Model: Sim1

Automatically generated LSD report

1 Model Structure

1.1 Object: Root

Containing: Market

1.2 Object: Market

Contained in: Root
Containing: Government, Firms, Banks, Consumer

Element	Type	Lags	Description and initial values comments
N	Parameter		
gamma	Parameter		
price_t	Parameter		Calculate the price. Eq (9) All 1 instances equal to 1.
xi	Parameter		
Cw_total	Variable		
EL_t	Variable	1	
Q_t	Variable	1	
Sw_total	Variable		Workers' Total savigns
UnRate	Variable		Unemployment rate
W	Variable		Total Wealth, workers and managers
Y_total	Variable		Total income
Yw_total	Variable		Workers' Total disposable income
Z_Q	Variable		
inflation	Variable		
numOfBorrowWorkers_t	Variable		
numOfNonBorrowWorkers_t	Variable		
pi	Variable		
psi	Variable		
shareOfBorrWorkers_t	Variable		Share of Borrowers
shareOfNonBorrWorkers_t	Variable		Share of Non-Borrowers
size_unemp	Variable		Number of unemployed workers
wbarocc	Variable		Average wage of employed workers
shape	Parameter		All 1 instances equal to 1.
pareto_mean	Parameter		All 1 instances equal to 0.5.
Gini_bTax	Variable		Gini calculation before taxes Gini calculation before taxes

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Element	Type	Lags	Description and initial values comments
Acesso_Credito	Parameter		Acesso ao crédito em função de SM. 1 = 1 SM All 1 instances equal to 1.

1.3 Object: Government

Contained in: Root→Market

Element	Type	Lags	Description and initial values comments
Auton	Variable	1	All 1 instances equal to 10.
c	Parameter		Valor base: 0.01. Testando 0.0 com função Kaleckiana All 1 instances equal to 0.01.
p_minsal	Parameter		
i	Parameter		'i' appears in the equation for: A_t, Yw_t, Wfinance, Yf_t, Gov_Debt All 1 instances equal to 0.
minsal_t	Variable	1	All 1 instances equal to 0.1.
basic_total	Variable		
Gov_Balance	Variable		Government net Balance (+) if surplus, (-) otherwise Government net Balance (+) if surplus, (-) otherwise
Gov_Total	Variable		Government total expenditure (fully autonomous) Warning: DO NOT include Gov_Total in GDP calculation. Reason: basic income already included in consumers disposable income
Tax_Total	Variable		Government total revenue collect at consumers disposable income
c_basic	Parameter		'c_basic' appears in the equation for: basic All 5000 instances equal to 0.01.
basic	Variable		
faixa_1	Parameter		All 1 instances equal to 1.
tax_transf	Parameter		All 1 instances equal to -0.1.
tax_flat	Parameter		All 1 instances equal to 0.2.
faixa_2	Parameter		All 1 instances equal to 2.
faixa_3	Parameter		All 1 instances equal to 5.
Gini_aTax	Variable		Gini calculation after taxes
flag_transf	Parameter		All 1 instances equal to 0.
flag_progress	Parameter		All 1 instances equal to 1.
tax_1	Parameter		All 1 instances equal to 0.1.
tax_2	Parameter		All 1 instances equal to 0.2.
tax_3	Parameter		All 1 instances equal to 0.4.

1.4 Object: Firms

Contained in: Root→Market

Element	Type	Lags	Description and initial values comments
delta	Parameter		
A_t	Variable		
B_t	Variable	1	All 1 instances equal to 0.
I_t	Variable	1	All 1 instances equal to 5.
K_t	Variable	1	Capital stock equation. K in t-1 + Eq. (8) 'K_t' appears in the equation for: Q_fc, K_t All 1 instances equal to 3200.
Q_fc	Variable	1	Full capacity output - ALTERADO All 1 instances equal to 800.

