1 Numerical solution: main text

	Description	Value	Moment	Target	Model
σ^z	std. dev. prod.	0.55%	$\sigma(\Delta \log c)$	0.5%	0.6%
χ^x	capital adj. cost	3.5	$\sigma(\Delta \log x)$	2.1%	2.0%
β	discount factor	0.98	$4r_{+1}$	1.3%	1.5%
γ^b	RRA b	25.5	$4[r^e_{+1} - r_{+1}]$	7.3%	7.0%
σ^p	std. dev. log dis. prob.	0.47	$\sigma(4\mathbb{E}r_{+1})$	2.2%	2.2%
ρ^p	persist. log dis. prob.	0.8	$\rho(\mathbb{E}r_{+1})$	0.79	0.75
γ^a	RRA a	10	qk^a/a^a	2.0	2.3
$\underline{k}$	lower bound k^i	10	qk^c/a^c	1.1	0.9
$\xi\bar{s}^a$	newborn endowment a	0%	$\lambda^a a^a / \sum_i \lambda^i a^i$	18%	21%
$\xi\bar{s}^c$	newborn endowment c	-0.25%	$\lambda^c a^c / \sum_i \lambda^i a^i$	23%	23%
b^g	real value govt. bonds	-2.7	$-\sum_i \lambda^i b^i / \sum_i \lambda^i a^i$	-10%	-10%

Disutility parameters $\bar{\nu}^i$ set to $(0.64, 2.89, 0.43)$ to jointly match average labor and steady state labor income shares.

Table V: targeted moments and calibrated parameters

Moment	Data	Model
$\sigma(\Delta \log y)$	0.8%	0.9%
$\sigma(\Delta \log \ell)$	0.8%	0.8%
$\sigma(d/p)$	0.2%	0.2%
$\sum_i \lambda^i mpr^i$	≈ 0.2	0.3
mpr^a		1.9
mpr^b		0.7
mpr^c		0.0
$\sum_i \lambda^i mpc^i$	≈ 0.2	0.02
mpc^a		0.02
mpc^b		0.02
mpc^c		0.02

