

Discussion of

# Political Economy of Sovereign Debt: A Theory of Cycles of Populism and Austerity

by DAVIS, Golosov, and Shourideh

---

Francisco Roldán  
IMF

XXV Workshop in International Economics and Finance  
UTDT, August 2023

The views expressed herein are those of the authors and should not be attributed to the IMF,  
its Executive Board, or its management.

# The *want* operator

---

## Model delivers

- Cyclical behavior
- “**Populist**” phase: low inequality, external borrowing
- “**Austerity**” phase: high inequality, debt deleveraging

## What to like

- Elegant theory
- **Overshooting** component — rare with fully rational, optimizing agents
- Makes sense of seemingly **inefficient** behavior

# The *want* operator

---

## Model delivers

- Cyclical behavior
- “**Populist**” phase: low inequality, external borrowing
- “**Austerity**” phase: high inequality, debt deleveraging

## What to like

- Elegant theory
- **Overshooting** component — rare with fully rational, optimizing agents
- Makes sense of seemingly **inefficient** behavior

## How it works

---

# How it works

---

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

---

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous



# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# How it works

## Ingredients

- Productivity types + labor income taxes + endogenous labor supply
  - ... Tax revenues lower earnings inequality but depress output
  - ... Efficiency / equity tradeoff
- Sovereign borrowing + no shocks and/or complete markets
  - ... Can borrow to finance transfers
  - ... Can default ex-post: risk-free subject to debt limit
  - ... Time inconsistency: debt limit is endogenous
- Overlapping generations + financial income taxes + save in government bonds
  - ... Can tax old people's savings (aka domestic default): reduce inequality with no distortion
  - ... Domestic debt + transfers reduces consumption inequality when income inequality is high
  - ... Time inconsistency: inequality limit is endogenous

# The key: two interacting sources of time inconsistency

- All choices subject to sustainability constraint

$$H(Y) \leq \frac{\hat{\beta}}{\beta} (W(B') - \underline{W})$$

- When constraint binds
  - To sustain more debt issuance
    - ... Need to provide incentives to repay tomorrow — Decrease  $H(Y)$  and  $Y$
  - To sustain more output
    - ... Need to tolerate more inequality tomorrow — Increase  $W(B')$ , decrease  $B'$
- Key: *tradeoff* is time-inconsistent

	Benefits	Costs
Debt	$t$	$t + 1$
Inequality	$t$	$t$ and $t + 1$



# The key: two interacting sources of time inconsistency

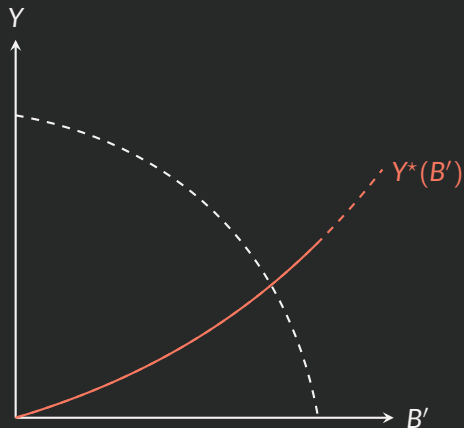
- All choices subject to **sustainability constraint**

$$H(Y) \leq \frac{\hat{\beta}}{\beta} (W(B') - \underline{W})$$

- When constraint **binds**
  - To sustain more debt issuance
    - ... Need to provide incentives to repay tomorrow — Decrease  $H(Y)$  and  $Y$
  - To sustain more output
    - ... Need to tolerate more inequality tomorrow — Increase  $W(B')$ , decrease  $B'$
- Key: *tradeoff* is **time-inconsistent**

