Discussion of Taxation, Redistribution and Frictional Labor Supply by Chris Sleet and Hakki Yazici

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Introduction

- This paper considers optimal taxation when workers differ not only in skills, but job matching luck.
- Argues that with reasonable parameters, linear taxes should be lower than if workers did not face matching luck.
- Very neat idea. I'm a bit skeptical regarding whether the lower taxes come from general equilibrium effects. I'll focus on that later.

Basic Idea

- Put together Burdett and Mortensen model with a Mirrlees *environment* (people of differing skill produce output) and do a Ramsey like optimal tax exercise.
- Burdett and Mortensen: Walmart vs. Costco. Walmart doesn't pay as much and churns through workers. Costco pays a lot and keeps its workers for a long time.
- Burdett and Mortensen build model where this happens in equilibrium. Key thing is on-the-job search. Walmart workers get random opportunities to trade up to Costco, which they grab.
- So firms trade off gains of paying low wages with loss of having your job filled less of the time.

Their model

- As usual for a Mirrlees model, agents have different skills θ. If they work ℓ hours, they produce $y = \theta\ell$ units of output.
- But a twist is that what I will call *land* (and they call firms) is a necessary input to production.
- Workers need to be matched to land to produce.
- Unmatched workers are unemployed. They get Poisson shocks to match them with landowners who post rent prices. They take whatever land gives them a deal better than being unmatched.
- Matched workers also get Poisson matching shocks. Move to lower rent land whenever possible.

Policy

- Most of paper deals with Ramsey affine taxation. (As opposed to introducing incentive constraints a la Mirrlees.)
- $c = \textit{benefit} + (1-\tau)\textit{output} - \textit{rent}$.
- Complicated equilibrium steady state distribution of consumption, outputs, and rents all as functions of θ types.
- (Nice bit of modeling to pull this off.)
- Authors derive expressions showing this effect and that effect with new terms.

My Contribution

- Why the lower taxes?
- I would have thought with an added source of consumption inequality and given a redistribution loving objective function, that would lead to higher, not lower taxes.
- So my contribution is to try to figure out what is going on.
- (if I'm wrong, BFI still has to pay for my expenses.)

My Contribution

- My strategy: Come up with simple *static* optimal tax problem where several things which should be determined in equilibrium are just made by me into fixed parameters.
  - Fraction of unemployed. (I think this is in steady state directly pinned down by death rate and Poisson match arrival rate in their model.) I just fix it.
  - Four types with jobs: Low skill with good job (zero rent), low skill with bad job, high skill with good job, high skill with bad job. I just fix the fraction of each.
  - I fix the rent associated with a bad job.
- These assumptions make finding the optimal affine tax pretty easy.
- Nests model with no bad jobs by setting the fraction of those with bad jobs equal to zero.

Optimal Tax Problem

$$\max_{b,\tau,c_i,y_i} \; \pi_0\,(u(b)) + \sum_{i\in\{lg,lb,hg,hb\}} \pi_i \left(u(c_i) - v(\frac{y_i}{\theta_i}) \right)$$

subject to

$$u'(c_i)\theta_i(1-\tau) = v'(\frac{y_i}{\theta_i})$$

$$c_i = b + (1-\tau)y_i - rent_i$$

$$b = (\pi_{lb} + \pi_{hb})rent_b + \tau \sum_i \pi_i y_i .$$

Optimal Tax Problem

$$\max_{b,\tau,c_i,y_i} \pi_0 \left(u(b)\right) + \sum_{i \in \{lg,lb,hg,hb\}} \pi_i \left(u(c_i) - v(\frac{y_i}{\theta_i}) \right)$$

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$$c_i = b + (1-\tau)y_i - rent_i$$

$$b = (\pi_{lb} + \pi_{hb})rent_b + \tau \sum_i \pi_i y_i.$$

- Tax land rental income is assumed here, and in the paper, to be 100%.
- If $(\pi_{lb} + \pi_{hb}) = 0$, then government revenue from land taxation equals zero.

Optimal Tax Problem

- Put in numbers from nowhere and compute.
- $\pi_0 = .1$, $\pi_i = .225$ for $i \in \{lg, lb, hg, hb\}$.
- $u(c) = .5\sqrt{c}$. $v(\frac{y}{\theta}) = .1(\frac{y}{\theta})^2$.
- $rent = .1$, $\theta_\ell = 1$, $\theta_h = 2$.

- With these parameters, I get $\tau = .21$.

Optimal Tax Problem

- Change parameters.
- $\pi_0 = .1$, $\pi_{lg} = \pi_{hg} = .45$, $\pi_{lb} = \pi_{hb} = 0$.
- (No one has a bad job, ie: No one pays rent.)
- $u(c) = .5\sqrt{c}$. $v(\frac{y}{\theta}) = .1(\frac{y}{\theta})^2$.
- $rent = .1$, $\theta_\ell = 1$, $\theta_h = 2$.

- Now, when I've gotten rid of this extra source of risk, (having to pay rent or not), I get $\tau = .22$, or linear taxes went **up**.
- This is same as in their paper, but with no general equilibrium effects.
- Again, I would have thought less risk would imply less redistribution and thus a lower, not higher, tax rate.

What's going on?

- My guess:
- The only government expenditure is b (the intercept term in the affine tax schedule).

$$b = (\pi_{lb} + \pi_{hb}) rent_b + \tau \sum_i \pi_i y_i.$$

- With bad jobs, two sources of revenue: linear tax on output, and 100% tax on rent.
- Without bad jobs, only one source of revenue, the linear tax on ouput.
- May not be surprising that when the 100% tax on revenue not there, you want a higher linear tax on output.

Conclusion

- Very nice model.
- Job ladder model important way of getting at an empirically relevant real-world thing.
- Might need to do something about the 100% land tax.