Thinking about IS-TR:

First, as a general rule: if a variable changes and is not on the axis of the chart, then think about how the lines shift.

The IS-TR model can be thought of as a system of 3 equations (IS, TR, and LRAS) and 3 unknowns (Y, i, and pi) plus some other variables that can be set by the government or central bank (i\*, Y\*, and G). There is set of Y’s and i’s that solve IS = TR over different values of pi. This set of solutions is called AD. Then take that LRAS = Y’ (i.e. some value of Y that is sustainable in the long-run, we can call this the natural rate of output). We can solve AD = LRAS to find pi.[[1]](#footnote-1) Going back to IS=TR, the same pi and Y’ allows us to solve for i. This describes the behavior of the economy (the values of output, inflation, and interest rate that are jointly sustainable given all exogenous components in the model).

When we incorporate SRAS, this makes things slightly more complicated. For AD = SRAS, we have to think about inflation expectations, which are inertial. We can shock AD to increase Y above Y’. If we only had AD = LRAS, then we would only get higher inflation. BUT since inflation expectations update slowly, we can sustain Y > Y’ when AD = SRAS. Given backward looking behavior by households, AD = SRAS goes to the point indicated by the purple line on slide 10 in the first period of the AD shock. Then it slowly converges to AD = LRAS as inflation expectations update (note inflation is higher at the purple arrow). The speed that expectations update determines how long Y stays above Y’. If households are fully rational, then they update expectations right away and there is no gain from increasing AD.

1. Note that the government and central bank should choose values of G, i\*, and Y\* that allow this. Hopefully they choose these values well. [↑](#footnote-ref-1)