

Minimum Wage, Informality, and Poverty: To What Extent Are They Interrelated. An Application to Ecuadorian Data.

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Extended Abstract

Informality in the labor market has gained particular attention from policy makers and researchers in the last decades. The increasing size of the informal sector and the important heterogeneity in the activities encompassed by it, give us an idea of the possible implications that the non regulation of this market has in the economic performance of the countries and most importantly on the well-being of the informal workers. The estimations of the OECD reveal that over half of all jobs in non-agricultural sectors in developing and emerging economies can be considered informal.

In Latin America, the proportion of people working in the informal sector, depending on the definition, ranges between 40 and 70 percent of the labor force. The case of Ecuador is particularly interesting in terms of economic policy. During 1998/99 Ecuador went through an important macroeconomic and financial crisis that had dramatic effects, particularly in rural areas in the Costa hurt by El Niño, and among the urban middle-class. The crisis and its negative effects on GDP and inflation detonated the adoption of the US dollar in September 2000. Inequality is high, the Gini coefficient is 0.49, and poverty is widespread. Around 15 percent of the population lives under the extreme poverty line, and around 30 percent lives under the poverty line. Regarding the Ecuadorian labor market, it is characterized by widespread informality that attains almost 60% of the working population. Moreover, despite several increases of the legal minimum wage during the last decade, the proportion of informal workers in the labor market seems to remain constant.

In this article we study the relationship between minimum wage, informality, and poverty. In particular we investigate first whether or not, and if so, to what extent an increase in the minimum-to-mean wage ratio has an influence on the changes of informality; and second, we estimate the effects of poverty and minimum wage on the likelihood of participating in the informal sector in Ecuador, taking into account the possible unobserved heterogeneity that may exist between them. Finally, in order to study to what extent the above estimates are affected by the definition of informality, we reestimate the models for alternative definitions.

This study contributes to the existing literature in two main ways. First, we build a 12 years synthetic panel that allows us to overcome the very short time span of available household level data for Ecuador, and so to characterize changes in labor informality over time. Second, we explicitly take into account the double causality between poverty and informality, and the simultaneity among formal labor, informal labor, and unemployment, with ecuadorian data.

Regarding the data and the econometrics techniques, we constructed a pseudo-panel dataset using survey data on the Ecuadorian labour market from the year 2000 to 2012. In order to account for possible unobserved heterogeneity between formal and informal sector employment and unemployment, on the estimation of the effects of changes in the minimum wage, we use the Seemingly Unrelated Regression estimator. The same general method is adopted to estimate the effects of poverty and minimum wage on the likelihood of participating in the informal sector, by means of a recursive bivariate probit model, with poverty as the endogenous variable.

Datasets:

The dataset used in this article, comes from the National Survey of Employment and Unemployment (ENEMDU) for the years 2000 to 2012.

The sampling unit is a dwelling or housing structure, and information regarding the household or households occupying each dwelling is collected. In spite of this, the dataset displays some socio-economic and demographic information, separately, for all individuals in the sample; therefore, in order to get the household total, we aggregate the information over all the individual members of the household. Incomes reported in the surveys are gross of taxes, and they are disaggregated in such a way that information regarding social benefits such as holiday bonus, the thirteenth and fourteenth wages, and contributions to social security can be recovered. There are three sources of labor income: main job, secondary job, and other jobs; and different sources of non-labor income. Even though, the measurement of non-monetary income is particularly difficult, and the incorrect report of these figures (which are often inflated) can conjure up an image of a more egalitarian distribution of income than is actually the case, the exclusion of it can impart serious biases to estimates of inequality, especially in developing countries. Since in the case of Ecuador, non-monetary income accounts for 20% to 30% of the total income, for the present analysis, all types of income sources (labor, pension, rent, private and public transfer, etc.) are considered.

Some adjustments are made in the construction of the Ecuadorian dataset from the original surveys data. First, we work with a reduced sample of households in which the household head is aged between 21 and 70 years old. Second, given that some pension and governmental transfer incomes are mistakenly reported, we impute the official value for these cases. Third, incomes were deflated by the consumer price index of November of the current year for the data coming from the December survey since the reference period for Income is the previous month to the one in which the interview takes place. Current incomes have been adjusted in order to reflect household composition and size. For this purpose, two equivalence scales were used. The first one: simple per capita income and the second one OECD scale, (Square root scale). Fourth, the incomes of children less than ten years old are not included in the total value of the household income. Fifth, in the surveys there is a variable that assigns to every individual a position within the household; that is, the individual may be the head of the household, a spouse, a child, etc. Households with individuals assigned with the condition "domestic employee" are withdrawn from the sample because we cannot assume income pooling within the family since these individuals do not constitute a member of the family. The elimination of these households allows us to avoid possible problems related with economies of scale generated by the presence of domestic employees. Finally, an important consideration is that of the treatment of outliers. Following Schluter and Trede (1999) and Ayala and Sastre (2002) households whose equivalent income is situated below the first or above the 99th percentile were eliminated from the sample. The number of observations that were lost is relatively low: less than two percent of the total sample for each year. Following the literature, the analysis is restricted to positive earnings.

Even though, the coverage of the survey is at national level, Insular Region (Galapagos Islands), collective dwellings, “viviendas flotantes”, and homeless population are excluded. At this point, it is essential to notice that the actual poorest population of the country has been omitted for the surveys and therefore from the forthcoming analysis.

The survey is designed as a rotating panel under the scheme 2-2-2; that is, households are interviewed for two consecutive quarters then, they are replaced by a new sample of households that are interviewed for the next two consecutive quarters, for finally entering the sample again for two last quarters before exiting the survey. The sample is renewed every two years.

The period that is analyzed includes the years between 2000-2012 inclusive, with exclusion of 2002 given the unavailability of data for this year. Since for the first two years considered for this study, data corresponds to the punctual December survey, and in order to do not deal with the difficulty of defining the age of the individuals when the figures are collected in different moments of the same year, as consider by Winkler (2004) and Margot (2001), it has been decided to work with December data every year. It is worth noting that representativity weights (expansion factor) provided by the INEC are used in order to take into account the probability that a certain household type is selected from the population to be part of the sample.

Note that, for the dynamic analysis we need to follow cohorts. For this purpose, pseudo-panels were formed based on the household head's age, restricted to individuals aged 21 to 70. Such construction faces an important trade-off between the number of cohorts to be defined and the number of individuals per cohort. The larger the number of cohorts, the smaller the number of individuals per cohort. With a large number of cohort observations, the regressions performed with the pseudo panel estimation will suffer less from small sample problems. However, if number of individuals per cohort is not large enough, the sample cohort averages would not be good estimates for the population cohort means. Cohorts are defined in a five years bands. The sample was further restricted to cohorts with more than 100 observations in a given wave in order to be able to rely on asymptotic theory (McKenzie (2004)), allowing the use of OLS on the cohort means for estimation.