Buying into inequality.

A macroeconomic analysis linking accelerated obsolescence, interpersonal inequality and potential for degrowth.

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Origins of the idea

- Frequent oppositions :
  - ecology VS economy
  - Less pollution VS more jobs, wages, profits

- Does Accelerated Obsolescence (AO) illustrate this opposition?
  - Invented in the 1930s to increase sales.
  - « Material » first, then also « social » and « software »-related.

- Intuitive reaction : AO is socially useless, ecologically nefast
  → who benefits from it?

- Need to verify it macroeconomically

Research hypothesis

- The increase in economic activity due to AO does not « really » benefit workers since their constrained expenditures increase.
- In contrast, capitalists benefit from it.
- The increase in capitalists' consumption is not enough to make workers benefit from AO.
- AO increases income and wealth inequality, even when accounting for macroeconomic feedback effects.
- Conclusion : reducing AO could allow for reducing inequality and resource consumption, without impacting workers negatively.

Methodology

- Construction of a macro SFC model, post-Keynesian theoretical basis
- Simulation: increase in depreciation rate of households' equipment goods (workers and capitalists)
- Interpersonal inequality:
  - Disposable income per person (worker VS capitalist)
  - Wealth per person (worker VS capitalist)

Outline of the presentation

- Presentation of the model
- Simulation of obsolescence acceleration
- Results and discussion
- Conclusion

The model

- Balance sheet matrix

	Households		Firms	Gvt/CB	Σ
	Workers	Capitalists			
High-powered money	$+H_w$	$+H_c$		$-H$	0
Productive capital			$+K$		$+K$
Equipment goods	$+N_wE$	$+N_cE$			$+NE$
Balance (net worth)	$-V_w$	$-V_c$	$-V_f$	$-V_g$	$-(V_w + V_c + V_f + V_g)$
Σ	0	0	0	0	0

The model

- Transactions-flow matrix

	Households		Firms	Gvt/CB	Σ
	Workers	Capitalists			
Consumpt. (equipment)	$-C_{1,w}$	$-C_{1,c}$	$+C_1$		0
Consumpt. (other)	$-C_{2,w}$	$-C_{2,c}$	$+C_2$		0
Government spending			$+G$	$-G$	0
Wages	$+WB$		$-WB$		0
Profits		$+P$	$-P$		0
Taxes	$-T_w$	$-T_c$		$+T$	0
Change in cash	$-\Delta H_w$	$-\Delta H_c$	0	$+\Delta H$	0
Σ	0	0	0	0	0

