

Leveraged Financing, Over Investment and Boom-Bust Cycles

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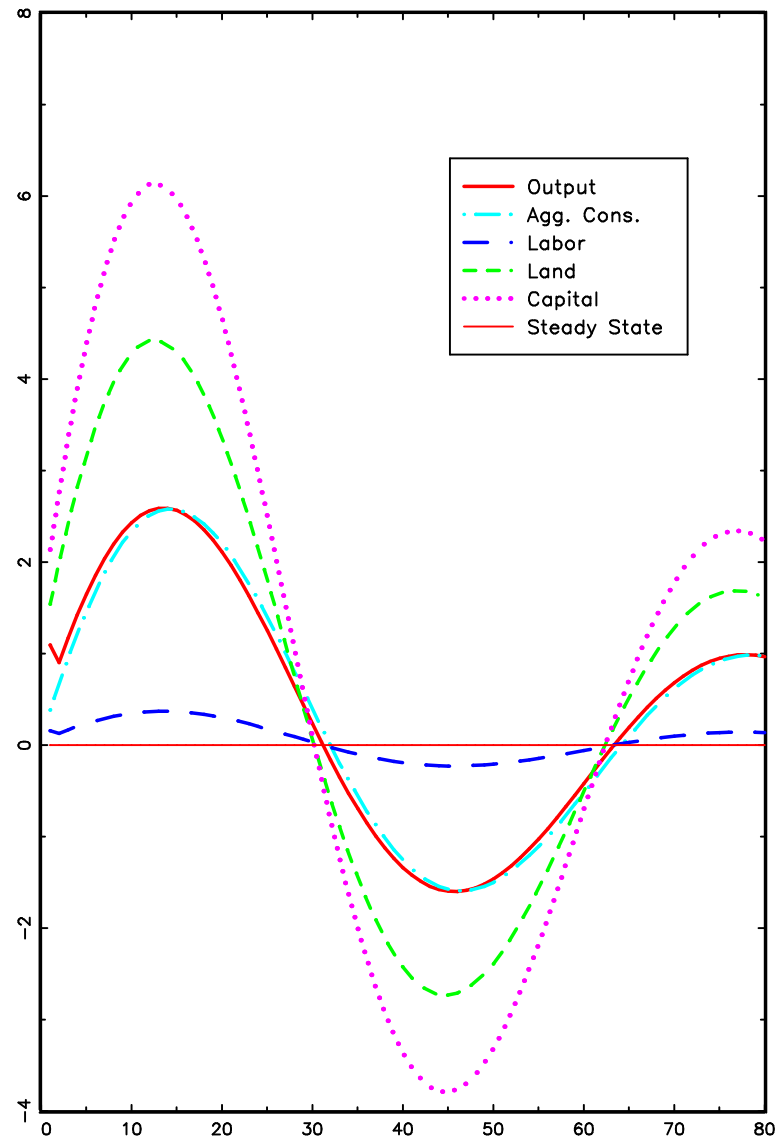
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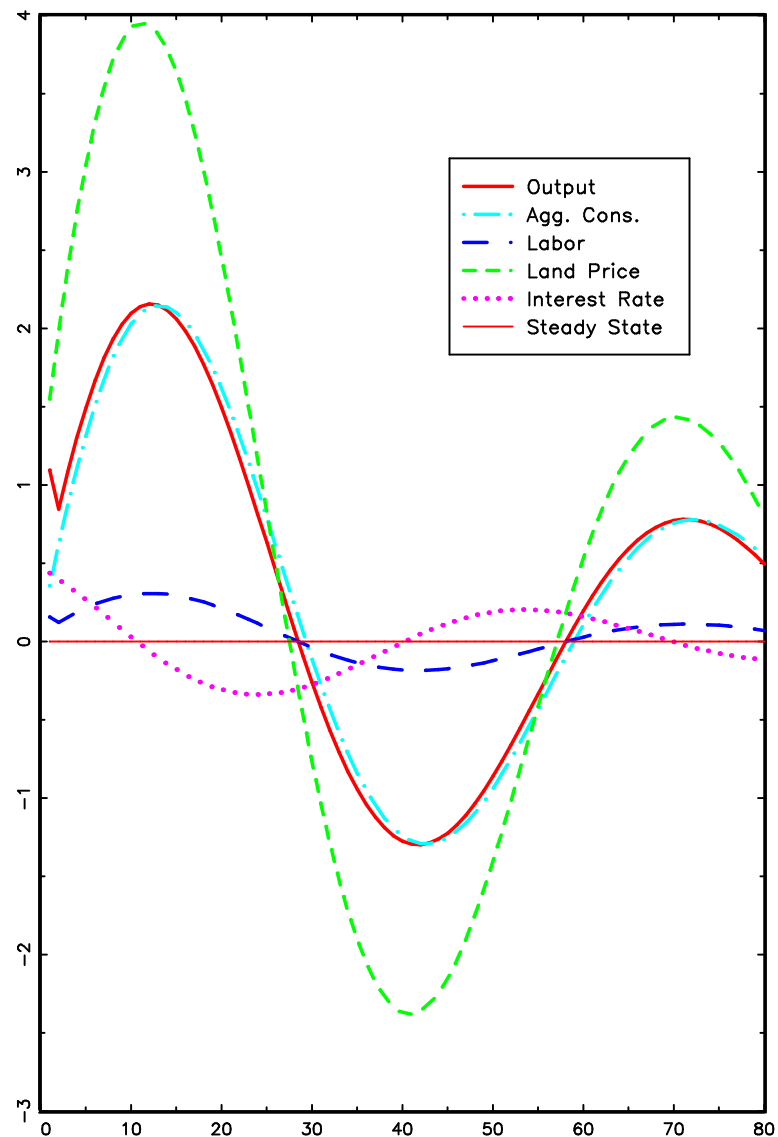
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- Kiyotaki and Moore (1997): collateralized asset value
- Quantitative importance:
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- Our paper revives Kiyotaki-Moore’s credit cycle theory
- Main result:
shocks generate large, persistent *boom-bust cycles*

