Monetary Economics
Workshop I

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We are going to analyse some of the ideas behind price level targeting (PLT).

1. Assume that the monetary authority implements a policy of targeting a path for the price level, P_t, such that it grows at the rate g per year. Assume that it can (imperfectly, due to transitory shocks) achieve this. Plot the resulting path for both the price level and its logarithm, p_t, in the absence of shocks.[1] In doing this, you will have the variable of interest on the vertical axis and time, t, on the horizontal.
2. Plot the resulting level of inflation.
3. What are the short-run and long-run effects of a transitory shock to the price level? What about inflation?
4. Now do the same analysis but assume instead that the monetary authority targets the level of inflation. What are the consequences for the price level?

In the introductory lecture we briefly discussed persistence and vector autoregressions (VARs). Consider a variable described by the following process

$$y_t = \alpha_0 + \alpha_1 y_{t-1} + \varepsilon_t$$

where ε_t is an i.i.d. process with mean zero.[2]

Assume that the process above is hit by a shock $\varepsilon_t = 1$, which will then equal zero thereafter. This means that the shock will be purely temporary.

[1] Begin with an arbitrary initial level.

[2] In other words, it's an exogenous shocks with a mean of zero.

1. Plot the evolution of y_t over time for $\alpha_0 = 0$ and $\alpha_1 = \{-1.5, -1, 0, 0.5, 1, 1.5\}$. What is the impact of the shock over time?
2. Do the same with $\alpha_0 = 1$, $\alpha_1 = 0.5$; $\alpha_0 = 0.2$, $\alpha_1 = 0.9$.
3. Do both α_0 and α_1 affect the dynamics of y_t?