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Financialisation, macroeconomic regimes and regime shifts after the 2007-09 crisis

A post-Keynesian simulation approach

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Agenda

1. Introduction
2. The model
3. Simulation scenarios
4. Outlook

Introduction

Autonomous demand-led growth

$$Y = mA$$

Short run: $\hat{Y} = \widehat{m} + \widehat{A}$

Long run: $\hat{Y} = \widehat{A}$

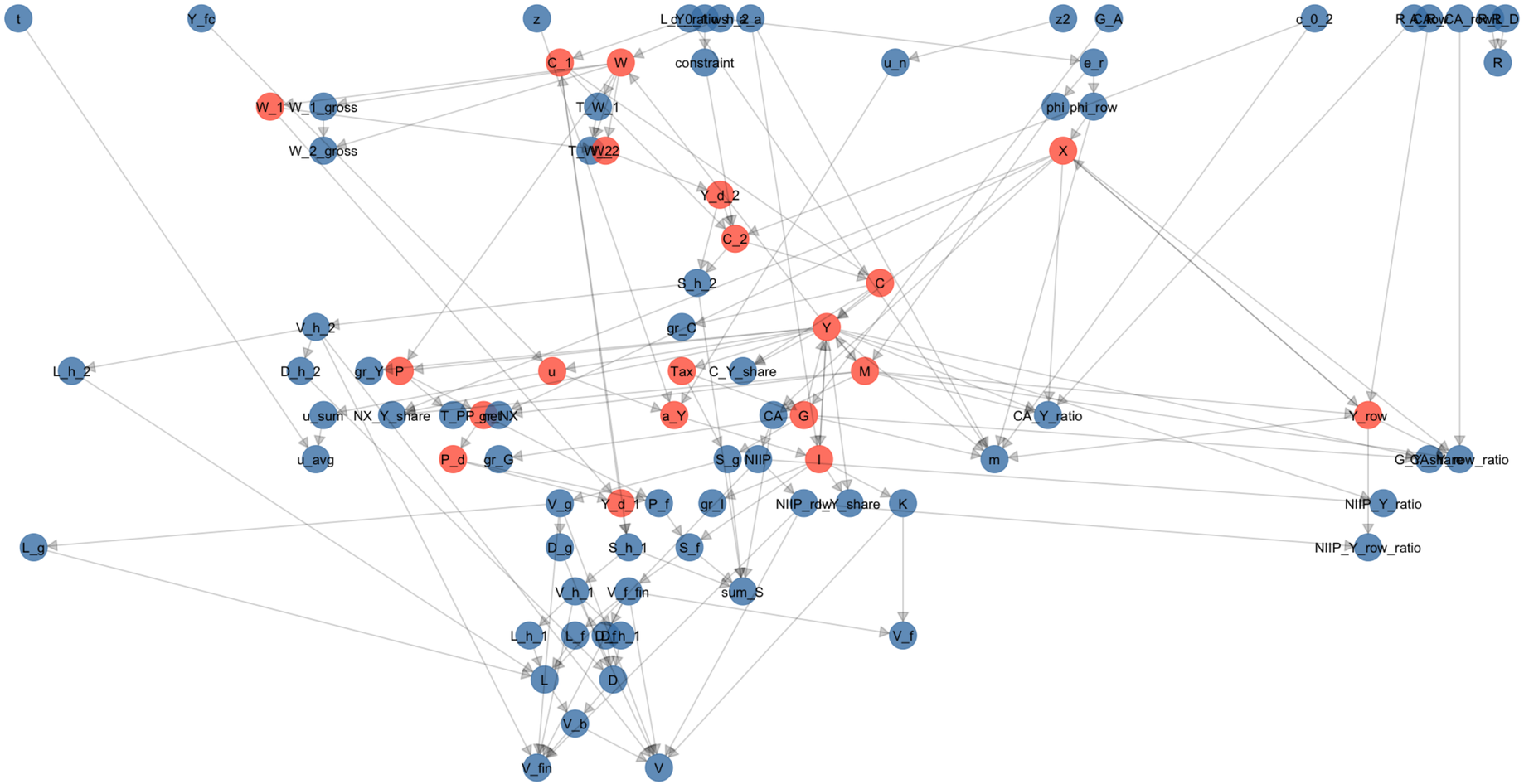
- Usually, A is driven by one of G, NX, C
- Aim: towards a more general model of simulating autonomous demand driven growth
  - multiple potential growth drivers
  - bringing together cycle & trend in one model

Dynamic equilibrium stock-flow consistent model (DESFC)
Causal graph

Red: short-run Keynesian goods market adjustment

Blue: components autonomous to short-run equilibrium

- autonomous demand
- Financial stocks



The model

Output and income

$$Y = C + I + G + X - M$$

$$Y = W + P$$

$$W = \omega Y$$

$$T = \tau Y$$

Stocks

Balance sheet matrix

name	Rich	Non-rich	Firms	Govt	Banks	RoW	Sum
Deposits	+D_h_1	+D_h_2	+D_f	+D_g	-D		
Loans	-L_h_1	-L_h_2	-L_f	-L_g	+L	+NIIP_row	
Fixed Capital			+K				+K
Net worth	-V_h_1	-V_h_2	-V_f	-V_g	-V_b	-NIIP_row	- K

