Economics 390

Assignment 1

John Hartwick Due: Friday, Oct. 15/04

USE DIAGRAMS to illustrate answers.

1. Consider an oil exporting nation ("Kuwait") facing a world of oil of \$30 and a marginal extraction cost schedule $MC(q) = 0 + q$.

   Calculate the last five extraction levels of its profit maximizing program. This is calculate

   q_T, q_{T-1}, q_{T-2}, q_{T-3}, q_{T-4}

   The interest rate is 10%.

2. Suppose "Kuwait" has a wealth B_{T-3} = \$70.

   Calculate:

   (a) how much it should be investing for constant consumption

   <u>and</u>

   (b) its level of constant consumption

3. Suppose world demand for oil is $p = 20 - \frac{1}{2}Q$ and unit extraction cost is $C = \$4$.

   The interest rate is 10%.

   Explain how the extraction path changes when

   (a) the interest rate is 5%

   (b) unit extraction cost is $C = \$2$.