Redistribution and employment in frictional labor markets

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Motivation

- Traditional view on income taxation: good for redistribution and/or insurance, bad for labor supply
- But.. labor supply and employment are not the same thing
- This paper: what are the implications of unemployment for optimal tax design?

Why do we care?

- Empirical evidence of taxes on unemployment: Nickell and Layard (1999), Daveri and Tabellini (2000), Lehmann et al. (2016)
- Theoretically, high marginal (average) tax rates are predicted to reduce (raise) unemployment
  - matching frictions (Pissarides, 1984)
  - efficiency wages (Pisauro, 1991)
  - union bargaining (Lockwood and Manning, 1993)

This paper

- I characterize optimal tax policy in a model with intensive/extensive labor supply and involuntary unemployment
- To do so, I extend the Mirrlees (1971) framework with an extensive margin and matching frictions. Model predicts that
  (i) high marginal taxes reduce effort, but also unemployment
  (ii) high average taxes have the opposite effect
- Quantitatively, optimal tax rates are lower if unemployment responses are taken into account

Main ingredients

- Individuals heterogeneous in their ability and search costs
- Search frictions generate unemployment (not privately insurable)
- Gov't cares for redistribution, but cannot observe types

Model: timing

Figure 1: Timing

A tale of two trade-offs

- The decision *whether* to apply depends on an individual's search costs
- The decision *where* to apply involves two trade-offs:
  (i) between consumption and leisure
  (ii) between consumption and employment (job finding)

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Comparative statics

- How are the outcomes affected by income taxes? For given ability:

Table 1: Comparative statics

	Earnings	Participation	Employment
Marginal tax rate	-	$=$	$+$
Average tax rate	$+$	-	-

Note: A $+/=/-$ indicates that the row variable has a positive/zero/negative impact on the column variable.

EEE and ERE

- An increase in the MTR reduces unemployment
  - employment-enhancing effect (**EEE**) of taxation
- An increase in the ATR raises unemployment
  - employment-reducing effect (**ERE**) of taxation

Government problem

- To characterize optimal tax policy, I consider perturbations of the tax function $T(\cdot)$
- These perturbations generate welfare-relevant effects, which sum to zero if the tax system is optimal (same for b)

Optimal tax rate $T'(z)$

- Expression for the optimal tax rate:

$$\frac{T'(z)}{1-T'(z)} = \frac{1}{\varepsilon_{zT'}} \int_{z}^{z_1} \left(1 - g(z') + z_T T'(z') + \frac{\pi_T}{\pi}(T(z') + b)\right) \frac{dH(z')}{zh(z)}$$

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$$+ \underbrace{\frac{\varepsilon_{eT'}}{\varepsilon_{zT'}} \frac{(T(z)+b)/z}{1-T'(z)}}_{\text{EEE}}$$