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Element	Type	Lags	Description and initial values comments
u_t	Variable	1	Capacity utilization equation All 1 instances equal to 0.5.
gamma_u	Parameter		All 1 instances equal to 0.1.
h	Variable	1	All 1 instances equal to 0.1.
mu	Parameter		
ud	Parameter		'ud' appears in the equation for: h All 1 instances equal to 0.8.
flag_super	Parameter		Super: 1 Kaleckian: 0 All 1 instances equal to 1.
gap_param	Parameter		'gap_param' appears in the equation for: I_t All 1 instances equal to 0.025.
profit_param	Parameter		Base Dutt value: 0.2 All 1 instances equal to 0.008.
valuation_param	Parameter		All 1 instances equal to 0.1.
E_t	Parameter		Our simplified version does not have equities All 1 instances equal to 0.
Pe_t	Parameter		Our simplified version does not have equities All 1 instances equal to 0.
flag_dutt	Parameter		All 1 instances equal to 0.
flag_marglin	Parameter		All 1 instances equal to 1.
r	Variable		Profit rate
param_auton	Parameter		Parâmetro associado ao crescimento do investimento autônomo All 1 instances equal to 0.001.

1.5 Object: Banks

Contained in: Root→Market
Description:
Financial sector. Currently not used

Element	Type	Lags	Description and initial values comments
Yf_t	Variable		Financial sector income. Eq. (33)
Wfinance	Variable		Financial sector wealth. From Eq. (33)
M_TOTAL	Variable		
D_total	Variable	1	All 1 instances equal to 0.
M_t	Variable		
Mw_total	Variable		
Gov_Debt	Variable	1	Government debt All 1 instances equal to 0.
Ww_total	Variable		Workers' Total Wealth.
flag_deposits	Parameter		Flag sobre depósitos remunerados. Se remunerados, flag=1, 0 caso contrário All 1 instances equal to 0.

1.6 Object: Consumer

Contained in: Root→Market

Element	Type	Lags	Description and initial values comments
Cw_t	Variable		Workers' consumption. Eq. (31) - ALTERADO Workers' consumption. Eq. (31) - ALTERADO

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Element	Type	Lags	Description and initial values comments
D_t	Variable	1	Workers' debt derived from Eq. (26) All 5000 instances equal to 0.
Mw_t	Variable	1	Workers' demand for money. Eqs. (27) and (28) All 5000 instances equal to 0.
Sw	Variable		Workers' savings. p. 7
Ww_t	Variable		Workers' wealth. Ww_1 in t-1 + Eq. (25)
Yw_t	Variable		Workers' disposable income. Eq. (23)
Ydw_t	Variable		Workers' DISPOSABLE Income Workers' DISPOSABLE Income
Tax_w	Variable		Workers' tax payment Workers' tax payment
g_it	Variable		Uniformly distributed shocks with mean zero in the wages. Suggestion: set to consider the shock's amplitude.
state_b_it	Variable		State of workers - borrow behavior. 1= borrowing; 0= not borrowing. Eqs. (21) and (22)
state_it	Variable		State of worker i at time t (Inactive=0, Active=1)
w_it	Variable	1	Updates wages by worker, evaluates wich one is below the minimum and set them to it. All 5000 instances set to random values drawn from a normal with mean=0.1 and std. deviation=0.05.
w_last	Variable		Just for code consistency. Returns de last wage of wich worker.
spsi	Parameter		'spsi' appears in the equation for: Cw_t All 5000 instances set to random values drawn from a normal with mean=0.8 and std. deviation=0.05.
sigmapsi	Parameter		All 5000 instances set to random values drawn from a normal with mean=0.9 and std. deviation=0.01.
eta	Parameter		All 5000 instances set to random values drawn from a normal with mean=0.5 and std. deviation=0.05.
gmin	Parameter		All 5000 instances equal to 0.
gmax	Parameter		All 5000 instances equal to 0.
leque	Variable		Leque salarial com distribuição de pareto com shape=1 e mean=1 tal como no artigo original 'leque' appears in the equation for: state_b_it, w_last
Tax	Variable		

2 Relevant elements to observe

Element	Object	Type	Description
(none selected)			

3 Relevant elements to initialize

Element	Object	Type	Description and initial values comments
(none selected)			