Other hypotheses

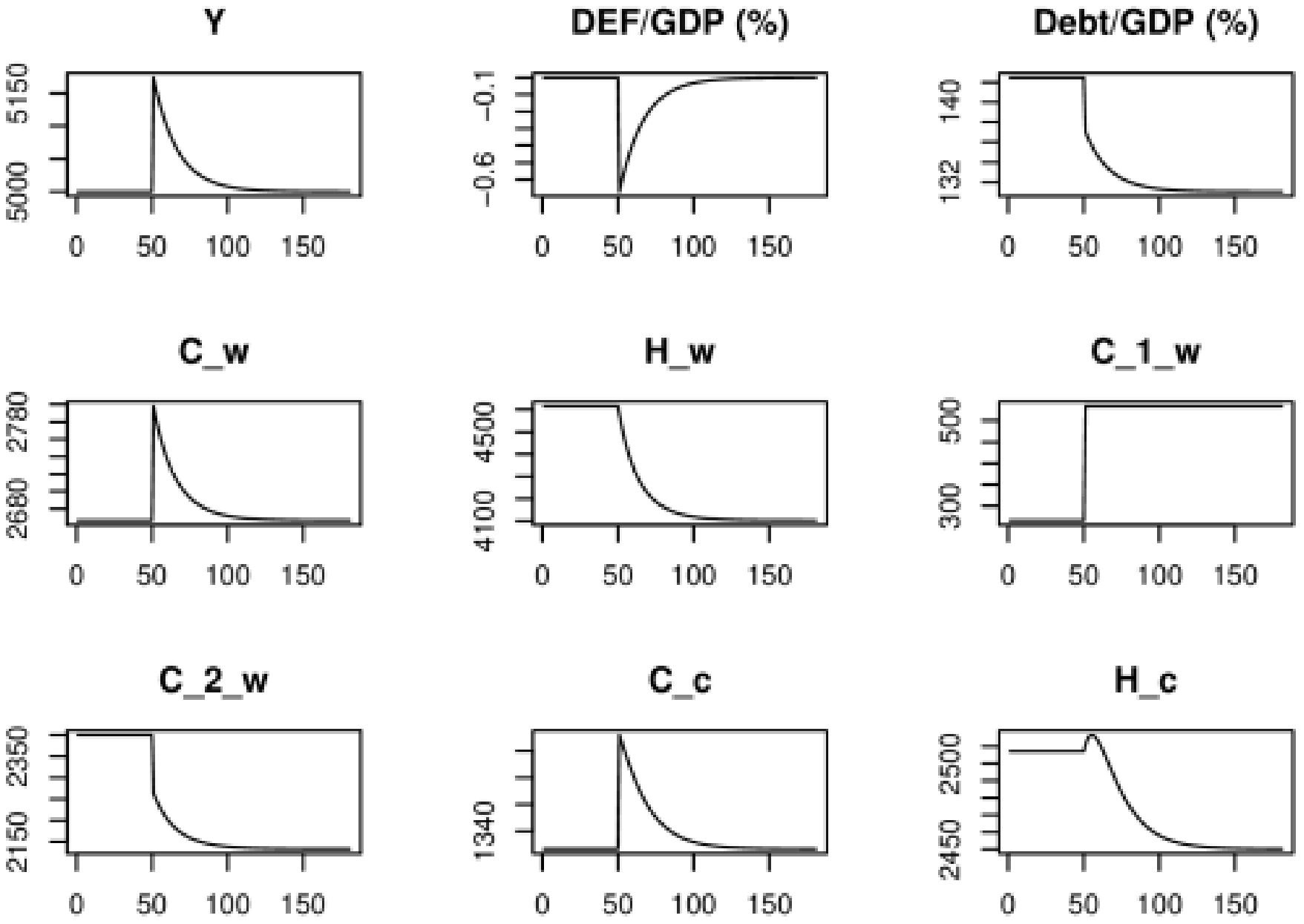
- Consumption of equipment : constrained, autonomous (Depreciation rate x Stock)
- Other consumption : effective disposable income and wealth
- Effective disposable income = Disp. Income - Constrained consumpt.
- Capitalists : 10 % population, 33 % national income (preexist. ineq.)
- Hours worked: proportional to production → Increase/decrease of working time when production increases/decreases (no unemployment)

Model in stationary state

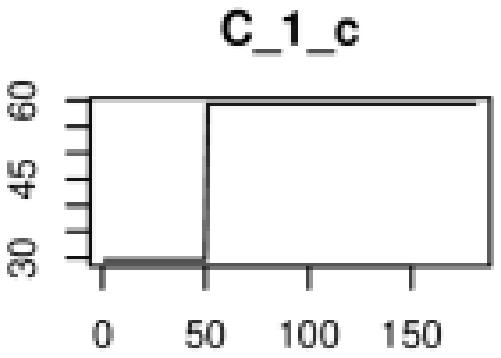
- In the absence of shock, the model converges to a stationary state