	Benefits	Costs
Debt	$t$	$t + 1$
Inequality	$t$	$t$ and $t + 1$

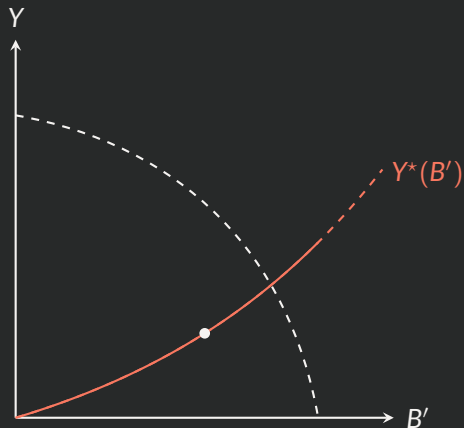
# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind

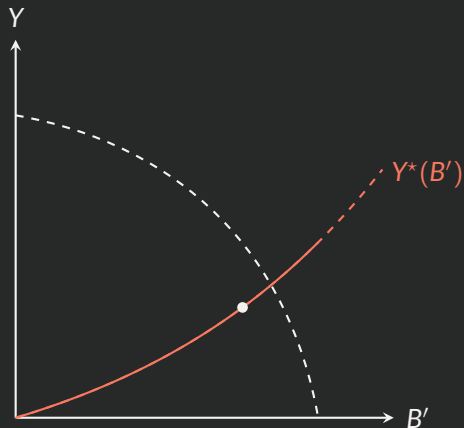
But  $B'(B)$  increasing...

# The Debt/Output Frontier



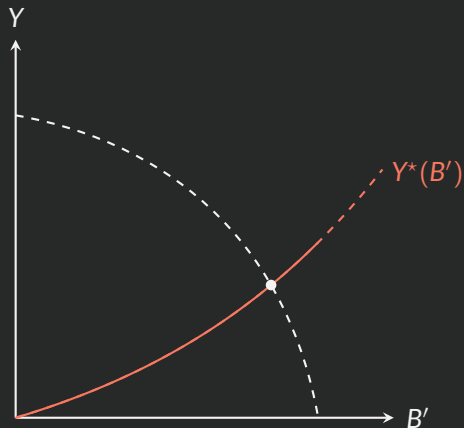
- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly

# The Debt/Output Frontier



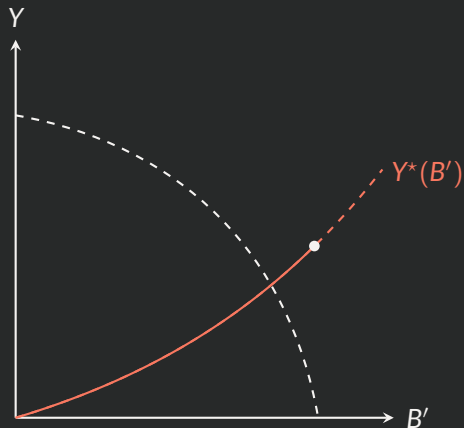
- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, reduce  $B'$

# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds **exactly**
- When constraint binds, reduce  $B'$   
 $\implies$  Hump-shaped  $B'(B)$

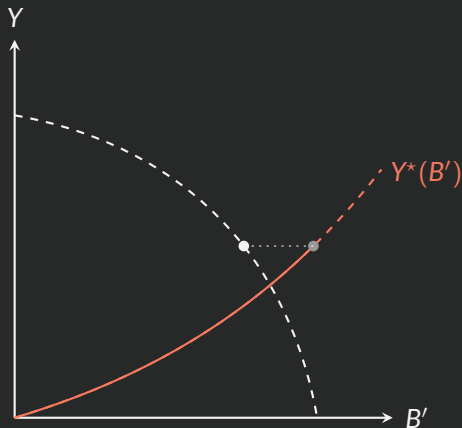
# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, **reduce**  $B'$   
 $\implies$  Hump-shaped  $B'(B)$