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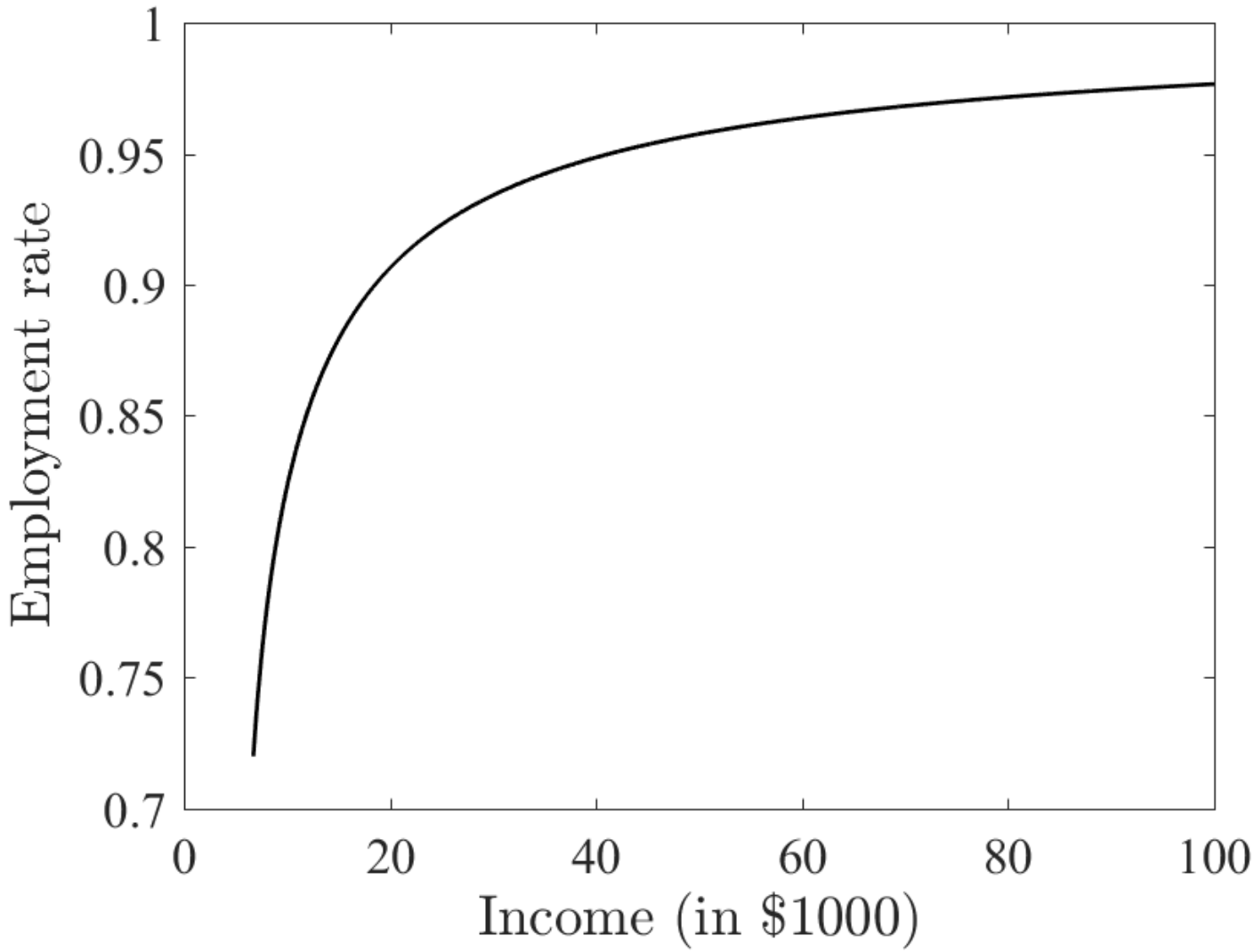
- Frictions modify optimal taxes in two ways:
  - (i) EEE calls for higher marginal tax rates
  - (ii) ERE calls for lower marginal tax rates

