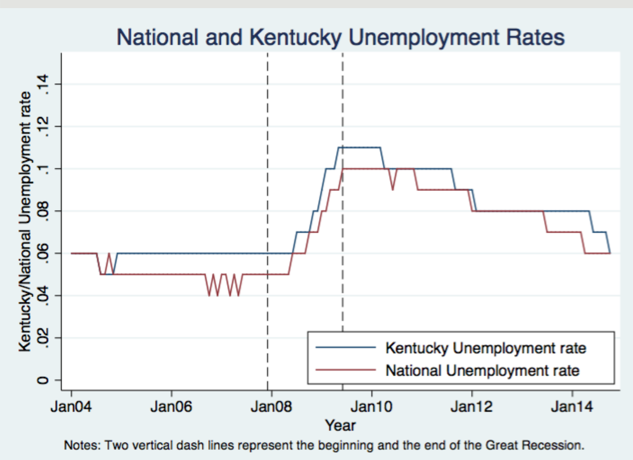
Introduction and Motivation

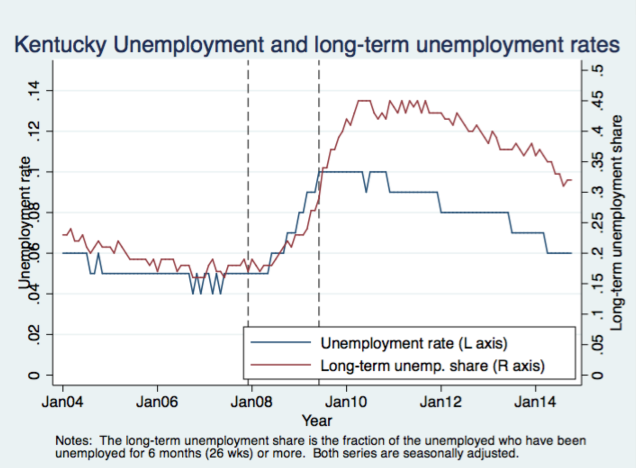
✧ An important policy response to the Great Recession was a extension of the Unemployment Insurance (UI) benefit. Regular UI benefits last up to 26 week. The temporary Emergency Unemployment Compensation (EUC) extended the maximum benefit duration to 99 weeks during and after the Great Recession.

✧ Recent analyses that use the Current Population Survey (CPS) data have found very small effects of the recent UI extension on the reemployment rates.

✧ Most concerns stem from the measurement error in the CPS data, which could bias the estimates largely. I use administrative data from Kentucky unemployment insurance program, which provide accurate information of UI claimants, to investigate the effects of extended benefits on unemployment exit rates.

Labor Market over the Great Recession





- The national unemployment rate rose from 6% to 10% at the beginning of the Great Recession, and has fallen below 9% since 2012 Jan.
- The unemployment rate of Kentucky is always higher than the national level.
- The share of long-term unemployed started rising rapidly in late 2008 and spiked at 2010 Jan, indicating an extreme weakening of labor demand.

EUC Legal Changes

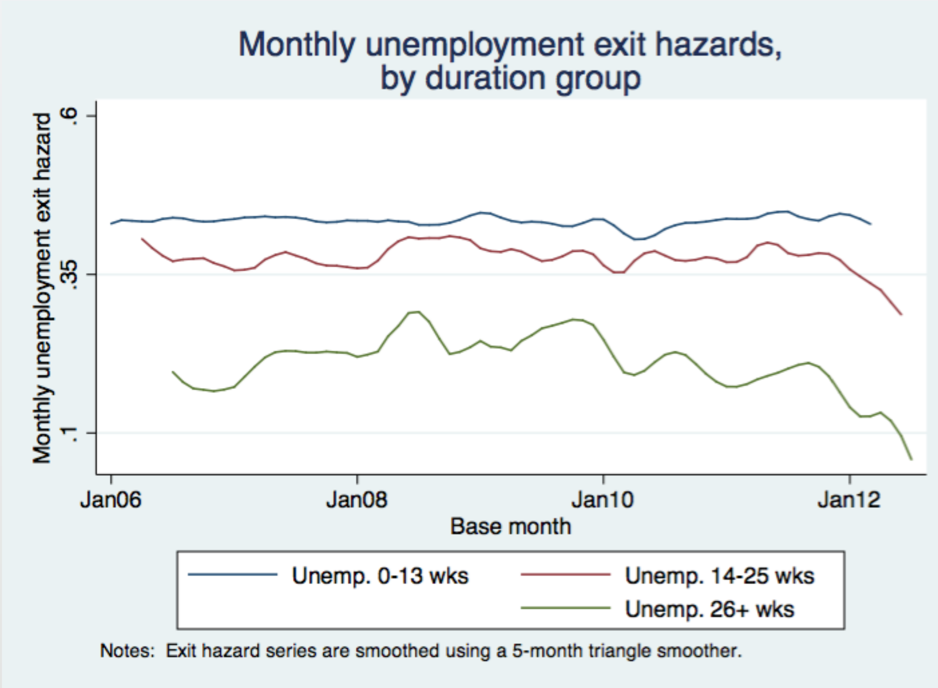
Approved Date	Cover weeks of unemployment	# of benefit weeks added in			
6/30/08	7/6/2008-3/28/2009	+13			
11/21/08	11/23/2008-3/28/2009	+20	+13		
2/17/09	2/22/2009-12/26/2009	+20	+13		
11/6/09	11/8/2009-12/26/2009	+20	+14	+13	+6
12/19/09	12/27/2009-2/27/2010	+20	+14	+13	+6
3/2/10	2/28/2010-4/3/2010	+20	+14	+13	+6
4/15/10	Retroactively funds EUC - 4/4/2010-5/29/2010	+20	+14	+13	+6
7/22/10	Retroactively funds EUC - 5/30/2010-11/27/2010	+20	+14	+13	+6
12/17/10	11/28/2010-12/31/2011	+20	+14	+13	+6

