

Search

Subject:

Date:

each labor market: $p, \lambda_0, \lambda_1, S, r, \bar{w}$
 meant $F(w)$

t_{ob} : elapsed unemp duration } exponential dist (λ_0)
 t_{of} : residual unemp " } exponential dist (λ_1)

$d_{ob} = 1$ if it's only known that the elapsed duration exceeds a certain value (right-censored)

$d_{of} = 1$ for residual duration

$$f_0 = \frac{s}{s + \lambda_0} \cdot \lambda_0 \quad \begin{matrix} \rightarrow d_{ob} + 1 - d_{of} \\ \text{exponential distribution} \end{matrix}$$

$\underbrace{}_{\text{unemp prob}} \quad \underbrace{}_{S.S.}$

pdf: $\lambda e^{-\lambda x}$
 cdf: $1 - e^{-\lambda x}$

$$\tilde{w} = w \cdot \varepsilon$$

$$1 - \text{cdf: } e^{-\lambda x}$$

$d_1 = 1$ if \tilde{w} is missing

$d_2 = 1$ if t_1 is right-censored

$d_3 = 1$ if destination following exit out of the job is known.

$d_4 = 1$ if destination is another job

$$f_1 = f(w) \exp(-(s + \lambda_1 \bar{F}(w)) \cdot t_1) \cdot (s + \lambda_1 \bar{F}(w))^{d_3(1-d_2)} \cdot (\lambda_1 \bar{F}(w))^{d_4(1-d_2)(1-d_3)} \cdot s^{(1-d_4)(1-d_3)(1-d_2)}$$

unemp \rightarrow $f_0 f_1^{(1-d_1)(1-d_{of})}$

pan

Subject: $w \in \langle \underline{w}, \bar{w} \rangle$ ϵ have a distribution with Date: density $h(\epsilon)$

$$L_1 = \int_{\underline{w}/\epsilon}^{\bar{w}/\epsilon} f(\bar{w}/\epsilon) \cdot \exp(-(s + \lambda F(\bar{w}/\epsilon)) \cdot t_1) \cdot (s + \lambda \bar{F}(\bar{w}/\epsilon))^{d_3(t_1)} \\ \cdot (\lambda \bar{F}(\bar{w}/\epsilon))^{d_4(1-d_2)(1-d_2)} \cdot s^{(1-d_4)(1-d_3)(1-d_2)} \cdot \frac{1}{\epsilon} h(\epsilon) d\epsilon$$

$d_5 = 1$ if \bar{w}_1 is unobserved

t_{1b} - the elapsed job duration $\{ \exp \text{dist}(s + \lambda, \bar{F}(w_1)) \}$

$t_{1f} \rightarrow$ residual \rightarrow

$d_{6b} = 1$ if it's only known that the elapsed duration exceed a certain value

$d_{6f} = 1$ if ... for residual duration (right censored)

$d_7 = 1$ if distribution following exit out of job is unknown

$d_8 = 1$ another job

$d_9 = 1$ if t_0 is right censored \rightarrow unemp after w_1

$d_{10} = 1$ \bar{w}_2 is unobserved

$d_{11} = 1$ t_2 is right censored

$d_{12} = 1$ if destination is unknown

$d_{13} = 1$ $s \rightarrow$ another job.

$$L = \frac{\lambda}{\lambda_0 + \delta} \cdot g(w_1) (s + \lambda \bar{F}(w_1))^{1-d_{6b}} \cdot \exp(-s + \lambda \bar{F}(w_1)) \cdot (t_{1b} + t_{1f}) \\ \cdot (s + \lambda \bar{F}(w_1))^{d_7(1-d_{6f})} \cdot [s \lambda_0^{(1-d_9)} \exp(-\lambda_0 t_0)]^{(1-d_8)(1-d_7)(1-d_{6f})} \\ \left[\lambda \bar{F}(w_1) \left[\frac{f(w_2)}{F(w_1)} \cdot (s + \lambda \bar{F}(w_2))^{d_{12}(1-d_{11})} \cdot \exp(-(s + \lambda \bar{F}(w_2)) \cdot t_2) \right. \right. \\ \left. \left. \cdot s^{(1-d_{13})(1-d_{12})(1-d_{11})} \cdot (\lambda \bar{F}(w_2))^{d_{13}(1-d_{12})(1-d_{11})} \right]^{1-d_{10}} \right]^{d_8}$$

\rightarrow No measurement error

Van Den Berg (1998) Intro:

- * distribution of wage offer \rightarrow endogenous
(Firms consider the reservation wage of job seekers)
- * productivity heterogeneity

degree of monopsony power of firms

(one consumer controls the market as the major purchaser)

Albrecht & Axell equilibrium search model (1984)

McCall \rightarrow 1970

Economics of information & Job search

\rightarrow Eckstein & Wolpin (1990) Empirical Analysis of the Albrecht & Axell (1984)
Equilibrium search model

[workers \rightarrow labor supply decision given a wage offer
firms \rightarrow set wages for vacancies]

assumptions
 \rightarrow In setting wages firms do not take the strategy of workers into account
 \rightarrow the resulting wage offers are dispersed

[optimal strategy of workers \rightarrow reservation wage property]

\rightarrow firms know! \rightarrow wage offers = Reservation wage
identical workers \rightarrow wage offer dist^{is} degenerate

in equilibrium
A dispersed wage offer distribution \rightarrow requires a dispersed distribution of reservation wages.

comparative static
analysis of
parameter changes

" prob. job seekers face a dispersed wage offer dist

effect of unemp benefit on job search by the unemployed

partial job search models

→ employers cannot respond to changes in the behavior of job seekers.