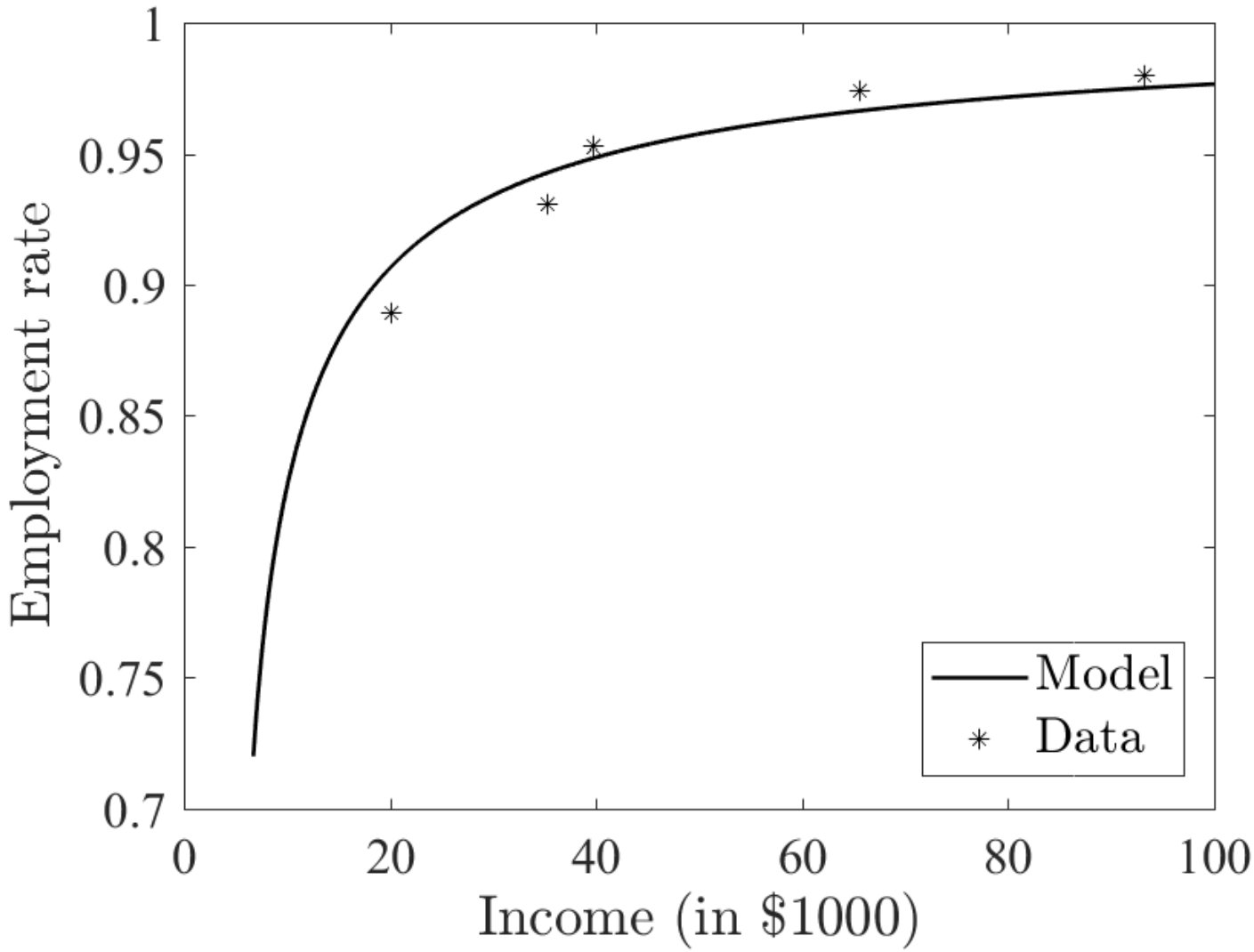
Simulations

- Data source: March release of the 2016 CPS. Detailed information on earnings, taxes, benefits, employment status
- Calculate ability distribution which is consistent with the empirical income distribution

