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Formal salaried employment  
generation and transition  
to formality in developing  
countries. The case of  
Latin America

Roxana Maurizio  
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Employment  
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Roxana Maurizio and Gustavo Vásquez

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## Abstract

Since the 2000s a trend towards increase in formality has been observed in several developing countries around the world. This has happened in many Latin American countries and also in Africa and Asia. There is a broad discussion on the drivers behind this process. Among them, economic growth, structural transformation processes and specific policies fostering the transition from informality to formality can be observed. This paper analyses the evolution of labour formality in Latin American countries. It evaluates the intensity and characteristics of this process, analyses the inflows to a formal salaried job and identifies the main drivers of this positive labour dynamics. Sustained job-generating growth enhances labour market predictability, which work in favour of long-term contracts. In this context, formalization is more feasible. However, even though job-generating growth seems to have been a necessary condition for the employment formalization process, it was the interaction between that process and specific policies that ultimately determined policy effectiveness and the tangible results observed in terms of labour registration in the countries studied.



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## Introduction

Since the 2000s a trend towards increase in formality has been observed in several developing countries around the world. This has happened in many Latin American countries and also in Africa and Asia. There is a broad discussion on the drivers behind this process. Among them, economic growth, structural transformation processes and specific policies fostering the transition from informality to formality. This paper analyses the evolution of labour formality in five Latin American countries: Argentina, Brazil, Ecuador, Paraguay and Peru.

The paper starts by recognizing that labour informality has many causes, is complex and comes in many forms. Labour informality encompasses both wage earners and the self-employed, whether employers or own-account workers. Likewise, it may be found both in formal productive units and in micro-enterprises and individual homes.

At the same time, labour informality is not reduced by a single determinant, but rather by a combination of various factors of different types. In particular, sustained job-generating growth enhances labour market predictability, which can promote the issuance of long-term contracts. In this context, formalization becomes more feasible. This is because, from the point of view of the employers, a stronger demand for labour makes it less likely that workers will be laid off and hence that the employers will have to bear the associated costs. From the point of view of the workers, a context of economic and job growth with a drop in unemployment gives them a stronger hand when it comes to negotiating working conditions, which can also promote registration.

However, while job-generating economic growth seems to be a necessary condition for the process of employment formalization, it is the interaction between that process and specific policies that determine policy effectiveness and the tangible results in terms of labour registration.

The main aim of this document is to evaluate –from a comparative perspective– the intensity and characteristics of labour formalization in five Latin American countries during the 2000s, analyse the inflows to a formal salaried job and identify the main drivers of this process. The paper considers the matter from both a static perspective, using cross-sectional data, and a dynamic perspective, using panel data. The latter approach enables a very detailed analysis of the inflows to formal waged employment. In this regard, this document contributes to the scarce but growing literature on occupational mobility mainly focusing on the process of labour formalization verified in several countries in the region during the new millennium.<sup>1</sup> The selection of countries allows us to have a broad picture about the Latin American labour markets since they exhibit occupational structures and dynamics that greatly differ from one another.

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<sup>1</sup> Other studies about labour informality and labour formalization process in Latin America are: Amarante and Arim (2015), Beccaria et al. (2015), Bertranou et al. (2013), Chacaltana (2001, 2008), Estrades and M. Terra (2011), FORLAC (2014, 2016), Maurizio (2015).

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The document follows with a description of the source of information. Section 2 describes the different methodologies used. Section 3 presents an overview of the evolution of labour informality in the countries under study. Section 4 shows the results of a decomposition of global change in labour formality. Section 5 estimates the intensity of transitions into a formal waged job. Section 6 evaluates the intensity and anatomy of labour formalization. Section 7 identifies the transitions towards a formal salaried job by income decile of origin and destination. Section 8 assesses the role of different drivers of labour formalization. Finally, Section 9 concludes.

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## 1. Source of information

Most data used in this paper come from regular household surveys carried out by the national statistical institutes of each country.

For Argentina, the data source is the *Encuesta Permanente de Hogares* (EPH). Micro-data are available for 31 urban areas. For Brazil, the *Pesquisa Mensal de Emprego* (PME) was used. It covers six major urban areas. The *Encuesta Nacional de Empleo, Desempleo y Subempleo* (ENEMDU) in Ecuador is carried out in urban and rural areas. The Paraguayan *Encuesta Permanente de Empleo* has national coverage. The *Encuesta Nacional de Hogares* (ENAH) in Peru also covers urban and rural areas.

