A General Theory of Tax Smoothing

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What the Paper Does

- Optimal labor taxation with complete markets or only real risk-free debt
- With commitment or smooth MPE
- With general recursive preferences (risk sensitivity etc.)

Overarching Theme

Optimal taxation is determined by two forces:

- Equalize marginal distortions over time: cost of raising an extra dollar in taxes should be as constant as possible
- Asset price manipulation: reduce required PV of taxes by minimizing the value of gov't debt

Making the Theory More General...

- Multi-period debt
- Other market incompleteness
- (Heterogeneous agents)

A Textbook Example

- Preferences:

$$E_0 \sum_{t=0}^{\infty} \beta^t [\frac{c_t^{1-\sigma}}{1-\sigma} - \frac{\ell_t^{1+\psi}}{1+\psi}]$$

- Output produced one for one with labor
- Initial debt: b_t

Ramsey first-order conditions

- $$c_t^{-\sigma}[1 + \Phi(1 - \sigma)] + \sigma\Phi b_t = \mu_t$$
- $$\ell_t^{\psi}[1 + \Phi(1 + \psi)] = \mu_t$$
- Φ: cost of raising an extra unit in taxes (constant over time and across states); numeraire: good weighted by marginal utility
- μ_t: LM on resource constraint (benefit of marginal expansion in the production frontier)
- $$\tau_t = 1 - \frac{\ell_t^{\psi}}{c_t^{-\sigma}}$$

How does this paper go beyond the textbook example?

1. Non-state separable preferences
2. Only risk free debt
3. Commitment vs. no commitment

Non-state separable preferences

- Increasing the level of utility in state s^t affects the value of resources in state $\tilde{s}^t$
- Value in manipulating utility levels, even at the cost of increasing tax distortions
- $$\frac{1}{\Phi_{t+1}} = \frac{1}{\Phi_t} - \eta_{t+1}$$
- η_{t+1}: martingale difference (in the appropriate measure), related to the value of debt across states

Only risk-free debt (AMSS 2002)

- Cannot perfectly smooth distortions across states
- New link across different histories: value of debt at t measurable wrt $t-1$ info
- $$E_t u_{c\,t+1} \Phi_{t+1} = u_{ct} \Phi_t.$$
- Paper provides expression that combines this and non-state separable utility

Generalize to arbitrary debt payoffs (BEGS, 2017 and 2021)

- Exogenously given state-contingent payoff $x(s^t|s^{t-1})$
- $$E_t\left[\frac{u_{c\,t+1}\Phi_{t+1}}{x(s^{t+1}|s^t)}\right] = u_{ct}\Phi_t E_t\left[\frac{1}{x(s^{t+1}|s^t)}\right].$$

Time-consistency

- Desire to devalue initial debt propagates over time
- With one-period debt: incentive to increase debt (Φ_t)

Heterogeneity

- Multiple implementability constraints:
  - Marginal value of redistributing from agent i to agent j
  - Marginal value of redistributing from agent i to government
- Bassetto (2013), BEGS (2017b, 2021)

Conclusion

- Deep insights
- Can push to even more generality
- Show two guiding principles across them