Flows

name	Rich	Non-rich	Firms current	Firms capital	Govt	Banks	RoW	Sum
Consumption	-C_1	-C_2	+C					
Investment			+I	-I				
Govt. Expenditures			+G		-G			
Exports			+X				-X	
Imports			-M				+M	
Wages	+W_1_gross	+W_2_gross	-W					
Taxes	-T_W_1	-T_W_2	-T_P		+Tax			
Profits	+P_d		-P_net	+P_f				
Int. payments on loans	-r[-1] * L_h_1[-1]	-r[-1] * L_h_2[-1]	-r[-1] * L_f[-1]		-r[-1] * L_g[-1]	+r[-1] * L[-1]	+r[-1] * NIIP_row[-1]	
Int. payments on deposits	+r[-1] * D_h_1[-1]	+r[-1] * D_h_2[-1]	+r[-1] * D_f[-1]			-r[-1] * D[-1]		
Change in loans	+d(L_h_1)	+d(L_h_2)		+d(L_f)	+d(L_g)	-d(L)	-d(NIIP_row)	
Change in deposits	-d(D_h_1)	-d(D_h_2)		-d(D_f)	-d(D_g)	+d(D)		

Households

Income

Rich

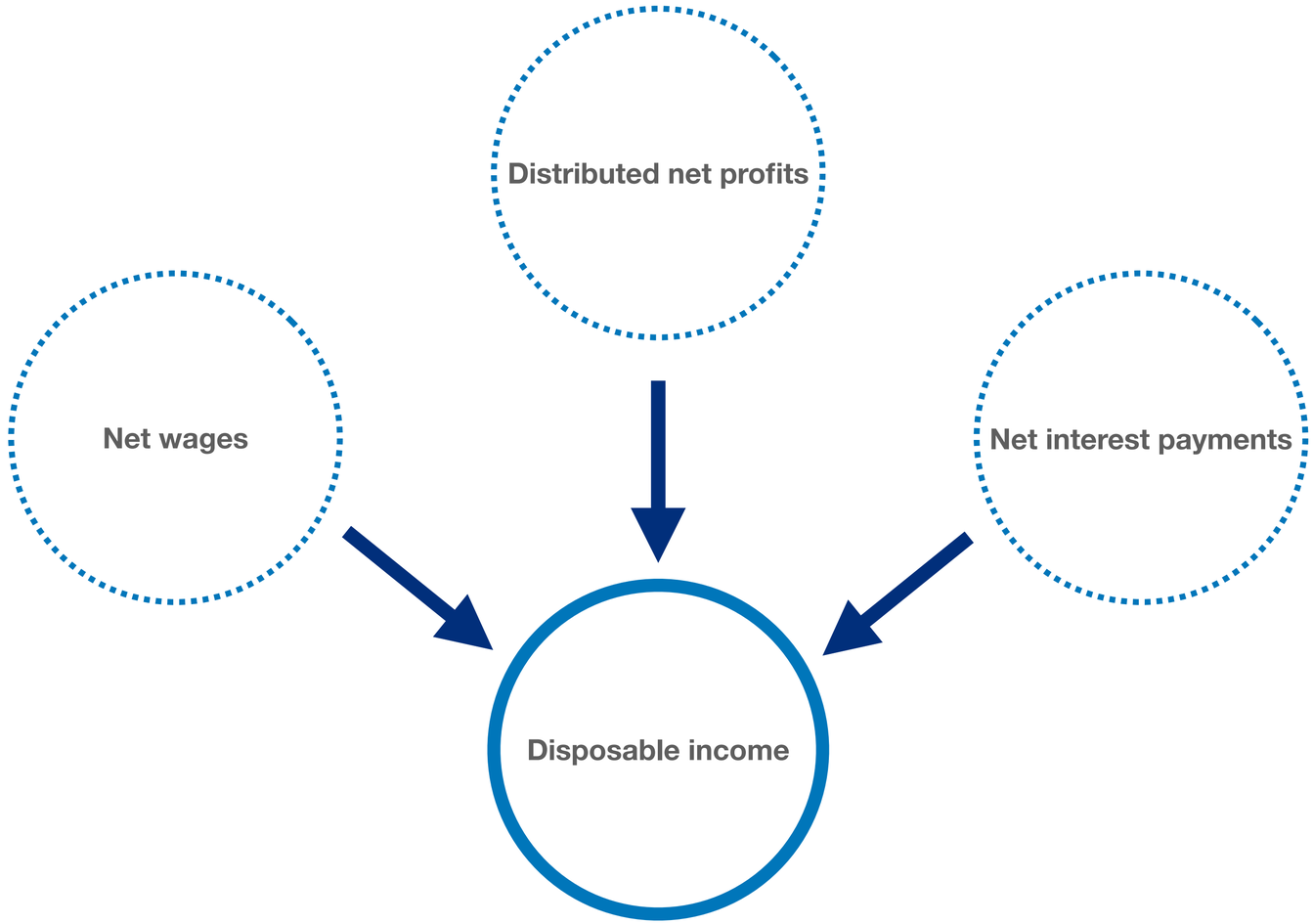
$$W_1 = \omega_1(1-\tau)W$$

$$Y_{d1} = W_1 + P_d + r_{-1}V_{h1_{-1}} + R$$

Non-rich

$$W_2 = (1-\tau)W - W_1$$

$$Y_{d2} = W_2 + r_{-1}V_{h2_{-1}}$$



Households

