Economics 250a
Problem Set #2
Answers

1. The key to this question is to notice that we are **only looking at the probability of working.**
So you have to think through what can happen as B or R rises to two groups: (1) people who
were working before the change (2) people who were not working before the change.

a) Consider a rise in B. This is a "pure" income effect for people who were receiving some
benefits. As shown in the first figure, a rise in B can lead some people who were working to
switch to non-work. The likelihood depends on how steep or flat is the income expansion path
(i.e., the size of the "mpe"). On the other hand, no one who was NOT working before the rise in
B will enter work (since if leisure in a normal good, the MRS at h=0 is higher at higher levels of
consumption). So in this case we can ONLY have a fall in the fraction of workers, and the size
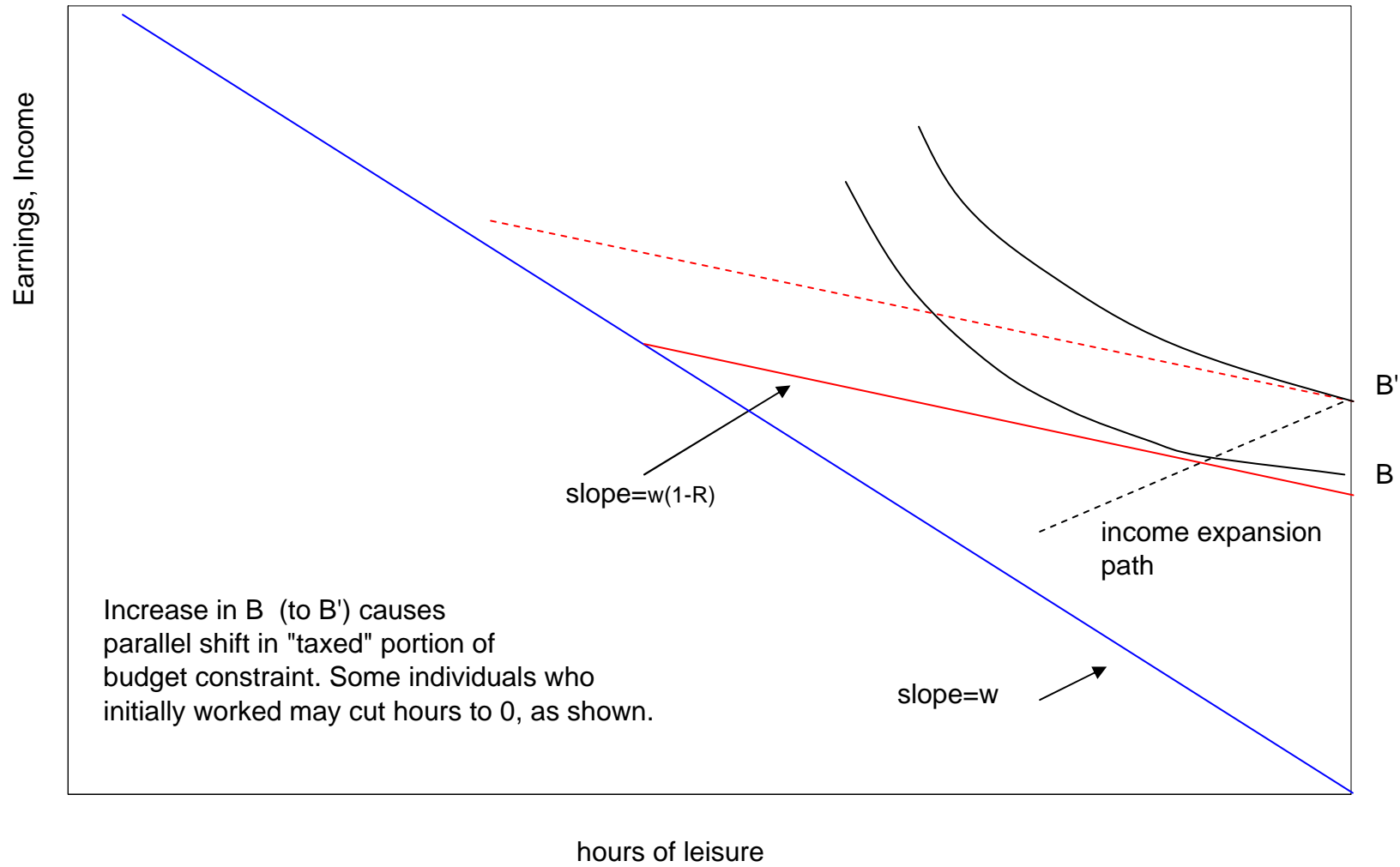will depend on the size of the income effect in labor supply.

b) Now consider a rise in R. This leads to the rotation shown in the second figure. As shown in
the figure, a rise in R can lead some people who were working to switch to non-work. This
decision depends on size of the substitution effect. (It may be easiest to see this by considering
a reduction in R, and looking at the impact on someone who is not working). On the other
hand, no one who was NOT working before the rise in R will enter work - since for non-workers
a rise in R decreases the return to the first unit of work). So in this case we can ONLY have a fall
in the fraction of workers, with a size that depends on the substitution effect in labor supply
(i.e., the magnitude of the **compensated** labor supply elasticity).

NOTES:
(1) many students (in both the exam setting and the problem set setting) spent a lot of time
talking about changes in hours - but the question is only about participation. The point is: READ
THE QUESTION CAREFULLY!

(2) Its important to think about how changes in B,R effect **both** P(Work|worked before) and
P(Work|did not work before).

PROBLEM SET 2: Question 1: Effect of rise in B on prob(work)

Earnings, Income

slope=w(1-R)

B'

B

income expansion
path

Increase in B (to B') causes
parallel shift in "taxed" portion of
budget constraint. Some individuals who
initially worked may cut hours to 0, as shown.

slope=w

hours of leisure

PROBLEM SET 2: Question 1: Effect of rise in R on prob(work)

Earnings, Income

slope=w(1-R)

slope=w(1-R')

B

Increase in R (to R') causes
rotation in "taxed" portion of budget constraint
around (h=0, y=B). Some individuals who
initially worked may cut hours to 0, as shown.

hours of leisure