- **Response to a one-time, serially uncorrelated TFP shock:**

Risk Neutral Lender



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- **Stresses hump-shaped impulse responses**

- **We show that large, persistent *boom-bust cycles* occur**

- **In addition, we study:**

optimal fiscal policy

constant-rate tax policies

- **Simple policies have (limited) stabilization power**

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- **Road map:**
 1. **Simple model with credit constraints**
 2. **Boom-bust cycles**
 3. **Policy implications**
 4. **Conclusion**

1. Simple model with credit constraints

- **Lenders (patient) and borrowers-producers (impatient)**

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$$\sum_{t=0}^{\infty} \tilde{\beta}^t \left[\frac{\tilde{C}_t^{1-\sigma_l}}{1-\sigma_l} + b \frac{\tilde{L}_t^{1-\sigma_w}}{1-\sigma_w} \right]$$

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- Borrowers have $\beta < \tilde{\beta}$ and produce

$$Y_t = AK_t^\alpha L_t^\gamma$$

- Borrowers maximize

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$$Q_{t+1}L_{t+1} \geq (1 + R_{t+1})B_{t+1}$$

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- Land in fixed supply:

$$L_t + \tilde{L}_t = \bar{L}$$

• **Benchmark: first-best allocation**

$$\max \sum_{t=0}^{\infty} \left\{ \beta^t \frac{[C_t - \rho \bar{C}_{t-1}]^{1-\sigma_B}}{1-\sigma_B} + \tilde{\beta}^t \left[\frac{\tilde{C}_t^{1-\sigma_l}}{1-\sigma_l} + b \frac{\tilde{L}_t^{1-\sigma_w}}{1-\sigma_w} \right] \right\}$$

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- Hence, monotonic (with no persistence) IRF to TFP shocks