Table VI: untargeted macro and micro moments

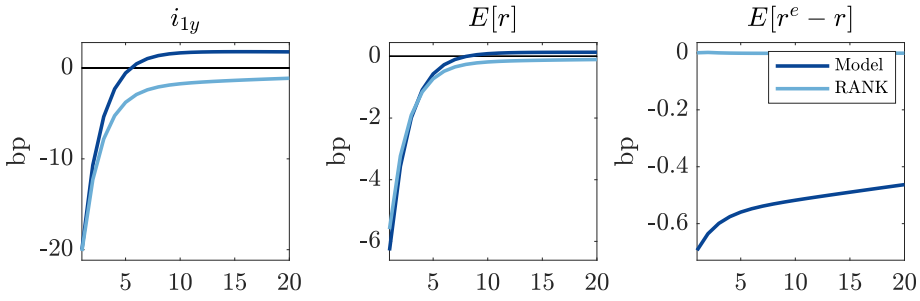

Figure 2: expected returns after negative monetary policy shock

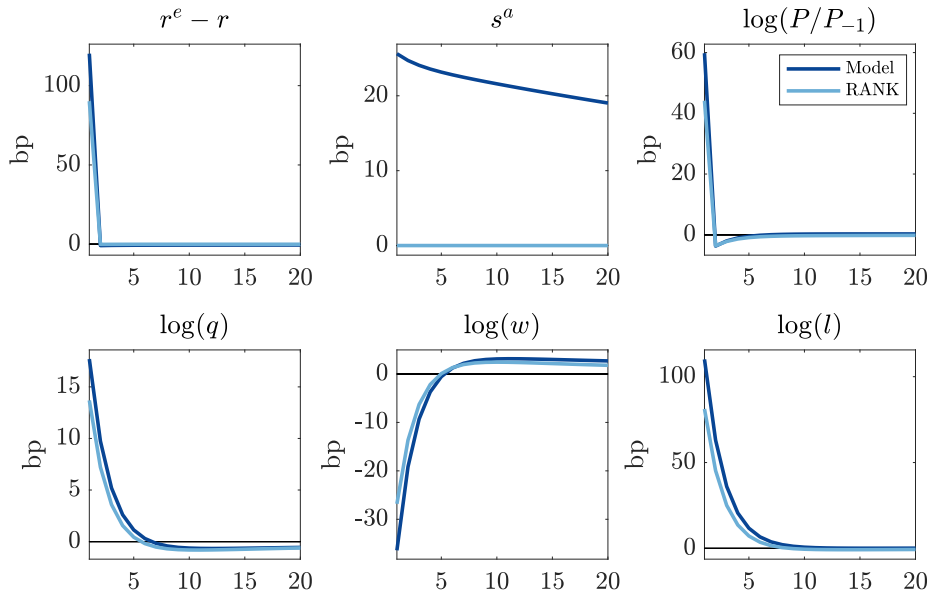

Figure 3: redistribution after negative monetary policy shock

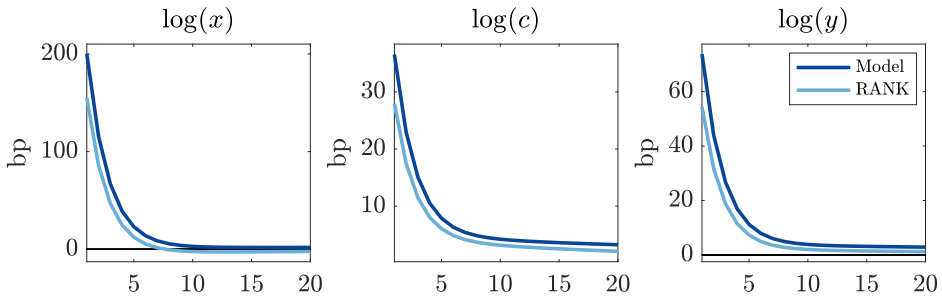

Figure 4: quantities after negative monetary policy shock

% Real stock return	Data [90% CI]	Model	RANK
Dividend growth news	33% [-13%,71%]	52%	65%
− Future real rate news	8% [-6%,21%]	16%	35%
− Future excess return news	59% [19%,108%]	32%	0%

Table VII: Campbell-Shiller decomposition of stock market return after monetary shock

	Model	RANK	Model/RANK
$\Delta \log(y)$	$74bp$	$54bp$	1.4
$\Delta \log(c)$	$37bp$	$28bp$	1.3
$\Delta \log(x)$	$200bp$	$155bp$	1.3

Real effects of monetary shock

	a	b	c
$d \log k^i$	$78bp$	$-188bp$	$0bp$
$n^i/(qk^i)$	0.4	2.8	1.0
$q\partial(k^i)/\partial n^i$	1.9	0.7	0.0
$d \log n^i$	$135bp$	$-25bp$	$35bp$
$\partial \log k^i$	$-24bp$	$-137bp$	$0bp$

Table VIII: decomposing capital accumulation on impact of shock

	baseline	$\rho^m = 0.75$	$\chi^x = 0$	$\chi^w = 0$
$d(\lambda^a n^a/n)$	$25bp$	$39bp$	$23bp$	$21bp$
$(\lambda^a/n)\left(d\left[w\ell^a\right] - (n^a/n)d\left[w\ell\right]\right)$	$-1bp$	$-1bp$	$-1bp$	$-0bp$
$(\lambda^a/n)(-(1+i_{-1})/P)(B^a_{-1} + \nu^a B^g_{-1})d \log p$	$20bp$	$33bp$	$23bp$	$22bp$
$(\lambda^a/n)(k^a_{-1} - (n^a/n)k_{-1})d\pi$	$1bp$	$1bp$	$1bp$	$0bp$
$(\lambda^a/n)(k^a_{-1} - (n^a/n)k_{-1})(1-\delta)dq$	$6bp$	$6bp$	$0bp$	$0bp$
$(\lambda^a/n)dt^a$	$-1bp$	$-1bp$	$-1bp$	$-1bp$

