Daniel Münich   **FINAL EXAM**   **CERGE-EI, Fall 2006**
<mark>SOLUTION HINTS</mark>
Labor and Public Economics I
Questions on both sides! You have 2 hours!
!!!!! Write legibly – text I will not be able to read will not count toward the grade !!!!!

Question # 1 (30 minutes), <mark>25pts = 5 x 5</mark>: Answer following questions as *True, False or Uncertain* and <u>briefly</u> explain your reasoning:

a) If education plays only a signaling role, workers with more schooling earn more not because education increases productivity, but because education signals a worker's innate ability. If this is so, educational expenditures are wasteful from worker's and social point of view.

<mark>**False or Uncertain:** If education serves only as a signal of unobserved abilities (positively correlated with productive characteristics of an individual), it is useful for smart individuals (to signal their higher ability) but education does not increase aggregate productivity and could be seen as wasteful from social (aggregate) point of view. However, if knowledge of ability (availability of signal) enhances matching of workers to heterogeneous jobs (professions) and in this way, enhance aggregate productivity, education is not necessarily wasteful from the social point of view.</mark>

b) As a result of increased costs of migration, the observed skills of average Brazilian migrant working in Sweden will increase (consider simple setup, no peculiarities).

<mark>**False:** Given setup (Sweden [Brazil] with high [low] average wages and their low [high] inequality, migrants from Brazil will recruit from the bottom tail distribution of skills. Higher costs of migration will decrease effective wage of migrants in Sweden and it will discourage some of the most skilled migrants from migration. This will turn into lower average skills of migrants. Find simple example in the textbook by Borjas (chapter on migration)</mark>

c) A worker plans to retire at the age of 65 (free choice of retirement-age scheme), at which time he will start collecting his retirement benefits. There is a sudden change in inflation forecasting: inflation is now predicted to be higher than it had been expected and the average price level of market goods and wages is now expected to increase. The person's preferred retirement age will increase if leisure is normal good.

<mark>**True:** If retirement benefits are not adjusted for inflation, the purchasing power of retirement benefits falls. If the person does not retire, he can enjoy the same consumption as he would without inflation as wages are assumed to fully adjust for inflation. If he retires at 65, his benefits are worth less in real terms (they can buy him less consumption) with inflation than without, so he cannot afford the same consumption path as before. Hence, his choice set over the years of retirement and consumption lies below the original (pre-inflation) choice set except at one point—where he does not retire at all. Thus, as long as leisure (i.e., years of retirement) and consumption are normal goods, the income and substitution effects both lead to the individual retiring later in life.</mark>

d) General training is valuable in all firms. Specific training is valuable only in the firm that provides the training. Therefore: i) workers pay for and collect the returns from general training, ii) firms pay for the costs of specific training and collect all returns.

<mark>**False:** i) is OK but ii) is not. Would firms collect all returns (while covering whole costs of firm-specific training), workers would not have special incentive to stay with the firm (no wage premium compared to alternative job options) and trained employees quitting would not generate the return expected.</mark>

e) The part of raw gender wage differential which is explained by different slope

coefficients of explanatory variables cannot be attributed to discrimination.

Question # 2 (30 minutes), 25pts: Consider life-cycle labor supply model *á la* MaCurdy presented in the course (JPE'81). Explain key differences in life-cycle labor supply between two consumers I and II who have very similar life-cycle wage profiles except the parametrical difference of wage profile (simply denoted by Δ) around age A*.
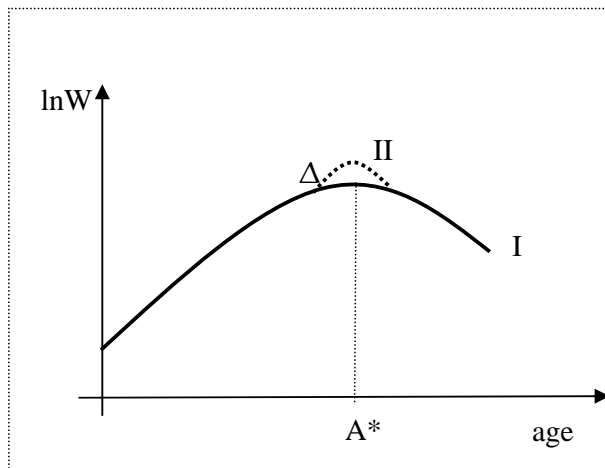
The key differentials in <u>life-cycle labor supply</u> are determined by two different causes. i) evolutionary change in wages over life-cycle, ii) impact of parametrical differentials in life-cycle wage profiles. The former cause works through intertemporal elasticity of substitution (people work more when they earn more during their life) but the later cause implies wealth effect (higher present value of life-time earnings has negative effect on life-time supply of labor – a kind of income effect). The former will cause <u>higher</u> supply of labor of person II around age A*, the later will imply <u>downward</u> shift of the whole life-cycle labor supply profile of person II (relative to person I). Since these two effects have opposite sign, the difference in labor supply around age A* is indeterminate. Details in MaCurdy article in JPE'81 (pp.1069-1072) also assigned as readings.

Question # 3 (10 minutes), 8pts = 4 + 4: Using key <u>principles and terms</u> of static labor supply theory (graph can help), explain why a lump sum government transfer can encourage some workers to stop working (and encourage no one to start working) while the earned income tax credit can encourage some people who otherwise would not work to start working (and encourages no one to stop working).

A lump sum transfer is simple increase in non-labor income. Such shift is associated with income effect but not a substitution effect, because such a shift doesn't affect the wage rate. Thus, if leisure is a normal good, a lump sum transfer will cause workers to work fewer hours (and certainly not cause them to work more hours) while possibly encourage some workers to exit the labor force as their reservation wage is lower.

The Earned Income Tax Credit (EITC) raises the effective wage of low-income workers (at least

Question # 4 (30 minutes), 25pts = 9 x 2 for each answer + 7 points for clarity of explanations: Assume a mother working 8 hours a day, being at her optimum number of hours worked on the market (interior solution). She has standard continuous utility **u(l,c)** such that $\partial u/\partial l > 0$, $\partial u/\partial c > 0$ (**l**-leisure, **c**-composite good consumption) with common properties.

a) Construct a table showing how the variables in column A would change (increase- **ü**, decrease - **ú**, no change-**0**, indeterminate-**?**) would variable in column B slightly increase. Consider all 9 pairs:

A	B
Work time at home	Job related commuting time
Leisure time	Child benefits (means non-tested)
Consumption of X	Overtime wage rate

	Work time at home	Leisure time	Consumption of X
Job related commuting time	0	**ú**	**ú**
Child benefits (means non-tested)	0	**ü**	**ü**
Overtime wage rate	0	**ú**	**ü**

Question # 5 (20 minutes), 17pts = 2 x 8 + 1 for very good point made: List 2 <u>common and serious</u> bias causing deficiencies of standard OLS estimates of mincerian function based on cross-sectional data and:
  a) Explain the essence of deficiencies (could be a mix of economics and econometrics). Examples: ability bias, measurement error, endogeneity of education, imputed experience
  b) Suggest and explain possible approach empirical/methodology/data to weaken or eliminate given deficiency.

END