Supplementary Materials

Supplementary Table ST1. Parameter Values

Parameter	Value	Description
$\#_{timesteps}$	200	number of timesteps
$\#_{MonteCarlo}$	100	number of Monte Carlo repetitions
$\#_{rounds}^{matching}{}_{max}$	50	maximum number of rounds in a market during matching
$\epsilon_{precision}$	0.001	precision parameter to avoid floating point errors
α_{exp}	0.5	adaptive expectation parameter
β_{cash}	0.5	how much cash a firm would want to keep
$\mu_{FN_{markup}}$	0.02	Folded Normal Distribution expected value for markup adjustment
$\sigma^2_{FN_{markup}}$	0.008	Folded Normal Distribution variance for markup adjustment
θ^{tax}	0.3	tax rate
θ^{div}	0.01	dividend payout ratio
γ^{logit}	5	logit competition parameter
$\nu^{R\&D}$	0.1	fraction of net profit allocated for the R&D
χ^{imit}	0	fraction of the R&D budget allocated towards imitation
χ^{innov}	1	fraction of the R&D budget allocated towards innovation
$\rho^{R\&D}$	0.8	parameter managing success probability of the R&D process
$\mu_{FN_{innov}^{product}}$	0.003	Folded Normal Distribution expected value for product innovation
$\sigma^2_{FN_{innov}^{product}}$	0.0008	Folded Normal Distribution variance for product innovation
$\mu_{FN_{innov}^{process}}$	0.002	Folded Normal Distribution expected value for process innovation
$\sigma^2_{FN_{innov}^{process}}$	0.0008	Folded Normal Distribution variance for process innovation
λ_1^{loan}	0.5	critical value of leverage ratio, under which probability of granting loan falls below 0.5
λ_2^{loan}	10	bank's lending decision sensitivity to borrower's leverage ratio bank
λ_3^{loan}	500	maximum loan to deposit ratio of a bank
η^{short}	5	duration of a short-term loan
r^L	0.001	loan interest rate
r^D	0.0001	deposit interest rate
$\#_{BNK}$	1	number of commercial banks

Table ST2. Parameter values describing households

Parameter	Value	Description
$\#_{HH}$	100	number of households
w	0.1	wage rate
u	0.05	unemployment benefit
c_Y^{HH}	0.8	propensity to consume out of income
c_D^{HH}	0.1	propensity to consume out of wealth
$D_{i,0}^{HH}$	0.01	initial deposit of a household

Table ST3. Parameters for final good sector

Parameter	Value	Description
$\#_{FG}$	10	number of final good firms
$\#_{FGC}$	1	number of final good capital firms
β_{FG}	0.1	final good inventory buffer parameter
α^{FG}	15	labor productivity in final good sector
$\tau^{C_{FG}}$	10	useful lifespan of final good capital
$\delta^{C_{FG}}$	0.1	depreciation rate of final good capital
$\eta^{C_{FG}}$	10	duration of a loan to cover final good capital investment
$dt^{C_{FG}}$	1	time to deliver final good capital
$prob^{FG}$	0	entry probability of a final good firm
$m^{C_{FG}}$	1	material productivity in final good capital sector
$\mu_{FG,0}$	0.1	initial markup of a final good firm
μ_{FGC}	0.5	markup for the final good capital sector
$\alpha_{C_{FG},0}$	10	initial labor productivity in final good capital sector
$\kappa_{C_{FG},0}$	2	initial productivity of capital for final good sector
$D_{FG,0}$	0	initial deposit of a final good firm
$D_{C_{FG},0}$	3	initial deposit of a final good capital firm
$inv_{FG,0}$	0	initial output inventory of a final good firm
$K_{FG,0}$	1	initial capital stock of a final good firm
$M_{C_{FG},0}$	0	initial material inventory of a final good capital firm