Table IX: decomposing wealth redistribution to a households on impact of shock

2 Numerical solution: appendix

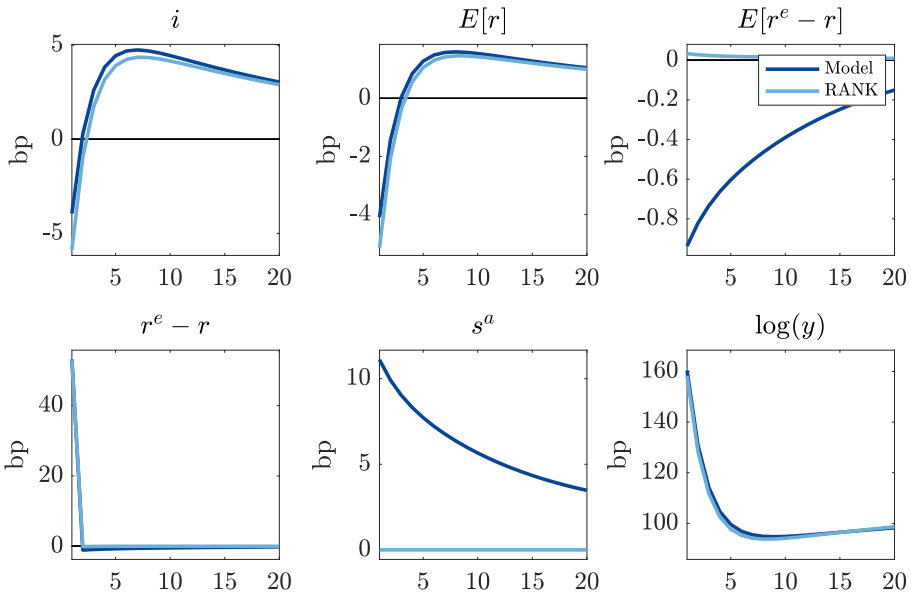

Figure A.2: impulse responses to positive productivity shock

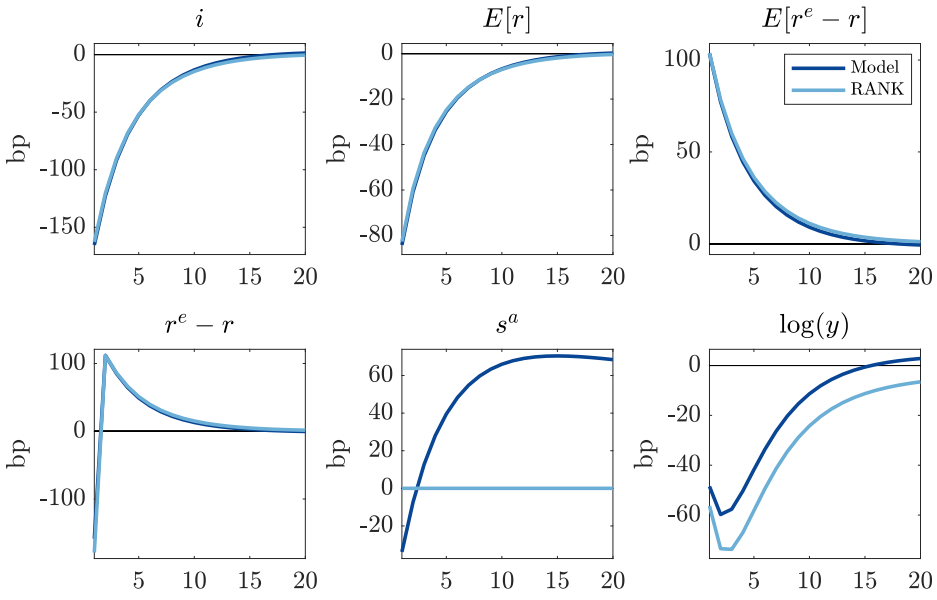

Figure A.3: impulse responses to positive disaster probability shock

	Description	Value	Moment	Target	Model
σ^z	std. dev. prod.	0.55%	$\sigma(\Delta \log c)$	0.5%	0.6%
χ^x	capital adj. cost	3.5	$\sigma(\Delta \log x)$	2.1%	2.0%
β	discount factor	0.984	$4r_{+1}$	1.3%	1.1%
γ^b	RRA b	21	$4[r^e_{+1} - r_{+1}]$	7.3%	7.3%
σ^p	std. dev. log dis. prob.	0.47	$\sigma(4\mathbb{E}r_{+1})$	2.2%	2.2%
ρ^p	persist. log dis. prob.	0.8	$\rho(\mathbb{E}r_{+1})$	0.79	0.74
γ^a	RRA a	2.5	qk^a/a^a	4.4	4.8
$\underline{k}$	lower bound k^i	10	qk^c/a^c	1.1	1.0
$\xi\bar{s}^a$	newborn endowment a	0%	$\lambda^a a^a / \sum_i \lambda^i a^i$	2%	3%