Data Summary

Data		
All sampled unemployed	N=81,772	
Claims	118,000	
	before EUC legislated	after EUC legislated
# Claims filed	5,786	112,214
Share of state UI	100.00%	73.77%
Share of EUC	0.00%	17.76%
Share of EB	0.00%	8.47%
Average of total benefit weeks used	10.40	29.23
Share 0-13 weeks	65.76%	36.95%
Share 14-26 weeks	34.24%	21.22%
Share 27-79 weeks	0.00%	36.20%
Share 80-99 weeks	0.00%	5.63%
Average of anticipated weeks of benefits	15.60	31.92
Exhaustion Rate	28.02%	12.60%
Exit Rate for jobs	70.53%	67.40%

✧ Data from the Kentucky Office of employment and Training (Jan. 2006 - Dec. 2011)

✧ Quarterly records: prior wages, age, gender, ethnicity, reason for separation from employer, geographic location of residence, geographic location of place of work, employer NAICS code, the level of education, veteran status, and school enrollment.



Empirical Strategies and Results

✧ Assuming that the weekly hazard of leaving UI for a job follows a logistic functional form, I use two specifications from Rothstein(2011) to investigate the overall effects of longer unemployment benefit entitlements on the probability of exiting to employment.

✧ I develop specifications which intend to identify effects of the change coming from the evolution of the EUC on the probability of exiting to employment.

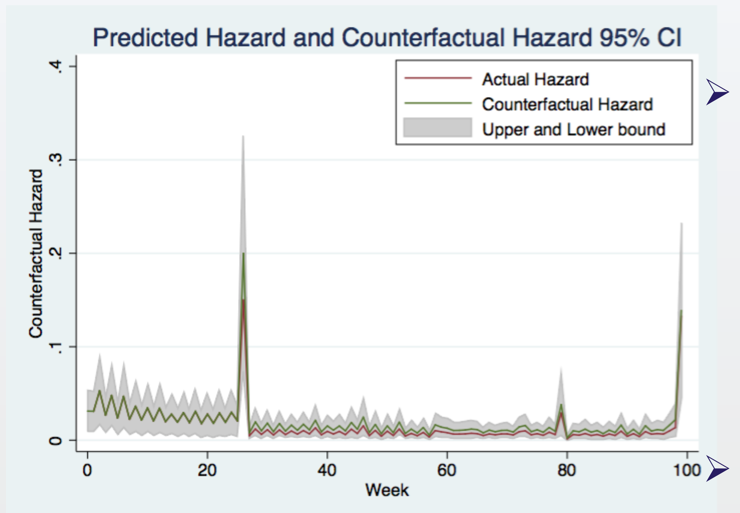
Result Table				
Independent Variables	(1)	(2)	(3)	(4)
# of total benefit wks	-0.00998***			
	(0.0006)			
# of total benefit wks (if unemp duration <26)		0.00247***		
		(0.0006)		
# of total benefit wks (if unemp duration>=26)		-0.0336***		
		(0.0007)		
# remaining benefit wks			-0.00198***	
			(0.0006)	
# of remaining wks changed				-0.00338*
				(0.0020)
(#wks remainins at t-1) *(# wks changed)				0.000198***
				(0.0001)
Controls				
Monthly FE	Y	Y	Y	Y
Demographic info.	Y	Y	Y	Y
Insured unem rate	cubic	cubic	cubic	cubic
New UI claims rate	cubic	cubic	cubic	cubic
Base line				
# of used wks	-0.0373***	-0.0730***		
	(0.0010)	(0.0014)		
1(used wks=0)	1.961***	2.625***		
	(0.0654)	(0.0730)		
(used wks) ^2	0.000291***	0.000668***		
	0.0000	0.0000		
1/ (used wks)	-0.477***	-0.953***		
	(0.0383)	(0.0437)		
dummies for unem duraions			Y	Y
Observations	3,045,432	3,045,432	3,045,432	2,927,453

