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Earning differentials by occupational categories: Gender, race and regions☆

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Abstract

Analyzing the income differentials amongst the Brazilian workers' occupations is the focus of this paper. Due to the wide diversity of occupations cataloged by the IBGE (around 800), a theoretical procedure is applied to reduce them to only seven in order to allow statistical treatment of the data. The methodological approach is based on Mincerian quantile equations to be estimated in various strata of the workers' income distribution, on which a breakdown is made to check the gap among the individuals' income with distinct inherent attributes and between those living in both more and less developed regions. The estimation results ensure the importance of breakdown analysis for occupational strata as well as for quantiles, since the effects of explanatory variables are distinct along the income distribution and vary among occupations. Regarding the gaps in this distribution, there is a glass ceiling effect in some occupations, that is, the gap is greater at the top of distribution, although in most cases the wider gap occurs at the bottom of the distribution – sticky floor effect, which makes this a distinguished result from other studies. Moreover, contrary to the gap in gender, which is due to the compensation characteristics of individuals only (discrimination), income differentials between regions and races also occur from the heterogeneous characteristics of workers.

JEL classification: J31; J44; J71; C21

Keywords: Earning differentials in occupations; Counterfactual decomposition; Mincerian quantile equations; Discrimination

Resumo

Analisar os diferenciais de rendimentos nas ocupações dos trabalhadores brasileiros é o foco central deste trabalho. Em virtude da vasta diversidade de ocupações catalogadas pelo IBGE (cerca de 800), aplica-se um procedimento teórico para reduzi-las em apenas sete a fim de permitir tratamento estatístico dos dados. São estimadas equações mincerianas quantílicas, sobre as quais são feitas decomposições para verificar o hiato entre os rendimentos dos indivíduos com atributos inerentes distintos, bem como entre aqueles residentes em regiões mais e menos desenvolvidas do país. Os resultados das estimações ratificam a importância da análise desagregada em estratos ocupacionais e por quantis, uma vez que os efeitos das variáveis explicativas são distintos ao longo das distribuições de rendimentos e entre as ocupações. Em relação às lacunas existentes entre as distribuições de rendimentos, verifica-se

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um *glass ceiling effect* em algumas ocupações, ou seja, a defasagem é maior no topo da distribuição, embora na maioria dos casos, o hiato seja mais acentuado na base da distribuição – *sticky floor effect*, resultado este que se distingue de outros trabalhos. Além disso, diferente das lacunas entre gêneros, que são decorrentes apenas da remuneração às características dos indivíduos (discriminação), os diferenciais de rendimentos entre raças e regiões também decorrem das diferentes características dos trabalhadores.

Palavras-chave: Diferencial de Renda em Ocupações; Decomposição Contrafactual; Equações Mincerianas Quantílicas; Discriminação

1. Introduction

Economic growth and the increase in demand for jobs have generated significant changes in the Brazilian job market dynamics. Besides that, the recent phenomenon of income inequality reduction has a direct implication for the transformations that have occurred in the demand and supply sides of the market occupational distribution (Barros et al., 2007).

However, age long problems such as salary inequalities between individuals who work at similar activities and also have the same qualifications are actually still observable. For instance, the salary gap between men and women, whites and non-whites, and residents of more and less developed regions. In some cases, acquired attributes such as education level and work experience seem to have less relevance than a worker's gender or race. In order to illustrate, data from PNAD (Brazil's National Household Survey) of 2011 reveal that for individuals 10 years and older, the averages of education years of women and men are respectively 7.5 and 7.1, which means a 5.6% superiority in favor of women. On the other hand, men's average monthly earnings are 73.7% higher than that for women, that is, R$1129.00 and R$650.00, respectively.

So, it becomes relevant to investigate how education and other personal attributes have affected the Brazilian worker. It is also believed to be indispensable for such analysis to take into account not only distinctions between inherent attributes and regionalization, but also differences among the diverse occupational categories due to requirements on each of them regarding human capital level.

It is usual to get theoretical support based on Mincerian equations for empirical application of such nature that spot the effects of explanatory factors on the average variation of worker's income. Worth reminding is that the impact of every factor can significantly vary among the income distribution strata. It is expected, for instance, that effects of inherent characteristics such as ethnicity and gender, or acquired characteristics such as human capital are differentiated according to occupation and income stratification. Therefore, the results obtained by applying this methodological technique on non-stratified samples, as is often applied in literature, produce inconsistent and distorted effects.

Based on this, quantile Mincer equations are estimated to verify the impact of explanatory variables on every income distribution quantile, allowing for the occurrence of differentiated effects when stratifying workers' income distribution by occupation. In proceeding so, an investigation is conducted within each quantile about the lag between workers' income caused by gender, and region differences, according to the methodology by Machado and Mata (2005), which expands the formulation of the Blinder–Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973). For this purpose, the conditional wage distributions of these categories are estimated via quantile equations, marginal distributions are obtained, when comparisons are made between the above mentioned categories, they make it possible to decompose the income distributions into two components; one that comes from observable characteristics of workers and another from the returns to these characteristics, which may be interpreted as discrimination.

The main methodological hurdle for the actualization of the estimations is the considerable number of more than eight hundred occupational categories designated by The Brazilian Institute of Geography and Statistics Foundation (FIBGE). In order to overcome such hurdles and make estimations possible, it is vital to implement a special handling on the data so as to create occupation groups and then have a statistically practicable numbers that lead to inferences of greater degree of freedom and accuracy, despite the possibility of information loss.

The seminal contribution to the investigation of occupational choices is believed to have been made by Roy (1951), who identified in such choices, and the distribution of the return of these skills for every occupation. In order to achieve continuity of this analysis through the application of adequate inference methods with discrete choices, some researchers suggested the grouping of those numerous occupational categories in smaller strata. Since we have applied