Lectures 16 and 17

The US Model

(1)   Estimate Coefficients: 1954:1--2017:3

(2)   Guess future exogenous-variable values
      (2017:4 on)

(3)   Know lagged values of endogenous
      variables
      (2017:3 back)

(4)   Solve the model (reduced-form equations)
      for future endogenous variable values
      (2017:4 on)
      Get Y* (base)

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(5)   Change one or more exogenous-variable
      values and solve again
      Get Y** (new)

(6)   Effect of change is Y** - Y*

Econ 116
Problem Set 7
Due November 7, 2017

1. For 2017:4–2022:4 (the forecast period) increase COG by $87 billion, use the interest rate rule of the Fed, and examine the effects on $GDPR$, $GDPD$, RS, UR, SGP, $PCGDPR$, and $PCGDPD$. Using your knowledge of the AS/AD model and the various extensions, explain why each of the first five variables changed the way it did (i.e., why it went up or down).

2. Do experiment 1 again but also add that $TRGHQ$ decreases by $87 billion. Why does $GDPR$ still increase? What happens to the government deficit, $-SGP$, and why?

3. For the forecast period take RS to be exogenous (that is, drop equation 30, the Fed rule), increase it by 1 percentage point, and explain the effects on $GDPR$, UR, $GDPD$, $INTG$, SGP, and RB.

4. Drop equation 25 and increase the value of CG in 2017:4 by 4000 (4 trillion). THIS IS A CHANGE FOR 2017:4 ONLY. Solve the model for the forecast period. (Use the interest rate rule of the Fed for this experiment.) Explain the effects on $GDPR$, RS, CD, and SRZ.

5. For the forecast period increase PIM by 20 percent of its base values, use the interest rate rule of the Fed, and examine the effects on $GDPR$, $GDPD$, RS, UR, AA, WR, $PCGDPR$, and $PCGDPD$. . Explain why each of the first six variables changed the way it did (i.e., why it went up or down).

6. Drop equation 30 (the Fed rule) and do experiment 5 again. Note that the effect on $GDPR$ is still negative. This is contrary to the AS/AD model presented in class, where the effect would be zero. (Why would the effect be zero?) What is going on in the US model to make the effect negative? (Hint: think about the effects on AA and WR.)

7. Run an interesting experiment using the US model. Discuss briefly what you did and what the results showed.

Note: You may find it helpful (and interesting) to look over *The US Model Workbook* that is on the site, especially Chapters 1 and 2. This is not, however, required, and there will be nothing on the final exam from the workbook.