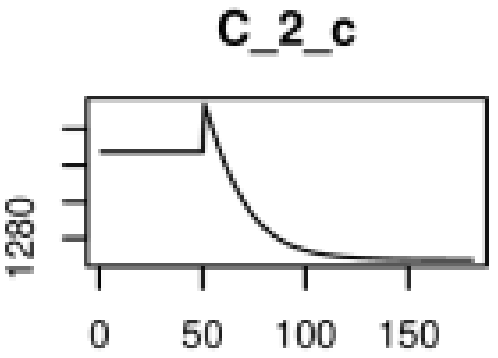
- $Y = G_0$ / Tax rate

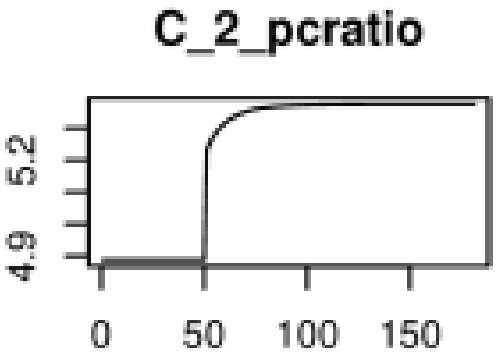
Acceleration of obsolescence

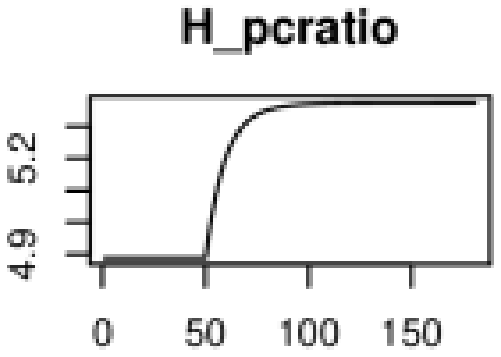


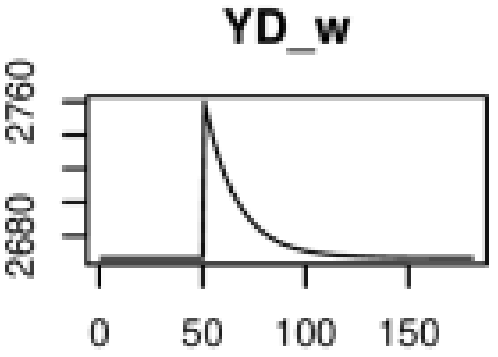
Acceleration of obsolescence

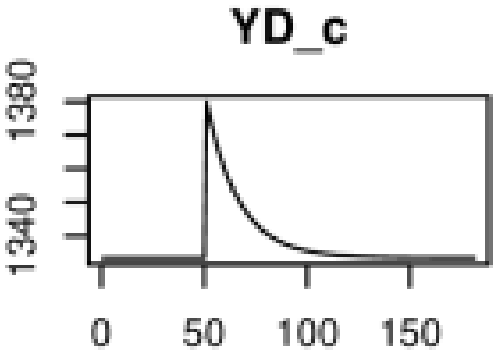


