

Firms and Unemployment Insurance Take-up

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July 2021

Background and motivation

In the U.S., unemployment insurance (UI) has dual goals:

- ▶ Smooth consumption of job losers (payments to workers)
- ▶ Automatic stabilizer (experienced rated: claims $\uparrow \Rightarrow$ tax rate $\uparrow \Rightarrow$ a layoff tax)

UI take-up is incomplete:

- ▶ Undermines both goals
 - ▶ Workers do not receive benefits
 - ▶ Firms perceive laying off workers to be less costly

Why is UI take-up incomplete?

Standard focus of studies: individual-level factors

- ▶ Incentives (e.g., Anderson and Meyer (1997)), information (e.g., Vroman (2009)), hassle (e.g., Ebenstein and Stange (2010))

Novelty of this paper: **firm-level** factors are also very important

What we do: two-way fixed effects estimator on administrative data from Washington State

- ▶ Relative importance of firm to individual effects in claims larger than for wages
- ▶ Moving below median firms to median level: claims up 12%

Why and how would firms affect UI take-up?

Why: b/c of experience rating firms care whether workers collect

How: appeal claims

- ▶ Industry devoted to managing unemployment claims (Association of Unemployment Tax Organizations; Equifax Workforce Solutions)
- ▶ Interviews with job losers suggests different firm attitudes: helping to neglect to actively dissuading (Gould-Werth (2016))

What we show:

- ▶ Firm effects in appeals of UI claims
- ▶ Firm effects in appeals negatively related to those in claims \Rightarrow deterrence effects

Quantify a simple model: financing of UI affects take-up and targeting (Kleven and Kopczuk (2011), Auray and Fuller (2020))

Outline

- ▶ Policy background, data, and summary statistics
- ▶ Firm effects in UI take-up and appeals
- ▶ Link to (im)perfect competition
- ▶ A model of experience rating and UI take-up and targeting

UI background

UI eligibility:

- ▶ “Monetary” eligibility (in WA, an hours requirement)
- ▶ Non-monetary eligibility: separate through “no fault of your own”
 - ▶ Ambiguity and basis of appeals

UI financing in Washington State:

- ▶ Tax rate depends on last four years of UI charges (UI received by past workers) at the firm
- ▶ On the “sloped” part of the schedule, extra \$1 in claims a year \Rightarrow taxes \uparrow by \approx \$1 a year
 - ▶ If there are enough charges, then tax rate stops increasing (“flat” part of the schedule)

Data

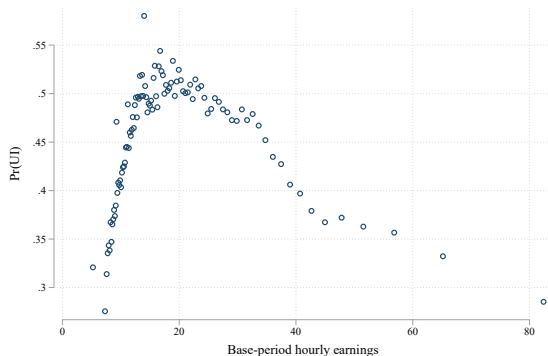
Administrative data from Washington State: 2005-2013

- ▶ Earnings and hours records: monetary eligibility exactly
- ▶ Whether worker filed
- ▶ Whether firm appealed
- ▶ Whether worker collected

Observe numerator (who claimed), tricky thing is the denominator (who was eligible)

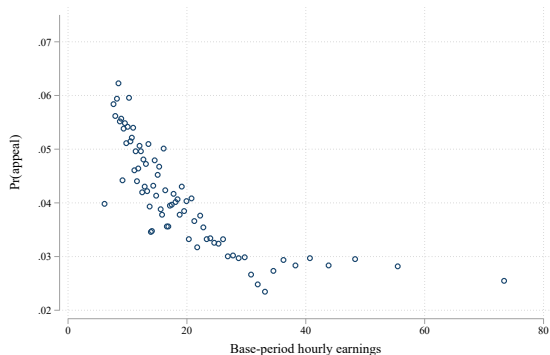
- ▶ Follow Anderson and Meyer (1997) with some refinements (▶ [Details](#))

Take-up rate by income



- ▶ Average take-up rate: 45% (Anderson and Meyer (1997, Table 3): 39.1%)
 - ▶ Lower than estimates following Blank and Card (1991) using CPS to determine eligibility
- ▶ Inverted-u
 - ▶ 20 percentage points from 1st to 5th decile of wages
 - ▶ Downward part is correlated with declining replacement rates (▶ [Figure](#))