$\xi\bar{s}^c$	newborn endowment c	0.9%	$\lambda^c a^c / \sum_i \lambda^i a^i$	23%	24%
b^g	real value govt. bonds	-2.7	$-\sum_i \lambda^i b^i / \sum_i \lambda^i a^i$	-10%	-10%

Disutility parameters $\bar{\nu}^i$ set to $(0.00, 2.47, 0.44)$ to jointly match average labor and steady state labor income shares.

Table A.IV: targeted moments and calibrated parameters, alternative calibration

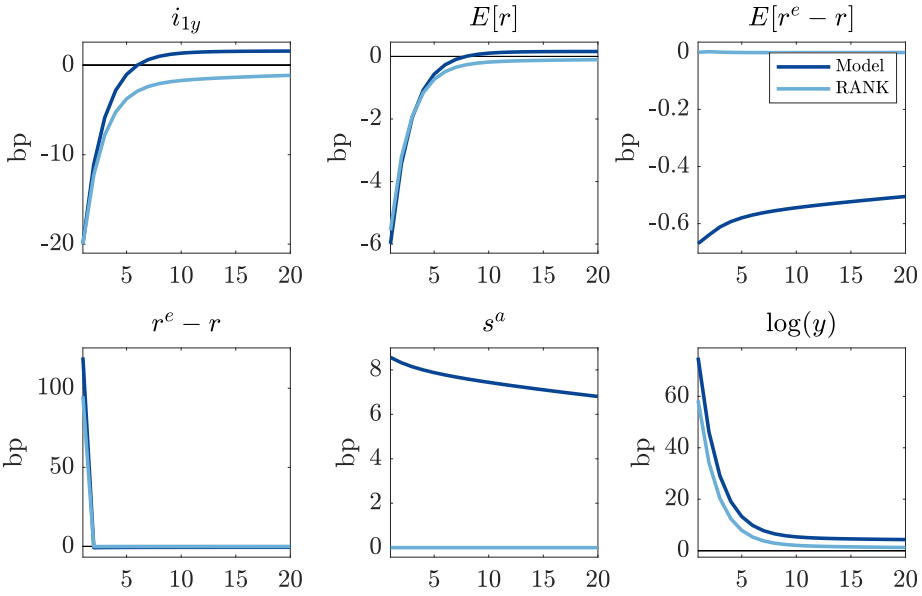

Figure A.5: quantities after negative monetary policy shock, alternative calibration

% Real stock return	Data [90% CI]	Model	RANK
Dividend growth news	33% [-13%,71%]	50%	65%
− Future real rate news	8% [-6%,21%]	13%	35%
− Future excess return news	59% [19%,108%]	37%	0%

Table A.V: decomposition after monetary shock, alternative calibration

	Model	RANK	Model/RANK
$\Delta \log(y)$	$75bp$	$58bp$	1.3
$\Delta \log(c)$	$37bp$	$29bp$	1.3
$\Delta \log(x)$	$201bp$	$156bp$	1.3