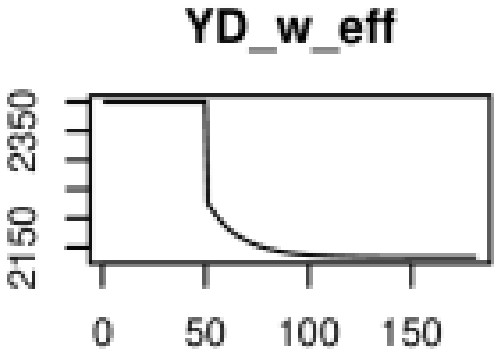


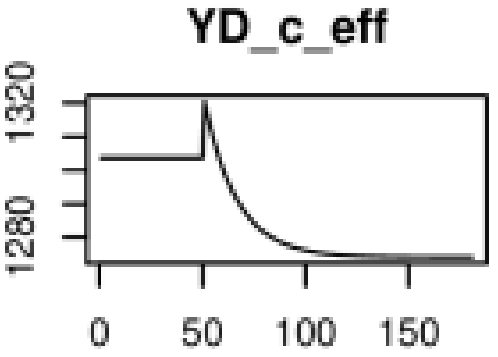




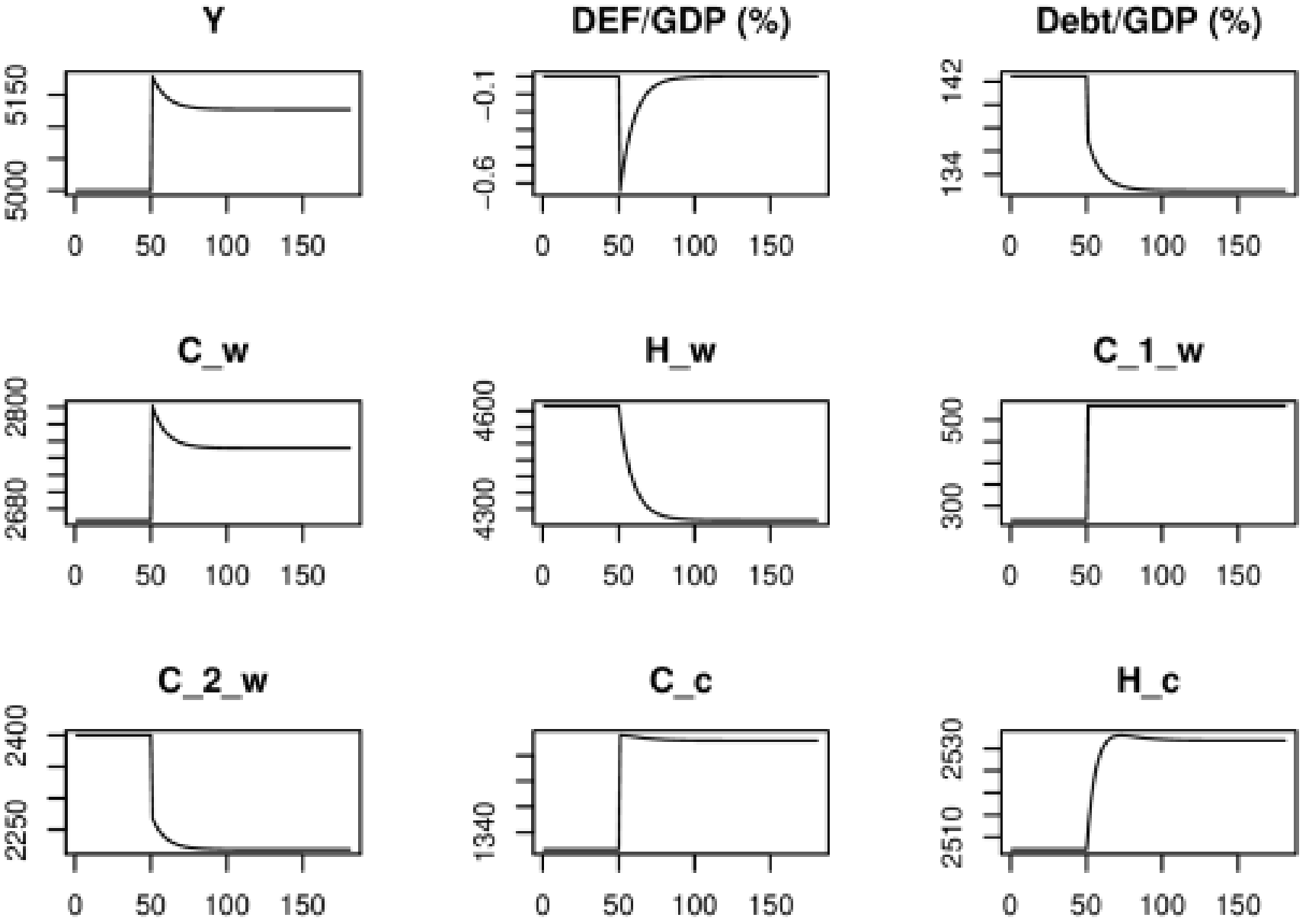




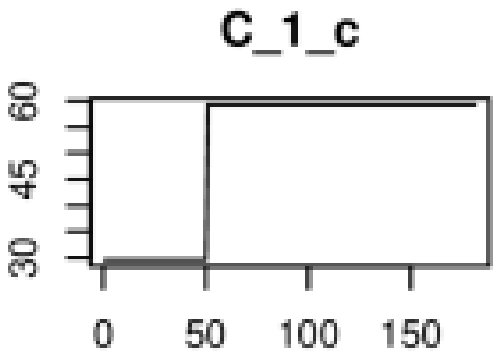


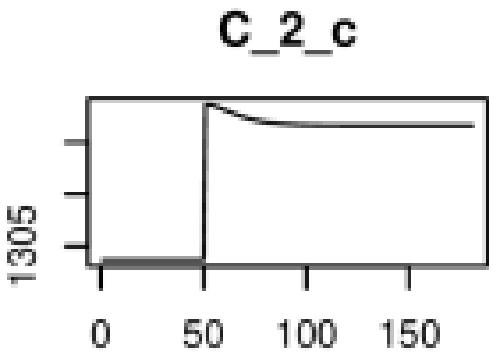


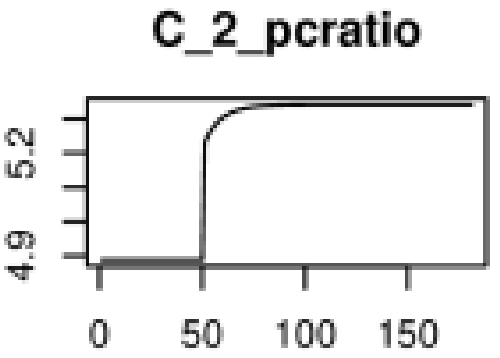
Same + tax cut or increase in G_0

