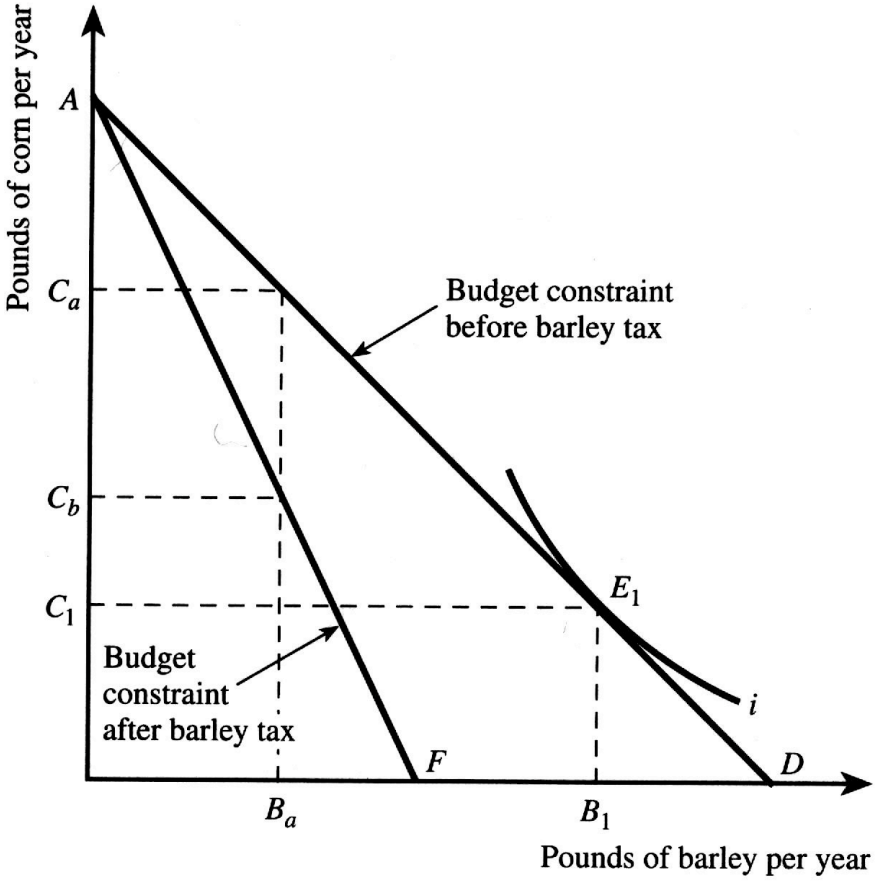
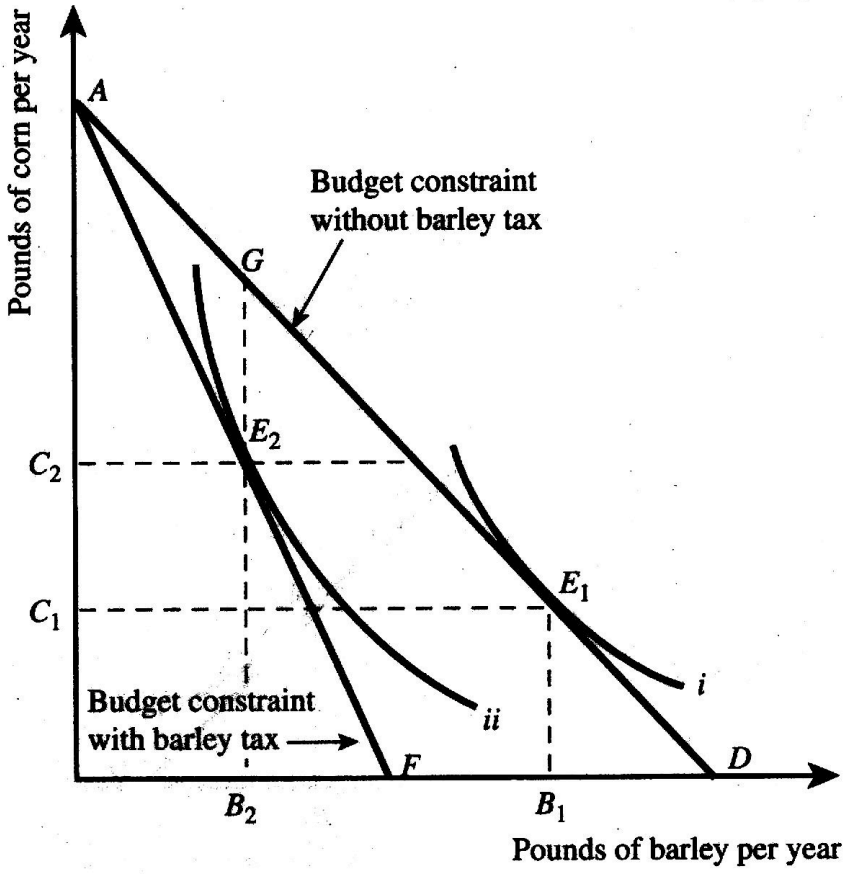
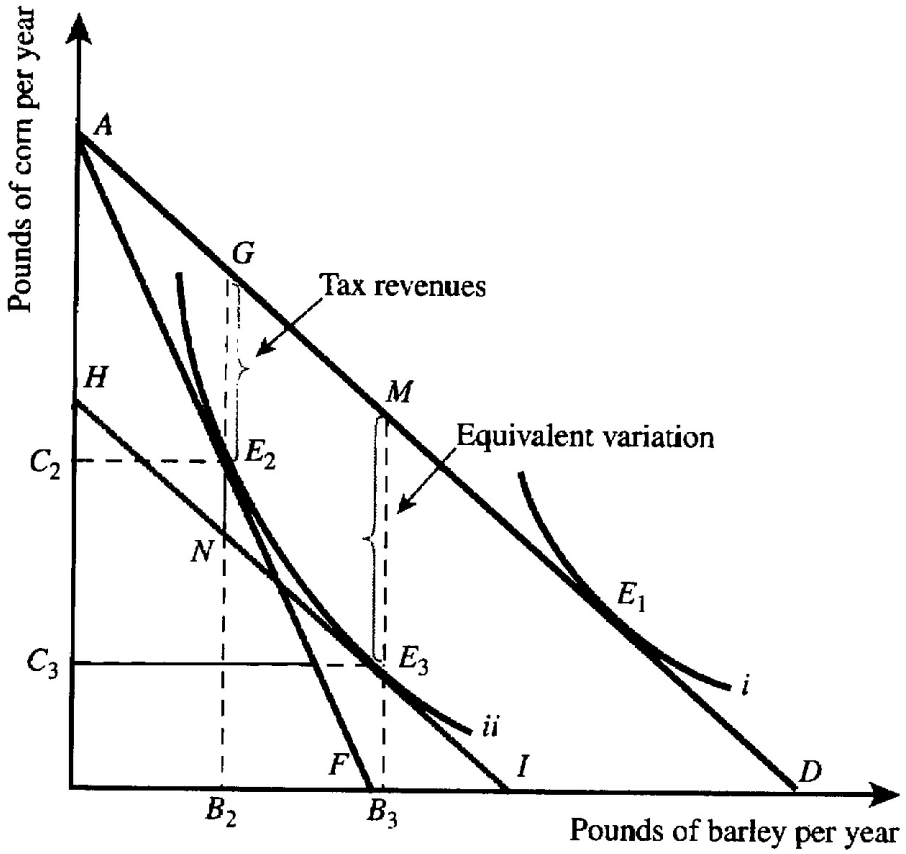
Excess Burden - Rosen Figs 14/13-1 and 14/13-2