4 Initial values

Object	Element	Lag	Initial values (by instance)
Market	N		5000
Market	gamma		2.5
Market	price\string _t		1
Market	xi		1
Market	EL\string _t	1	30
Market	Q\string _t	1	3
Market	shape		1
Market	pareto\string _mean		0.5
Market	Acesso\string _Credito		1
Government	Auton	1	3
Government	c		0.01
Government	p\string _minsal		0.2
Government	i		0
Government	minsal\string _t	1	0.1
Government	c\string _basic		0.01
Government	faixa\string _1		1
Government	tax\string _transf		-0.1
Government	tax\string _flat		0.2
Government	faixa\string _2		2
Government	faixa\string _3		5
Government	flag\string _transf		0
Government	flag\string _progress		1
Government	tax\string _1		0.1
Government	tax\string _2		0.2
Government	tax\string _3		0.4
Firms	delta		0.02
Firms	B\string _t	1	0
Firms	I\string _t	1	2
Firms	K\string _t	1	3200
Firms	Q\string _fc	1	800
Firms	u\string _t	1	0.5
Firms	gamma\string _u		0.1
Firms	h	1	0.1
Firms	mu		0.1
Firms	ud		0.8
Firms	flag\string _super		1
Firms	gap\string _param		0.025
Firms	profit\string _param		0.008
Firms	valuation\string _param		0.1
Firms	E\string _t		0
Firms	Pe\string _t		0
Firms	flag\string _dutt		0
Firms	flag\string _marglin		1
Firms	param\string _auton		0.001
Banks	D\string _total	1	0
Banks	Gov\string _Debt	1	0
Banks	flag\string _deposits		0
Consumer	D\string _t	1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...

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Object	Element	Lag	Initial values (by instance)
Consumer	Mw\string _t	1	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
Consumer	w\string _it	1	0.110213, 0.0837471, 0.138306, 0.102643, 0.177788, 0.0411241, 0.10741, 0.0855845, 0.0471434, 0.177595, 0.143023, 0.114721, 0.208009, 0.113841, 0.0605195, 0.0564179, 0.139049, 0.140412, 0.125707, 0.0853066, 0.106439, 0.0110429, 0.0353968, 0.064058, 0.160529, 0.0976425, 0.0773179, -0.018011, 0.0858333, 0.131678, 0.0319449, 0.0608118, 0.0460708, 0.120948, 0.0780019, 0.181671, 0.0872516, 0.0916892, -0.0637907, 0.22299, 0.0974787, 0.0680941, -0.0244235, 0.13811, 0.128179, 0.086699, 0.108543, 0.177596, 0.218292, 0.149595, 0.128311, 0.112778, 0.10014, 0.164973, 0.076452, 0.103614, 0.146275, 0.0526425, 0.149569, 0.101684, 0.0603074, 0.13431, 0.168662, 0.112393, 0.125518, 0.0271584, 0.0394423, 0.191628, -0.0222509, 0.0536421, 0.11863, 0.19807, 0.0816782, 0.0600387, 0.109547, 0.158831, 0.113967, 0.045366, 0.144463, 0.0820111, 0.099564, 0.118346, 0.0855852, 0.157438, 0.129744, 0.0924271, 0.0699594, 0.122687, 0.116288, 0.0807504, 0.0566286, 0.128518, 0.106398, 0.11926, 0.0664706, 0.0755724, 0.0672045, 0.0568255, 0.195727, 0.0455693, ...
Consumer	spsi		0.816863, 0.787452, 0.804965, 0.774345, 0.85686, 0.79342, 0.775492, 0.79623, 0.766954, 0.745873, 0.799675, 0.835677, 0.75621, 0.815518, 0.814462, 0.799099, 0.753161, 0.804729, 0.803267, 0.822356, 0.774157, 0.805925, 0.772718, 0.873241, 0.814439, 0.709554, 0.802972, 0.799993, 0.750181, 0.853516, 0.863097, 0.721251, 0.792812, 0.807777, 0.812379, 0.796129, 0.803778, 0.8157, 0.772721, 0.81069, 0.870641, 0.781789, 0.816602, 0.765099, 0.715273, 0.866483, 0.850451, 0.81925, 0.85893, 0.779846, 0.751623, 0.697366, 0.855882, 0.765647, 0.771201, 0.763782, 0.87287, 0.814128, 0.798942, 0.953018, 0.811017, 0.793969, 0.746731, 0.868655, 0.773478, 0.723961, 0.782264, 0.838753, 0.870387, 0.792597, 0.764029, 0.8251, 0.868361, 0.831474, 0.924112, 0.783426, 0.8134, 0.752382, 0.852665, 0.717404, 0.84922, 0.78614, 0.788533, 0.848089, 0.796923, 0.767112, 0.778329, 0.890071, 0.943308, 0.831009, 0.74517, 0.844513, 0.768271, 0.818803, 0.82868, 0.852079, 0.847535, 0.862718, 0.818878, 0.716154, ...

