

On Decomposing the Changes in Wage Inequality in Palestine over Time

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Research Motivation

Inequality among wage earners in Palestine is found to have increased across time, particularly in the decade . Most of this trend results from an increase in the concentration of wage earnings at the top end of the real monthly wage distribution. It's well-known that Palestine experienced a remarkable decline in consumption inequality during the last decade, where the value of the Gini coefficient fell to 34.0 percent in 2017 compared to 40.3 percent in 2011 (PCBS, 2018). This period of widening wage inequality coincided simultaneously with a sharp reduction in the share of the low- and medium- wage earners (the bottom 20% and the middle 20%-80%, respectively) and a concomitant increase in the share of the highest wage earners (the top 20%). But when looking at the changes of labor income inequality assessed by the Gini index and the wage share held by the top 20%, we find an increasing trend over the same period of time.

This study aims to investigate which factors are driving this increase in labor income inequality in Palestine during the period 2009-2016 using a generalization of the Kitagawa Oaxaca-Blinder decomposition proposed by Firpo, Fortin, and Lemieux (2009,2018) on wages/salaries and a panel of Labor Force Surveys conducted by the Palestinian Central Bureau of Statistics (PCBS) for the years 2009–2019. It may introduce some relevant policy implications for the policymakers by revealing how economic and social factors, individual worker characteristics as well as labor market characteristics might contribute to the observed wage inequality in Palestine.

1.1. Methodology

Giving that the RIF regression decomposition can be used to analyze any statistic that describes changes in wage distribution over time, we attempt to implement a procedure to analyze changes in the Gini coefficient and provide results across quintiles and selected inter-quintiles. While the first inequality statistic provides an overview of the change in earning concentration across time,

the inter-quintiles provide a better and more detailed picture of changes in inequality along the wage distribution.

Using Labor Force Surveys data from 2009 to 2019, we aim further to analyze observed trends in wage levels and distribution among salary workers in Palestine. In this regard, a generalization of the Oaxaca-Blinder decomposition approach (Blinder 1973; Oaxaca 1973), proposed by [Firpo, Fortin, and Lemieux \(2018\)](#) will be used to analyze how changes in socio-economic and demographic factors across time may explain the changes observed in wage distribution over the considered period. Such method, which allows us to extend the decomposition analysis to statistics other than the mean, has two main steps, following [Canavire-Bacarreza and Rios-Avila, \(2017\)](#): The first one involves building an appropriate counterfactual distribution with which the wage distribution can be compared across the considered years¹, abstracting from changes in individual and market characteristics. The second one is using the constructed counterfactual wage distributions in order to obtain a decomposition of the inequality changes of any statistic of interest (q) into portions explained by measured differences in individual and work features (called the “*composition effect*”) and by differences in the coefficients or “returns” on observables (called the “*wage structure effect*”) as shown below.

More specifically, consider the case with two periods, $t = 0, 1$, a linear approximation for the conditional expectation of the RIF is constructed as follows, using all data for a given period:

$$E(RIF(w_i, F_t; q) | X, t) = X' \gamma_t$$

Where F_t denotes the unconditional distribution of wages w_i at time t . The set of parameters can then be estimated as:

$$\hat{\gamma}_t = \left(\sum_{i \in t} X_i' X_i \right)^{-1} \sum_{i \in t} X_i' \widehat{RIF}(w_i, F_t; q) \text{ for } t = 0, 1$$

For the estimation of the counterfactual, we have

$$E(RIF(w_i, F_c; q) | X, c) = X' \gamma_c$$

Where the counterfactual unconditional distribution F_c can be approximated using a reweighted approach such that the counterfactual coefficients γ_c can be defined as:

$$\widehat{F}_c \sim \int f_0(w_i | X_i) \widehat{\omega}_c(X_i) f_0(x) dx$$

$$\hat{\gamma}_c = \left(\sum \widehat{\omega}_c(X_i) \times X_i' X_i \right)^{-1} \sum \widehat{\omega}_c(X_i) X_i' \widehat{RIF}(w_i, F_c; q)$$

Where \widehat{F}_c is approximation for the counterfactual distribution, $f_t(w_i | X_i)$, is the conditional distribution of wages in period t , and $f_t(x)$ is the distribution of characteristics in period t . $\widehat{\omega}_c(X_i)$ is the inverse probability weight estimated in the first step for the identification of

counterfactual distributions, and $\hat{\gamma}_c$ are the coefficients associated with that counterfactual distribution. For our analysis, we choose $\hat{\omega}_c(X_i)$ such that counterfactual distribution approximates what would the wage distribution in period 0 would have looked like, if the population had the same characteristics distribution as in period 1.

Main Results

We find a sizable increase in wage inequality in terms of Gini coefficient of about 5 percentage points. This increase starting mainly in 2013 was accompanied by a decrease of both the wage shares held by the bottom 20% and the middle 20%-80% and an increase of the upper quintile. Our KOB decomposition results show that the increase of wage inequality during the first period 2009-12 is primarily attributable to the composition effect explained by differences in demographic and labor market characteristics. However, for the second period the wage structure effect attributable to different returns to those characteristics contributes more to the changes in wage inequality than the composition one. Using detailed decomposition of both composition and wage structure effects, we show that the compositional differences in industry composition, region and refugee status during the first years can explain a significant portion of the rise in wage inequality during the first period, while the wage structural effect of age and discrimination against female workers may make a significant and positive contribution to the increase of the Gini coefficient and upper quintile during the second period. Furthermore, we find evidence that differences in returns to education, occupation and region are found to put downward pressure on the rise in wage inequality mainly during the period starting in 2011.