Comments on "Quasi-Experimental Evidence on the Effects of Unemployment Insurance from New York State" by Bruce Meyer and Wallace Mok

Manuel Arellano

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Introduction

- A nice paper showing a convincing natural experiment. It looks at effects of UI on unemployment durations paying careful attention to the validity of identification sources.
- I do not have much to add on the empirical analysis.
- After a brief summary I will focus on the interpretation of the effects.
- I will also discuss some of the difficulties in trying to go beyond transitional effects of UI benefit increases on claim durations.

Summary

- The design is differences in differences: There are data before and after a reform that increased benefit payments, and there is a group of claimants unaffected by the reform.
- Administrative claim data for 1988 and 1989 are used (reform in April 89). All durations are censored at benefit exhaustion (26 weeks).
- Between 25% and 50% of job losers eligible for benefits in the US did not file claims.
- The goal is to obtain an estimate of duration effects of UI that is free from potential biases due to changes in claim filing.
- A critical aspect is to look at the durations of a group of (1st quarter) claimants whose decision to file could not have been influenced by the reform (i.e. ongoing claims).
- Linear, Tobit, and hazard estimates from 1st quarter are shown. Focus is not on specific econometric techniques but in drawing lessons from basic sources of variation in data.
- They find the hazard of ending UI claim falls by 6% for high earners after the reform.
- Puzzle: using data for claimants when the benefit increase was known (3rd and 4th quarters) yields wrong signed elasticities.
- A model of take-up suggests that variation following an increase in benefits may produce positive or negative biases on duration effects.
- The DID results for incidence and duration by quarter are very telling in this respect.

- The results come from an increase in benefits that took place in NYS 18 years ago. It is a selective pure increase in amounts that leave the duration of benefits unchanged.
- Recent concerns about the role of liquidity constraints in UI effects on search effort provides renewed interest in this natural experiment.
- The positive effects for new spells can be attributed to changes in the incidence of claims, but the finding of no effect for in-progress spells of individuals under 40 remains a puzzle.

The nature of the unanticipated causal effects of UI on durations

- The fact they are unanticipated means participation rates are not affected, but at each duration we get an effect for a different self-selected subpopulation of survivors.
- As a result it is not obvious how to reconstruct a meaningful distribution of durations or how to compare effects on average durations with others in the literature.
- To see the problem, imagine a straight before-after comparison and ignore for the time being take-up issues.
- Consider a (weekly) hazard function for the pre-intervention period (for spells ending before the reform):

$$h_0(1), h_0(2), ..., h_0(26)$$

and a hazard function for the post-intervention period (for job losers after the reform):

$$h_1(1), h_1(2), ..., h_1(26).$$

- Now, let the hazard of individuals who lost their job one week before the reform be

$$h_0(1), h_1^1(2), h_1^1(3), ..., h_1^1(26).$$

Similarly, for job losers 2, 3,..., up to 25 weeks before the reform, we get

$$h_0(1), h_0(2), h_1^2(3), h_1^2(4), ..., h_1^2(26)$$
$$h_0(1), h_0(2), h_0(3), h_1^3(4), ..., h_1^3(26)$$
$$\vdots$$
$$h_0(1), h_0(2), ..., h_0(25), h_1^{25}(26)$$

- What causal effects can be considered?
  - Long-term differences in hazards between the two regimes:
$$h_1(t) - h_0(t) \quad (t = 1, ..., 26)$$
  - but also transitional differences
$$\begin{aligned} &h_1^1(t) - h_0(t) \quad (t = 2, ..., 26) \\ &h_1^2(t) - h_0(t) \quad (t = 3, ..., 26) \\ &\vdots \\ &h_1^{25}(t) - h_0(t) \quad (t = 26) \end{aligned}$$
- The latter are causal effects as long as they result from exogenous changes, but the randomization is applied to subsamples of survivors in the UI system at different weeks.
- Without an economic model it is not clear how they would relate to post-transition effects.
- The concern is not so much with indirect effects through savings or job search that may be triggered by anticipation of the reform, but with the more basic fact that the effects are measured for different endogenously-selected subsamples at different weeks.
- The differences in results for the col.6 (Tables 7 & 8) estimates that use only spells beginning in the first six weeks of the year suggest that this problem matters. Alternatively, they could reflect differences in the effects at different durations.