Appeals rate by income



- ▶ Striking pattern by income: falls by half from 1st to 5th decile of wages
- ▶ Negative relationship with claims \Rightarrow consistent w/deterrence effects

Outline

- ▶ Policy background, data, and summary statistics
 - ▶ Administrative data from 2005-2013
 - ▶ Incomplete take-up
 - ▶ Stark income gradients in claims and appeals
- ▶ Firm effects in UI take-up and appeals
- ▶ Link to (im)perfect competition
- ▶ A model of experience rating and UI take-up and targeting

Empirical model of claiming

$$c_{ij} = \alpha_i + \psi_j + \epsilon_{ij},$$

- ▶ α_i is person effect
- ▶ $\psi_{j(i)}$ is firm effect

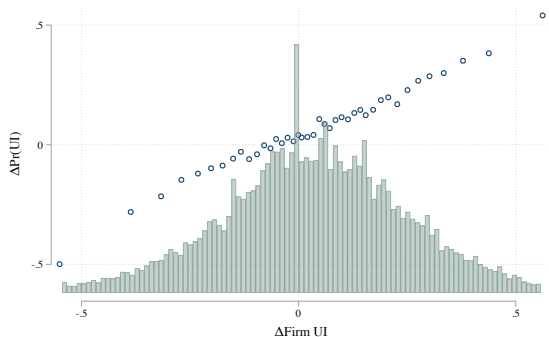
Central economic concern: endogenous mobility (people choose firms based on ϵ_{ij})

- ▶ Sample construction: spells are connected by U
- ▶ Balance in mobility
- ▶ Symmetry in changes

Central statistical concern: limited mobility bias

- ▶ Report Kline, Saggio and Solvesten (2020) bias-corrected variance components

The role of firms in UI claims

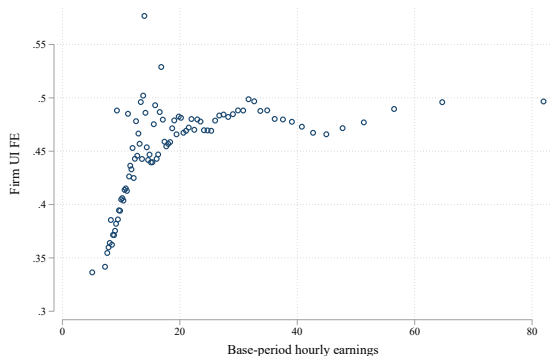


71,000 twice-eligible worker; shrunken
leave-one-out, w/o controlling for person
f.e. ([▶ Details](#))

- ▶ Balanced and symmetric
- ▶ Slope: 0.82
- ▶ **Two-way fixed effect results:**
- ▶ Variance (std) of firm effect: 0.022 (0.15)
- ▶ Variance of person effect: 0.049
- ▶ $\frac{\text{var}(\text{firm f.e.})}{\text{var}(\text{person f.e.})} = \frac{0.022}{0.049} \approx 45\%$ (20% for hourly wages)
- ▶ Move below-median to median firm effect (use dist.): raise take-up by 6 p.p. (12%)

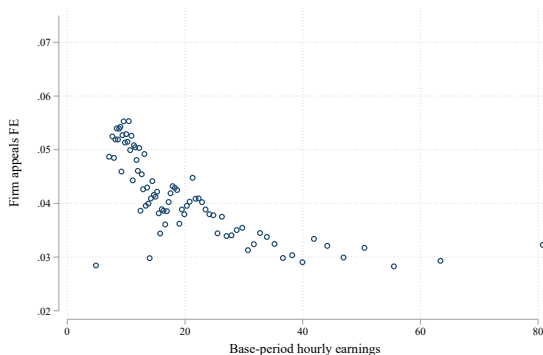
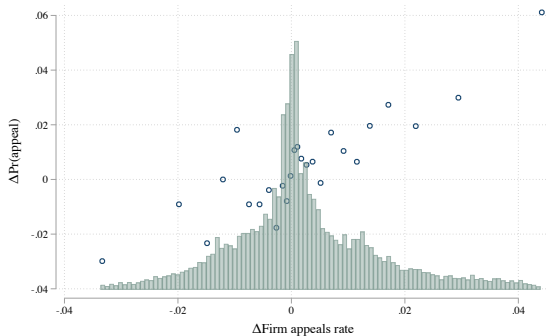
[▶ Details](#)

