

Application: Working with the Solow Model

Instructions:	Results:
1. Set initial steady state: Blue values	1. Steady states = red
2. Set changes: Enter yellow boxes	2. Period-0 values = green
[Default = 10% less capital]	3. Transition path = see table and charts

Initial Conditions: Steady state (change parameters as needed)

Parameters	Value	Meaning
Alpha	33.3%	Capital share
Delta	4.0%	Depreciation rate
n	1.0%	Growth of workforce
g	1.0%	Growth of productivity
s	16.7%	Investment rate

Initial Values (normalization - no need to set)

A(0)	1.000	Initial productivity value
L(0)	100.000	Initial labor force
K(0)	462.963	Capital stock

Steady state values: Initial

$z^* = k^*/y^*$	2.778	Capital-output ratio
k^*	4.630	Capital-labor ratio
y^*	1.667	Output in efficiency units
c^*	1.389	Consumption in efficiency units
Lambda	4.0%	Convergence rate

Changes: Effective period zero

- Default: if blank = initial value

- If no change is marked, graphs will show a default change: 10% cut in capital

Parameters	Change pts	Parameter set	Change %	Change Pts
Alpha		33.3%	0.0%	0.0%
Delta		4.0%	0.0%	0.0%
n		1.0%	0.0%	0.0%
g		1.0%	0.0%	0.0%
s		16.7%	0.0%	0.0%

Disturbances

Variable	Change %	Value in t=0	Change %
A(0)		1.000	0.0%
L(0)		100.000	0.0%
K(0)		416.667	Default: -10%

Steady state values: Final

$z^* = k^*/y^*$	2.778	0.0%
k^*	4.630	0.0%
y^*	1.667	0.0%
c^*	1.389	0.0%
Lambda	4.0%	0.0%

Period-0 values - new

$z(0)$	2.589
$k(0)$	4.167
$y(0)$	1.609
$c(0)$	1.341
$z(0) - z^*$	-0.188

Case of Disturbances:

Half-life 17.3 (years)

Case of Savings rate changes:

Recovery: na (years)
to initial consumption

Compare:

Period-0 vs. Initial ss	Period-0 vs. Final ss
-6.8%	-6.8%
-10.0%	-10.0%
-3.5%	-3.5%
-3.5%	-3.5%

Transition Path

Time	Weight on $z(0) - z^*$	$z(t)$	$k(t)$	$y(t)$	$c(t)$	$C(t)$	growth $d\ln(k)$	convergence $dk/(k^* - k)$
-2		2.778	4.630	1.667	1.389	1.361		
-1		2.778	4.630	1.667	1.389	1.375	0.0000	
0	1.000	2.589	4.167	1.609	1.341	1.341	-0.1054	
1	0.961	2.597	4.185	1.611	1.343	1.356	0.0043	3.85%
2	0.923	2.604	4.202	1.614	1.345	1.372	0.0041	3.86%
3	0.887	2.611	4.218	1.616	1.346	1.387	0.0039	3.86%
4	0.852	2.617	4.234	1.618	1.348	1.403	0.0038	3.86%
5	0.819	2.624	4.249	1.620	1.350	1.419	0.0036	3.86%
6	0.787	2.630	4.264	1.622	1.351	1.435	0.0035	3.87%
7	0.756	2.635	4.278	1.623	1.353	1.451	0.0033	3.87%
8	0.726	2.641	4.292	1.625	1.354	1.467	0.0032	3.87%
9	0.698	2.646	4.305	1.627	1.356	1.483	0.0030	3.87%
10	0.670	2.651	4.317	1.628	1.357	1.500	0.0029	3.88%
11	0.644	2.656	4.330	1.630	1.358	1.516	0.0028	3.88%
12	0.619	2.661	4.341	1.631	1.359	1.533	0.0027	3.88%
13	0.595	2.666	4.352	1.633	1.361	1.549	0.0026	3.88%
14	0.571	2.670	4.363	1.634	1.362	1.566	0.0025	3.88%
15	0.549	2.674	4.374	1.635	1.363	1.583	0.0024	3.88%
16	0.527	2.678	4.383	1.637	1.364	1.600	0.0023	3.89%
17	0.507	2.682	4.393	1.638	1.365	1.618	0.0022	3.89%
18	0.487	2.686	4.402	1.639	1.366	1.635	0.0021	3.89%
19	0.468	2.690	4.411	1.640	1.367	1.653	0.0020	3.89%
20	0.449	2.693	4.420	1.641	1.368	1.670	0.0019	3.89%
21	0.432	2.696	4.428	1.642	1.368	1.688	0.0018	3.89%
22	0.415	2.700	4.436	1.643	1.369	1.706	0.0018	3.89%
23	0.399	2.703	4.443	1.644	1.370	1.724	0.0017	3.89%
24	0.383	2.706	4.450	1.645	1.371	1.743	0.0016	3.90%
25	0.368	2.708	4.457	1.646	1.371	1.761	0.0016	3.90%