Day 9 was me answering questions on Golden Rule.

Produced email below:

Hi,

I have completed my assignment. To remind you, Brandon's Bold Proposal (BBP) involved a gradual implementation of increasing s. Here are important points to remember:

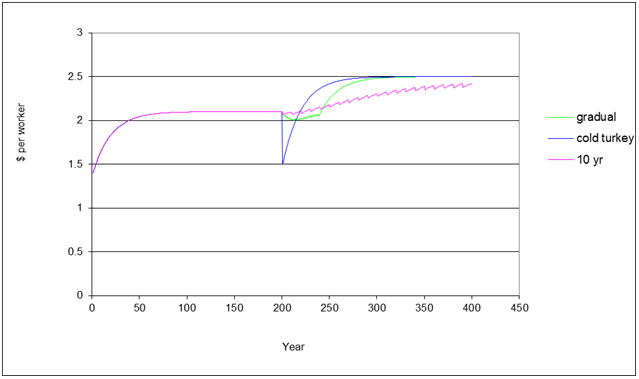
1) Everyone (well, everyone who is really smart and has a PhD in Econ because understanding this model as an undergraduate without simulation, in my opinion, is simply impossible) knows that when s is below its Golden Rule value, increasing s to s\* will produce a temporary decrease in c. I used the word "crater" (because in a sad attempt to communicate I tend toward colorful language) to describe what everyone else calls the "transition." Initially, higher s must decrease c, but then the economy catches up to its new, higher steady-state c.

2) BBP first came out as raising s from 30% to 50% by 1% pt per year. The idea is that a gradual increase would not cause the crater to be so bad. In my implementation, I ended up making this be every 2 years. I increase s, wait a year, then do it again.

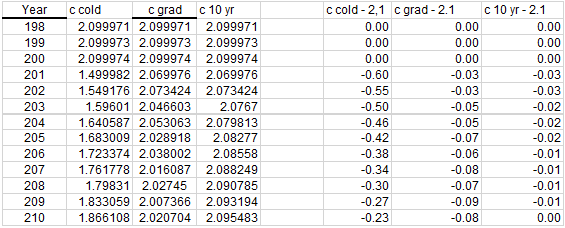
3) In subsequent discussion, BBP evolved to raising s 1% pt every 10 years.

So, we have three schemes: 1) cold turkey (s to s\* immediately), 2) gradual (s rises by 1% pt every other year), and 3) 10 yr (s rises every 10 years).

Here is a graph of the results:



Here are numbers for the initial transition period:

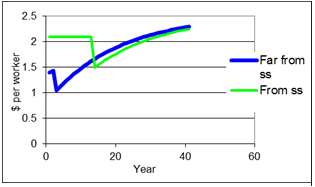


The results look good for gradualism in one sense -- gradualism does ameliorate the depth of the crater (look closely at the graph and numbers). But two things:

1) No matter how gradual you do it, it is true that (in this model), c must fall the moment you increase s. Yes, you can lessen the decrease in c compared to its previous value by increasing c slowly, but it is guaranteed that c will fall from wherever it was when s rises. Notice the "ratcheting effect" in the pink, 10 yr series. Every time s rises by 1% pt, c falls.

2) I did not know, but the graph makes clear that there is a BIG problem with gradualism. While it is true that the crater is not so deep, look at how slowly c grows. In other words, look not at the past, but to the future. Gradualism hurts future generations because c rises so slowly compared to cold turkey.

I conclude with a final point. In response to a question from Hien, we found that increasing s when you are still far from the steady state is less painful than doing so from the steady state. Here is the picture:



It takes 8 years to pass the initial c value when far from the steady state, while it takes 19 years to pass 2.1 (the green series). You can see how much smaller the crater is for the Blues, than the Greens, but maybe that is an unfair comparison because the Blues were so much poorer when both changed s from 30% to 50%. Would rather live in Green or Blue?

The ability to answer incredibly complicated questions like the ones you posed and the one I ask above is a HUGE advantage of simulation.

I appear to be blessed with a very strong group of students in this class. You seem to be doing very well. As you know, this is a grand experiment for me. I am a veteran teacher, used to lecturing. I am trying out different things to stay relevant and fresh, but doing new things carries the risk of failure. I would appreciate any and all comments and feedback you have for me, be it via email or in person. If you are ever moved by a screencast or in class example, either positively or negatively, please let me know.

Thanks and I hope you're having a good weekend,

B

P.S. Population videos and tasks 4 & 5 was what I assigned for hw for Mon.