



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$

Monetary policy rule:

$$i_t = \pi_t + \rho + \theta_\pi(\pi_t - \pi_t^*) + \theta_Y(Y_t - \bar{Y}_t)$$

Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$

Monetary policy rule:

$$i_t = \pi_t + \rho + \theta_\pi(\pi_t - \pi_t^*) + \theta_Y(Y_t - \bar{Y}_t)$$

- 5 equations; 5 endogenous variables ($Y_t, \pi_t, r_t, i_t, \mathbb{E}_{t-1}[\pi_t]$).

Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$

Monetary policy rule:

$$i_t = \pi_t + \rho + \theta_\pi(\pi_t - \pi_t^*) + \theta_Y(Y_t - \bar{Y}_t)$$

- ▶ 5 equations; 5 endogenous variables ($Y_t, \pi_t, r_t, i_t, \mathbb{E}_{t-1}[\pi_t]$).
- ▶ 4 exogenous variables ($\bar{Y}_t, \pi_t^*, \epsilon_t, v_t$); “shocks”.

Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$

Monetary policy rule:

$$i_t = \pi_t + \rho + \theta_\pi(\pi_t - \pi_t^*) + \theta_Y(Y_t - \bar{Y}_t)$$

- ▶ 5 equations; 5 endogenous variables ($Y_t, \pi_t, r_t, i_t, \mathbb{E}_{t-1}[\pi_t]$).
- ▶ 4 exogenous variables ($\bar{Y}_t, \pi_t^*, \epsilon_t, v_t$); “shocks”.
- ▶ 5 parameters ($\alpha, \rho, \phi, \theta_\pi, \theta_Y$).



Lecture Recap

DAD/DAS Building Blocks

Demand for goods/services:

$$Y_t = \bar{Y}_t - \alpha(r_t - \rho) + \epsilon_t$$

Fisher equation:

$$i_t = r_t + \mathbb{E}_t[\pi_{t+1}]$$

Phillips curve:

$$\pi_t = \mathbb{E}_{t-1}[\pi_t] + \phi(Y_t - \bar{Y}_t) + v_t$$

Adaptive expectations:

$$\mathbb{E}_{t-1}[\pi_t] = \pi_{t-1}$$

Monetary policy rule:

$$i_t = \pi_t + \rho + \theta_\pi(\pi_t - \pi_t^*) + \theta_Y(Y_t - \bar{Y}_t)$$

- ▶ 5 equations; 5 endogenous variables ($Y_t, \pi_t, r_t, i_t, \mathbb{E}_{t-1}[\pi_t]$).
- ▶ 4 exogenous variables ($\bar{Y}_t, \pi_t^*, \epsilon_t, v_t$); “shocks”.
- ▶ 5 parameters ($\alpha, \rho, \phi, \theta_\pi, \theta_Y$).
- ▶ One predetermined variable (π_{t-1}).



Lecture Recap

DAD/DAS

- Dynamic AS curve:

$$\pi_t = \pi_{t-1} + \phi(Y_t - \bar{Y}_t) + v_t$$



Lecture Recap

DAD/DAS

- ▶ Dynamic AS curve:

$$\pi_t = \pi_{t-1} + \phi(Y_t - \bar{Y}_t) + v_t$$

- ▶ Dynamic AD curve:

$$Y_t = \bar{Y} - \frac{\alpha\theta_\pi}{1 + \alpha\theta_Y}(\pi_t - \pi^*) + \frac{1}{1 + \alpha\theta_Y}\epsilon_t$$



Lecture Recap

DAD/DAS

- Dynamic AS curve:

$$\pi_t = \pi_{t-1} + \phi(Y_t - \bar{Y}_t) + v_t$$

- Dynamic AD curve:

$$Y_t = \bar{Y} - \frac{\alpha\theta_\pi}{1 + \alpha\theta_Y}(\pi_t - \pi^*) + \frac{1}{1 + \alpha\theta_Y}\epsilon_t$$

$$\frac{d\pi_t}{dY_t} = -\frac{1 + \alpha\theta_Y}{\alpha\theta_\pi}$$