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Object	Element	Lag	Initial values (by instance)
Consumer	sigmapsi		0.903899, 0.900111, 0.890416, 0.914059, 0.891913, 0.914332, 0.899592, 0.904005, 0.890648, 0.91283, 0.919963, 0.892488, 0.882083, 0.904867, 0.909466, 0.898814, 0.905544, 0.896249, 0.899112, 0.881655, 0.899958, 0.904178, 0.898697, 0.897241, 0.89995, 0.915396, 0.907105, 0.909301, 0.896927, 0.903667, 0.909022, 0.879115, 0.903003, 0.893277, 0.896843, 0.892004, 0.897889, 0.914448, 0.895824, 0.900636, 0.894579, 0.900374, 0.880859, 0.888001, 0.884104, 0.880822, 0.907332, 0.896094, 0.912021, 0.883541, 0.90386, 0.886532, 0.898801, 0.888682, 0.88891, 0.878757, 0.907667, 0.903321, 0.902586, 0.908121, 0.896938, 0.922027, 0.89589, 0.889351, 0.886651, 0.900518, 0.890862, 0.901074, 0.910429, 0.884625, 0.897571, 0.905327, 0.898086, 0.895582, 0.917271, 0.904826, 0.894036, 0.896772, 0.898635, 0.900636, 0.89359, 0.925681, 0.898082, 0.907658, 0.894609, 0.908662, 0.8963, 0.895118, 0.888227, 0.907936, 0.914339, 0.894549, 0.888341, 0.881474, 0.908087, 0.91378, 0.893503, 0.910983, 0.907403, 0.925259, ...
Consumer	eta		0.516863, 0.487452, 0.504965, 0.474345, 0.55686, 0.49342, 0.475492, 0.49623, 0.466954, 0.445873, 0.499675, 0.535677, 0.45621, 0.515518, 0.514462, 0.499099, 0.453161, 0.504729, 0.503267, 0.522356, 0.474157, 0.505925, 0.472718, 0.573241, 0.514439, 0.409554, 0.502972, 0.499993, 0.450181, 0.553516, 0.563097, 0.421251, 0.492812, 0.507777, 0.512379, 0.496129, 0.503778, 0.5157, 0.472721, 0.51069, 0.570641, 0.481789, 0.516602, 0.465099, 0.415273, 0.566483, 0.550451, 0.51925, 0.55893, 0.479846, 0.451623, 0.397366, 0.555882, 0.465647, 0.471201, 0.463782, 0.57287, 0.514128, 0.498942, 0.653018, 0.511017, 0.493969, 0.446731, 0.568655, 0.473478, 0.423961, 0.482264, 0.538753, 0.570387, 0.492597, 0.464029, 0.5251, 0.568361, 0.531474, 0.624112, 0.483426, 0.5134, 0.452382, 0.552665, 0.417404, 0.54922, 0.48614, 0.488533, 0.548089, 0.496923, 0.467112, 0.478329, 0.590071, 0.643308, 0.531009, 0.44517, 0.544513, 0.468271, 0.518803, 0.52868, 0.552079, 0.547535, 0.562718, 0.518878, 0.416154, ...
Consumer	gmin		0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...
Consumer	gmax		0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, ...