**ECON 136: Week 6, Friday**

**On the Economic Efficiency of Taxation**

Goal: Be able to explain circumstances in which taxation would not lead to economic inefficiency.

Taxing products with sloped demand and supply leads to inefficiency:

a wedge between value and opportunity cost

between willingness to pay and the minimum needed to provide for the last (marginal) unit sold

between marginal social benefit and marginal social cost

that economists call dead weight loss

because it represents surplus that would have been generated by an unfettered market that now is list, that accrues to no one

But, consider the market for land: Assume that a community has 10,000 acres of land available for use and that the demand for land (measured in the annual rental equivalent) is as given. What’s the market price and what’s the resulting economic rent?

Fluctuations in demand alter the price and the economic rent, but have no effect on the amount of land in use.

Taxing a good with vertical supply transfers economic rent to tax revenue without altering the quantity exchanged generating no DWL.

Market Allocation of Land Use

 Suppose that there are two competing uses for land in our community: residential and agricultural.

Since agricultural land is the only potential source of additional residential land, the demand for agricultural land is the supply of residential. That is, the maximum willingness to pay for agricultural land becomes the minimum that must be received for a farmer to provide land for residential use.

Residents of the community vote for a certain level of residential services (schools, police, road repair). What would be the consequence of imposing a $200 tax on residential land use?

Price of land

Quantity in residential uses

Quantity in agricultural uses

Deadweight loss

We could eliminate the inefficiency by imposing the same tax on agricultural uses.

Would that be fair, if occupants of agricultural land consume no (or much lower levels) of government services?

The inefficiency would be eliminate if access to government services linked to occupancy of residential land sufficiently raised the attractiveness of owning residential land.

D1 = the maximum willingness to pay for residential land

$D\_{i}^{t}$ = the demand for residential land after the imposition property taxes

D2 = the maximum willingness to pay for residential land plus bundled government services

Imposing a $200 property tax to fund government services that confer no benefits on residents would result in land values falling from $400/acre to $350 and the residential land use falling from 6,000 to 4,000 of the community’s 10,000 acres.

Property taxes are efficient when the benefits they confer upon land owners equal or exceed the size of the tax.

Task: According to

Taylor, L.O., X. Liu and T.  Hamil (2012, April 2).  Amenity Values of Proximity to National Wildlife Refuges.  Final Report to Jim Caudill and Kevin Kilcullen, U.S. Fish and Wildlife Service, and Peter Grigelis,  U.S. Department of the Interior, Office of Policy Analysis (mimeo).  Retrieved from<http://www.guidrynews.com/12May/15212Wildlife.pdf> .

the amenity value of living within half a mile of a national wildlife refuge like Tinicum Marsh (which the 360 students visited several weeks ago) adds 5% to the residential property values.

Use a suitable diagram to illustrate an explanation of the efficiency effects of imposing a 2% property tax on residential properties located near Tinicum Marsh.