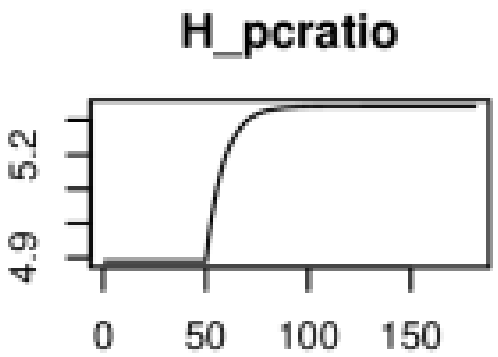


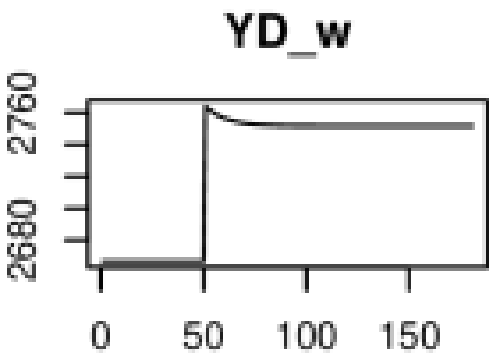
Same + tax cut or increase in G_0

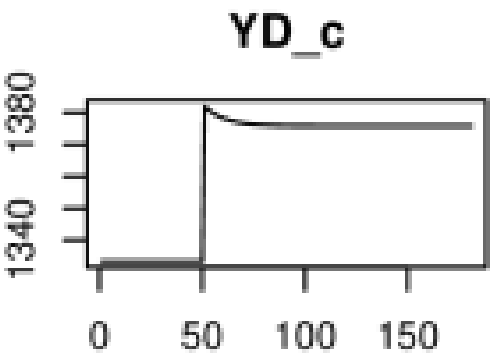


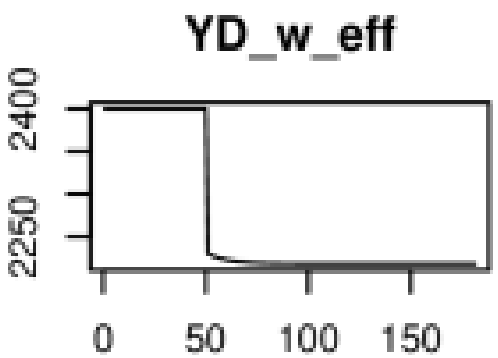


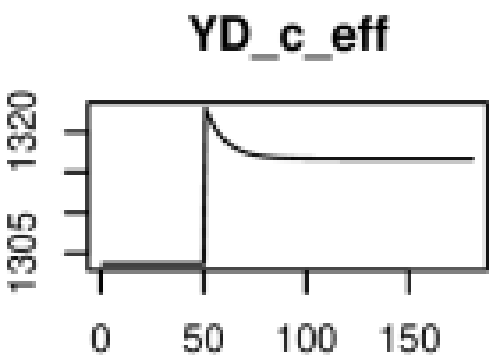




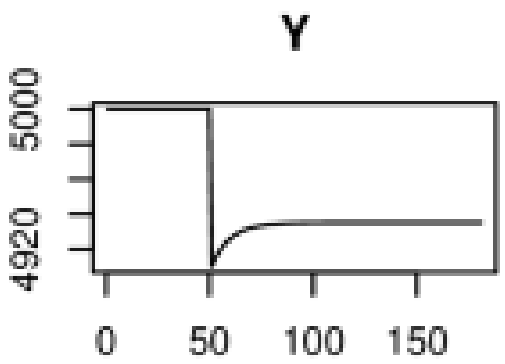


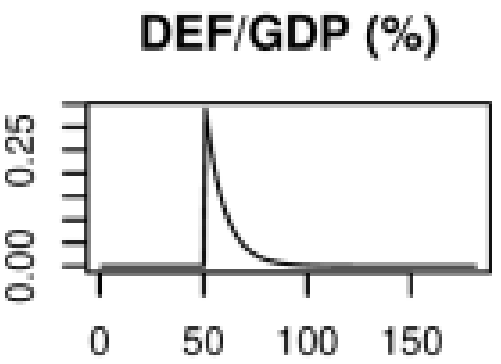