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2. Boom-bust cycles

- **Parameter values:**

lender's $\tilde{\beta} = 0.99$

borrower's $\beta = 0.5$ and $\sigma_b = 4$

capital depreciation $\delta = 0.025$

habit persistence $\rho = 0.9$

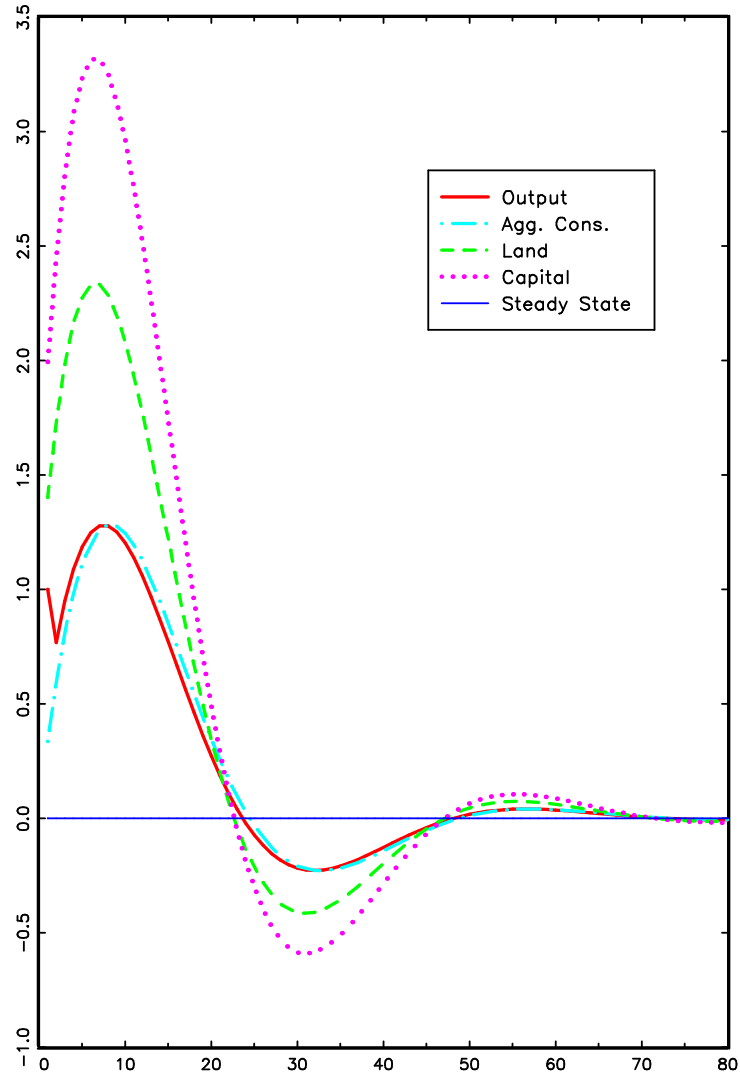
capital share $\alpha = 0.35$

land share $\gamma = 0.05$

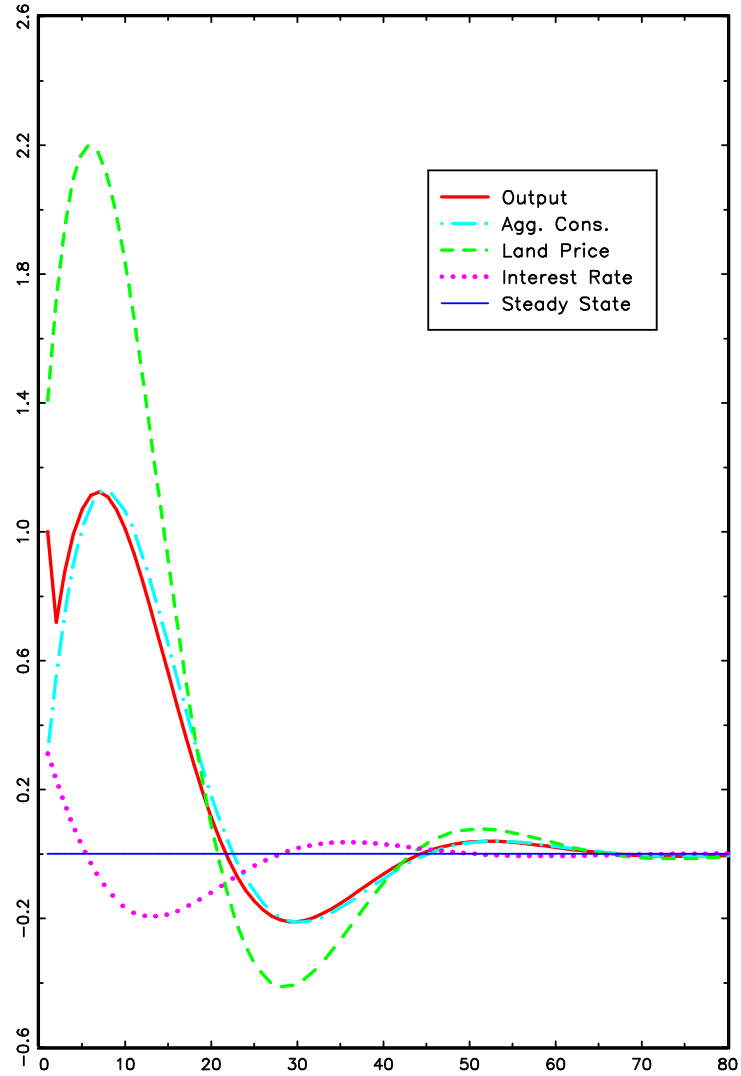
utility weight b set so that $\tilde{L} = L$

