Discussion of Taxation, Redistribution and Frictional Labor Supply
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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 $\theta$. If they work $\ell$ 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.
Most of paper deals with Ramsey affine taxation. (As opposed to introducing incentive constraints a la Mirrlees.)

\[ c = benefit + (1 - \tau) output - rent. \]

Complicated equilibrium steady state distribution of consumption, outputs, and rents all as functions of \( \theta \) 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.

- Nest model with no bad jobs by setting the fraction of those with bad jobs equal to zero.
Optimal Tax Problem

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

subject to

\[
u'(c_i) \theta_i (1 - \tau) = \nu' \left( \frac{y_i}{\theta_i} \right)
\]

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

\[b = (\pi_{lb} + \pi_{hb}) rent_b + \tau \sum_i \pi_i y_i.\]
Optimal Tax Problem

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

subject to

\[
\begin{align*}
u'(c_i)\theta_i(1 - \tau) &= v'\left(\frac{y_i}{\theta_i}\right) \\
c_i &= b + (1 - \tau)y_i - rent_i \\
b &= (\pi_{lb} + \pi_{hb})rent_b + \tau \sum_i \pi_i y_i.
\end{align*}
\]

- 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 \( i \in \{lg, lb, hg, hb\} \).
- \( u(c) = .5\sqrt{c}. \ v\left(\frac{y}{\theta}\right) = .1\left(\frac{y}{\theta}\right)^2. \)
- \( rent = .1, \ \theta_\ell = 1, \ \theta_h = 2. \)
- 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.)
- $u(c) = .5\sqrt{c}$. $v(\frac{v}{\theta}) = .1(\frac{v}{\theta})^2$.
- 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 output.
- 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.