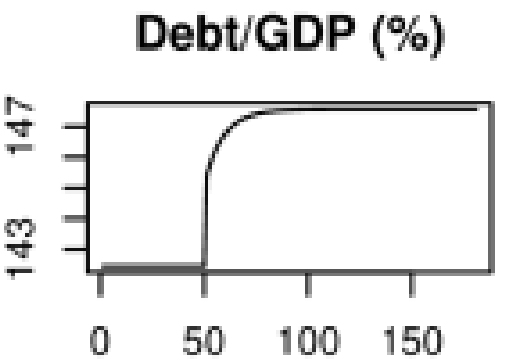




Degrowth


Y
5000
4920
0
50
100
150


DEF/GDP (%)
0.25
0.00
0
50
100
150


Debt/GDP (%)
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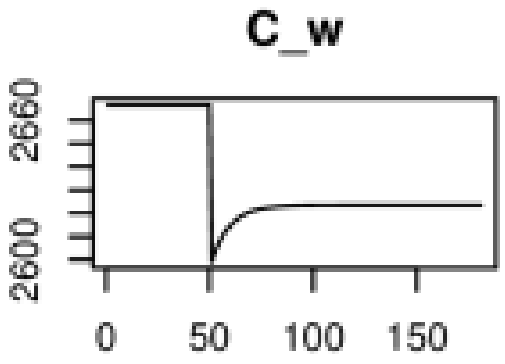
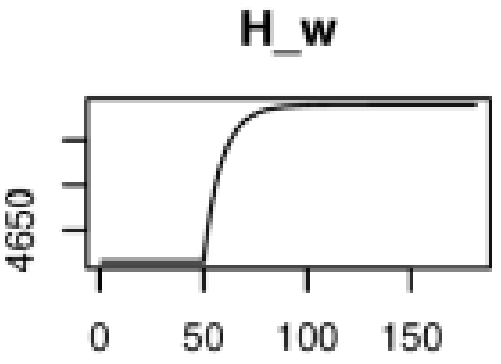
143
0
50
100
150


