ECO 203: Environmental and Resource Economics

Group-B: Resource Economics

Unit-2: Exhaustible Resources

Lecture-IV

MONOPOLY AND THE RATE OF EXTRACTION

The analysis so far has assumed that competitive conditions prevail. Basically, if resource markets are competitive, resource owners will deplete the resource at a socially optimal rate. If so, the only reason to intervene in resource markets would be:

a) If social rates of discount are different to the private rate of discount used by the resource owner,
b) If there are externalities from resource use, and
c) If markets are not competitive.

If social rates are lower than private rates, we would expect the socially optimal price path to encourage more conservation, i.e., a less rapid exploitation of the resource. The presence of external effects would also imply that social rates of depletion are lower than private rates. The effects of relaxing the competition assumption now need to be discussed.

The general presumption is that monopolists restrict output and raise prices compared to those that would prevail under perfect competition. This leads us to surmise that P_0, the initial price, will be higher under monopoly than under completion. But given the fixed resource stock, a higher initial price entails a less steep price path through time. The outcome is shown in Figure-3. Note that the effect of monopoly is to increase the "life" of the resource: *monopoly turns out to be an ally of the conservationist*.

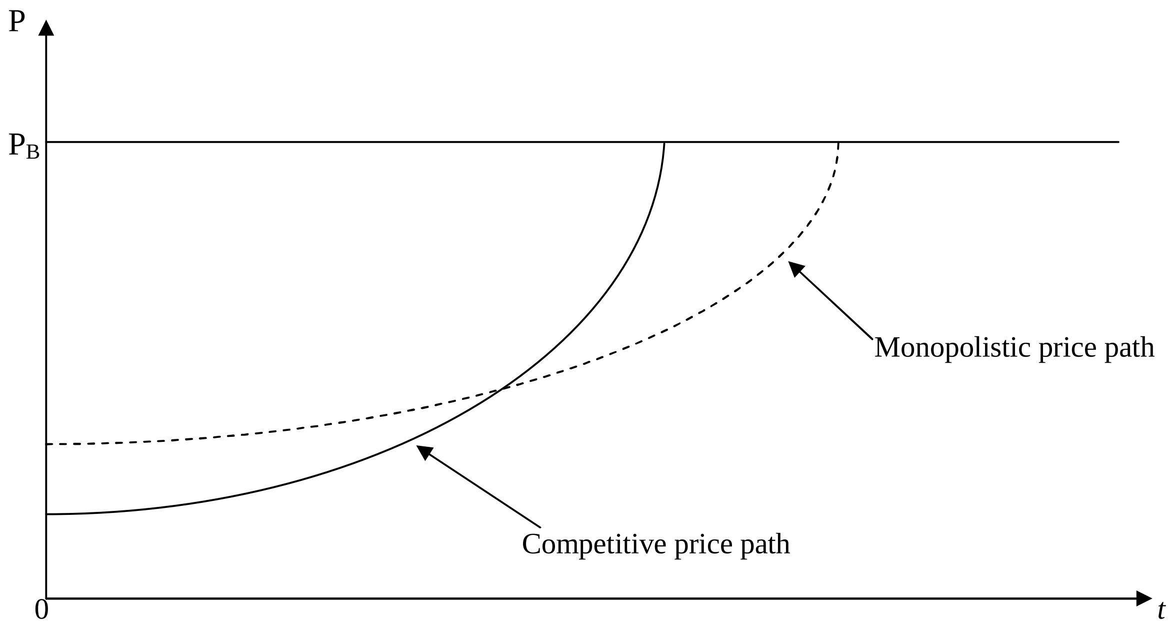

Figure-3: The effects of monopoly on resource extraction

This general proposition accords with intuition, but in practice it depends on particular values of the relevant parameters, e.g., the elasticity of the demand curve. Overall, we might say that monopoly tends to lead to resource conservation.