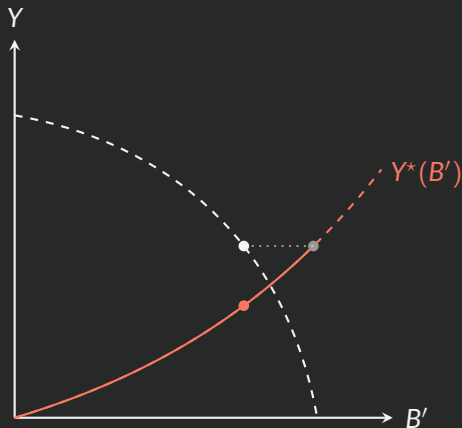
But  $\Delta B_0$  with the same  $B'$  unconstrained

# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, reduce  $B'$   
 $\implies$  Hump-shaped  $B'(B)$
- But  $\exists B_0$  with the same  $B'$  *unconstrained*  
 $\implies B'(B_0) = B_0$

# The Debt/Output Frontier

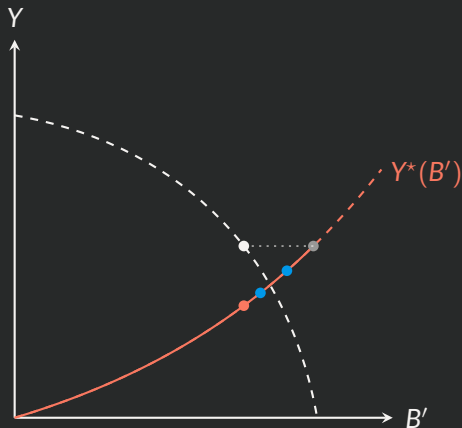


- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, reduce  $B'$   
 $\implies$  Hump-shaped  $B'(B)$
- But  $\exists B_0$  with the same  $B'$  *unconstrained*  
 $\implies B'(B_0) > B_0$

Constraint binds once and only once

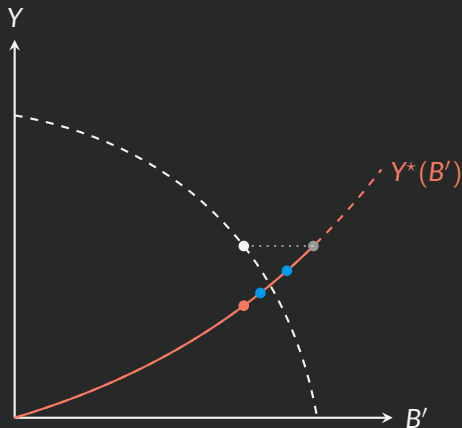


# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, reduce  $B'$   
 $\implies$  Hump-shaped  $B'(B)$
- But  $\exists B_0$  with the same  $B'$  *unconstrained*  
 $\implies B'(B_0) > B_0$
- Constraint binds *intermittently*

# The Debt/Output Frontier



- For low  $B$ , low choice of  $B'$   
 $\implies$  constraint does not bind
- But  $B'(B)$  increasing...
- At some point constraint binds exactly
- When constraint binds, reduce  $B'$   
 $\implies$  Hump-shaped  $B'(B)$
- But  $\exists B_0$  with the same  $B'$  *unconstrained*  
 $\implies B'(B_0) > B_0$
- Constraint binds **intermittently**

## Two Comparisons

---

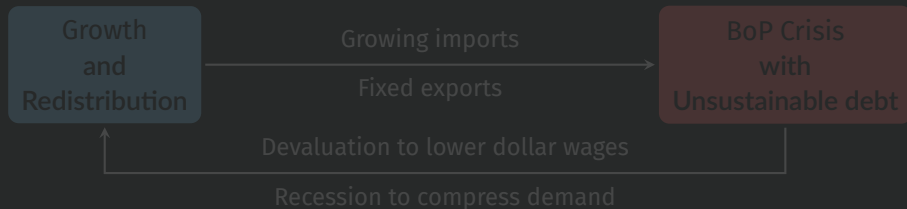
## Phelan and Stacchetti (2001)