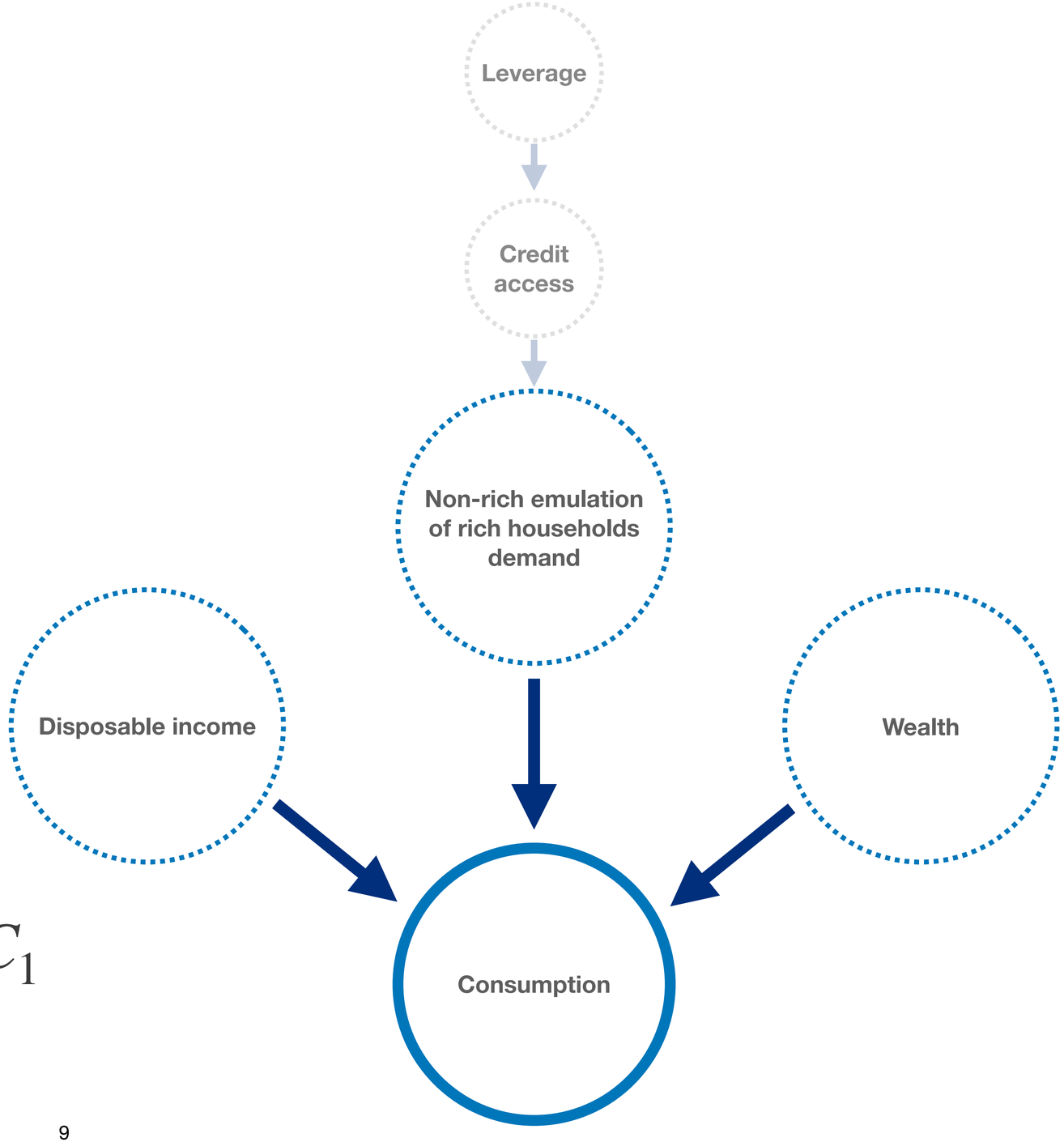
Consumption

Rich

$$C_1 = c_{a1} + c_{Yd1} Y_{d1} + c_{V1} D_{1_{-1}}$$

Non-rich

$$C_2 = c_{a2} + c_{Yd2} Y_{d2} + c_{V2} D_{2_{-1}} + \alpha C_1$$



Firms

Investment

$$I_{net} = a_a + a_Y Y - a_r R_{Lf} - \delta K_{-1}$$

$$K = K_{-1} + I - \delta K_{-1}$$

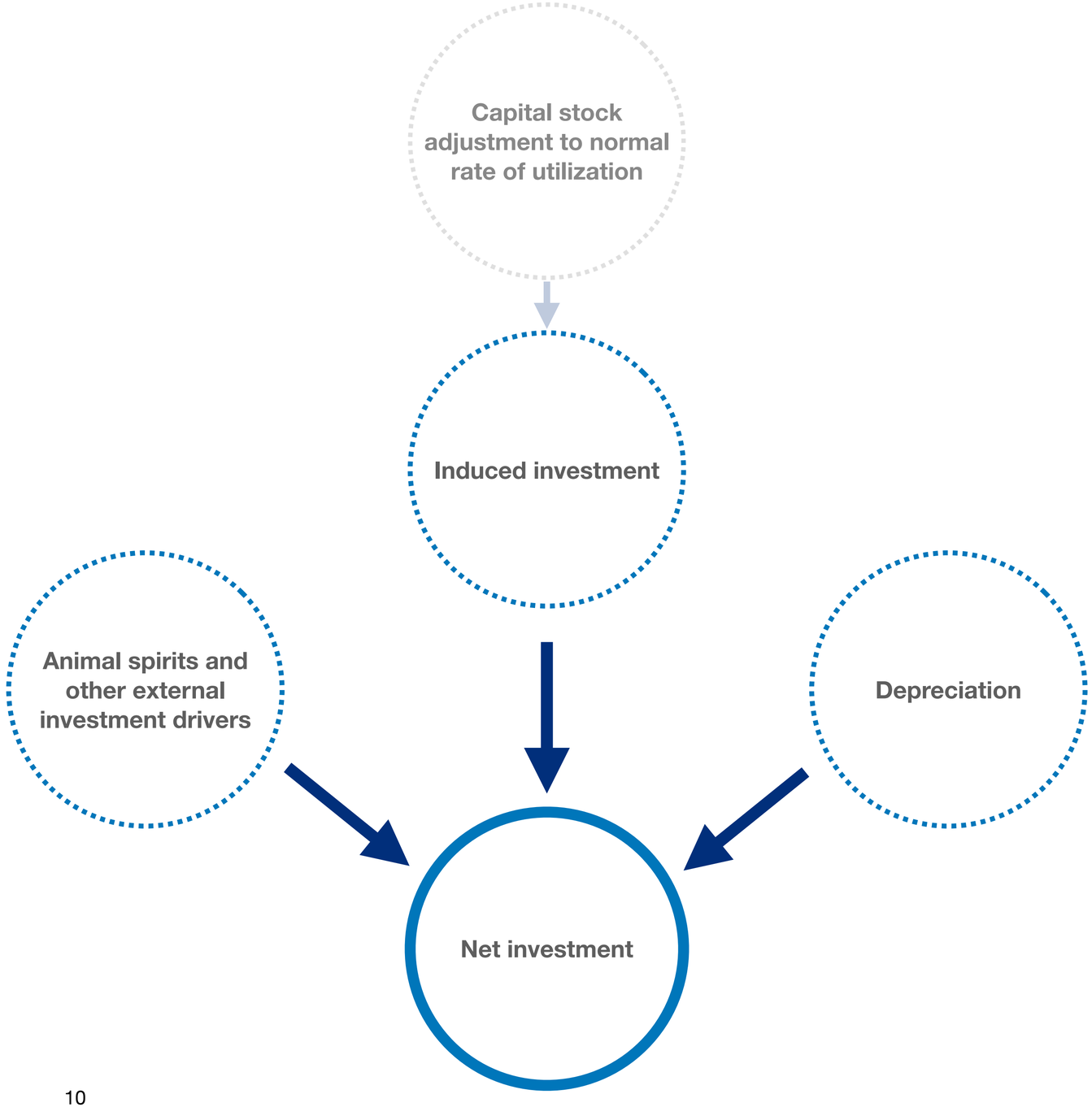
Capital-stock adjustment

if $\left| u - u_n \right| > x$: $\Delta a_Y = a_{Y_{-1}} \gamma \left(u - u_n \right)$