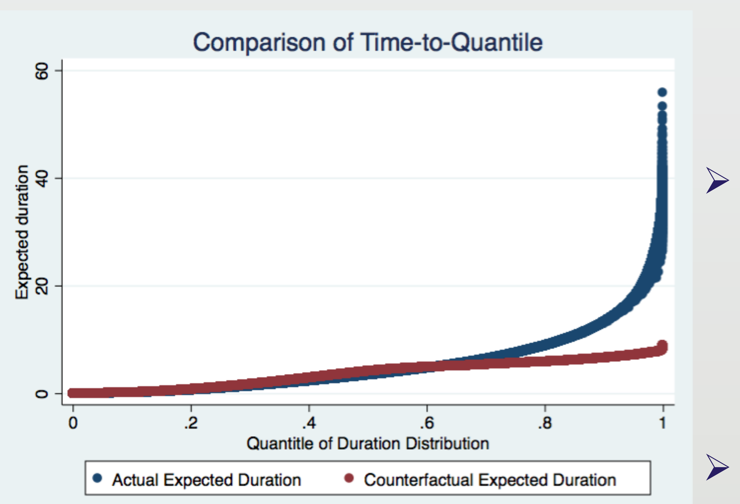
Main Findings

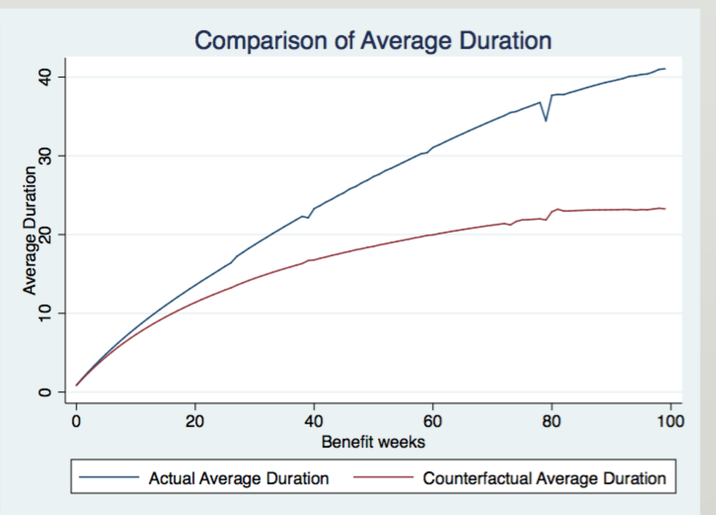
- The more total benefit weeks available, the less likely an unemployed person will find a job at a given period.
- As total benefit weeks increasing, the exit hazards start to climb for short-term unemployed workers. For long−term unemployed individuals, their exit hazards diminishes as the total benefit weeks becoming larger.
- Higher expected remaining benefit induces lower exit rates for employment, which implies that the more extensions unemployed workers are eligible for, the lower job search effort they would exert.
- UI extension has negative effect on the probability of exiting for jobs.
- If the extra benefit weeks were added in at the beginning of the unemployment spell, the extension could accelerate the rates of exiting for jobs; however, if the benefit changes happened at the end of the UI, the exit rates will be falling.

- Relative to other races, white workers have lower hazard rates.
- Male unemployed individuals have higher exit hazards than female benefit claimants.
- More education often associated with higher job finding rates: relative to individuals whose education levels are lower than high school, more educated workers are more likely to reemployed.
- Relative to individuals who are less than 25 years old, people with higher ages are more difficult to leave UI for jobs.

Counterfactual Study and Simulation Results







- In the counterfactual study, I assume that there is no extension for each unemployed individual, and the maximum benefit weeks they could claim is 26 week.
- The extension of UI decreases the exit hazards for jobs by 0.01 to 0.03, and decrease the overall exit hazards by 0.07 to 0.2
- I simulate the expected unemployment durations under two scenarios - with extensions and without extensions.
- Extended benefits have larger effect on the duration of unemployment at higher quantiles than at lower quantiles of UI spells. On average, having one more week of UI benefit, the unemployment duration will be extended by 0.4 week.

Robustness Check

✧ Complementary log-log model
- ✓ Given the extreme value distribution assumption, this model produces similar estimates as logit model.

✧ Cox Proportional hazard model.
- ✓ Assume a Gamma distribution for unobserved heterogeneity.
- ✓ Treating unobserved heterogeneity non-parametrically.
- ✓ Results from both models suggest that there is no heterogeneity issue in my specifications.

Conclusion

- My estimates confirm that increasing unemployment benefits decreases job-finding rates and prolongs unemployment durations, consistent with the prediction of the standard job search model.
- My counterfactual results are higher than those from the previous literature that uses the Current Population Survey (CPS) to study the Great Recession.
- My simulation results are in line with previous literature which study other historical extended UI programs.