- **Impulse responses:**

Risk Neutral Lender

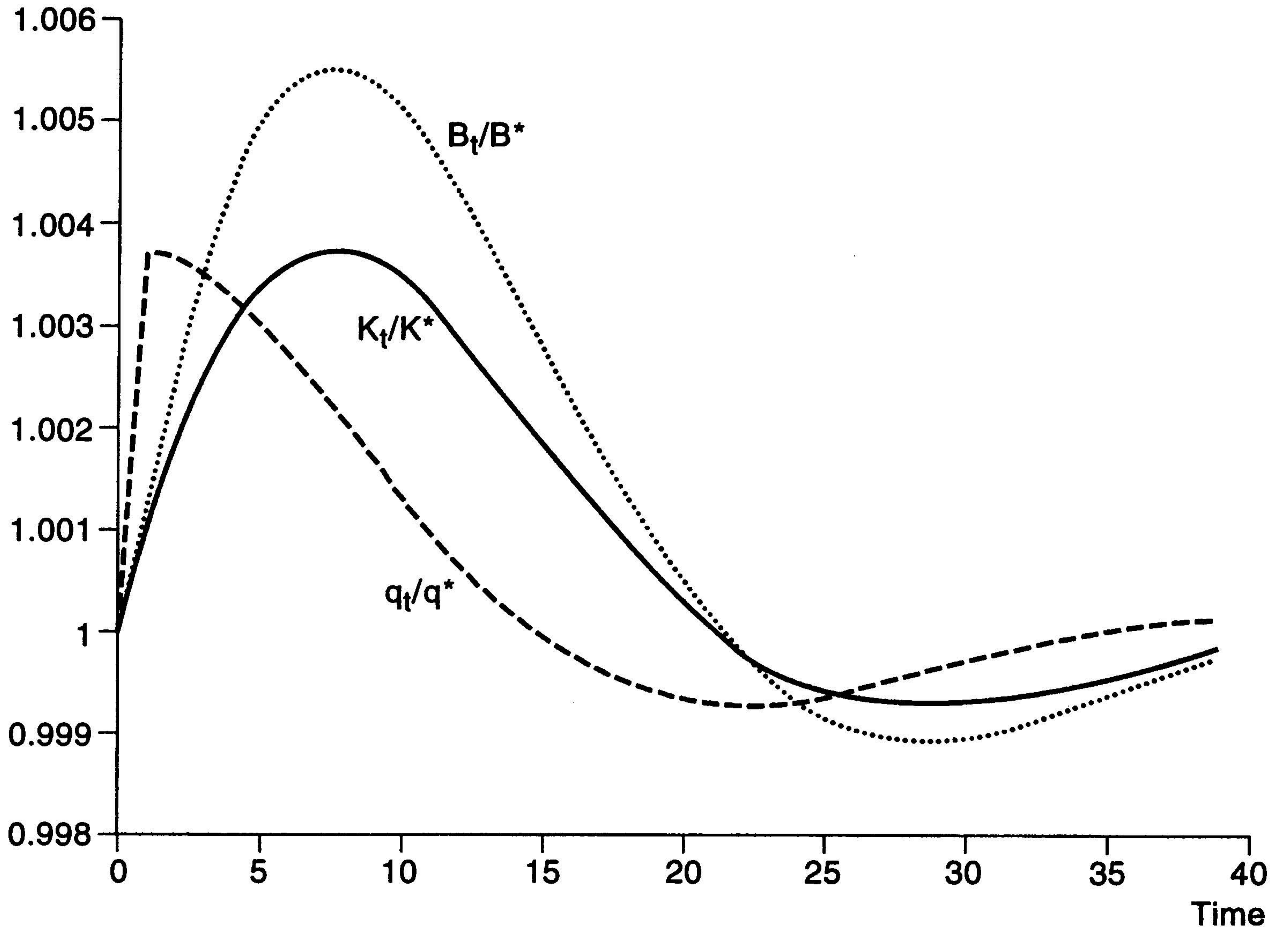