Individual income and firm effects in claiming remarkably related



- ▶ Surprisingly similar to the individual-level graph at the bottom of the income distribution
- ▶ Regress firm effects on income deciles: 1st to 5th decile is 60% of the individual-level slope

Firm effects and income gradient in appeals

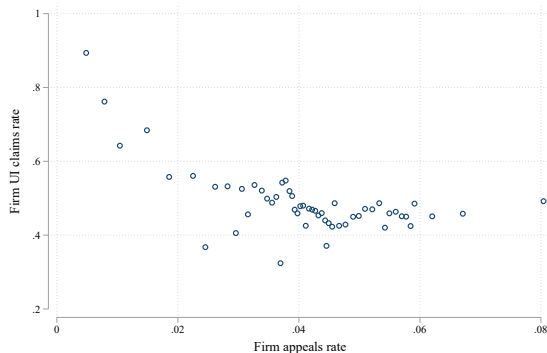


- ▶ 21,000 twice-claiming workers
- ▶ Coefficient: 1.08; Mean: 0.037
- ▶ Var. (stdev.) of **firm**/worker effects:
0.0009/ 0.0011 (**0.03**)

- ▶ Similar to the individual-level graph
- ▶ 1st to 5th decile, 3/4 of the individual slope

Negative relationship between firm claim and appeals rates

shrunk firm averages in claims and appeals



- ▶ Looking at firm FE in claiming and appeals (and correcting the slope), we get an elasticity of -0.16
- ▶ Anderson and Meyer (2000): elasticity of claims to separation issue denials: -0.128 to -0.279
- ▶ Consistent with deterrence effects

Outline

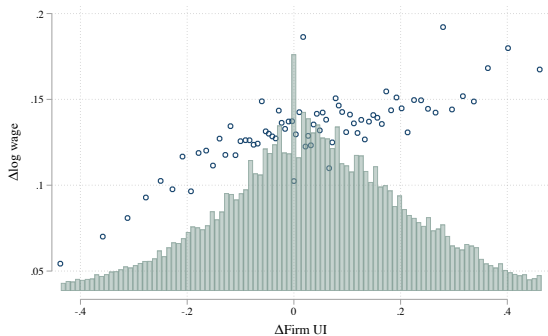
- ▶ Policy background, data, and summary statistics
- ▶ Firm effects in UI take-up and appeals
 - ▶ Substantial dispersion in firm effects in claims (takeup \uparrow 6 p.p. (12%) if below median to median)
 - ▶ Relative importance of firm to worker higher for take-up than in wages
 - ▶ Firm effects in appeals
 - ▶ Negative relationship b/w claims and appeals
- ▶ Link to (im)perfect competition
- ▶ A model of experience rating and UI take-up and targeting

Link to (im)perfect competition

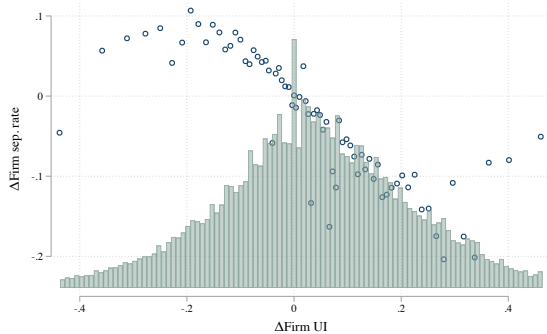
- ▶ In perfect competition \Rightarrow compensating differential for lower firm-level claims
- ▶ In imperfect competition, less clear (Lang and Majumdar (2004), Sorkin (2018)):
 - ▶ If amenities are a normal good, some amenities will be positively correlated with earnings

Move to higher claims rate firms \Rightarrow

individual earnings increases



firm-level separation rate decreases



higher claims rate firms look like “better” firms from the worker perspective

Outline

- ▶ Policy background, data, and summary statistics
- ▶ Firm effects in UI take-up and appeals
- ▶ Link to (im)perfect competition
 - ▶ Higher UI claims rate firms more desirable firms
- ▶ A model of experience rating and UI take-up and targeting

Statistical model of take-up and targeting

Workers who separate are eligible or ineligible, $e \in \{0, 1\}$:

- ▶ Application rate: A_e
- ▶ Appeals rate: p_e
- ▶ Receipt (given appealed) rate: r_e

To identify parameters for the eligible:

- ▶ Assume: incremental workers who separate when the firm contracts are eligible for UI
- ▶ We compare $[-0.025, 0.025]$ to $[-0.275, -0.225]$

Additional moment that identifies parameters for the ineligible:

- ▶ Share of ineligible among recipients (Benefit Accuracy Measurement data: 0.13 in WA)

Linking experience rating to appeals to claims

Elasticity of appeals to experience rating:

- ▶ Firm pays τ if worker collects UI (experience rating)
- ▶ Firm picks an appeals probability knowing eligibility status:

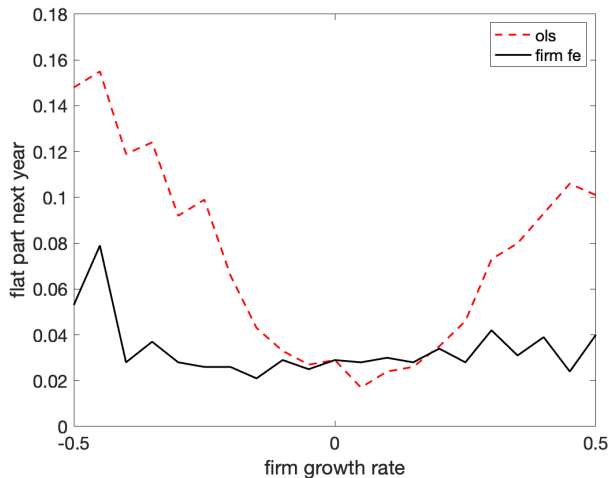
$$\underbrace{-p_e r_e \tau}_{\text{appeal, receive, pay}} - \underbrace{p_e(1-r_e) \times 0}_{\text{appeal, don't receive}} - \underbrace{(1-p_e)\tau}_{\text{don't appeal, pay}} - \underbrace{p_e^{\frac{1}{\zeta}+1}}_{\text{cost function, } \zeta > 0}$$

- ▶ FOC: $p_e \propto ((1-r_e)\tau)^\zeta$
- ▶ Then: $\frac{p_1}{p_0} = \left(\frac{1-r_1}{1-r_0}\right)^\zeta \Rightarrow \zeta = \frac{\ln \frac{p_1}{p_0}}{\ln \frac{1-r_1}{1-r_0}}$

Elasticity of claims to appeals:

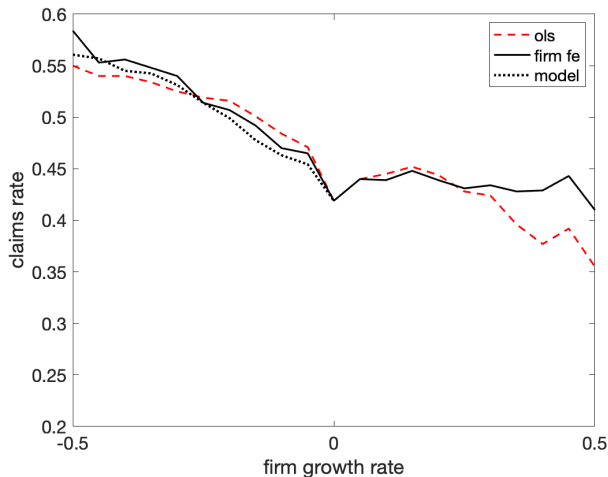
- ▶ Use x-sectional elasticity

Firms that shrink still face marginal experience rating incentives



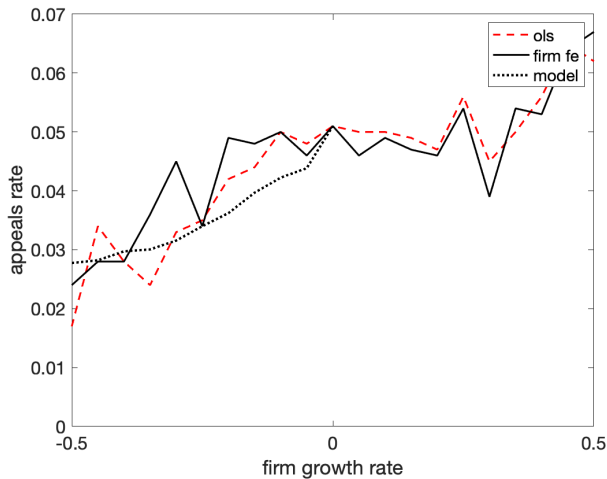
- ▶ Model assumes experience rating is constant
 - ▶ On the “slope” it approximately is
 - ▶ On the “flat” part it is not
- ▶ Regress outcome on growth rate dummies with and w/o firm f.e.
- ▶ W/firm f.e., can use growth rates out to ≈ -0.4 (informs choice of -0.25)

