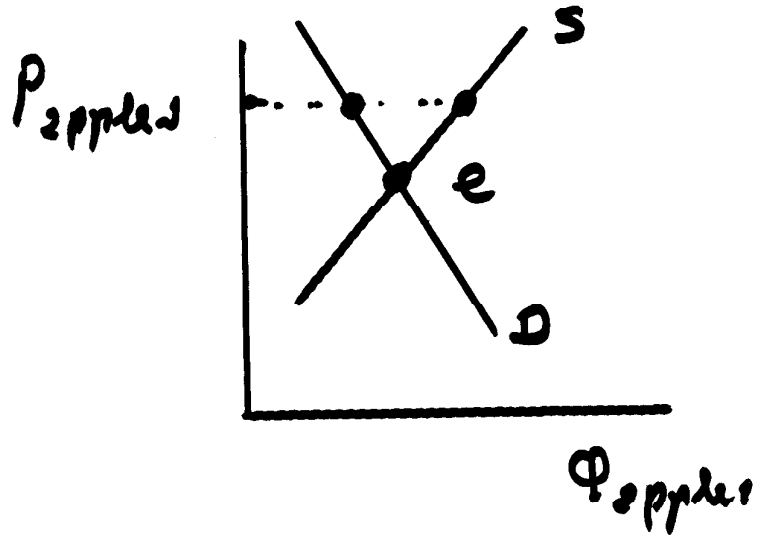
economics:

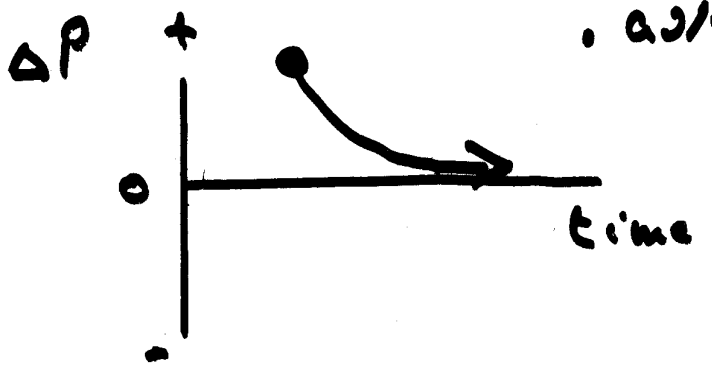
how do markets work?



- are markets in equilibrium?
  - if not, how fast do they adjust?