The period under analyses corresponds to the first fifteen years of the new millennium. However, specific years considered vary in each country according to data availability. In Argentina and Brazil all years between 2003 and 2015 are analysed, 2004-2015 for Ecuador and Peru, and 2002-2014 for Paraguay.

Although in the case of the Latin American countries under study their surveys are not longitudinal, their rotating panel sample allows flow data to be drawn from them. In such schemes, the total sample is divided into a certain number of household groups and each group remains in the sample for a given number of observation periods.

To obtain datasets that could be compared between countries, we included one transition for each individual, based on a one-year interval between observations. Specifically, this paper uses data on the occupational situation in month  $t$  of people who are salaried formal workers in month  $t$ . This enables us to identify the origin of the inflows to labour formality.

As well as using the panel structure of the sample, this paper also uses retrospective information. Specifically, all workers are asked about how long they had been in their present jobs. This information allows us to define the “job tenure” variable, which was used to identify whether a person who was employed both in month  $t$  and month  $t+12$  remained in the same job or had moved to another one. If employed individuals responded in the second observation that they had been in their current job for more than one year, it was understood that they had not changed jobs between the two observations.<sup>2</sup> These surveys do not inquire into the causes for job separation, so there was no way of distinguishing a dismissal from a voluntary separation.

For the case of workers, our study is restricted to employed male workers between 15 and 65 years of age and employed female workers between 15 and 60.<sup>3</sup> Since not all the surveys used in this study are representative of each country as a whole, and given that labour markets in rural areas and urban centres may behave differently, our analysis was restricted to urban areas.

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<sup>2</sup> Further consistency analyses were carried out to ensure that this criterion was correctly applied.

<sup>3</sup> The upper age limit corresponds to the legal retirement age from the labour market. The lower limit corresponds to the minimum legal working age established by ILO.



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## 2. Approach and methodology

### 2.1 Approach and measurement of informality

This study focus on labour informality, in particular among wage workers. Most part of the analysis will be based on the “legal approach” to informal employment, which is associated with the evasion of labour regulations.<sup>4</sup> The empirical identification of the wage-earners’ registration condition in each of these countries is based on the availability of information derived from these databases.

In Argentina, formal wage earners are those who answer that they employers make payroll deductions to pay social security contribution. In Brazil, a wage-earner is considered as registered if she has signed a labour contract. In Paraguay and Peru, the question on whether or not the employee is affiliated to a pension system is employed. Finally, in Ecuador those indicating that they receive social insurance from the job are considered registered wage-earners.

In order to have a broader picture of labour informality, in some parts of the analysis, the “productive” approach to informality will also be considered. Under this approach, informality reflects the inability of economies to generate sufficient employment in the formal sector in comparison to the growth of the labour force. The informal sector (IS) is usually associated with small productive units with low levels of productivity and where the aim is rather survival than accumulation. Therefore, following the ILO recommendations, the IS is made up of employers and wage-earners in establishments of less than five employees, unpaid family workers and non-professional own-account workers.<sup>5</sup> All workers in the public sector are included in the formal sector (FS).

Given the lack of enough information from household surveys about the formal/informal character among independent workers, following ILO's recommendation, it will be directly determined by the characteristics of their enterprises: informal own-account and employers are those working in enterprises of the IS. Therefore, the classification of workers according to whether they are formal or informal workers belonging, simultaneously, to the IS or the FS is more interesting in the case of wage earners given that for non-wage earners both classifications coincide.

### 2.2 Decomposition of changes in labour formality

#### *Aggregate decomposition*

In order to determine the extent to which the change in the formality rate among wage earners in each country being studied is due to variations in the composition of employment (composition effect) and to what extent it is due to the formality rate of each group of workers (coefficient effect), an "aggregate" decomposition was calculated as a first step, as follows:

---

<sup>4</sup> ILO (2002), Hussmanns (2004).