otherwise: $\Delta a_Y = 0$

Endogenous normal rate

$$u_n = u_{n_{-1}} + \zeta \left(\bar{u}_{-1} - u_{n_{-1}} \right)$$



Government

Expenditures

$$G = G_A + \sigma T$$

$$S_g = T - G - r_{-1} V_{g-1}$$

External sector

Domestic trade balance

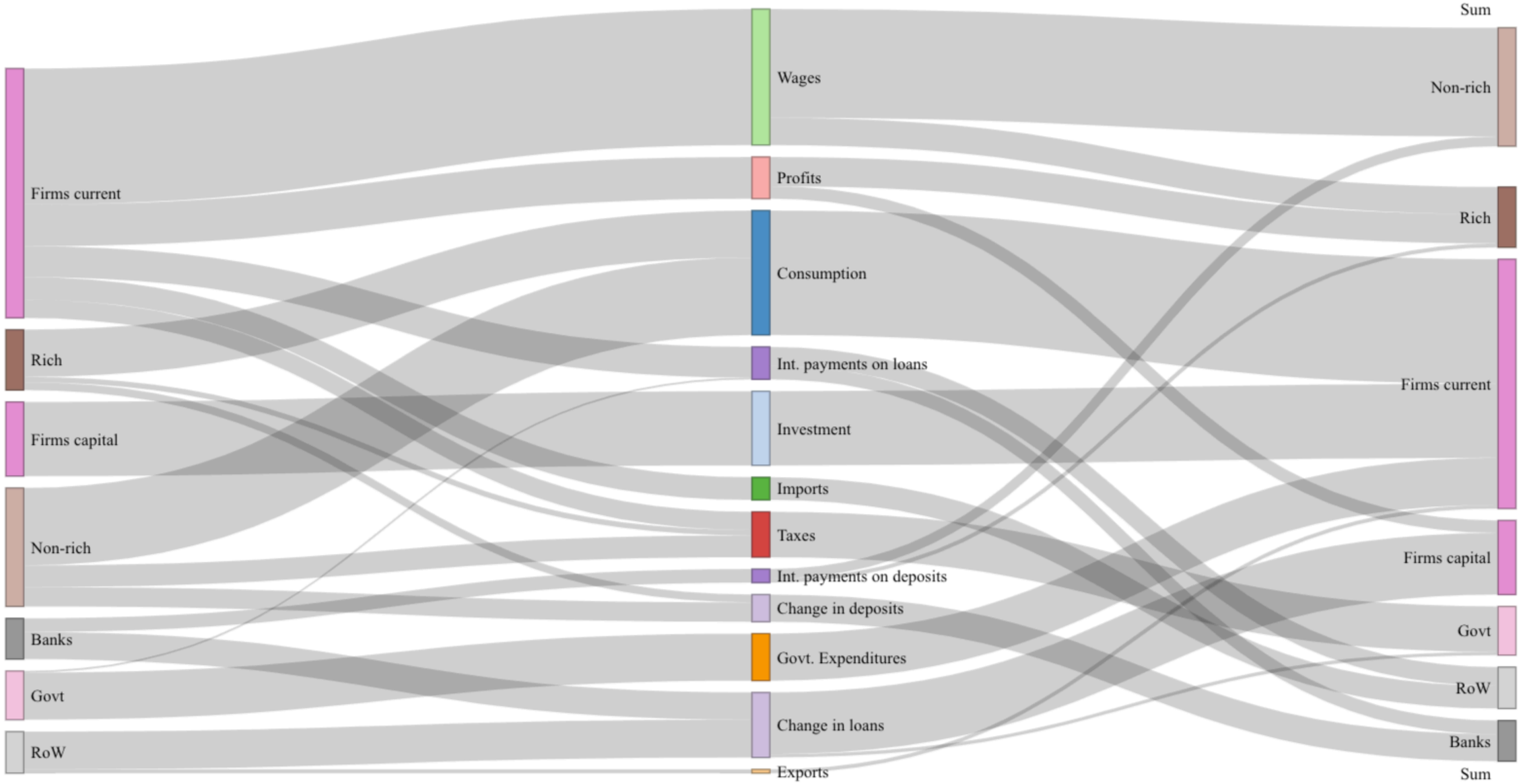
$$M = \phi Y$$

$$X = \phi_{RoW} Y_{RoW}$$

External economy

$$Y_{RoW} = A_{RoW} + M - X$$

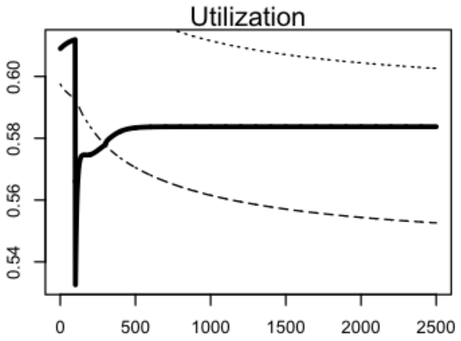
Flows

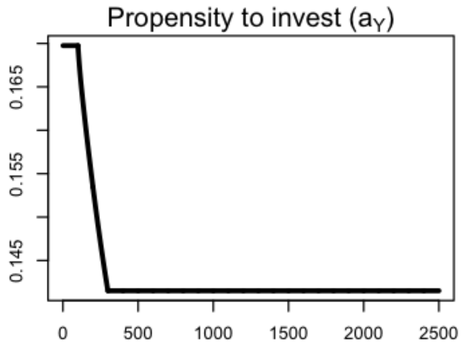

Firms current
Rich
Firms capital
Non-rich
Banks
Govt
RoW
Wages
Profits
Consumption
Int. payments on loans
Investment
Imports
Taxes
Int. payments on deposits
Change in deposits
Govt. Expenditures
Change in loans
Exports
Sum
Non-rich
Rich
Firms current
Firms capital
Govt
RoW
Banks
Sum

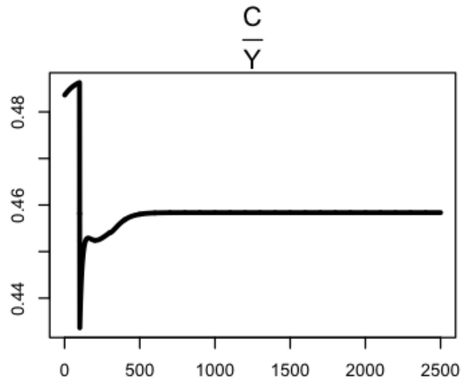
Wage-led regime

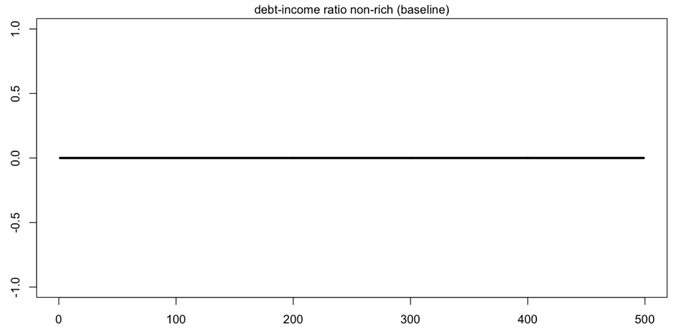
Aggregate wage share (-)

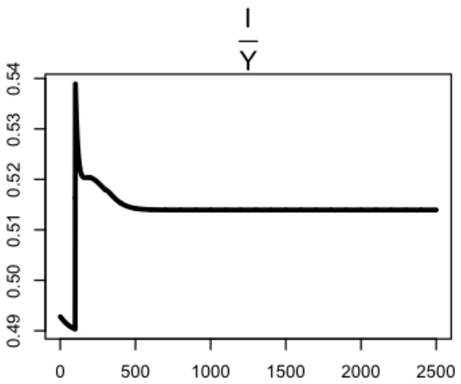
Wage share of rich (+)