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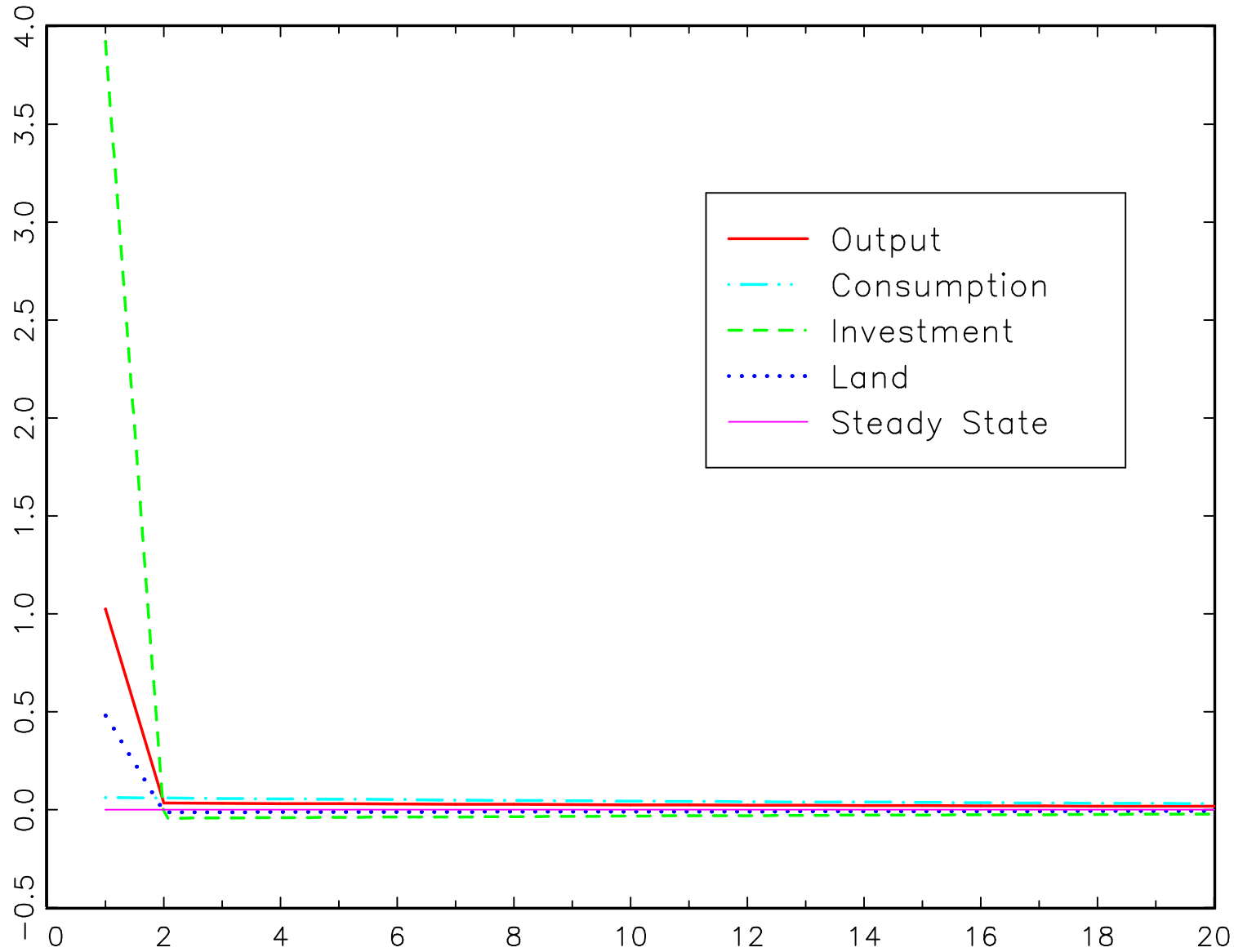