- Similar model with
  - Endogenous labor supply
  - Savings
  - Time-inconsistent taxes
- Time inconsistency: **capital** accumulation
  - Want tax capital ex-post, promise low taxes ex-ante
- No cycles? — Example with  $k_0 > k^*$  overshoots initial capital reduction
  - Only **link** between  $t$  and  $t + 1$  is the capital stock
  - To induce savings, can subsidize labor today or 'promise' low taxes
  - ... Same result



# Stop & Go Dynamics

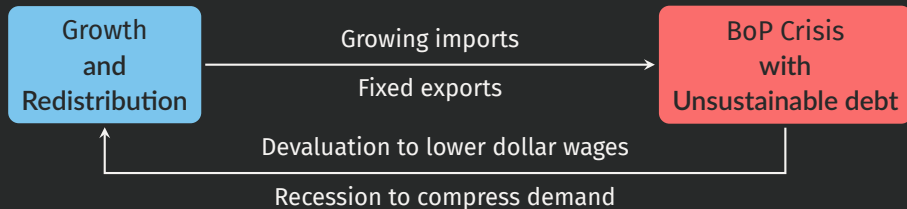
- Phenomenon also studied by Latin American **structuralists**
  - ... Díaz-Alejandro, Ferrer, Braun and Joy, etc...
  - ... More about shocks/imperfect planning than purposeful overshooting
- Also two phases (but with different names)



- **Testable** differences:
  - Growth in 'Go' phase v. low labor and output in 'populist' phase
  - REER depreciation in 'Stop' phase v. high after-tax wages in 'austerity'?

# Stop & Go Dynamics

- Phenomenon also studied by Latin American **structuralists**
  - ... Díaz-Alejandro, Ferrer, Braun and Joy, etc...
  - ... More about shocks/imperfect planning than purposeful overshooting
- Also two phases (but with different names)



- **Testable** differences:
  - Growth in 'Go' phase v. low labor and output in 'populist' phase
  - REER depreciation in 'Stop' phase v. high after-tax wages in 'austerity'?

# Stop & Go Dynamics

- Phenomenon also studied by Latin American **structuralists**
  - ... Díaz-Alejandro, Ferrer, Braun and Joy, etc...
  - ... More about shocks/imperfect planning than purposeful overshooting
- Also two phases (but with different names)



- **Testable** differences:
  - Growth in 'Go' phase v. low labor and output in 'populist' phase
  - REER depreciation in 'Stop' phase v. high after-tax wages in 'austerity'?

# Concluding Remarks

---

- Excellent theoretical exercise
  - ... All assumptions needed, sharp characterization, basic idea applies to many setups
- Last comments
  - ... Quantitative performance?
    - ... Baseline is a little underwhelming
    - ... Three-period model seems to have larger effects
    - ... Would a full life-cycle give more traction?
  - ... How to think about best SPE?
    - ... Harsh punishments: better model for US / Advanced Europe?
    - ... Eurozone crisis, LatAm coups fit more with shocks than planning?
    - ... Are all SPEs cyclical?



# Concluding Remarks

---

- Excellent theoretical exercise
  - ... All assumptions needed, sharp characterization, basic idea applies to many setups
- Last comments
  - ... Quantitative performance?
    - ... Baseline is a little underwhelming
    - ... Three-period model seems to have larger effects
    - ... Would a full life-cycle give more traction?
  - ... How to think about best SPE?
    - ... Harsh punishments: better model for US / Advanced Europe?
    - ... Eurozone crisis, LatAm coups fit more with shocks than planning?
    - ... Are all SPEs cyclical?

# Concluding Remarks

---

- Excellent theoretical exercise
  - ... All assumptions needed, sharp characterization, basic idea applies to many setups
- Last comments
  - ... Quantitative performance?
    - ... Baseline is a little underwhelming
    - ... Three-period model seems to have larger effects
    - ... Would a full life-cycle give more traction?
  - ... How to think about best SPE?
    - ... Harsh punishments: better model for US / Advanced Europe?
    - ... Eurozone crisis, LatAm coups fit more with shocks than planning?
    - ... Are all SPEs cyclical?