Table ST1. Parameters for energy sector

Parameter	Value	Description
$\#_{FE}$	10	number of fossil-fuel energy power plants
$\#_{RE}$	2	number of renewable energy power plants
$\#_{FEC}$	1	number of fossil-fuel energy capital firms
$\#_{REC}$	1	number of renewable energy capital firms
β_E	0.5	desired excess production of electricity
α^{RE}	10	labor productivity in renewable energy sector
α^{FE}	10	labor productivity in fossil-fuel energy sector
ϕ^{FE}	20	thermal efficiency (energy-output-to-fuel-input ratio)
p_{fuel}	0.1	fuel price (initial)
μ_{fuel}	0.002	fuel price drift
σ^2_{fuel}	0.00003	fuel price volatility (variance of the Brownian motion)
ε	2	energy productivity in final good sector
$pricing_E$	0	energy market pricing: 0 for weighted average, 1 for marginal
$\tau^{C_{RE}}$	20	useful lifespan of renewable energy capital
$\tau^{C_{FE}}$	30	useful lifespan of fossil-fuel energy capital
$\eta^{C_{RE}}$	20	duration of a loan to cover renewable energy capital investment
$\eta^{C_{FE}}$	30	duration of a loan to cover fossil-fuel energy capital investment
$dt^{C_{RE}}$	1	time to deliver renewable energy capital
$dt^{C_{FE}}$	1	time to deliver fossil-fuel energy capital
μ_E	0.3	markup for the energy sector
$m^{C_{RE}}$	1.25	material productivity in renewable energy capital sector
$m^{C_{FE}}$	15	material productivity in fossil-fuel energy capital sector
$\mu_{C_{RE}}$	0.2	markup for the renewable energy capital sector
$\mu_{C_{FE}}$	0.2	markup for the fossil-fuel energy capital sector
$\alpha_{C_{RE},0}$	10	initial labor productivity in renewable energy capital sector
$\alpha_{C_{FE},0}$	10	initial labor productivity in fossil-fuel energy capital sector
$\kappa_{C_{FE},0}$	2	initial productivity of capital for fossil-fuel energy sector
$\kappa_{C_{RE},0}$	2	initial productivity of capital for renewable energy sector
$D_{FE,0}$	0	initial deposit of a fossil-fuel energy power plant
$D_{RE,0}$	0	initial deposit of a renewable energy power plant
$D_{C_{FE},0}$	3	initial deposit of a fossil-fuel energy capital firm
$D_{C_{RE},0}$	3	initial deposit of a renewable energy capital firm
$K_{FE,0}$	1	initial capital stock of a fossil-fuel energy power plant
$K_{RE,0}$	1	initial capital stock of a renewable energy power plant
$M_{C_{RE},0}$	0	initial material inventory of a renewable energy capital firm

$M_{C_{FE},0}$	0	initial material inventory of a fossil-fuel energy capital firm
$\hat{F}_{FE,0}$	1000000000	initial fuel inventory of the foreign economy
$F_{FE,0}$	0	initial fuel inventory of a fossil-fuel energy power plant

Table ST5. Parameters for materials sector

Parameter	**Value**	**Description**
$\#_M$	5	number of material firms
$\#_{MC}$	1	number of material capital firms
$\#_{R^D}$	100	number of mining sites
β_M	0.3	material inventory buffer parameter
α^M	10	labor productivity in material sector
ρ	1	ore productivity in material sector
$\gamma_{1,t}^{ore}$	0.3	average ore extraction cost of newly explored ore deposit
γ_2^{ore}	0.5	convexity of of extraction costs (controls speed of ore cost increase)
μ_{R^D}	150	average ore deposit of the newly explored mining site
R_{min}^D	7.5	minimum ore deposit that is viable for mining
$\sigma_{R^D}^2$	400	variance of ore deposit of the newly explored mining site
$\sigma_{\gamma_1^{ore}}^2$	0.05	variance of ore cost parameter 1
$pricing_M$	0	material market pricing: 0 for weighted average, 1 for marginal
τ^{C_M}	30	useful lifespan of material capital
δ^{C_M}	0.0333	depreciation rate of material capital
η^{C_M}	30	duration of a loan to cover material capital investment
dt^{C_M}	1	time to deliver material capital
m^{C_M}	7	material productivity in material capital sector
$\mu_{M,0}$	0.3	initial markup of a material firm
μ_{C_M}	0.5	markup for the material capital sector
$\alpha_{C_M,0}$	10	initial labor productivity in material capital sector
$\kappa_{C_M,0}$	2	initial productivity of capital for material sector
$D_{M,0}$	0	initial deposit of a material firm
$D_{C_M,0}$	3	initial deposit of a material capital firm
$inv_{M,0}$	0	initial output inventory of a material firm
$K_{M,0}$	1	initial capital stock of a material firm
$M_{C_M,0}$	0	initial material inventory of a material capital firm

Table ST6. Sensitivity analysis. We report the means from the last 50 rounds of model simulations. The means are computed over 100 simulations repeated for the same initial conditions. Standard deviations are reported in brackets.

