Delete this before using. Math is hard. Go slow.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Barreto

Macro Topics

Comparative Statics with KAcc.xls

In the screencast and task I assigned, you saw how *s* affects the steady-state. We will return to this critical comparative statics exercise in the next class, but for now, let’s play with the other exogenous variables.

Open KAcc.xls and click Original Example in the *EqPath* sheet and run the economy for 200 years. This is our base case. We will explore what happens when we change, the depreciation parameter.

1. Write down whatever intuition you have here. Don’t cheat and change the spreadsheet or talk to your neighbor. Just think about this for a few seconds: What do you think will happen to the economy when  rises or falls? Why?
2. OK, now use the *EqPath* sheet to answer the question. Make  =12%. How did you do on #1?
3. Draw the canonical graph of the Solow Model below and show what happens when you increase .

**Wait. Let’s chat.**

Let’s work out together the *discrete change* and *calculus* approaches to see how they work.

1. Discrete change is a simple comparison of the new and initial solutions. In the table below, fill in values for the two left-most columns, then label the third column and compute the change in k\* for the given change in , filling it in the bottom row, third column.

|  |  |  |  |
| --- | --- | --- | --- |
| ** | *k\** |  |  |
|  |  |  |  |
|  |  |  |  |

**Wait.**

The reduced-form (that’s what the answer is called) for steady-state capital per worker is



1. Use calculus to show what happens when you increase .

**Wait.**

1. Compare your discrete change and calculus answers—are they the same or different? Why?

**Wait.**

1. Return to the table in Q4 and label the 4th column, , then compute the ** elasticity of *k\*.*
2. Compute this same elasticity below via .

**Wait.**

1. In the screencast, when s rose from 30% to 40%, there was a transition issue. In Task 5, you compared countries with 30% versus 20% saving rates. Was there a transition there? Explain.
2. Is there a transition issue with depreciation? Explain.

HW: Watch all three videos in GoldenRule.xls. The first will review what we have done here today, but the other two are new material. Pay close attention. Maybe even take notes. Work diligently on the file. Explore it. Do the tasks 3 and 4. In addition, create a Word doc called “Golden Rule Questions” that has *at least three questions* in it. I prefer real, actual questions, but if you think you understand everything, then make up three questions that you think are fundamental.