

MEASURING FISCAL DISCIPLINE A REVEALED PREFERENCE APPROACH

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WHAT IS THE PAPER ABOUT?

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- ▶ Two reasons why this may happen:
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 - ▶ There are costs and benefits of breaking the rules.
 - ▶ Find the payoff “**weight**” between costs and benefits that rationalizes the observed outcome.

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- ▶ **Use revealed preference approach to measure intentionality**
 - ▶ There are costs and benefits of breaking the rules.
 - ▶ Find the payoff “**weight**” between costs and benefits that rationalizes the observed outcome.
- ▶ **This discussion**
 - ▶ The finding depends on the modelling assumptions, how do we interpret them? What could go wrong? How?

THE SIMPLE MODEL AGAIN

- ▶ There is a government that solves:

$$\min_{p_t} \left\{ \frac{y_t^2}{2} + \lambda \frac{(x_t - \bar{x}_t)_+^2}{2} \right\}$$

s.t.

$$y_t = \alpha x_t + \xi_t, \quad x_t = -\beta y_t + p_t$$

- ▶ \bar{x}_t : target level of the fiscal variable.
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- ▶ \bar{x}_t : target level of the fiscal variable.
- ▶ Government trades off smoothing output vs satisfying the rule \bar{x}_t .
- ▶ Interpretation:
 - ▶ Why choosing only p_t ? Short term “discretionary” reaction?
⇒ model assumes it is **unlimited**.
 - ▶ Structural “long-term” responses embedded in β .
Shouldn't be all about β ?

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- ▶ Deficit:

$$x_t = \begin{cases} -\frac{1}{\alpha} \xi_t, & \text{if } \xi_t \geq -\alpha \bar{x}_t \\ \frac{-\alpha}{\alpha^2 + \lambda} \xi_t + \frac{\lambda}{\alpha^2 + \lambda} \bar{x}_t, & \text{if } \xi_t \leq -\alpha \bar{x}_t; \end{cases}$$

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- ▶ Solution does not depend on β !
- ▶ Unrestricted discretionary response renders the **stabilizer irrelevant**
 \Rightarrow more general than just the simple model.

ONE WAY TO FIND λ

- ▶ One straightforward approach would be to estimate the previous system:

$$y_t = \eta_0 + \eta_1 \xi_t$$

$$x_t = \gamma_0 + \gamma_1 \xi_t$$

- ▶ I assume here that $\bar{x}_t = \bar{x}$ is constant.
- ▶ I have 4 estimated parameters to recover 2 fundamental ones.
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- ▶ Why not to do this? The outcome is very intuitive!
- ▶ Over-identification? Hopefully, all roads lead to Rome.
- ▶ In a more general model maybe is harder?
- ▶ Shouldn't this approach generate an estimation for λ **consistent** with the one proposed by the authors?

RESPONSES AND UNDERLYING λ

- ▶ The underlying discretionary policy leading to the result is:

$$p_t = \begin{cases} -\frac{1}{\alpha}\xi_t, & \text{if } \xi_t \geq -\alpha\bar{x}_t \\ \frac{\beta\lambda - \alpha}{\alpha^2 + \lambda}\xi_t + \frac{\lambda(1 + \beta\alpha)}{\alpha^2 + \lambda}\bar{x}_t, & \text{if } \xi_t \leq -\alpha\bar{x}_t; \end{cases}$$

- ▶ Response parameter does depend on β and shock dependent:

$$p_t(\lambda, \xi_t) = \theta(\lambda, \xi_t)\xi_t \quad \text{with} \quad \theta(\lambda, \xi_t) = \frac{\beta\lambda - \alpha}{\alpha^2 + \lambda} + \frac{\lambda(1 + \beta\alpha)}{\alpha^2 + \lambda} \frac{\bar{x}_t}{\xi_t}$$

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- ▶ Shock realization conditions government's reaction: **state dependent**.
- ▶ Here it matters if we compare values ex-ante or ex-post.
- ▶ If ex-ante, **Jensen's inequality would kick in!**

RESPONSES AND UNDERLYING λ

- ▶ Find the underlying λ considering that the **observed reaction $\theta^o(\xi_t)$ is state dependent**:

$$\lambda^o(\xi_t) = \frac{\theta^o(\xi_t)\alpha^2 + \alpha}{\beta - \theta^o(\xi_t) + (1 + \beta\alpha)\bar{x}_t/\xi_t}$$

- ▶ Everything else equal, λ is increasing in ξ_t
- ▶ Everything else equal, λ is decreasing in β .

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- ▶ If we assume constant θ^o , **what is the bias in λ ?**
- ▶ **Remark:** information about λ only when the rule is broken?

Maybe not from an ex-ante perspective. (probability over future ξ)

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 - 3) **Default risk** imposes market discipline.
Government's fear of risk premium may constraint fiscal responses.
Is this captured by a bigger λ ?