Universidad de Chile
Facultad de Ciencias Fisicas y Matematicas
Departamento de Ingeniería Industrial

MAGCEA Semestre Primavera 2008
IN77I-1 Economía Laboral

TAREA GRUPO 1

(Fecha de entrega: 19 Diciembre 2008, 17.00 hrs.)

Returns to tertiary education in Chile (1990-2006) and evaluation of college-aid policy.

Consider the data from the cross-sectional Chilean household survey "CASEN" for the period 1990 – 2006 available in the CD with the relative documentation.

1) Descriptive analysis

Provide descriptive statistics for the trends over the period considered (1990-2006) in:

a) Educational attainment rates for the working age population with tertiary education (university degree and above), secondary education (1o-4o medio) and primary education or below (8o basico or lower): the educational attainment rate is defined as the ratio between the number of persons who attained a given education level in a given population subgroup and the total population in that subgroup. Provide breakdowns by gender and income groups (use alternative definitions, e.g. top 20% vs. bottom 20% or top 10% vs bottom 10% of the household income distribution) for the total population in working age (16-64), the young (16-29) and the adult population (30-64).

b) Composition of the working age population by highest educational attainment: given 100 the total working-age population (16-64) in each of the years considered, provide the % incidence of individuals with tertiary, secondary and primary (and below) education, by gender and income groups (see a) above); provide the same statistics for the age groups 16-29 and 30-64.)

c) Enrollment rates by education level: the enrollment rate is defined by the ratio of the number of students actually enrolled in a given education track and the number of persons which could be potentially enrolled in the same track. For example the enrollment rate for primary education is the ratio between the number of students enrolled in primary education and the total population which could be potentially enrolled in primary education, e.g. those aged 6-14 (for tertiary education consider the age group 18-29). Provide breakdowns by gender and income groups.

d) Using the available classification for type of occupation and/or profession, classify the employed population in working age (16-64) in white collar/blue collar (or high skill/low skill or equivalent) and provide trends by gender for the period considered; show also the trend of the % incidence of women in high skill/low skill occupations.

e) Using an appropriate CPI (Consumer Price Index) deflator, compute the following statistics for *real* wages for the total (16-64) and the adult population (30-64) in working age: the ratios of the average real wage for people with tertiary education to the average real wage of people with secondary and primary (or lower) education, respectively, by gender. Further, for each year available, compute "pseudo" wage-age profiles (consider age intervals of 5 years) by highest educational attainment. Finally, provide measures of dispersion of the real wages over time by gender and highest educational attainment (e.g. top-to-bottom decile, top and bottom decile-to-median distances, coefficient of variation, Theil Index, Gini Index etc.).

Comment the results obtained (possibly in relation to the existing evidence on selected OECD and developing countries): how have the demand and the supply of skills evolved in Chile over the period considered? What is the preliminary evidence on the skill premium (tertiary vs. secondary and primary education)? Discuss in particular the evolution of gender disparities.

2) Econometric analysis

a) Estimate for each available cross-section a mincerian wage equation separately for men and women in working age using the most appropriate specification. How has the return to tertiary education relatively to secondary and primary evolved over time? Are there significant differences across genders? Control for the potential self-selection into labour market participation: is the impact of self-selection relevant? Compare OLS estimates with IV estimates discussing strengths and weaknesses of the instrument(s) chosen. In order to capture the effect of education and other observable individual characteristics not only on the conditional mean wage but on the entire wage distribution, estimate the wage equation using quantile regression techniques (see the web page of Roger Koenker at the University of Illinois Urbana-Champaign http://www.econ.uiuc.edu/~roger/). Comment in detail the results obtained under your preferred specification comparing them to the main findings emerging from the related literature.

b) Using the "residual approach" analyzed in class (or one adopted by the related studies), provide an estimate of the skill-biased technical change parameter. Justify your choice of the value of the elasticity of substitution between high and low educated workers.

c) Summarize briefly the main policies undertaken by the government to enhance participation in tertiary education during the period considered. Are the policies described well targeted? In other words, can you assess whether the beneficiaries of the policies are those individuals who whould have not participated in tertiary education in the absence of the policy rather than individuals who whould have participated in tertiary education even in the absence of the policy? Have been the policies described effective? In other words, is the probability of enrolling in tertiary education for the beneficiaries of the policies significantly higher *in the presence* rather than in the absence of the policy? Provide a quantitative answer to the above questions justifying carefully your identification strategy and your estimation method. Suggest an identification strategy and an estimation method to detect potential (if any) crowding-out effects: in other words, can you assess whether an individual *non-beneficiary* of the policy who would have enrolled into tertiary education in the absence of the policy, decided *not to* enter tertiary education in the presence of the policy? (In the case the data at hand were not suitable to fully answer question 2-c, you can suggest which type of data would be needed and propose an alternative data source).