Measuring Fiscal Discipline
A Revealed Preference Approach

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  - There are costs and benefits of breaking the rules.
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- **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.

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

- $\bar{x}_t$: target level of the fiscal variable.
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- Interpretation:
  - Why choosing only p_t? Short term "discretionary" reaction?
    $\Rightarrow$ model assumes it is **unlimited**.
  - Structural "long-term" responses embedded in β.
    Shouldn't be all about β?

My solution

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- 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.
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- I have 4 estimated parameters to recover 2 fundamental ones.
- 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**!

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- Find the underlaying 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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- **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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    Need quadratic loss for theorems, what about other objectives?
    Smooth government spending? **Limited discretion**?

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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?