Macroeconomics II

Lecture Notes II

1. (Log-linearization) Log-linearize the following equations around zero-inflation steady-state:

   (a) Aggregate GDP

   $$Y_t = C_t + I_t$$

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   $$\ln(Y_t) = \ln(C_t + I_t)$$

   $$\ln(Y) + \frac{1}{Y}(Y_t - Y) = \ln(C + I) + \frac{1}{C+I}(C_t - C + I_t - I)$$

   $$\hat{y}_t = \frac{1}{Y}\frac{C}{C}(C_t - C) + \frac{1}{Y}\frac{I}{I}(I_t - I)$$

   $$\hat{y}_t = \frac{C}{Y}\hat{c}_t + \left(1 - \frac{C}{Y}\right)\hat{i}_t$$