ANSWER TO 7.3)

How do results of Taylor model depend on overlapping of pricesetting decisions? What if price adjustments are synchronized?

a) What is $x_t = p_{it} = p_{it+1}$?

Recall $p_{it} = E\left[\sum_{t=0}^{\infty} \omega_0 p_{it}^*\right]$

Here, $x_t = p_{it} = \frac{1}{2} p_{it}^* + \frac{1}{2} E_t p_{it+1}^*$

and $p_i^* = \phi m + (1-\phi) p$ hence

$$x_t = \frac{1}{2}\left(\phi m_t + (1-\phi) p_t\right) + \frac{1}{2}\left(\phi E_t m_{t+1} + (1-\phi) E_t p_{t+1}\right)$$

b) In terms of m_t and $E_t m_{t+1}$ alone?

<u>Everyone</u> sets price equal to x_t

so $p_t = p_{t+1} = x_t$

hence

$$x_t = \frac{1}{2}(\phi m_t + (1-\phi) x_t) + \frac{1}{2}(\phi E_t m_{t+1} + (1-\phi) x_t)$$

$$\Longrightarrow x_t = \frac{1}{2} m_t + \frac{1}{2} E_t m_{t+1}$$

ANSWER TO 7.3) (cont.)

c) What's y in each period, assuming $m_{t+1} = m_t + e_{t+1}$ i.i.d.

$p_t = p_{t+1} = \frac{1}{2} m_t + \frac{1}{2} m_t = m_t$ hence $E_t m_{t+1} = m_t$

$y_t = m_t - p_t = m_t - m_t = 0$

$y_{t+1} = m_{t+1} - p_{t+1} = m_{t+1} - p_t = m_{t+1} - m_t = e_{t+1}$

Note! ϕ doesn't matter for effect of e on y

e_{t+1} won't affect $y_{t+2}, y_{t+3}, \ldots$

$y_{t+2} = 0$

$y_{t+3} = e_{t+3}$ uncorrelated with e_t