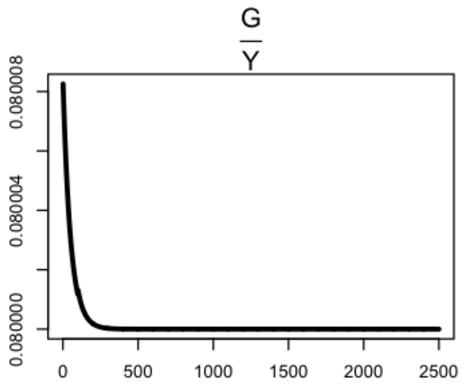


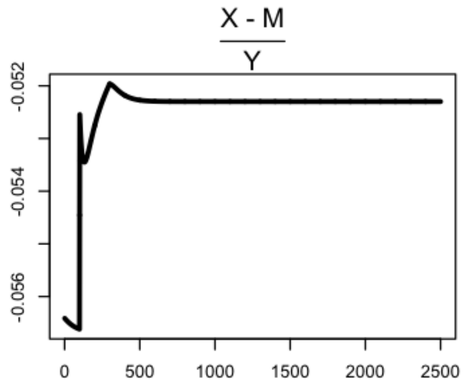






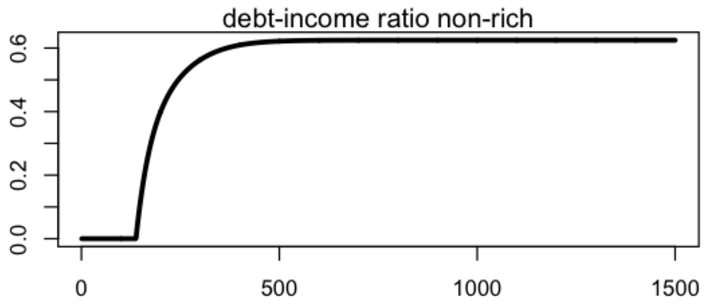


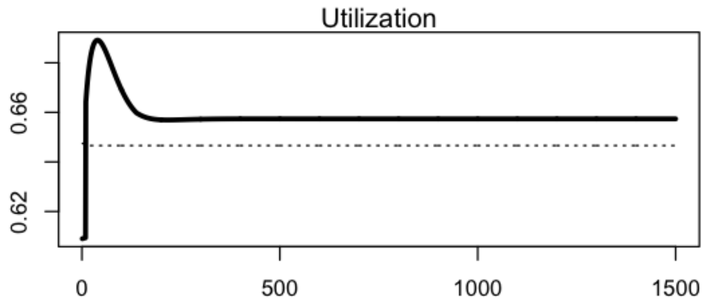


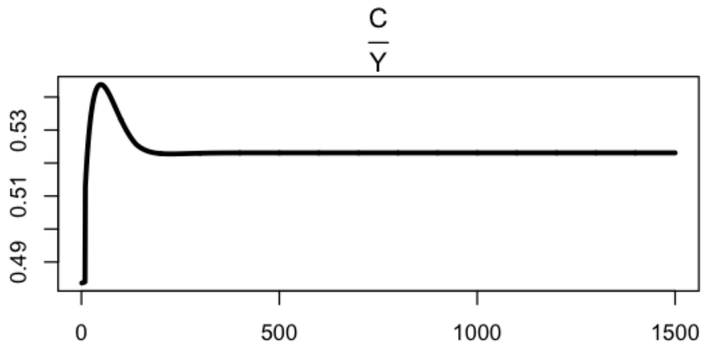


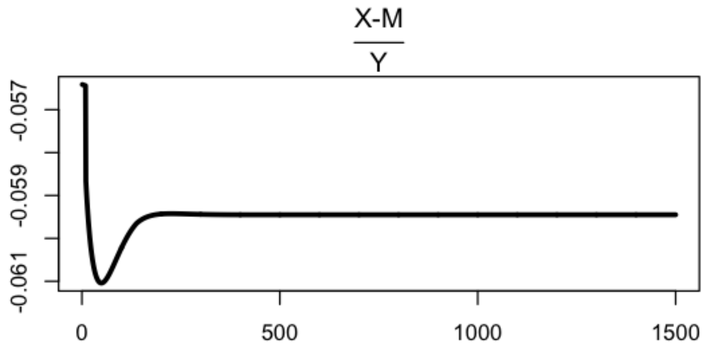
Debt-led regime

- Institutions and financial norms allow for credit-financed emulation effects (consumption, housing)
- Higher utilization, despite rising inequality
- Rising financial fragility



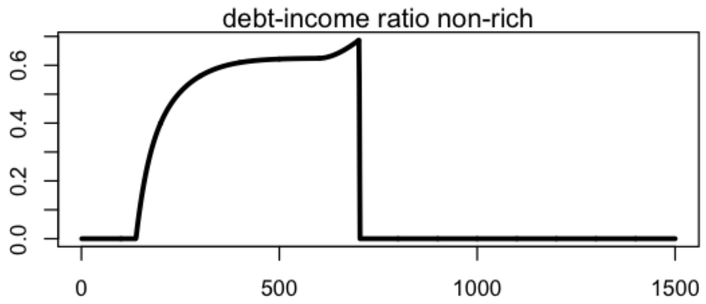


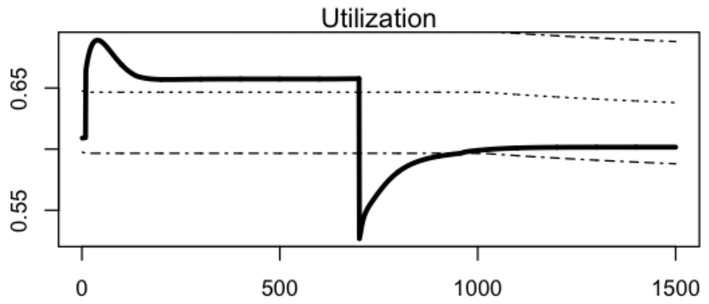


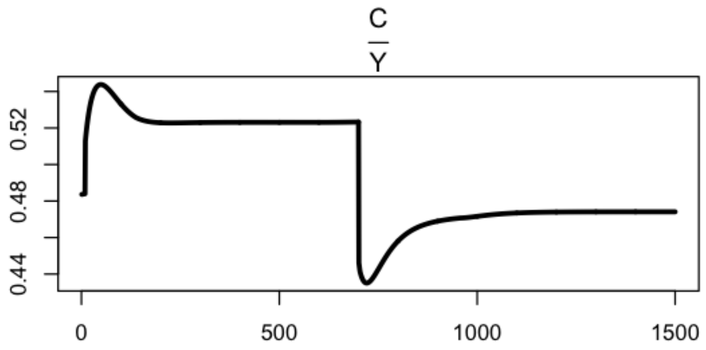


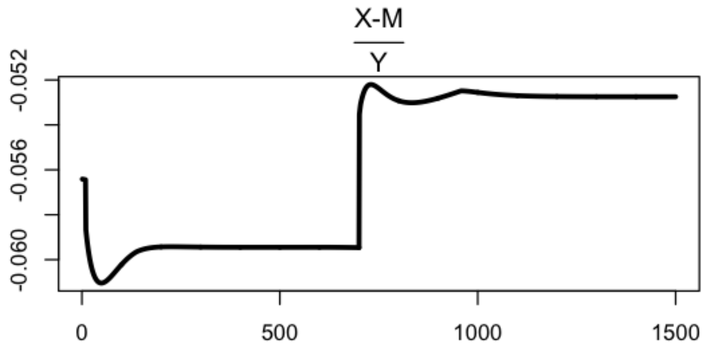
Debt-led regime & its crisis

- **Marginal distributional change (or interest spike due to global crisis) can trigger "Minsky moment" (sudden credit constraints & precautionary saving)**