<sup>5</sup> Own-account workers with less than complete university degree

$$\Delta LF = \underbrace{\sum_{g=1}^G w_g^0 \cdot \Delta LF_g}_{\text{Coefficient Effect}} + \underbrace{\sum_{g=1}^G LF_g^0 \cdot \Delta w_g}_{\text{Composition Effect}}$$

where:

$\Delta LF$ : change in labour formality rate between  $t = 1$  and  $t = 0$

$\Delta LF_g$ : change in labour formality rate between  $t = 1$  and  $t = 0$  in subgroup  $g$

$LF_g^0$ : Labour formality rate of subgroup  $g$  in  $t = 0$

$w_g^0$ : participation rate of group  $g$  in total wage earners in  $t = 0$

$\Delta w_g$ : change in participation rate of group  $g$  in total wage earners between  $t = 1$  and  $t = 0$

The first term in the equation reflects the coefficient effect, which is the weighted sum of the changes in the formality rate of each of the various subgroups, where the weighted factor is the initial weight of each subgroup in total wage-earning employment. The second term reflects the composition effect, which results from the weighted sum of the changes in occupational structure, where the weighted factor is the initial specific formality rate of each group.

This exercise will be carried out separately for the dimensions of greatest significance for the structure of wage-earning employment in the countries concerned: branch of activity, size of enterprise, educational level and age.

The advantage of this decomposition is that it is easy to interpret. However, because these exercises were conducted unidimensionally for each employment characteristic, they do not control for the other occupational and worker attributes. These "aggregate" decompositions are therefore accompanied by conditioned microeconomic exercises, which are described below.

#### *Microeconomic decomposition*

Microeconomic decomposition exercises are carried out to decompose the differences in the change in the formality rate into the share explained by changes in occupational structure (composition effects) and the share associated to variations in the formality rate of each of the groups of workers and occupations (coefficient effect). To do so, we used the decomposition methodology put forward by Yun (2004), which extends the model used by Oaxaca (1973) and Blinder (1973) to include dichotomous dependent variables.

Particularly, be  $Y$  a binary variable that takes the value of 1 if the salaried worker is formal and takes the value of 0 if he/she is informal. It can then be assumed that this is a function of a linear combination of variables, which are aggregated in vector  $X$ , and that it is the standard normal distribution function. That is,

$$\Pr(Y = 1) = \Phi(X\beta)$$

The decomposition of the change in the formality rate between the beginning ( $\bar{Y}_0$ ) and the end of the period ( $\bar{Y}_1$ ) in each country under study can thus be expressed as follows:

$$\bar{Y}_1 - \bar{Y}_0 = \overline{\Phi(X_1\beta_1)} - \overline{\Phi(X_0\beta_0)}$$

To carry out an initial aggregate decomposition by characteristics ( $\Delta_X$ ) and coefficients ( $\Delta_\beta$ ), the above expression is modified by adding and subtracting  $\overline{\Phi(X_0\beta_1)}$ .

$$\bar{Y}_1 - \bar{Y}_0 = [\overline{\Phi(X_1\beta_1)} - \overline{\Phi(X_0\beta_1)}] + [\overline{\Phi(X_0\beta_1)} - \overline{\Phi(X_0\beta_0)}] = \Delta_X + \Delta_\beta$$

Then, to determine the individual contribution of each of the factors contained in X in each of these aggregates, we proceeded to calculate the weight associated with each of them. First, the value of the functions  $\overline{\Phi(X_i\beta_i)}$ ,  $i = 0,1$  is approximated by using the average value of the attributes. Second, a first-order Taylor approximation around  $\bar{X}_i\beta_i$ ,  $i = 0,1$  is carried out

Thus,

$$\begin{aligned}\Delta_X + \Delta_\beta &= [\Phi(\bar{X}_1\beta_1) - \Phi(\bar{X}_0\beta_1)] + [\Phi(\bar{X}_0\beta_1) - \Phi(\bar{X}_0\beta_0)] + R_M + R_T \\ &= (\bar{X}_1 - \bar{X}_0)\beta_1\phi(\bar{X}_1\beta_1) + \bar{X}_0(\beta_1 - \beta_0)\phi(\bar{X}_0\beta_0) + R_M + R_T\end{aligned}$$

where

$$\begin{aligned}R_M &= [\overline{\Phi(X_1\beta_1)} - \overline{\Phi(X_0\beta_1)}] + [\overline{\Phi(X_0\beta_1)} - \overline{\Phi(X_0\beta_0)}] - [\Phi(\bar{X}_1\beta_1) - \Phi(\bar{X}_0\beta_1)] \\ &\quad + [\Phi(\bar{X}_0\beta_1) - \Phi(\bar{X}_0\beta_0)]\end{aligned}$$

$$\begin{aligned}R_T &= [\Phi(\bar{X}_1\beta_1) - \Phi(\bar{X}_0\beta_1)] + [\Phi(\bar{X}_0\beta_1) - \Phi(\bar{X}_0\beta_0)] - (\bar{X}_1 - \bar{X}_0)\beta_1\phi(\bar{X}_1\beta_1) \\ &\quad + \bar{X}_0(\beta_1 - \beta_0)\phi(\bar{X}_0\beta_0)\end{aligned}$$

