

**ADVANCED MACROECONOMICS**  
**UNIVERSIDAD DE MÁLAGA**  
**Academic Year 2018-2019. Exercise 2 (Week 1-5 April 2019)**

Consider the following small open economy model:

$$m_t - p_t = \psi y_t - \theta i_t \quad (1)$$

$$y_t^d = \beta_0 + \beta_1(s_t - p_t + p_t^*) - \beta_2(i_t - \Delta p_t^e) \quad (2)$$

$$y_t = y_t^d \quad (3)$$

$$\Delta p_t = \mu(y_t - y_t^n) \quad (4)$$

$$\Delta s_t = i_t - i_t^* \quad (5)$$

where  $m$  is the logarithm of money supply,  $p$  the logarithm of the price level,  $y^d$ , the logarithm of aggregate demand,  $y$  the logarithm of output,  $y^n$  the logarithm of potential output,  $s$  the nominal exchange rate, and  $i$  the nominal interest rate. A star denotes a foreign variable. All parameters are positive.  $\Delta$  means variation with respect to time. Obtain the solution of the model as a two-equations system for the price level and output. Build the corresponding spreadsheet. Calibrate the model and study the effects of a 1 percentage point rise in the foreign interest rate

Once the results have been obtained, you must write an assessment with all analytical calculus and plot the trajectories for the endogenous variables given the shock, following the 10 steps described for solving this type of models. All results must be collected in a file in "pdf" format, to be sent to the email: macroavanzada2@uma.es. The deadline for submitting the file is 23:59pm, 7 April 2019. All questions about this exercise will be resolved on Monday, April 1 from 9:30am.