A DID hazard model for potential durations in the absence of endogenous take-up

- There are two periods: pre- and post-reform (post-reform here means durations starting *after* April 89) and two types of job losers: affected and unaffected by the reform (high wage and low wage earners).
- We observe T, D, S:
  T =duration of claim
  D =low/high wage indicator
  S =before/after indicator
- The treatment indicator is $D \times S$.
- There are 4 potential duration outcomes $T_d(s)$ $(d, s = 0, 1)$ with densities $f(t; d, s)$. Realized outcomes are $T = T_D(S)$.
- A parametric-hazard DID approach assumes that the $f(t; d, s)$ have hazard functions of the form
$$h(\gamma_{0t} + \gamma_1 d + \gamma_2 s + \gamma_3 d \times s).$$
- A conditional likelihood model for the realized durations is
$$f_T(t \mid D = d, S = s) = f(t; d, s).$$
- A less parametric approach could be as in Athey and Imbens (2006).

Endogenous take-up

- A full evaluation of the effects of increased benefits on unemployment duration would require a model for both potential take-up outcomes and potential duration outcomes.
- Potential durations would be defined for both claimants and non-claimants. Expected potential claims are an important ingredient of the participation decision.
- A precondition for this setup to have empirical content is that we observe claim status and durations for both claimants and non-claimants.
- In this paper only individual data on claimants are available, but there are also available data on incidence by quarter and earnings group.
- We would be in the context of models with endogenous selection and would probably need a very different specification of potential outcomes.

What this paper does

- To exploit the fact that the reform was applied to ongoing claims in order to avoid incidence effects, applying the DID hazard approach to ongoing durations.
- By doing so
  - (i) we are conditioning potential outcomes on participation in the pre-reform period, and
  - (ii) we are calculating causal effects for self-selected samples of survivors at different durations.

Trying to go beyond transitional effects

- Can one extend the parametric DID approach to the remaining quarters (2nd to 4th) in combination with data on incidence to estimate non-transitional effects?
- Suppose every job loser claiming under the old regime also claims under the new. This is reasonable because no one is made worse off by the reform.
- Set $\eta = 0$ for claimants under both regimes and $\eta = 1$ for claimants under the new regime only.
- Consider treatment effects conditioned on $\eta = 0$. This is not quite what we would like but it is in the spirit of what is attempted in the paper.
- Thus, the density $f_T(t \mid D = d, S = 0)$ is reinterpreted as $f_T(t \mid D = d, S = 0, \eta = 0)$.
- However, we expect $f_T(t \mid D = d, S = 1) \neq f_T(t \mid D = d, S = 1, \eta = 0)$ because in the $S = 1$ data there are both $\eta = 0$ and $\eta = 1$ individuals.
- In fact,

$$\begin{aligned} & f_T(t \mid D = d, S = 1) \\ = \; & f_T(t \mid D = d, S = 1, \eta = 0)(1 - p_d) + f_T(t \mid D = d, S = 1, \eta = 1)\, p_d \end{aligned}$$

  where

$$p_d = \Pr(\eta = 1 \mid D = d, S = 1).$$

- Suppose that p_d is identified from the incidence data.

- As before, assume that $f_T\left(t \mid D=d, S=s, \eta=0\right)$ has a hazard function of the form
$$h\left(\gamma_{0t}+\gamma_1 d+\gamma_2 s+\gamma_3 d \times s\right)$$
- and that $f_T\left(t \mid D=d, S=1, \eta=1\right)$ has a hazard function of the form
$$h\left(\delta_{0t}+\delta_1 d\right).$$
- The incentives to claim by low-wage job losers are unaffected by the reform. So p_d for this group purely reflects changes in macro conditions.

Adding in-progress spells

- For ongoing spells, low-wage claimants' hazards are unaffected.
- As for high-wage claimants's hazards: let c be the intervening number of weeks between job loss and the reform. A possible model is

$$h\left[(\gamma_{0t}+\gamma_1)+\gamma_2 s+\sum\nolimits_{j=1}^{m-1}\gamma_{3j}1\left(t=c+j\right)+\gamma_3 s\times 1\left(t\geq c+m\right)\right]$$

- That is, it specifies that transitional effects last for m weeks.
- As long as the choice of m does not saturate the model, the data on the ongoing spells will contain information on non-transition effects at long durations.
- The parameters γ_{3j} measure transitional effects of the reform and γ_3 measures the effect for new spells, all for $\eta=0$ individuals.
- The procedure is parametric. If the model is linear and ongoing spells contribute no information on γ_3, it may not be possible to distinguish between γ_3 and δ_1. More generally, a nonparametric distributional DID assumption would lead to set identification.
- A worry is that if the specification of $f_T\left(t\mid D=d,S=1,\eta=1\right)$ is sufficiently general, all the information on γ_3 will come from the in-progress spells, as long as we assume there is any.
- There does not seem to be obvious robust information on non-transitional effects in these data, and the transitional effects are conditional on endogenous selection.

Other comments

- If there are individuals that file claims in both years they could be used to separate the effect of changes in incidence.
- There are half-million claims per year. What is the incidence of multiple claims?