



In the diagram above, the profit of the  $i$ th firm is on the vertical axis and the price it charges is on the horizontal axis. The profit functions shown reflect how profit responds to its pricing decision when aggregate demand is  $m_0$  and  $m_1$ , where  $m_1 < m_0$ .

1. Show the profit-maximizing price and the amount of profit the firm can earn when  $m = m_0$ .
2. Show the profit-maximizing price and the amount of profit the firm can earn when  $m = m_1$ .
3. Suppose that aggregate demand is initially  $m_0$  and that it falls to  $m_1$ . How much profit does the firm lose if it chooses to keep its price at the level that was optimal when  $m = m_0$  instead of changing it to the optimal price?
4. How large would “menu costs” of price adjustment have to be in order for the firm to be better off keeping its price constant rather than lowering it?