$\phi(\bar{X}_i\beta_i) = \frac{d\Phi(\bar{X}_i\beta_i)}{d(\bar{X}_i\beta_i)}$ ,  $i = 0,1$  is the density function associated with the standard normal distribution; while  $R_M$  and  $R_T$  represent the residuals associated with each of the approximations mentioned above.

Reordering the above expression yields the following detailed decomposition:

$$\Delta_X + \Delta_\beta = \sum_{j=1}^J \omega_{\Delta_X}^j [\overline{\Phi(X_1\beta_1)} - \overline{\Phi(X_0\beta_1)}] + \sum_{j=1}^J \omega_{\Delta_\beta}^j [\overline{\Phi(X_0\beta_1)} - \overline{\Phi(X_0\beta_0)}]$$

where

$$\begin{aligned}\omega_{\Delta_X}^j &= \frac{(\bar{X}_1^j - \bar{X}_0^j)\beta_1^j\phi(\bar{X}_1\beta_1)}{(\bar{X}_1 - \bar{X}_0)\beta_1\phi(\bar{X}_1\beta_1)} = \frac{(\bar{X}_1^j - \bar{X}_0^j)\beta_1^j}{(\bar{X}_1 - \bar{X}_0)\beta_1} \\ \omega_{\Delta_\beta}^j &= \frac{\bar{X}_0^j(\beta_1^j - \beta_0^j)\phi(\bar{X}_0\beta_0)}{\bar{X}_0(\beta_1 - \beta_0)\phi(\bar{X}_0\beta_0)} = \frac{\bar{X}_0^j(\beta_1^j - \beta_0^j)}{\bar{X}_0(\beta_1 - \beta_0)}\end{aligned}$$

---

## 2.3 Analysis of occupational inflows to a formal salaried job

Finally, occupational inflows to a formal job are analysed from a dynamic perspective. This analysis is restricted to Latin American countries due to the availability of panel data.

Formalization can take place through two channels: (1) *in situ* formalization — i.e. a worker becomes formal, maintaining the same occupation between  $t$  and  $t+1$ ; and (2) transition to a formal waged job coming from a labour status other than a formal job (informal or independent job, unemployment or inactivity).

In order to analyse the contribution of the different groups of workers to formalization through the second channel, it is possible to start with the following equation:

$$\frac{f_{ij}}{F_j} = \frac{S_i \times P(E_{ij})}{F_j}$$

where

$f_{ij}$  indicates the transition from state  $i$  (any labour status other than a formal job) in  $t$  to state  $j$  (formal job) in  $t + 1$

$F_j$  indicates total transitions from any state in  $t$  to state  $j$  (formal job) in  $t + 1$

$S_i$  indicates the stock of non-formal individuals (informal or independent workers, unemployed or inactive) in  $t$

$P(E_{ij})$  indicates the probability of transition from state  $i$  in  $t$  to state  $j$  (formal job) in  $t + 1$   
 $i \neq j$

In turn, the probability of entering formality  $P(E_{ij})$  can be decomposed into two factors: on the one hand, the probability of leaving the initial state (different from a formal job) —  $P(E_i)$  —, and on the other hand, the conditional probability of entering a formal job after leaving the initial state —  $P(E_j|E_i)$  —:

$$P(E_{ij}) = P(E_j|E_i) P(E_i)$$

This decomposition allows evaluation of the extent to which transitions to formality of given groups of individuals are associated with their relative participation in non-formal employment or with a higher probability of transiting to formality. Then, it is also possible to find out if the latter higher probability is in turn associated with the fact that these individuals exit the initial state more frequently or because they have greater possibilities of moving to formality once they abandon their initial state.