C_w
2660
2600
0
50
100
150


H_w
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0
50
100
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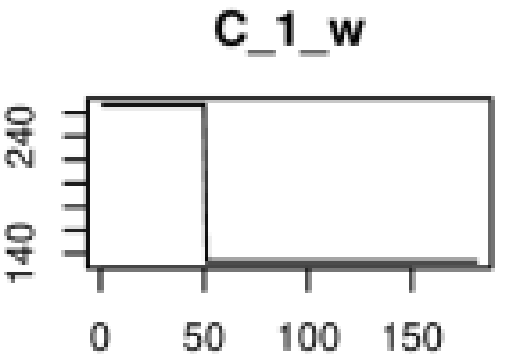
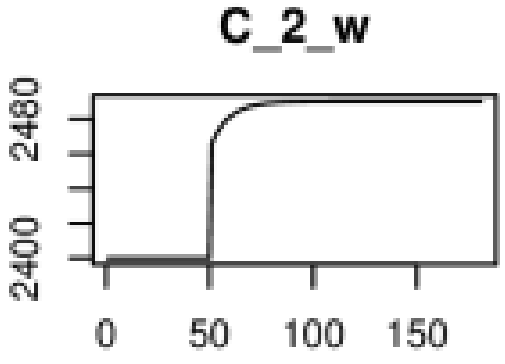

C_1_w
240
140
0
50
100
150


C_2_w
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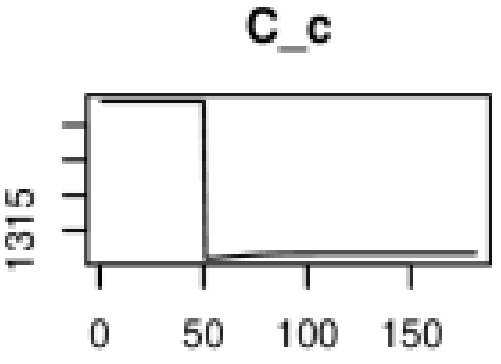
2400
0
50
100
150


C_c
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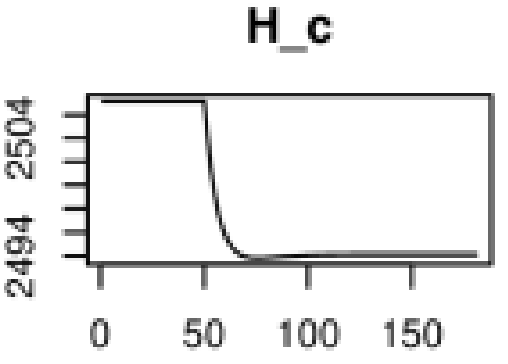
0
50
100
150


H_c
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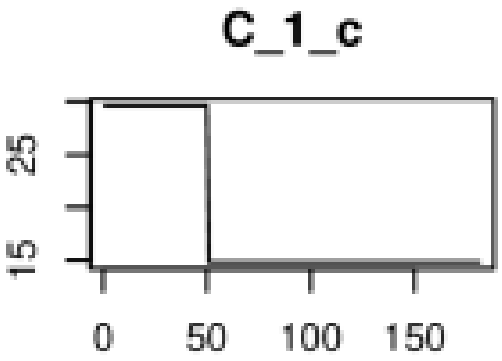
2494
0
50
100
150

Degrowth


C_1_c
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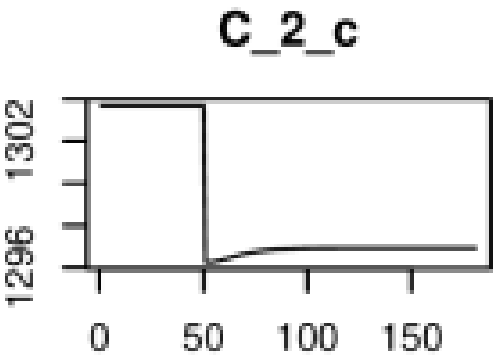
25
0
50
100
150


C_2_c
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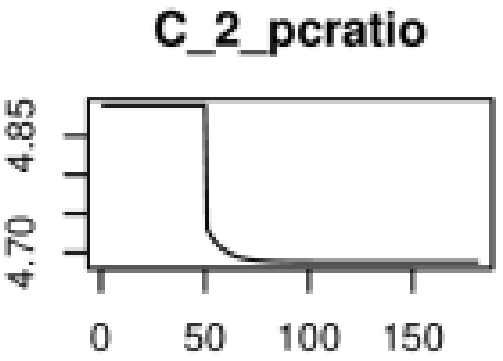
1302
0
50
100
150