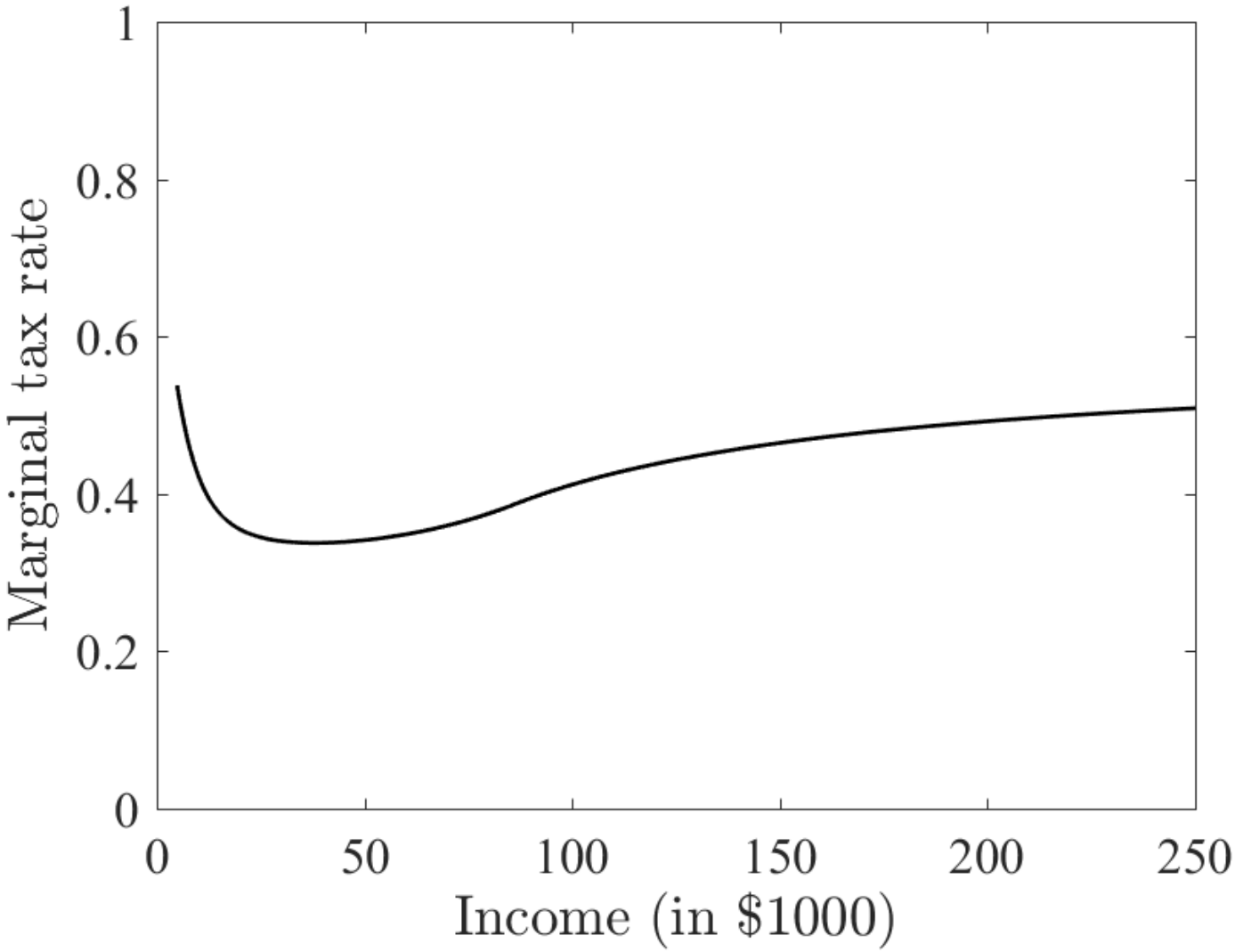
Employment rates by income



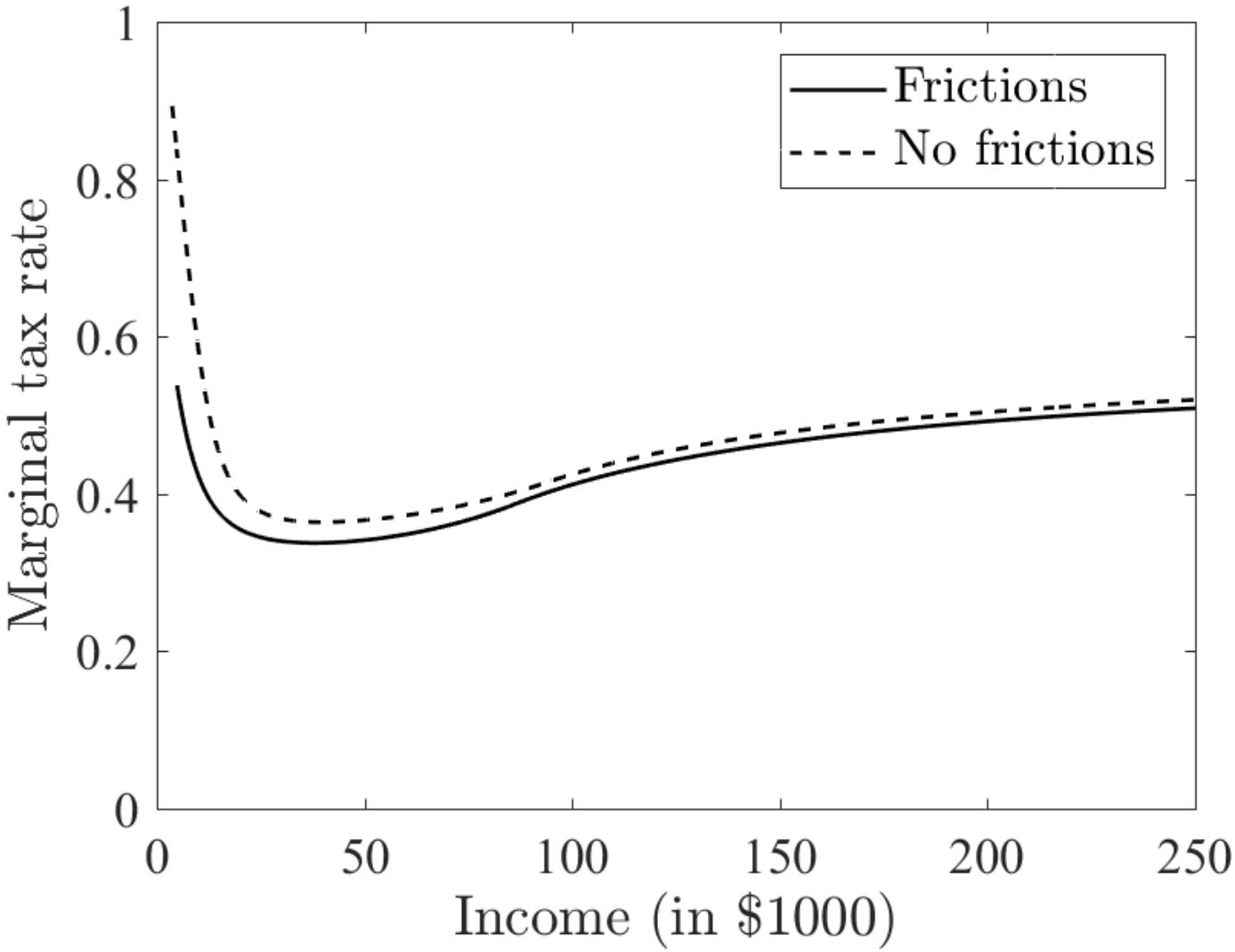
Employment rates by income (model vs. data)