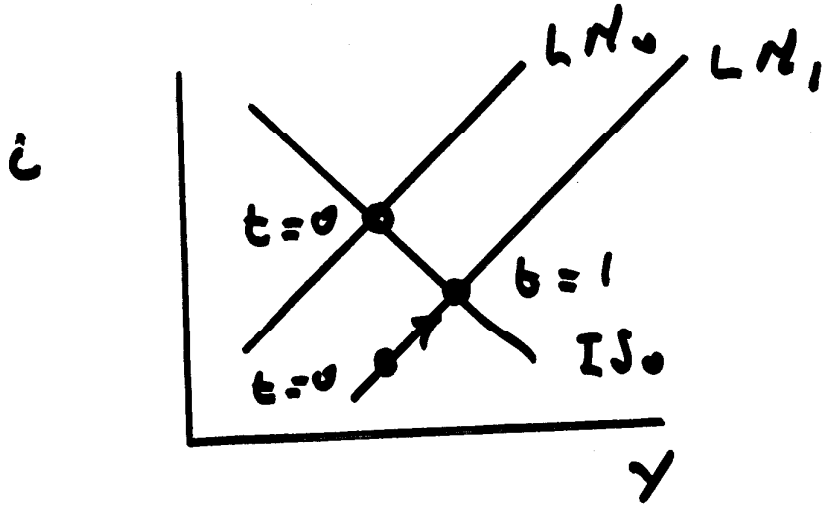
$$\Delta P = \alpha * (Q^D - Q^S)$$

- will P approach e?
  - assume $\alpha > 0$



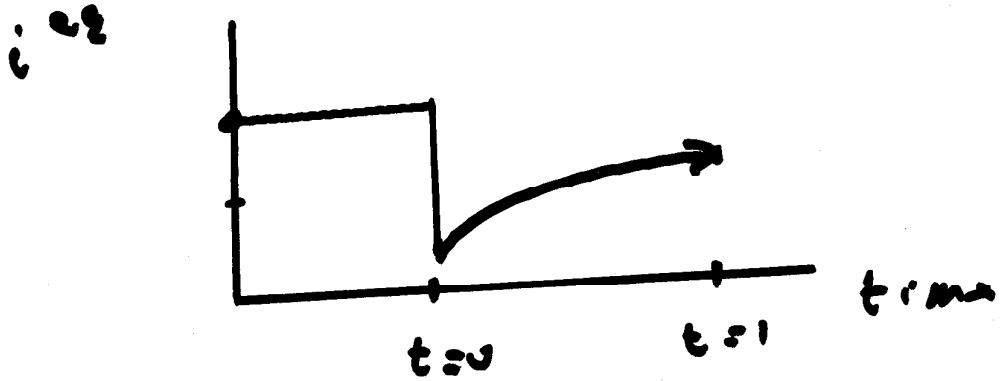
in text fig 11-3

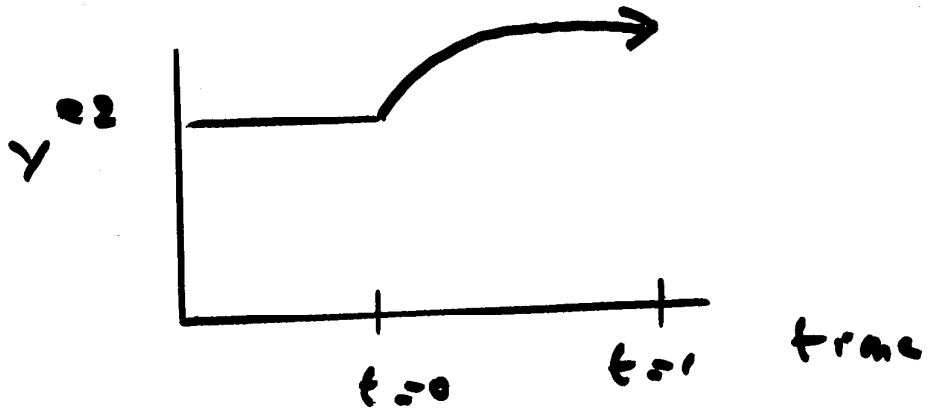
- financial markets adjust instantaneously
  - all observable $(i^{e_2}; Y^{e_2})$ observations lie on the LM curve



- what happens at $t=0$?
  - I increases $\bar{M}$
- when is equilibrium restored in both markets?: at $t=1$

- modelling market adjustment paths (3)
  - see MacroSoft for this feature





- systems of non-linear first order differential equations.

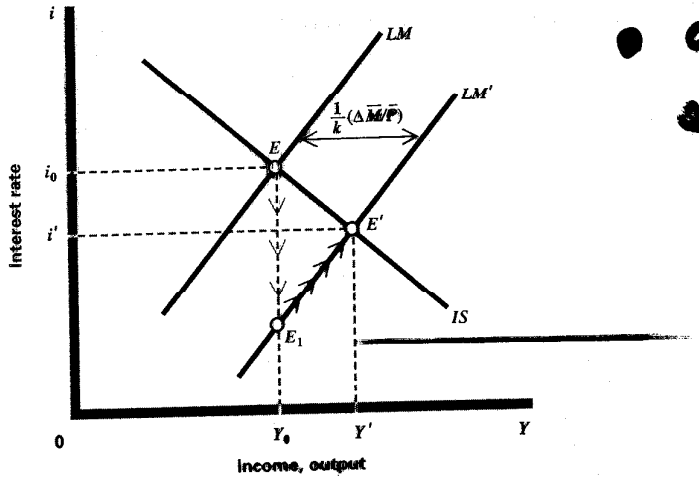


FIGURE
MONETARY POLICY. An increase in the real money stock shifts the *LM* schedule to the right. The asset markets adjust immediately, and interest rates decline between points *E* and E_1. The lower interest rates stimulate investment, and spending and income rise until a new equilibrium is reached at point *E'*. Once all adjustments have taken place, a rise in the real money stock raises equilibrium income and lowers equilibrium interest rates.