Claims rates rise as firms shrink



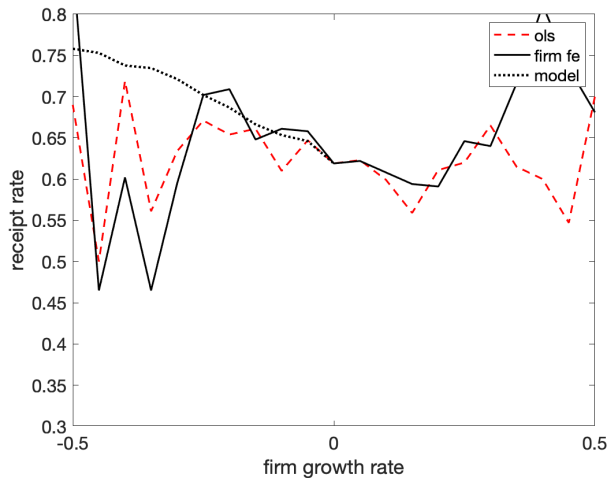
- ▶ Claims rate rises, but never get above 60%
- ▶ \Rightarrow eligible have higher claims rates than ineligible

Appeals rates fall as firms shrink



- ▶ Appeals rate declines—almost by half
- ▶ \Rightarrow eligible are less likely to be appealed than ineligible

Receipt rate (given appeals) rise as firms shrink



- ▶ Rise (albeit noisily)
- ▶ \Rightarrow conditional on appeal, eligible more likely to receive

Results

	Eligible	Ineligible
Application rate (A_e)	0.60	0.14
Appeals rate (application) (p_e)	0.02	0.24
Receipt rate (appeal) (r_e)	0.81	0.49
Eligible share at "zero" (σ)	0.61	

Kleven and Kopczuk (2011) error typology:

- ▶ Type IA: $\sigma(1 - A_1) = 0.24$ (eligible don't apply)
 - ▶ Type IB: $\sigma A_1 p_1 (1 - r_1) = 0.003$ (eligible apply, don't collect)
 - ▶ Type II: $(1 - \sigma)A_0((1 - p_0) + p_0 r_0) = 0.048$ (ineligible collect)
- ⇒ $\approx 70\%$ do the correct thing

Elasticity of appeals w.r.t. exp. rating is 2.3

Simulate effects of reducing experience rating

Experience rating \downarrow 10% \Rightarrow take-up \uparrow 4% ($\approx \underbrace{-0.1}_{\text{change}} \times \underbrace{-0.16}_{\text{claims w.r.t. appeals}} \times \underbrace{2.3}_{\text{appeals w.r.t. exp. rating}}$)

- ▶ Type IA: 0.23 (\downarrow 1 p.p.) (eligible don't apply)
 - ▶ Type IB: 0.002 (\downarrow 0.1 p.p.) (eligible apply, don't collect)
 - ▶ Type II: 0.051 (\uparrow 0.3 p.p.) (ineligible collect)
- \Rightarrow 0.8 p.p. more do the correct thing
- ▶ "Layoff tax" only decreases by 6% (rather than 10%)

To increase take-up by 12% (i.e., same magnitude as compress firm f.e. distribution):

- ▶ A 30% decrease in experience rating

Summary

Typical explanations for incomplete UI take-up focus on individual-level factors

This paper: **firm-level** factors are also important:

- ▶ Relative importance of firm to individual effects in claims larger than for wages
- ▶ Moving below median firms to median level: claims up 12%
- ▶ Firm effects explain large share of income gradient

Important reason why firms matter: experience rating

- ▶ Important firm effects in appeals, negatively correlated with claims
- ▶ Decreases in experience rating:
 - ▶ increase take-up
 - ▶ more ineligible claim
 - ▶ endogeneity of take-up means reduction in layoff tax smaller

⇒ Take-up and targeting an important consideration in analyzing changes in financing