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- **Compare with Kiyotaki and Moore (1997):**



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- Intuition:
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 - large initial reaction of investment in collateralized asset
 - procyclical credit constraints relaxed
 - sizeable effect on output
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 - downturn in income, investment and consumption

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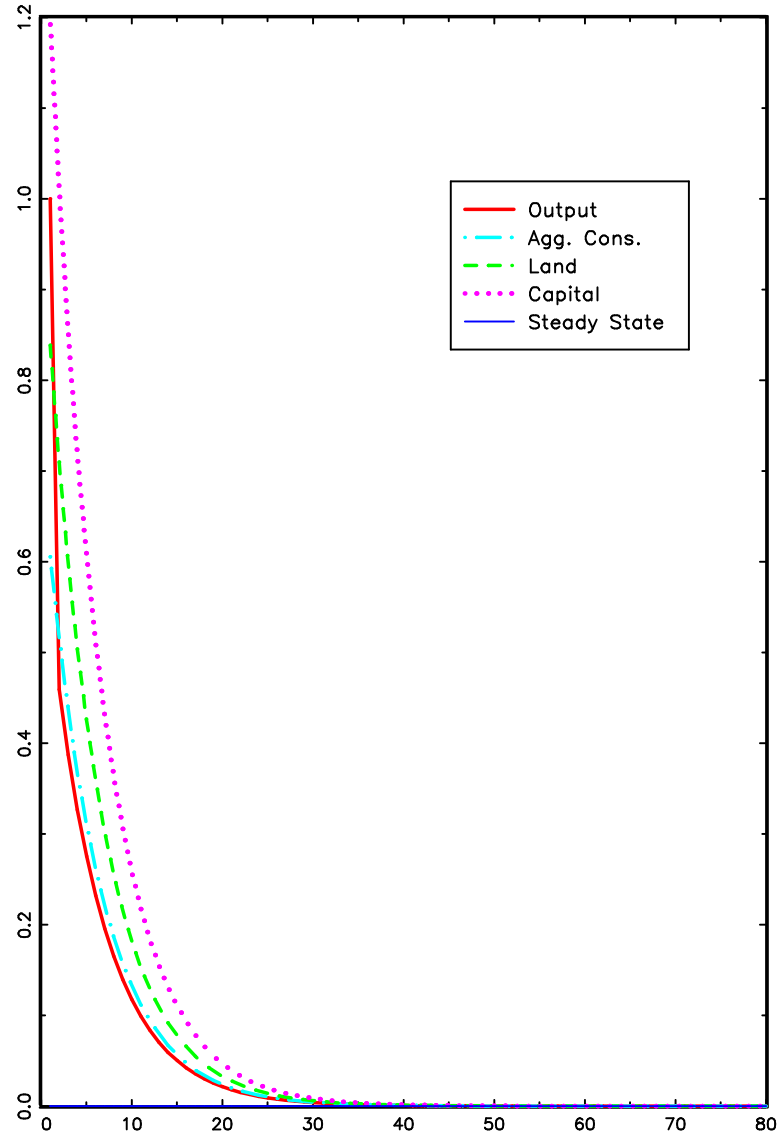
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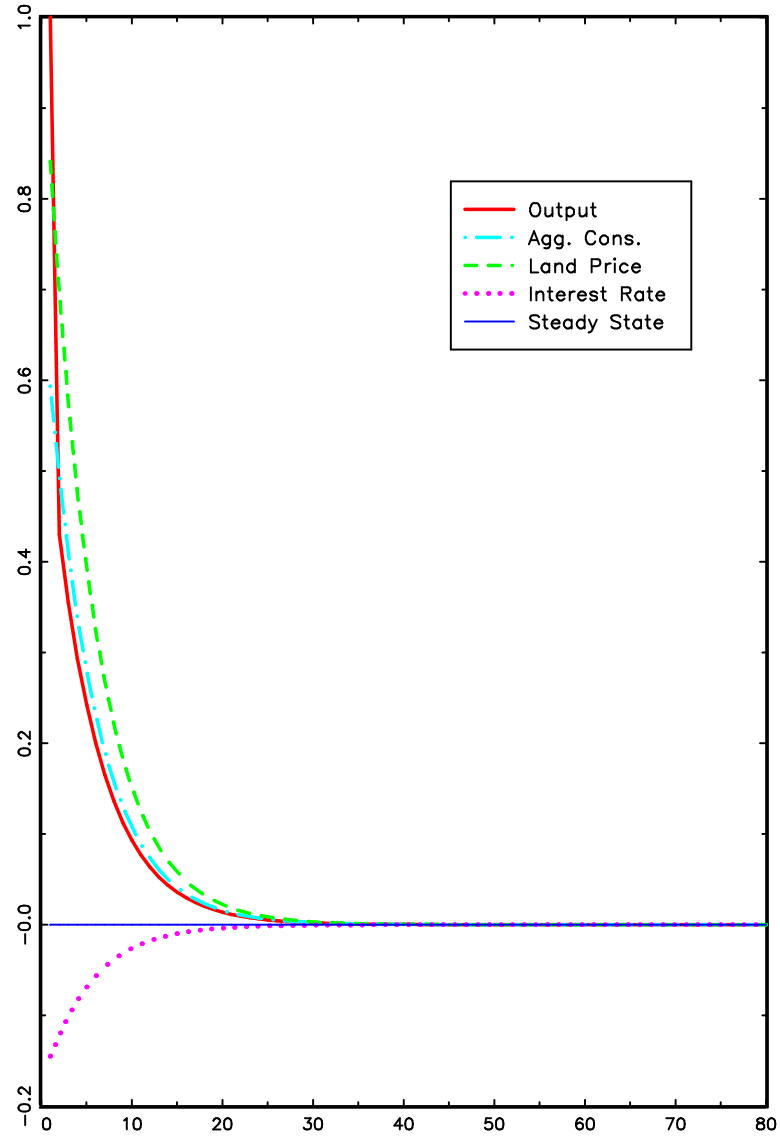
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- Habit formation *key*:

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3. Policy implications

- Model with labor
- Procyclical labor only if income effect on labor supply small
- We use Greenwood *et al.* (1988) with habit:

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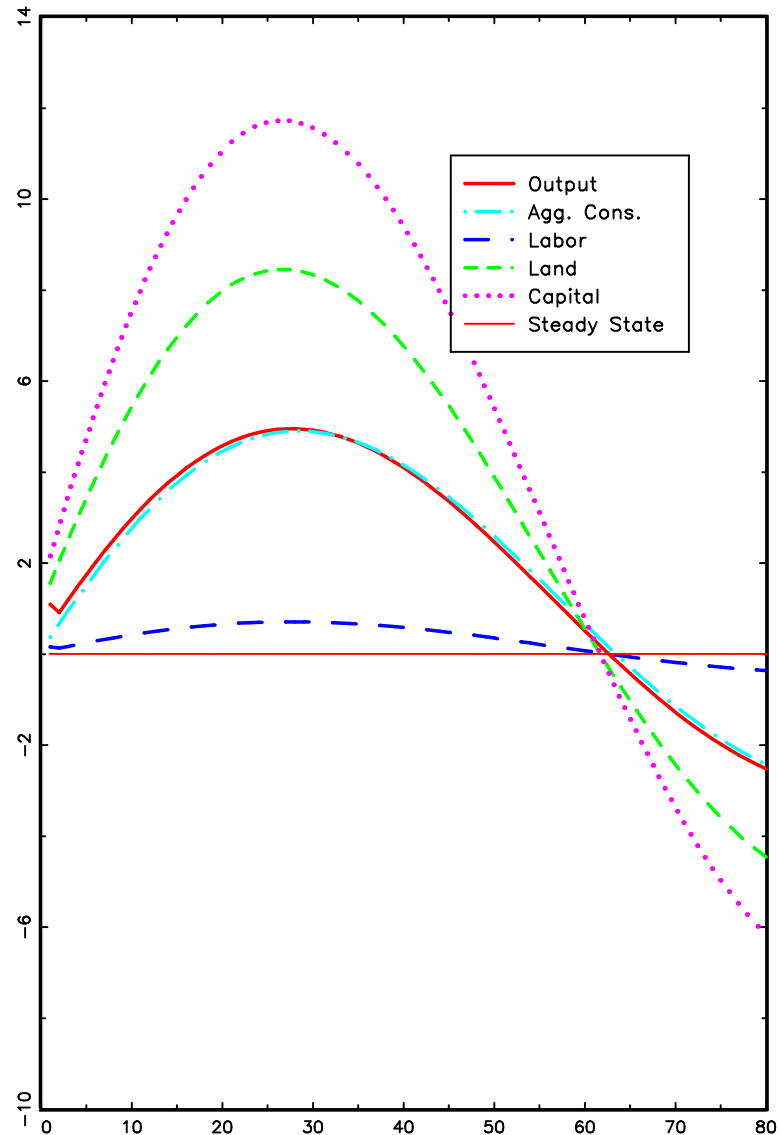
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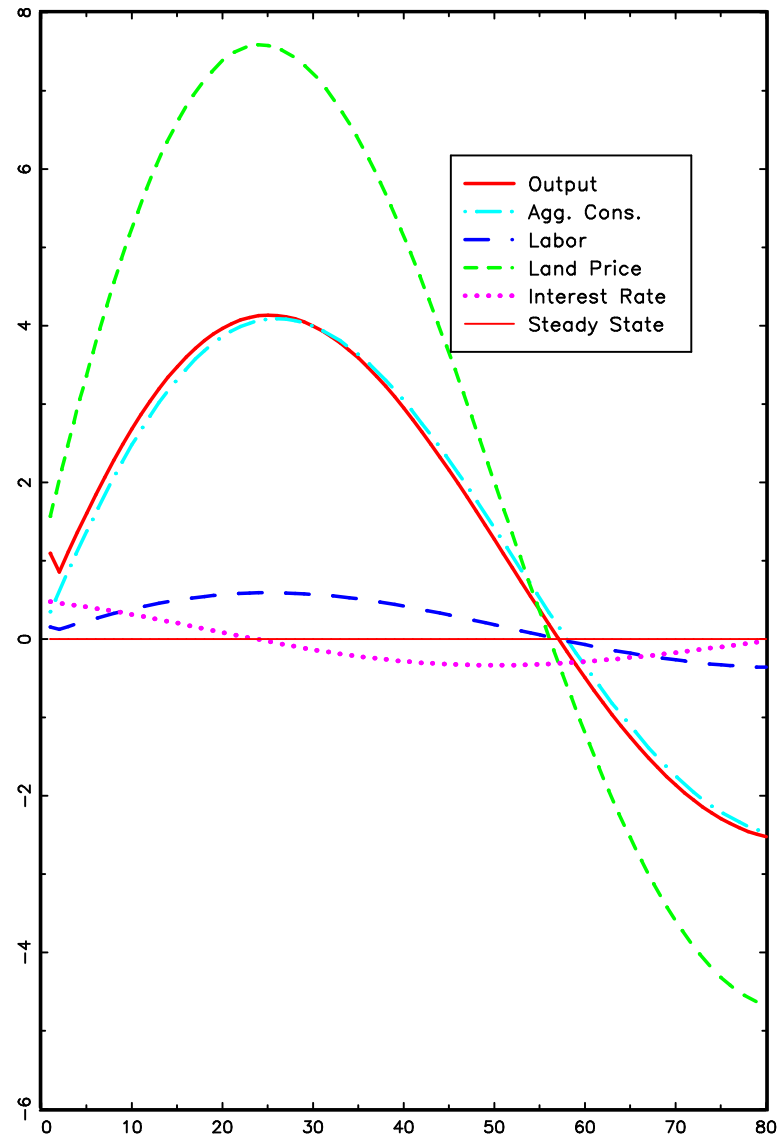
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- Impulse responses with $\eta = 6$:

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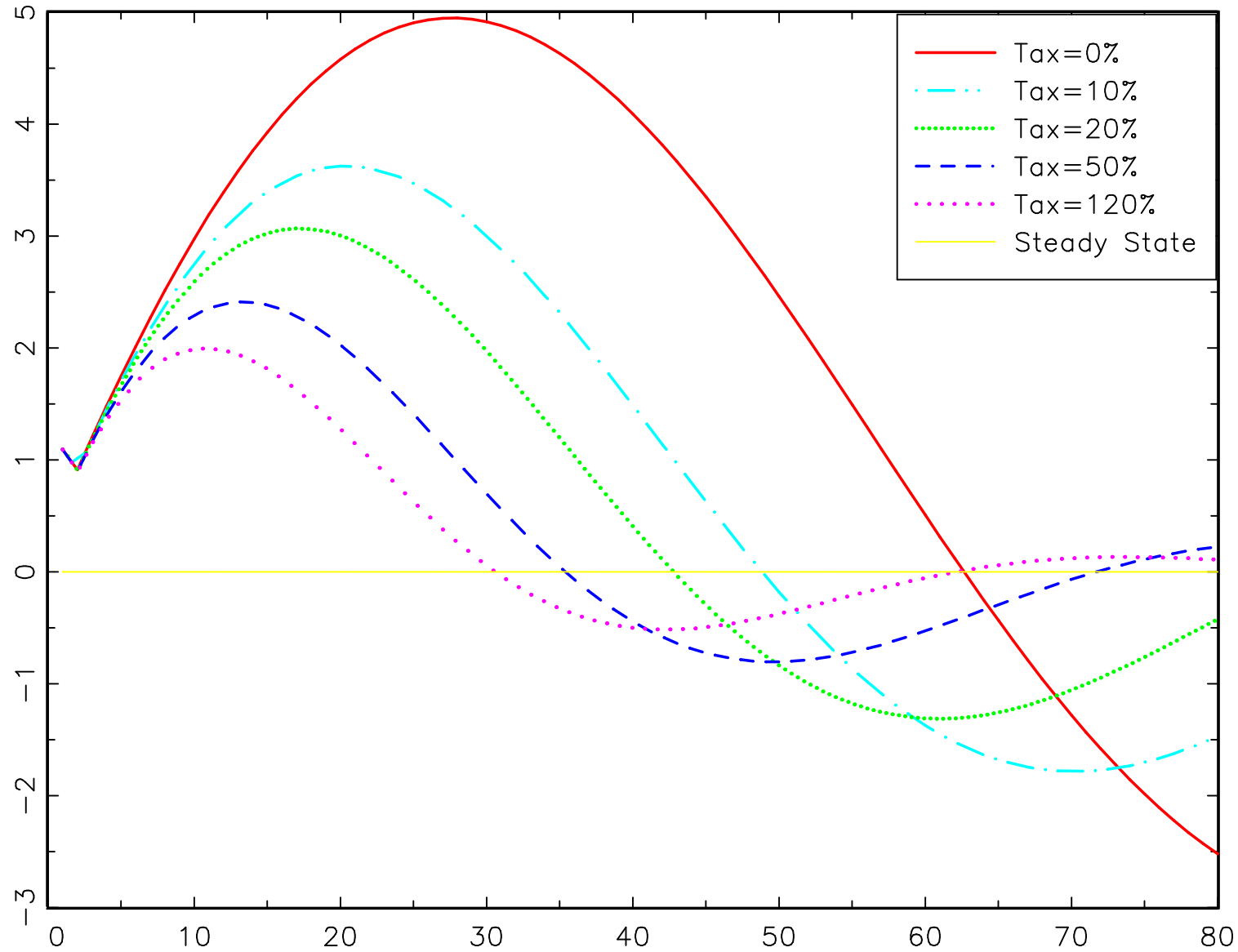


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- **What about constant-rate consumption tax rules?**
- **Similar results with constant-rate income tax**

- **Unexpected income tax cut: long recession after short-lived boom**

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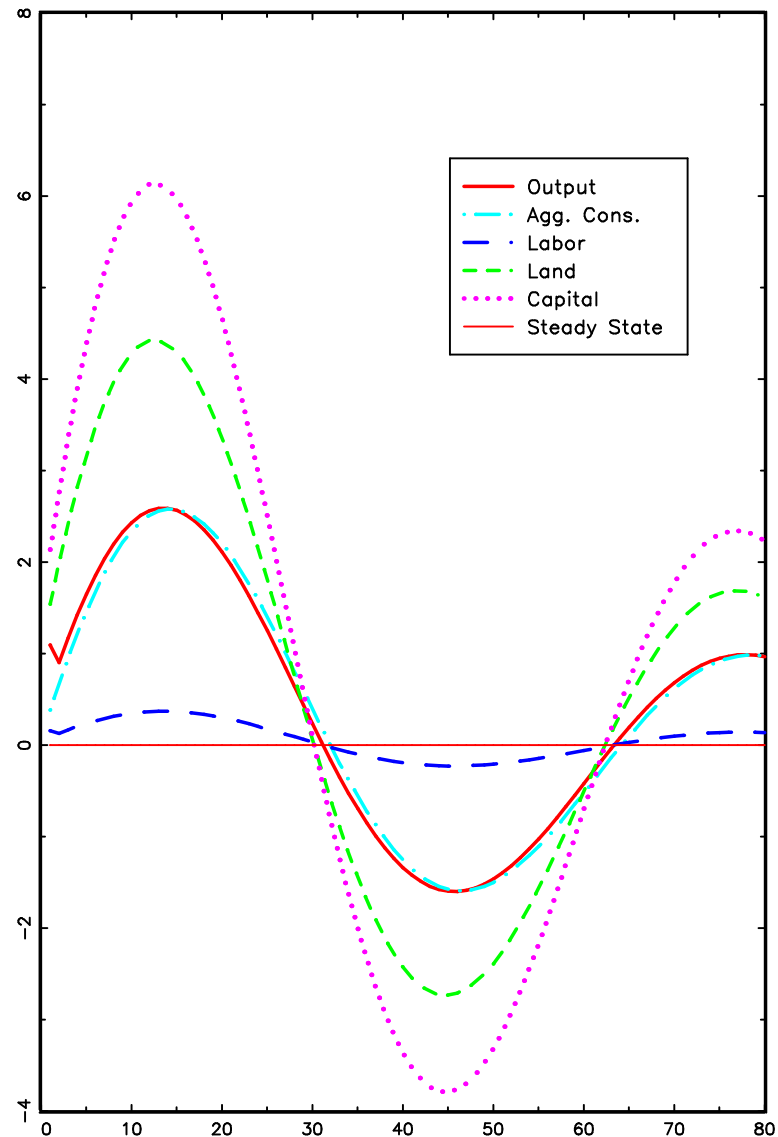
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