EXTENDED ABSTRACT

Title: Spatial wage differentials, Human Capital and Labour Precariousness in Ecuador.

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Abstract:

1. Introduction

In Ecuador, the reduction of income inequality has been one of the highest in the Latin American region. However, this trend does not necessarily mean that in a spatial dimension the wage gaps narrowed. In fact, in Ecuador, much of the inequality (87% in 2015) is explained because spatial differentials (Sarmiento, 2017). We therefore aim to analyse spatial wage differentials (SWD) in Ecuador, with special attention in the human capital (education) and two faces of labour precariousness (informality and underemployment).

Regional economic literature provides a considerable amount of empirical evidence that concerns in the explanations of the spatial wage disparities. For instance, an explanation concerns in differences in the cost of living, such as higher housing prices (Coelho & Ghali, 1971). Other reasons come from Combes et al. (2008); they highlight and classify three broad sets of explanations. One of them focus on agglomeration economies related with knowledge spillovers effect that improve productivity (in line with Romer, 1986; 1990; Lucas, 1988). The other two are related with spatial differences in the composition of skill workforce and local non-human endowments. From the latter explanation,

regional wage disparities could also be correlated with local labour market conditions (precarious jobs) that comes from the labour market institutions. Finally, another strand of literature focus on the argument of Borjas et al. (1992) who suggest that regional wage differentials may arise because of differences in the return to productivity-related worker characteristics (based on a human capital theory). As an alternative of the human capital theory (even in a spatial dimension), the labour market segmentation theory deserves an equivalent position in the economists' toolbox (Harrison & Sum, 1979). Our general research hypothesis is that apart from the imbalances of human capital across regions, the spatial wage differentials are highly explained by the incidence and the returns of informality and underemployment (as labour precariousness proxies); that is for employees and self-employed as two highly heterogeneous type of workers.

Studies on regional wage disparities have been scarce explored for developing countries, characterised by heterogeneous and precariousness labour markets. For Latin American countries, Herrera-Idárraga et al. (2016) and Matano et al. (2020) highlight the role of informality to explain the spatial wage differentials and matter in the determination on the wage of workers in Ecuadorian cities, respectively. After that, there is an important amount of studies concerning in the regional wage differentials and highlighting the individual characteristics of workers to explain the spatial wage differentials (e.g., Groot et al., 2014; Eeckout et al., 2014; Lindley & Machin, 2014). Other, such as García & Molina (2002), Motellón et al. (2011), López-Bazo & Motellón (2012), Galego & Pereira (2014), Pereira & Galego (2014) confirm that the existence of differences in the endowment of factors (as human capital) and different returns of them, in each region, accounts for a significant proportion of regional wage gaps.

2. Data and Empirical Strategy

We use urban micro data from the fourth quarter of 2019 Ecuadorian National Survey of Employment, Unemployment and Underemployment, ENEMDU (INEC, 2020). The analysis excludes public employees, because wages in the public administration are fixed at the national level, and Galapagos, because is a province that behaves differently in terms of wages and prices from the continental territory. On the other hand, we split the analysis by type of workers: employees and self-employed. Likewise, we decompose the spatial wage gaps between the main metropolitan area (the Metropolitan District of Quito,

MDQ) and three other regions with lower income (the Metropolitan District of Guayaquil, MDG; the provincial capitals and the rest of cantons, the periphery).

On the other hand, we first run OLS and unconditional quantile regressions, UQR (Firpo et al., 2009) to determine the differences in the returns between and within regions. Thereafter, we will take advantage of the novelty Firpo et al. (2018) methodology that uses a reweighting procedure to assess the spatial wage gaps along the entire wage distribution. This wage decomposition procedure is an extension of the standard Oaxaca (1973) and Blinder (1973) wage decomposition technique. The reweighting wage decomposition of Firpo et al. (2018) can be expressed as:

$$\Delta_O^{\mu} = (E[X_C] - E[X_h])'\beta_h + E[X_C]'(\beta_C - \beta_h) \; + \; E[X_l]'(\beta_l - \beta_C) + (E[X_l] - E[X_C])'\beta_l$$

Where:

- $(E[X_C] - E[X_h])'\beta_h$: reflects the composition (the endowment) effect. This component expresses wage differential due to imbalances of the characteristics of workers across regions. For this effect, we will refer also as the explained component of the spatial wage differential.
- $E[X_C]'(\beta_C - \beta_h)$: denotes the specification error used to assess the quality of the model specification and the RIF approximation. A large and significant specification error advise us that the RIF regression is misspecified or that the RIF provide us a poor approximation to the distributional statistic. It is part of the aggregate composition effect.
- $E[X_l]'(\beta_l - \beta_C)$: reflects the wage structure (the coefficient) effect. This component refers to the wage differentials due to disparities in the returns of the observed characteristics, because of dissimilarities between regional wage structures. We will call this effect as the unexplained component.
- $(E[X_l] - E[X_C])'\beta_C$: is the reweighting error used to evaluate the quality of the reweighting strategy. We will expect that it goes to zero (0) in large samples. Thus, if the reweighting error is large and significant, the counterfactual is not well built and hence, we may need to modify the specification of the probit or logit model to estimate the reweighting factors. It is part of the aggregate wage structure effect.

Rios-Avila (2020) highlights three advantages of the procedure of Firpo et al. (2018) in comparison with other strategies in the literature: the simplicity of its implementation, the possibility of obtaining the total share of individual covariates on the aggregate decompositions (a detailed decomposition) and the possibility of analyse other statistics for which a RIF can be defined. One of our research objectives request of assessing the contribution of human capital and labour precariousness proxies within each aggregate component, and therefore, we take advantage of the Firpo et al. (2018) strategy, through the 'oaxaca_rif' command in Stata proposed by Rios-Avila (2020).

3. Results and concluding remarks

In this research, we analyse between and within wage differentials across four groups of regions in Ecuador. In doing so, we split our analysis in two sample of workers: employees and self-employed, avoiding mix findings between these two heterogeneous groups. Our main results could be divided into three groups. First, we emphasize that employees and self-employed are sizeable heterogeneous and hence, results may considerable differ in the spatial analysis.

Secondly, we highlight the role of education characteristics in explaining wage gaps between and within regions, particularly in the upper tail (where the returns of productivity-based characteristics are higher, for both employees and self-employed). Therefore, if public policies addressed to reduce spatial imbalances through investments in human capital accumulation are not focused on the poorest income regions and at the bottom of the wage distribution, then, wage gaps may increase. In doing so, we also highlight the role of labour precariousness explaining wage disparities because its incidence in the labour markets of each region and because the differences of pay penalties across them. Nevertheless, results have different implications when we analyse the spatial divergence of salaries whether worker is employee or self-employed. For instance, informality and underemployment mainly explain the bottom of the spatial wage differentials and with minor exceptions at the median (education mostly contribute in the upper tail). Moreover, findings show that informality and underemployment pay penalties are higher in the bottom than their counterparts in the top 10%. We therefore conclude that decreasing labour precariousness through labour formalization process and policies to increase full employment may reduce inequality in Ecuador. If we focus on self-

employed to study the few existing wage gaps between regions, results partially differ: firstly, the incidence of informality contributes significantly in the decomposition but it really matters in the upper tail (unlike for employees); then, both, informality and underemployment have inequality effects along the wage distribution (lower penalties at the bottom). Therefore, stated policies may not reach the same objectives between employees and self-employed.

Summing up, human capital and labour precariousness explain wage differentials between the main metropolitan district and other regions, particularly for employees. In that case, both, informality and underemployment explain the gaps in the bottom and median part of the wage curve, between the metropolitan districts because of their incidence and between the MDQ and other regions, also because differences in pay penalties across regions. Whereas, education matters in the upper tail in all decompositions, suggesting that sorting is an issue of the determined position of the worker in the wage curve, but rather it could be an issue of agglomeration economies that generate disparities in the returns of education between regions. Spatial disparities in the case of self-employed have as a source the incidence of informality (more important in the upper tail) and differences in the productive-related characteristics (more relevant in the lower tail, unlike employees).

Finally, we expand our sample (2007-2019) to analyse the temporal evolution of the spatial wage differentials. The results for employees reveal that the structure of the wage gaps between the MDQ and the other regions differ along the wage distribution, but it is highly related with the coefficient component, which also explain the temporal evolution of the slightly narrowing of the wage differentials over the last years (2007-2019). In last year of the period of analysis, the results differ, in some issues, regarding the average behaviour since 2007. From a temporal perspective, this research has made possible the determination of changes in the patterns of the composition of the wage gaps between regions in Ecuador from 2007 to 2019. For self-employed, the few wage disparities are strictly a matter of endowment imbalances.

Keywords: Spatial inequality; education; informality; underemployment; quantile decomposition.

JEL Codes: I24, I26, J24, J31, J42.

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