Tackling Inequalities in Brazil, China, India and South Africa
The Role of Labour Market and Social Policies
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Corrigenda

Pages 97-98

The following entries have been added to the list of references:

Hoffman, R. (2006), "Transferências de renda e a redução da desigualdade no Brasil e cinco regiões entre 1997 e 2004", *Econômica,* Vol. 8, No. 1, Rio de Janeiro.

Kakwani, N. (1996), "Income Inequality, Welfare and Poverty in Ukraine", *Development and Change,* Vol. 27, No. 4, pp. 663-691, October.

Soares, S. (2006), "Análise de bem-estar e decomposição por fatores da queda na desigualdade entre 1995 e 2004", *Econômica*, Vol. 8, No. 1, Rio de Janeiro, pp. 83-115.

Pages 105-108

Annex 2.A2 has been edited as follows:

Gini index breakdown by income source

This annex follows Soares (2006) and Hoffmann (2006) derivation and normalisation proposed. The dynamic decomposition of the Gini index by income sources is also used by Kakwani (1996).

B is the area between the Lorenz curve and the axis, the Gini index (G):

$$G = 1 - 2\beta \qquad 0<=G<1$$

Ratio of concentration

The curve of income concentration *Ch* shows how the accumulated proportion of the income share *h* varies according to the accumulated ratio of the population:

B_h is the area between the curves and the axis, and the ratio of concentration of the share *h* is:

$$C_h = 1 - 2\beta_h \qquad -1<C_h<1$$

Be Φ_h the participation of the share of income *h* in the total income: $G = \sum_{h=1}^{k} \varphi_h C_h$

Thus the Gini index may be divided into *K* shares of the household per capita income.

Decomposition of the Gini index between two years

The percentage contribution of the h-part of the income for this change is:

$$s_h = \frac{100}{\Delta G}\left[(C_h^* - G^*)\Delta\varphi_h + \varphi_h^*\Delta C_h\right],$$

where * is the average between two years

One may distinguish between the effect associated with the change in the income (effect composition) and the effect associated with the change in the ratio of concentration (concentration effect).

The composition effect of the h-part as a percentage of the change in the Gini index is:

$$s_{\varphi h} = \frac{100}{\Delta G}(C_h^* - G^*)\Delta\varphi_h$$

The concentration effect of the h-part as a percentage of the change in the Gini index is:

$$s_{Ch} = \frac{100}{\Delta G}\varphi_h^* \Delta C_h$$

For the period 2001-08 the methodology of decomposition of Gini variations are presented here in more detail than in the text. For example, to the last column in Table 2.A2.2 shows the income from work explains 66.86% of the reduction in inequality expected between 2001 and 2008. The other columns compare 2008 to the other years. The table decomposes the nature of the effects per type of income separating the effect of the contribution of each source in total income, by the change in the relative mass of benefits of the effects of inequality of each source assessed through Gini of total income.

[…]

Mincerian equation approach to the inequality breakdown

The Mincerian equation of earnings used in the chapter is the basis of a vast empirical literature of labour economics. The salary model by Jacob Mincer (1974) is the framework used to estimate the returns on education, among other variables that determine the salary. Mincer conceived an equation for earnings that would be dependent on explanatory factors related to the academic level and experience, besides possibly other attributes, like sex, for instance.

This equation is the basis of the labour economics particularly in what concerns the effects of education. Its estimate has already encouraged hundreds of studies, that tried to include different educational costs, such as taxes, fees, opportunity costs, learning material, just as the uncertainty and expectation of agents present in the decisions, the technological progress, non-linearity in school, etc., identifying the costs of education and work earnings enable a calculation of the internal rate of return on education, which is the discount rate that must be compared to the market's interest rates to determine the optimal quantity of investment in human capital. The Mincer equation is also used to analyze the relation between growth and educational level in a given society, besides inequality determinants.

The typical econometric model of regression of the Mincerian equation is:

$\ln w = \beta 0 + \beta 1\, educ + \beta 2\, exp + \beta 3\, exp^2 + \gamma' x + \epsilon$

Where, *w* is the salary earned by the individual; *educ* is its educational level, measured by years of schooling; *exp* is its experience, whose proxy is the individual's age; *x* is a vector of the observable characteristics of the individual, such as race, gender and region; and ϵ is a stochastic error.

This is a model of regression in the log-level format, that is, the dependent variable (salary) is in a logarithm form and the independent variable, more relevant (education) is on level. Therefore, the β1 coefficient measures how much an extra year of schooling causes a proportional variation in the individual's salary. For instance, if estimated β1 is 0.18, this means that each extra year of study will be related on average with an increase in salary of 18%.

Deriving, it is found that $(\partial \ln w / \partial educ) = \beta 1$

On the other hand, by virtue of chain: $(\partial \ln w / \partial educ) = (\partial w / \partial educ)(1 / w) = (\partial w / \partial educ) / w)$

Thus, β1 = (∂ w / ∂ educ) / w, corresponding to the percentage variation of the salary from each unit increase per year of study.

Methodology of the multivariate analysis

The bivariate analysis captures the role played by each attribute considered separately in the demand for insurance. That is, possible and probable interrelations of the explanatory variables are not considered. For example, in the calculation of insurance by state within the Federation, we do not consider the fact that Sao Paulo is a richer place than most states, thus should have greater access to insurance. The multivariate analysis used further ahead seeks to consider these interrelations through a regression of the many explanatory variables taken together.

In order to provide a better controlled experiment than the bivariate analysis, the objective is to capture the pattern of partial correlations between the variables, interest and explanatory. In other words, it is capturing the relations between the two variables, keeping the remaining variables constant. This analysis is very useful to identify the repressed or potential demand (i.e. what are the chances of a person with more education having higher income, if he/she has the same characteristics as the comparison group). We present under request the full Mincerian equations used in the inequality decomposition exercise presented in the chapter.

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