Denominator: who could have claimed

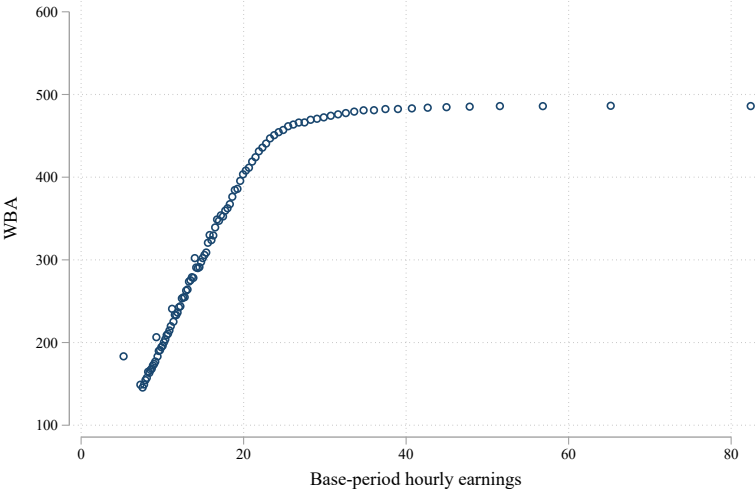
Follow Anderson and Meyer (1997), with some refinements. Get rid of:

- ▶ Employer-to-employer (small dip in hours in transition quarter)
- ▶ Employment-to-nonemployment (do not see for five quarters after (seasonal))
- ▶ “Complicated” histories: multiple employers pre-separation

We use variation in employer growth rates to change mix of non-monetarily “eligible” and ineligible

([▶ Details](#))

Weekly benefit amount by hourly wage



Mover regression and its interpretation

Consider a worker at two firms, regressed on firm-level claims rates:

$$\Delta c_{ij} = \beta \bar{c}_{j,-i}^{EB} + \Delta \epsilon_{ij}$$

- ▶ $\bar{c}_{j,-i}$: leave-one out mean firm claims rate
- ▶ EB: shrinkage (▶ [Details](#))

Then:

$$\text{plim } \hat{\beta} = \frac{\text{var}(\psi_j - \psi_{j'}) + \text{cov}(\psi_j - \psi_{j'}, \bar{\alpha}_{j,-i} - \bar{\alpha}_{j',-i})}{\text{var}(\psi_j - \psi_{j'}) + \text{var}(\bar{\alpha}_{j,-i} - \bar{\alpha}_{j',-i}) + 2\text{cov}(\psi_j - \psi_{j'}, \bar{\alpha}_{j,-i} - \bar{\alpha}_{j',-i})}$$

- ▶ If sorting is positive (below, we show it is), then coefficient gives lower bound on share of variance of between-firm means in claim rates that is due to firm effects

(▶ [Details](#))

Estimating hyper-parameters for shrinkage

- ▶ C_j : number of claims at firm j
- ▶ N_j : number of (eligible) separators at firm j
- ▶ Assume $c \sim \mathcal{B}(\alpha, \beta)$, true distribution of claims *rates* are beta
- ▶ Then: $Pr(C_j|c, N_j) = \binom{N_j}{C_j} c^{C_j} (1-c)^{N_j-C_j}$
- ▶ \mathcal{O} is observed data (j^{th} row is (N_j, C_j)), $\theta = \{\alpha, \beta\}$:

$$\max_{\theta} \mathbb{P}\{\mathcal{O}|\theta\} = \max_{\theta} \prod_j \omega_j \left(\int_{c=0}^1 \underbrace{\mathbb{P}\{\mathcal{O}_j|c\}}_{\text{binomial}} \times \underbrace{\mathbb{P}\{c|\theta\}}_{\text{beta}} dc \right)$$

- ▶ Posterior: $\hat{c}_j^{EB} = \frac{C_j + \hat{\alpha}}{N_j + \hat{\alpha} + \hat{\beta}}$

▶ [Back to mover reg](#)

Variance decomposition of claims rates

UI claims	0.25	
	Plug-in	Leave-out (KSS)
Firm effects	0.079	0.022
Person effects	0.169	0.049
Covariance	-0.038	0.001

Standard deviation of firm effects: 0.1489, about a third of the mean claims rate

(([▶ Back to talk](#))

Sensitivity of share of variance in firm f.e. in claiming attributable to challenges to the relevant elasticity

