

PROBLEM SET ON LABOR MARKETS
AND UNEMPLOYMENT

1. The production function for Belgium is given by $Y = AK^{\frac{1}{2}}N^{\frac{1}{2}}$ and $K = 25$ is given. The labor supply curve is given by $N_s = 100[(1 - t)w]^2$ where $[(1 - t)w]$ is the after-tax real wage rate. Suppose $A = 9$.
 - (a) Draw the labor demand curve. Then, draw the labor supply curve (with after-tax wage on the vertical axis). Draw the pictures as accurately as you can (using the above information).
 - (b) How does labor supply respond to an increase in the tax rate t ?
 - (c) Assume $t = 0$. Compute the
 - i. market-clearing real wage,
 - ii. employment, and
 - iii. labor income of all workers.
 - (d) Does a beneficial supply shock [K is still fixed at 25] help or hurt the labor income of all workers in Belgium? Explain.
 - (e) Assume $t = 0.6$. Compute the
 - i. market-clearing real wage,
 - ii. employment, and
 - iii. after-tax labor income of all workers.
 - (f) Why does employment fall when t rise?
 - (g) Will a minimum wage of $w_{\min} = 2$ increase the total after-tax income of all employed workers if $t = 0.6$? Explain.
 - (h) Will a minimum wage of $w_{\min} = 2$ increase the total after-tax income of all employed workers if $t = 0$? Explain.