Parameter and baseline value	**Value**	**Renewable Energy market share**	**Average ore extraction cost**	**Cumulative number of bankruptcies**	**Total NPL balance**	**Commercial bank loan-to-deposit-ratio**
Mining Site Exploration Probability $pr^{ore} = 0.5$	0.1	0.08 (0.02)	0.29 (0.01)	69.32 (1.62)	497.51 (21.59)	0.82 (0.02)
	0.25	0.22 (0.02)	0.23 (0.01)	80.17 (1.61)	504.12 (23.05)	0.82 (0.02)
	0.5	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.9	0.78 (0.02)	0.12 (0.004)	88.42 (1.9)	444.94 (49.97)	0.71 (0.02)
Average Ore Extraction Cost of a New Mine $\gamma_1^{ore} = 0.3$	0.1	0.93 (0.02)	0.09 (0.002)	73.94 (1.55)	287.31 (9.70)	0.58 (0.01)
	0.3	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.5	0.07 (0.01)	0.39 (0.01)	92.47 (1.94)	1086.06 (64.38)	1.12 (0.02)
Variance in Initial Ore Extraction Cost $\sigma^2_{\gamma_1^{ore}} = 0.05$	0.005	0.003 (0.002)	0.37 (0.004)	69.32 (1.49)	757.13 (35.12)	0.97 (0.02)
	0.05	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.03	0.29 (0.03)	0.20 (0.01)	86.86 (1.82)	521.95 (24.12)	0.83 (0.02)
Speed of Ore Cost Growth as Ore Deposit Gets Depleted $\gamma_2^{ore} = 0.5$	0.1	0.82 (0.02)	0.12 (0.003)	70.93 (1.52)	316.58 (9.80)	0.61 (0.01)
	0.5	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.9	0.14 (0.02)	0.41 (0.02)	116.85 (2.11)	2759.69 (427.14)	1.36 (0.03)
Material Productivity of Renewable Energy Capital $m^{C_{RE}} = 1.25$	0.9	0.26 (0.03)	0.16 (0.004)	80.76 (1.86)	410.94 (21.97)	0.71 (0.02)
	1.25	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	2	0.84 (0.02)	0.19 (0.01)	91.07 (1.78)	548.18 (27.21)	0.84 (0.02)
Material Productivity of Final Good Capital $m^{C_{FG}} = 1$	0.9	0.43 (0.03)	0.19 (0.01)	90.88 (2.2)	599.77 (46.40)	0.85 (0.02)
	1	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	2	0.86 (0.02)	0.11 (0.003)	57.04 (1.48)	200.39 (7.20)	0.45 (0.01)
Useful Lifespan of Capital for Renewable Energy Sector $\tau^{C_{RE}} = 20$	15	0.03 (0.01)	0.15 (0.004)	74.95 (1.82)	346.3 (20.10)	0.63 (0.02)
	20	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	25	0.84 (0.02)	0.18 (0.004)	91.69 (1.9)	610.7 (33.86)	0.88 (0.02)
Ore Productivity $\rho = 1$	0.75	0.13 (0.02)	0.21 (0.01)	100.74 (1.95)	771.41 (45.32)	0.97 (0.02)
	1	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)

Parameter and baseline value	**Value**	**Renewable Energy market share**	**Average ore extraction cost**	**Cumulative number of bankruptcies**	**Total NPL balance**	**Commercial bank loan-to-deposit-ratio**
	1.25	0.81 (0.02)	0.15 (0.003)	74.11 (1.53)	327.74 (10.67)	0.63 (0.01)
Average Initial Ore Deposit of a New Mine $\mu_{R^D} = 150$	100	0.22 (0.02)	0.21 (0.01)	95.2 (1.87)	547.05 (23.24)	0.82 (0.02)
	150	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.1)	0.77 (0.02)
	200	0.66 (0.03)	0.14 (0.003)	76.34 (1.67)	379.8 (13.29)	0.70 (0.02)
Variance in Amount of Ore in a New Mine $\sigma^2_{R^D} = 400$	400	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	8000	0.52 (0.03)	0.17 (0.004)	82.95 (1.63)	432.23 (15.86)	0.75 (0.02)
	16000	0.55 (0.03)	0.16 (0.004)	82.65 (1.52)	448.79 (20.51)	0.75 (0.02)
Adaptive Expectation of Material Price $\alpha^M_{exp} = 0.5$	0.1	0.43 (0.03)	0.19 (0.004)	64.69 (1.39)	523.12 (22.24)	0.87 (0.02)
	0.5	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.9	0.55 (0.03)	0.16 (0.003)	114.70 (1.95)	417.58 (15.21)	0.71 (0.01)
Logit Competition Parameter When Picking Mining Site $\gamma^{logit}_{mining} = 10$	0.01	0.20 (0.02)	0.32 (0.01)	118.66 (1.66)	2234.07 (190.07)	1.4 (0.03)
	10	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.1)	0.77 (0.02)
	50	0.48 (0.03)	0.17 (0.004)	79.29 (1.86)	426.95 (17.71)	0.74 (0.02)
Fuel Price Drift $\mu_{fuel} = 0.002$	0.0003	0.17 (0.02)	0.16 (0.003)	82.92 (1.75)	417.74 (15.92)	0.73 (0.02)
	0.002	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.1)	0.77 (0.02)
	0.006	0.96 (0.01)	0.18 (0.01)	88.75 (1.70)	566.50 (26.32)	0.86 (0.02)
Fuel Price Volatility $\sigma_{fuel} = 0.00003$	0.00000001	0.49 (0.03)	0.17 (0.004)	82.92 (1.73)	443.18 (16.51)	0.76 (0.02)
	0.00003	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.1)	0.77 (0.02)
	0.0009	0.42 (0.04)	0.17 (0.004)	85.40 (1.90)	471.64 (21.11)	0.77 (0.02)
Loan Interest Rate $r_L = 0.001$	0.00001	0.49 (0.03)	0.17 (0.004)	85.83 (1.71)	457.35 (15.58)	0.78 (0.02)
	0.001	0.49 (0.03)	0.17 (0.004)	88.64 (1.79)	470.58 (21.10)	0.77 (0.02)
	0.05	0.26 (0.02)	0.17 (0.004)	104.9 (1.95)	548.74 (20.57)	0.87 (0.02)