C_2_pcratio
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50
100
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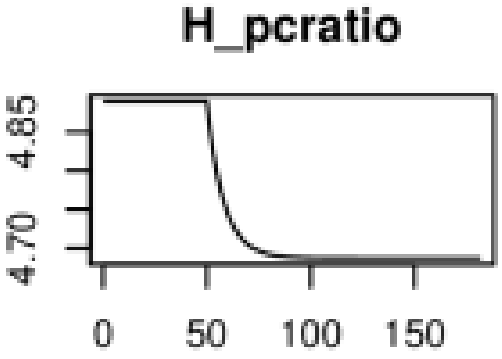
H_pcratio
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4.85
0
50
100
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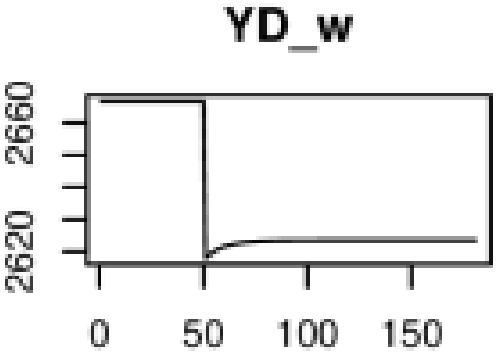
YD_w
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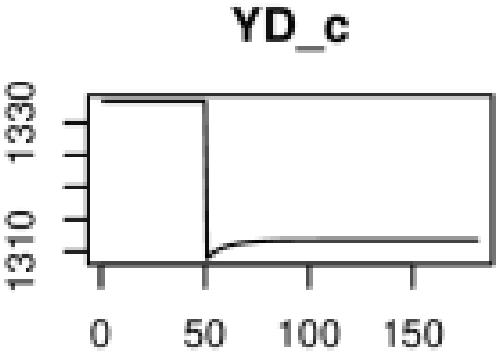
2660
0
50
100
150


YD_c
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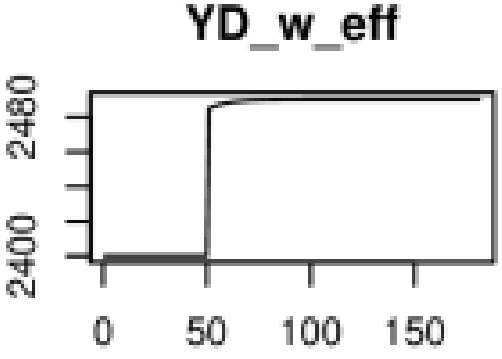
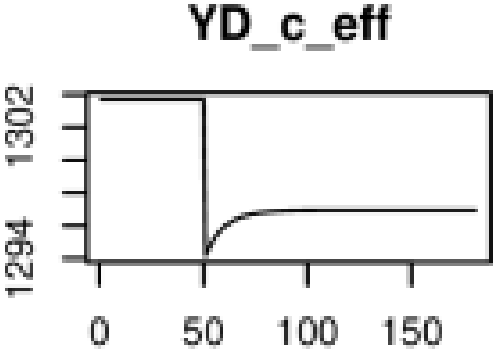
1330
0
50
100
150


YD_w_eff
2400
2480
0
50
100
150


YD_c_eff
1294
1302
0
50
100
150

Conclusion

- Possible « win-win» scenario: slowing down obsolescence, reduction in resource use, reduction in ineaquality.
  - Despite increase in tax rate
  - Reduced ecological damage
  - Rebound effect is tamed
  - Public debt increases but stabilises
  - Working time reduction → could increase desirability of change

Merci de votre attention !

Calibration

- $N_w / N_c = 9$
- Tau (tax rate) = 0.2
- Propensities to consume : 0.75 (income) ; 0.13 (wealth)