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

Pounds of corn per year

Pounds of barley per year
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 $NE_2 = ME_3 - GE_2$
Initially, consumer surplus is aih

Now impose tax $t_b \Rightarrow$ new price is $(1 + t_b)P_b$

Consumer surplus falls to afg

Tax revenue is $gfdh = hd \cdot tb$

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

Area of triangle $= (1/2) \ (base) \cdot (height)$

$= (1/2) \ (q_1 \ t_b \ e) \cdot (P_b t_b) = (1/2) \ (q_1 \ e \ P_b t_b^2)$
Excess Burden of Labor Income Taxation

Rosen Fig 14-7

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