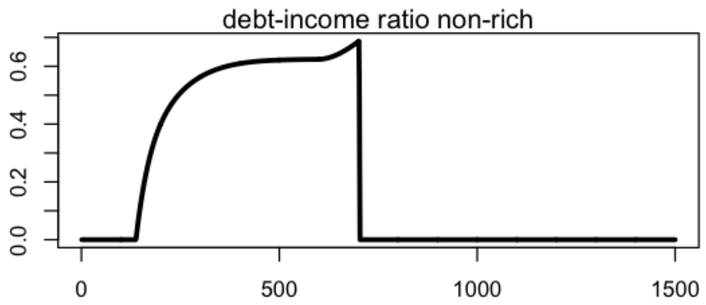


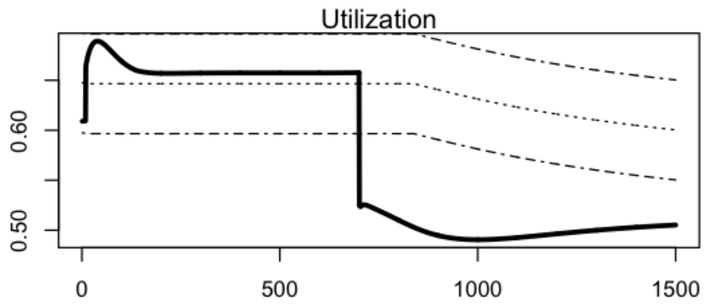


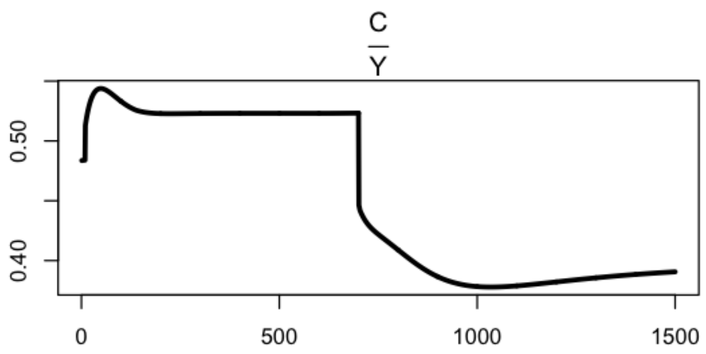


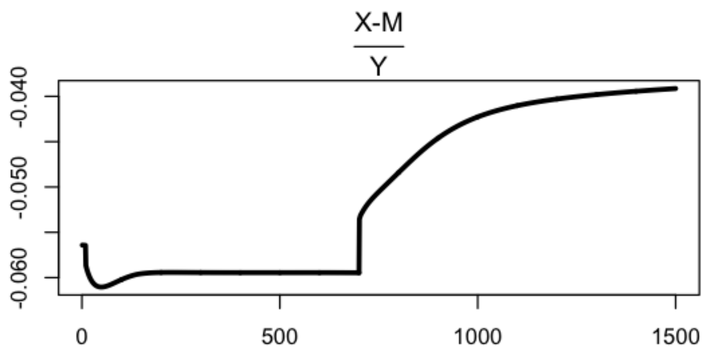
Debt-led regime & global recession

- **Fall in aut. growth of external economy**



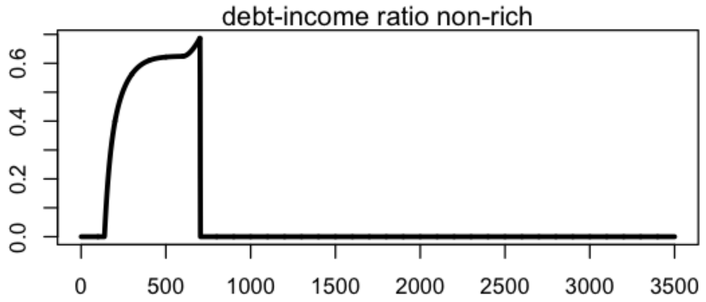


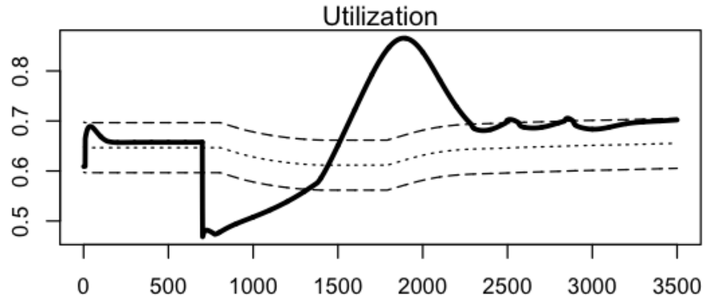


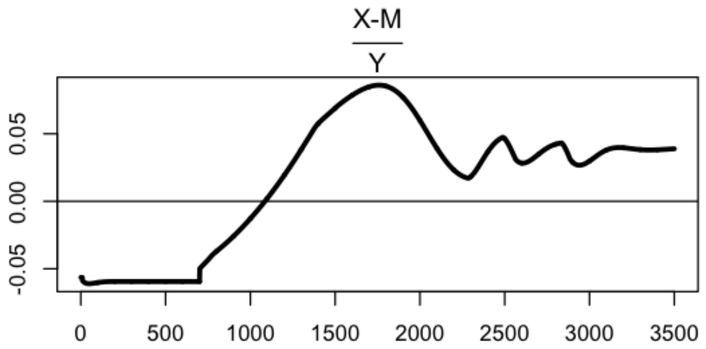


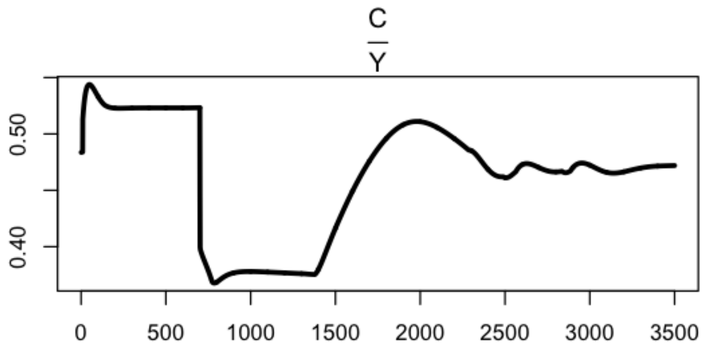
"Export-led" regime post-crisis?

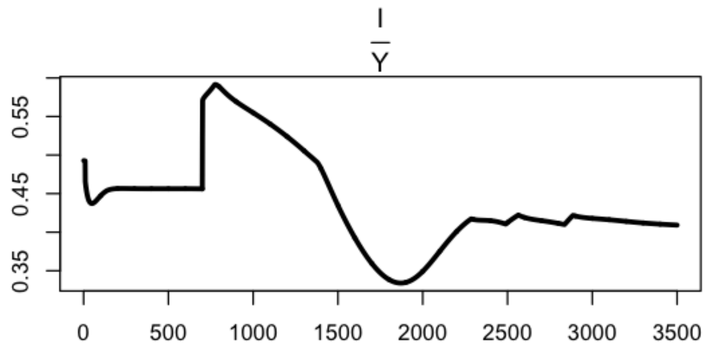
- Sustained depression of domestic demand (e.g. austerity reduces aut. investment)
- Depends on external growth





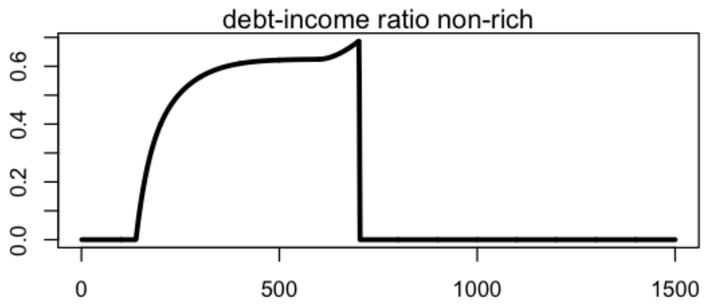


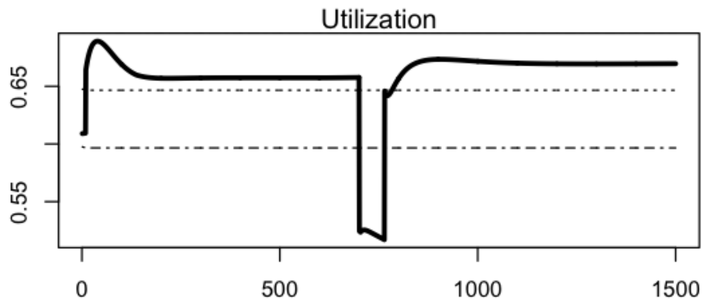


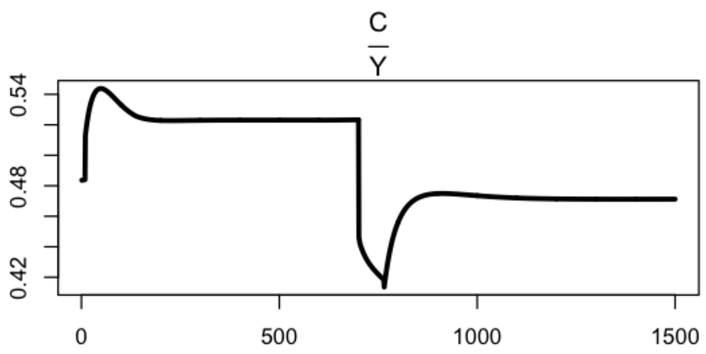


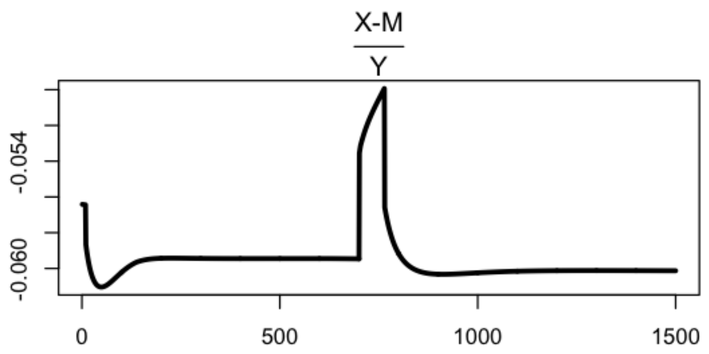
State-led regime to the rescue?

- **Fiscal policy (gov. consumption) as growth driver**









Conclusion & Outlook
1

- Attempt to rejoin supermultiplier and Kaleckian models
  - Capital stock adjustment (tamed by endogenous normal rate)
  - Endogenous normal rate of utilization (tamed by Harrodian instability)

- Calibration tool can be used to build *pure* supermultiplier or *pure* Kaleckian models (and others)

Conclusion & Outlook

2

- The model should provide a starting point for modeling pre- and post-crisis growth regimes with different growth drivers
  - allows for multiple growth sources
  - can be used to highlight historical distinctiveness of growth regimes

Outlook

3

- Endogenous regime shifts
- Accessible interactive online scenarios for broader public

Thanks!

Stay tuned:

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