Optimal marginal tax rates



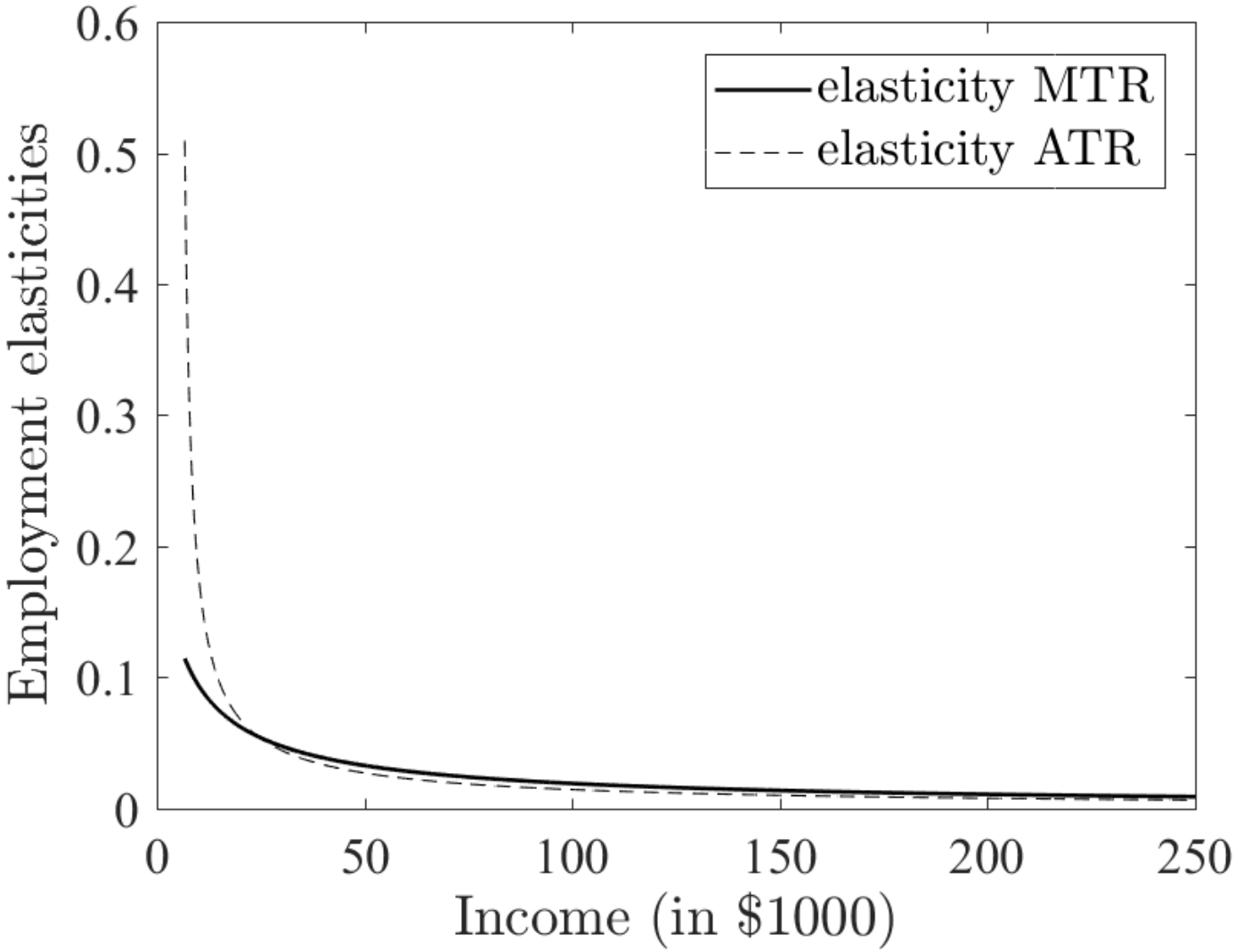
Optimal marginal tax rates (with and without frictions)