- differential adjustment speeds

Question /

- Shift LM
- dis eq. in both markets
- which market reaches eq. first
  - which variable moves fastest
    - i ?
    - Y ?

anticipatory monetary policy

$$\Delta M_t > 0 \rightarrow \Delta Y_{t+1} > 0$$

current policy change → future output effect

— — — — — — — — — — therefore

$$\Delta Y_t > 0$$

past policy change → current output effect

— — — — — — — — — — generalizing

$$\Delta Y_t = f(\Delta M_{t-1}, \Delta M_{t-2}, \Delta M_{t-3} \text{ etc.})$$

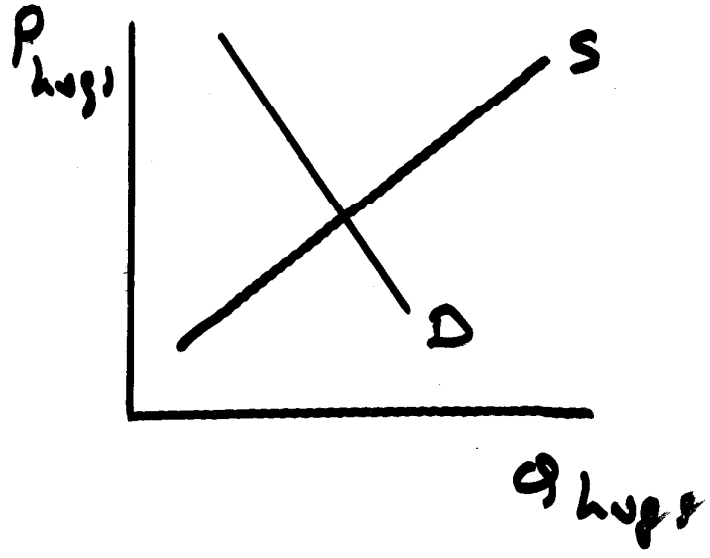
— — — — — — — — — — generalizing

fiscal — monet.

$$\Delta Y_t = f(\Delta G_{t-1}; \Delta G_{t-2}; \Delta T_{t-1}; \Delta T_{t-2}; \Delta M_{t-1}; \Delta M_{t-2}$$

- Alternative hypotheses:

  - Commodity price cycles
    - $t=0$ too much
    - $t=1$ too little



- SR eq.
- no long run eq.

Demand:

$$P_t = \overset{(+)}{a} + \overset{(-)}{b} Q_t^D$$

Supply

$$Q_t^S = c + \overset{(+)}{d} P_{t-1}$$

* adaptive expectations

$$\hat{P}_t = P_{t-1}$$

Market clearance

$$Q_t^D = Q_t^S$$

therefore:

$$P_t = (a + bc) + bd\, P_{t-1}$$

$$P_t = (a + bc) + bd\, P_{t-1}$$

$$\Delta P_t = bd * \Delta P_{t-1}$$

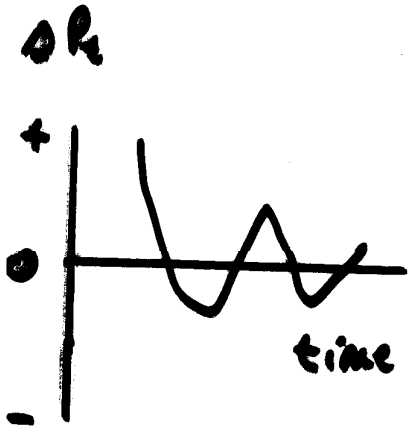
$$\frac{\Delta P_t}{\Delta P_{t-1}} = \overset{\ominus\ \oplus}{bd} < 0$$

- Crucial question

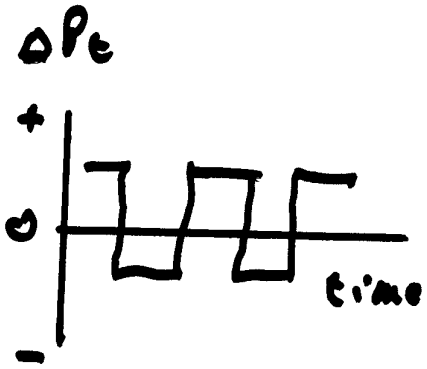
$$-1 < bd < 0$$

$$bd = -1$$

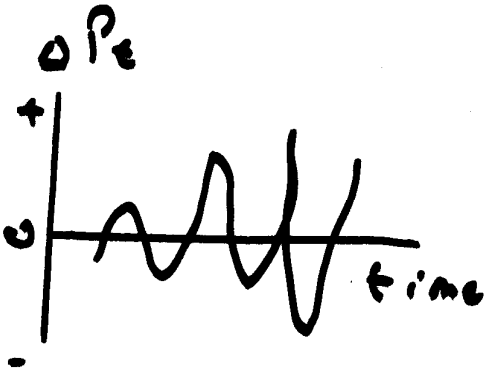
$$bd < -1$$



$-1 < bd < 0$
stable



$bd = -1$
cyclical
(cob web model)



$bd < -1$
unstable