! لجه اولیه باید دو قیمتی

Equilibrium search models

→ wage offer dist is endogenous it results from optimal wage setting by firms that take account of the responses by job seekers & other firms

& hence is affected by a change in unemployment income & level of the min wage.

or oligopolistic offers or wages, based wage offer dist
or whole wage offer dist, min wage will increase eqn

dist of accepted wages is the wage offer dist truncated at the ^{wage} resumt

recover & observe \hat{w}_j complete wage offer dist
Flinn & Heckman (1982)

Equilibrium search models

Albrecht & Axell (1984)

Blundell & Mortensen (1998)

no job-to-job

فوق اینجا

unemployed to be heterogeneous in EW (1990) empirical, (AA 1984)

assume that there are a finite number of workers types that differ in their value of nonmarket time, & that firms are heterogeneous with respect to their labor product

points of support \rightarrow $\text{reservatn wage dist}$ of the wage offer dist is finite!

Not surprising that most of the observed variation in wages is explained by the measurement error that they introduce to smooth the discrete wage offer dist

job-to-job transition \rightarrow an imp source of wage growth for employees (Topel & Ward 1992)

possibility of on the job search \rightarrow optimal search strategy of unemployed job seekers

reservatn wage for an employed job seeker
= current wage
(allowing for on the job search extends the range of reservatn wage)
& equilibrium wage offers

BM 98 if workers continuously search for a better-pay job (and face a risk of becoming unemp during...) then the equilibrium wage offer dist is dispersed even if all workers & firms are identical. \rightarrow explicit solutions for the equilibrium wage offer & earning dists.

2.6) empirical analysis is right w/ the model
dist of wages paid to employed

unattractive features of
actual solution

→ wage offer & earnings dist
have increasing densities
≠ evidence on the shape of
the income dist
closely related ~~to the~~ earnings
dist

[homogeneous population
of workers & firms]

dr. explicit solution^(*)

Allowing for observed & unobserved population heterogeneity
makes the model more realistic & fit to the data

Heterogeneity

VR 98

a labor market that consists a large
number of segments

every segment is a labor market of its own
& all workers & firms are identical in that

observed differences
segment differs according:
age - educational level occupation
level of the workers & jobs.

unobserved
differences

+ in the productivity of the jobs or
other characteristics of the segment

allows for b/w-market heterogeneity

EW 90

single labor market + unobserved differences
in the value of leisure between workers

& unobs diff in productivity b/w firms
(N @ observed differences)

allow for within market heterogeneity

sufficient variation in the productivity of firms → fit to the observed wage (offer) distribution
heterogeneity in productivity

impact on

effect of changes in min wage on the level of unemployment

in homogeneous model (monopsonistic features)

min wage does not affect the level of unemployment
with a common productivity level

the data decide whether the empirical model is
comparative or the monopsonistic
is ...

Estimation & Data

→ max likelihood + panel data
unemployed & employed indivs

unemp & job durations
for some respondents

consecutive job durations & corresponding wages

results

the model implies that unemp & job durations
have mixed exponential distributions

↳ evidence

→ on avg, the arrival rate of job offers is only slightly larger when employed

→ a small number of observed personal characteristics is sufficient to capture the heterogeneity in arrival & separation rates [but] insufficient to capture the heterogeneity in the productivities of firms.

propose & apply a formal decomposition of observed wage variation
3 ↳ variation due to the measurement error / search friction 20%
EW wage structural determinants

→ "Search-Theoretic Models of the Labor Market: A Survey"

Balding block: [problem of a single agent looking for a job.]

↳ It takes time to find an acceptable job.

↳ A matter of luck: similar agents may end up with different wages.

Basic job search (Discrete)

$$\max E \sum_{t=0}^{\infty} \beta^t x_t$$

x_t { wage
b
unemp + insurance

↳ maximizing income { risk neutral
risk-averse + comp market

wage: an iid offer each period from a known distribution $F(w)$

$$G(w)(m-u)$$

w inflow

$$\lambda_1 \bar{F}(w) G(w)(m-u) + S G(w)(m-u)$$

$$= \lambda_0 \underbrace{(F(w) - F(r)) u}_{w \text{ inflow}}$$

w inflow

moments of $w-u$ dist

product of $(p-w)^n \cdot n$

$\frac{d}{dx} p(w) \text{ dist} \approx w$

and observed wage after or earning dist

can be matched with data

$$\ln w = f(s, x) = \ln w_0 + \beta_1 s + \beta_2 x + \beta_3 x^2$$

Mincer
Equation

↓
Schooling ↓
experience Heckman

Part time

if test=1 & c>1 → local

test=2

→ Industry / Rural or urban / . . .

143,347