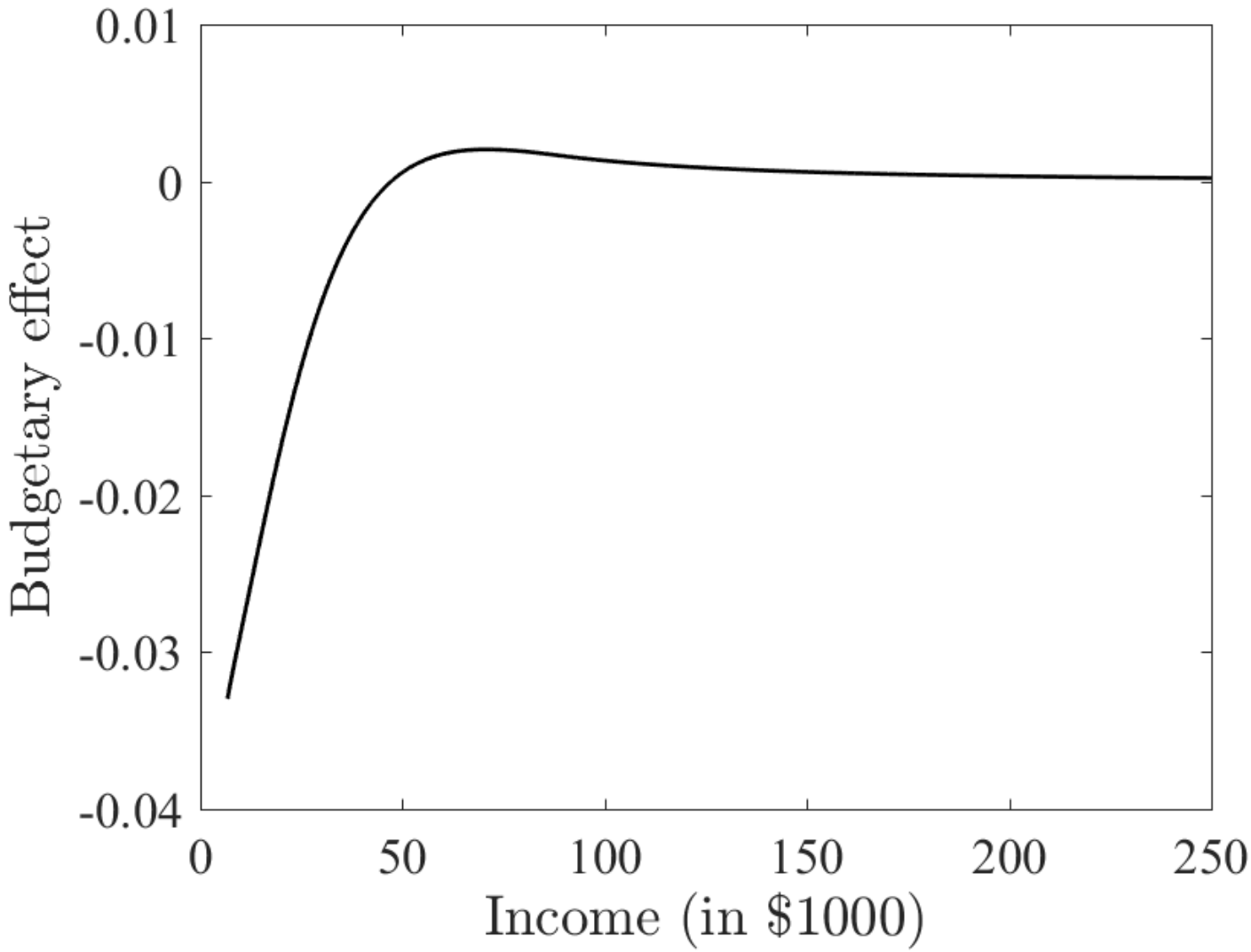
Comparison

- Optimal tax rates are (somewhat) lower if frictions are taken into account, especially at the bottom
- It thus appears the employment-reducing effect is quantitatively more important (ERE $>$ EEE)

Employment elasticities



Budgetary effects from unemployment responses



Conclusion

- This paper characterizes optimal tax policy in a model with intensive/extensive labor supply responses and unemployment
- Frictions have an ambiguous effect on optimal taxes:
  - EEE calls for higher tax rates
  - ERE calls for lower tax rates
- Simulations suggest the second effect is quantitatively more important, especially at the bottom

Thank you for your attention!