Explaining C. Romer Numbers

(Slide 25 IS/LM)
Using Model from Class

• \( Y = \frac{c_0 + l + G - c_1 T}{1 - c_1} \)

• One unit increase in \( G \) increases \( Y \) by \( 1/(1-c_1) \)

• Inconsistent with numbers from C. Romer which are generally increasing

• Implies \( c_1 \) changing across quarters

• Or generated by different model
Response to Permanent Increase in $G$

c1=0.3 Standard Model
Alternative Habit Formation Model

- \( C(t) - C(t-1) = a \left( C(t) \times - C(t-1) \right) \)
  - with \( C(t) \times = c_0 + c_1 Y(t) \)
  - \( 0 < a \leq 1 \)
  - For \( a = 1 \), \( C(t) = C(t) \times \)

- \( Y(t) = C(t) + G(t) \)

- Solution: \( Y(t) = c_0 + (1-a)C(t-1) + G(t)/(1-ac_1) \)
Response to Permanent Increase in $G$

$c_1=0.3$, $a=0.5$ Habit Formation

![Graph showing response to permanent increase in $G$]