Real effects of monetary shock

	Description	Value	Moment	Target	Model
σ^z	std. dev. prod.	0.55%	$\sigma(\Delta \log c)$	0.5%	0.5%
χ^x	capital adj. cost	3.5	$\sigma(\Delta \log x)$	2.1%	2.1%
β	discount factor	0.98	$4r_{+1}$	1.3%	1.4%
$\gamma^a = \gamma^b = \gamma^c$	RRA	11	$4[r^e_{+1} - r_{+1}]$	7.3%	7.4%
σ^p	std. dev. log dis. prob.	1.20	$\sigma(4\mathbb{E}r_{+1})$	2.2%	2.2%
ρ^p	persist. log dis. prob.	0.8	$\rho(\mathbb{E}r_{+1})$	0.79	0.70
η^b	idio. risk b	0.001	qk^a/a^a	2.0	2.5
$\underline{k}$	lower bound k^i	10	qk^c/a^c	1.1	0.9
$\xi\bar{s}^a$	newborn endowment a	-0.02%	$\lambda^a a^a / \sum_i \lambda^i a^i$	18%	22%
$\xi\bar{s}^c$	newborn endowment c	-0.15%	$\lambda^c a^c / \sum_i \lambda^i a^i$	23%	24%
b^g	real value govt. bonds	-2.6	$-\sum_i \lambda^i b^i / \sum_i \lambda^i a^i$	-10%	-10%

Disutility parameters $\bar{\nu}^i$ set to $(0.64, 2.89, 0.43)$ to jointly match average labor and steady state labor income shares.

Table A.VI: targeted moments and calibrated parameters, idiosyncratic risk

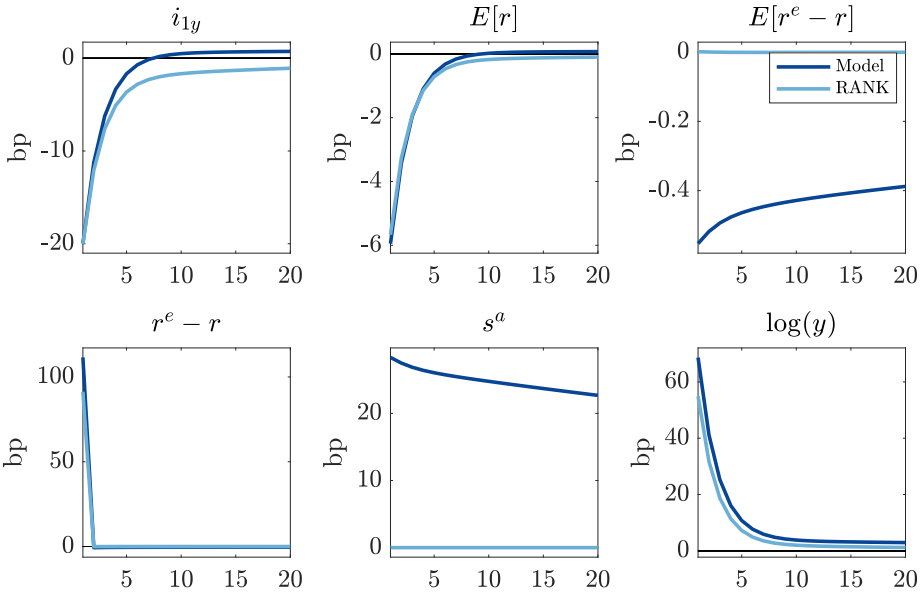

Figure A.6: responses to negative monetary policy shock, idiosyncratic risk

% Real stock return	Data [90% CI]	Model	RANK
Dividend growth news	33% [-13%,71%]	51%	65%
− Future real rate news	8% [-6%,21%]	20%	35%
− Future excess return news	59% [19%,108%]	28%	1%

Table A.VII: decomposition after monetary shock, idiosyncratic risk

	Model	RANK	Model/RANK
$\Delta \log(y)$	69*bp*	55*bp*	1.3
$\Delta \log(c)$	33*bp*	28*bp*	1.2
$\Delta \log(x)$	190*bp*	155*bp*	1.2

Real effects of monetary shock