Showing Why Excess Burden Exists



Rosen Fig 14/13-3

Does the barley tax inflict a greater utility loss than necessary to raise revenue GE_2? If so, there is an 'excess burden'

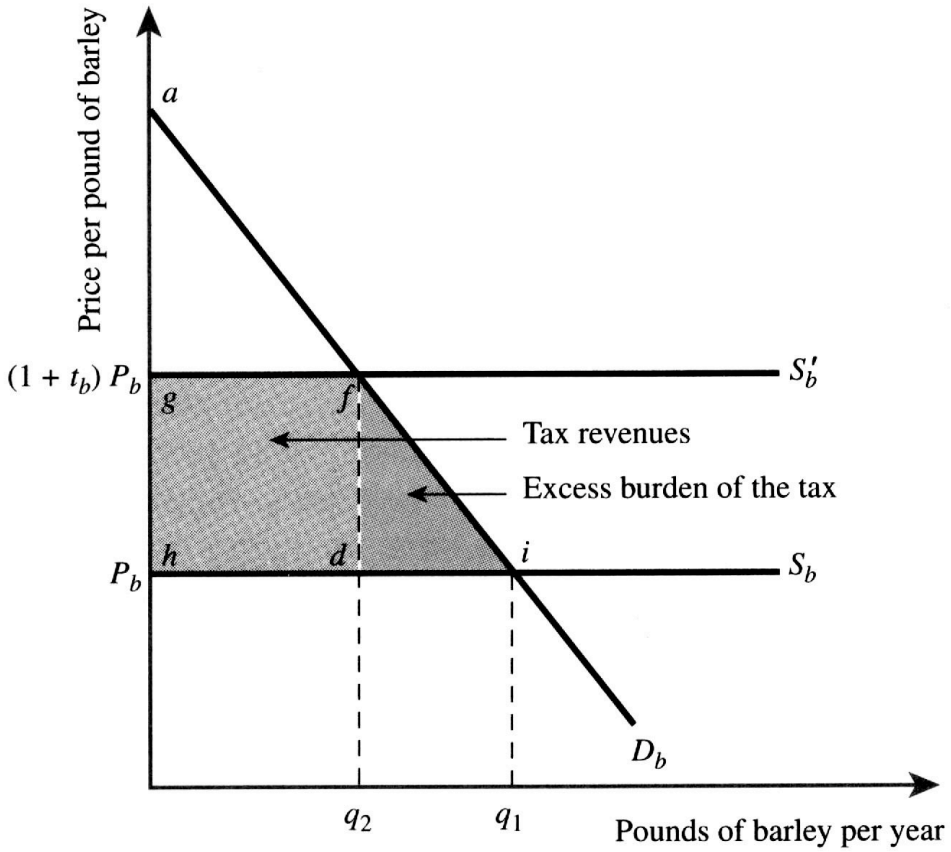
'equivalent variation' (EV) is amount we would have to take away from consumer *before barley tax was levied* to move her from indifference curve i to curve ii.

Reduction in income is just a shift down in budget line => to find EV shift budget line inward until tangent to indiff curve ii

Consumer indifferent betw. losing ME_3 and facing barley tax

Since $ME_3 > GE_2$, there is an excess burden of $NE_2 = ME_3 - GE_2$

Deriving the formula for Excess Burden



Rosen Fig 14/13-5

Initially, consumer surplus is aih

Now impose tax t_b => new price is $(1+t_b)P_b$

Consumer surplus falls to afg

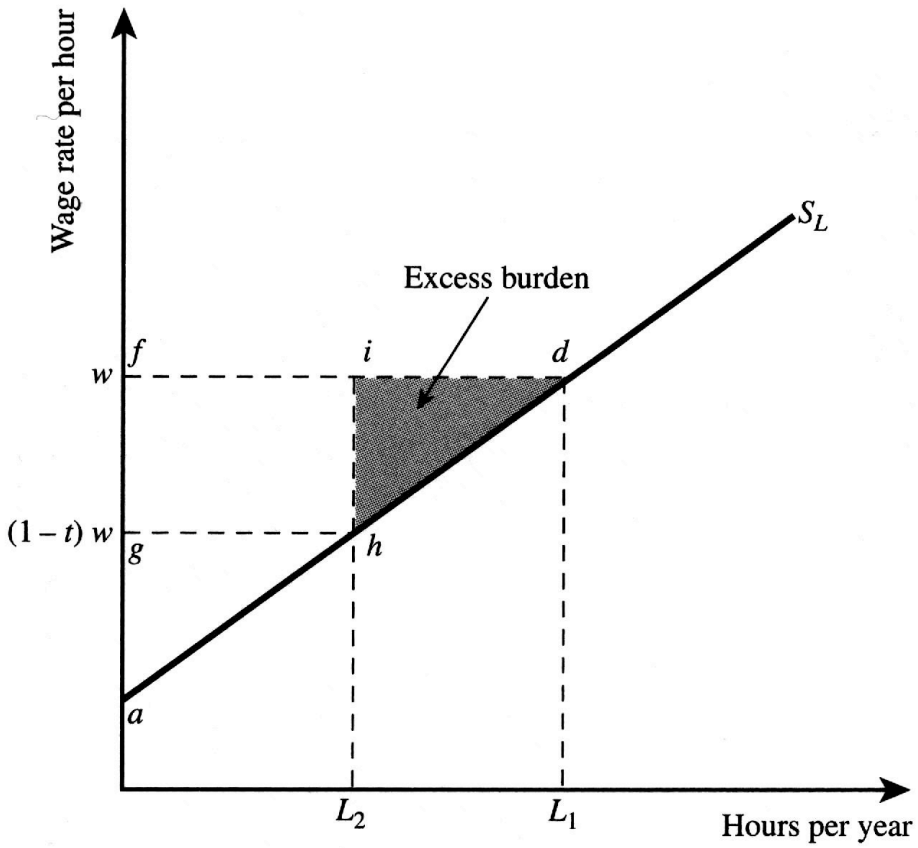
Tax revenue is gfdh = hd*tb

Even if tax revenue were returned in a lump sum, consumers worse off by fid = excess burden

Area of triangle = (1/2) (base)*(height)

$= (1/2)\ (q_1\ t_b\ e)*(P_b t_b) = (1/2)\ (q_1\ e\ P_b t_b^2)$

Excess Burden of Labor Income Taxation



Rosen Fig 14-7

Excess burden formula: $(1/2)ewL_1t^2$