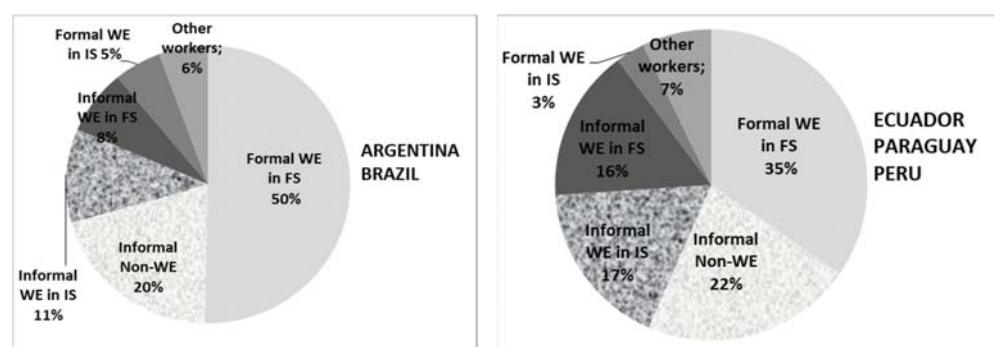
### 3. An overview of the evolution of labour informality in Latin American countries during the 2000s

As it can be observed in Graph 1, two sets of countries under analysis with different employment structures can be identified.<sup>6</sup> The first group is comprised of Argentina and Brazil, and the second group is made up of Ecuador, Paraguay and Peru.

In the first group, formal wage-earners in the formal sector constitute the biggest group, representing 50% of total urban employment, followed by informal non-wage earners<sup>7</sup>, who represent around 20%.

In the second group, formal wage-earners in the formal sector represent only 35% of total employment, 15 percentage points (p.p.) less than the first group of countries. Informal non-wage earners explain about 22% of total employment. They are mostly non-professional own-account workers. Lastly, informal wage-earners (both in formal and informal sectors) constitute another group of significant magnitude in this group of countries, representing 33% of total employment, two times more than in the first group.

Graph 1: Employment composition in Latin American countries



Source: Authors' elaboration based on Household Surveys

This overview shows a significant degree of heterogeneity among the employment structures of these countries. It also shows that despite these important differences between the countries, employment in the informal sector and informal employment represent more than a third of total workers in the all countries under study.

However, although salaried informal employment continues to be one of the distinctive characteristics in Latin America, its incidence has fallen in a significant number of countries, especially over the past decade. In Argentina, Brazil and Paraguay the decrease was between 12 and 16 p.p. Even more intense was the formalization process that took place in Peru and Ecuador, where the proportion of informal workers fell 19 p.p. and 23 p.p., respectively

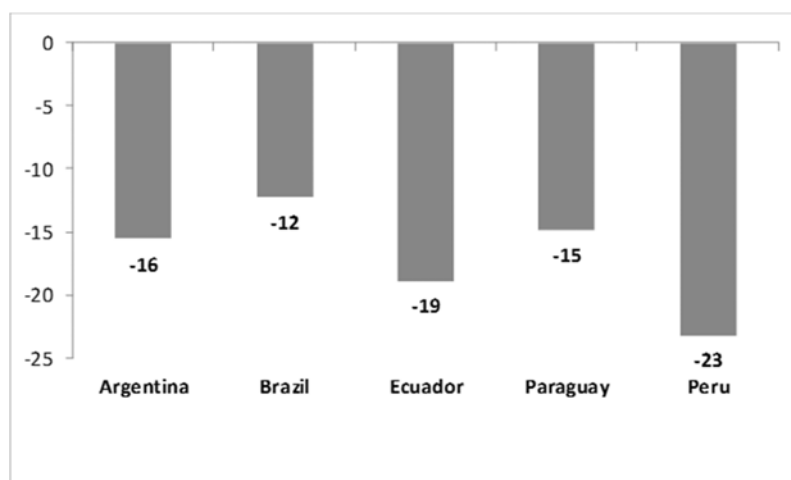
<sup>6</sup> In this Graph both approaches to informality are combined in order to quantify the incidence of formal/informal employment in the formal/informal sectors.

<sup>7</sup> As mentioned before, given the lack of information about “legal” informality among independent workers, informal own-account and employers are those working in enterprises belonging to the informal sector.

---

(Graph 2). Remember that this analysis covers only urban salaried employment and that the behaviour of informality in total salaried employment might therefore be different.

Graph 2: Variation of informality rate among urban salaried employment during the 2000s

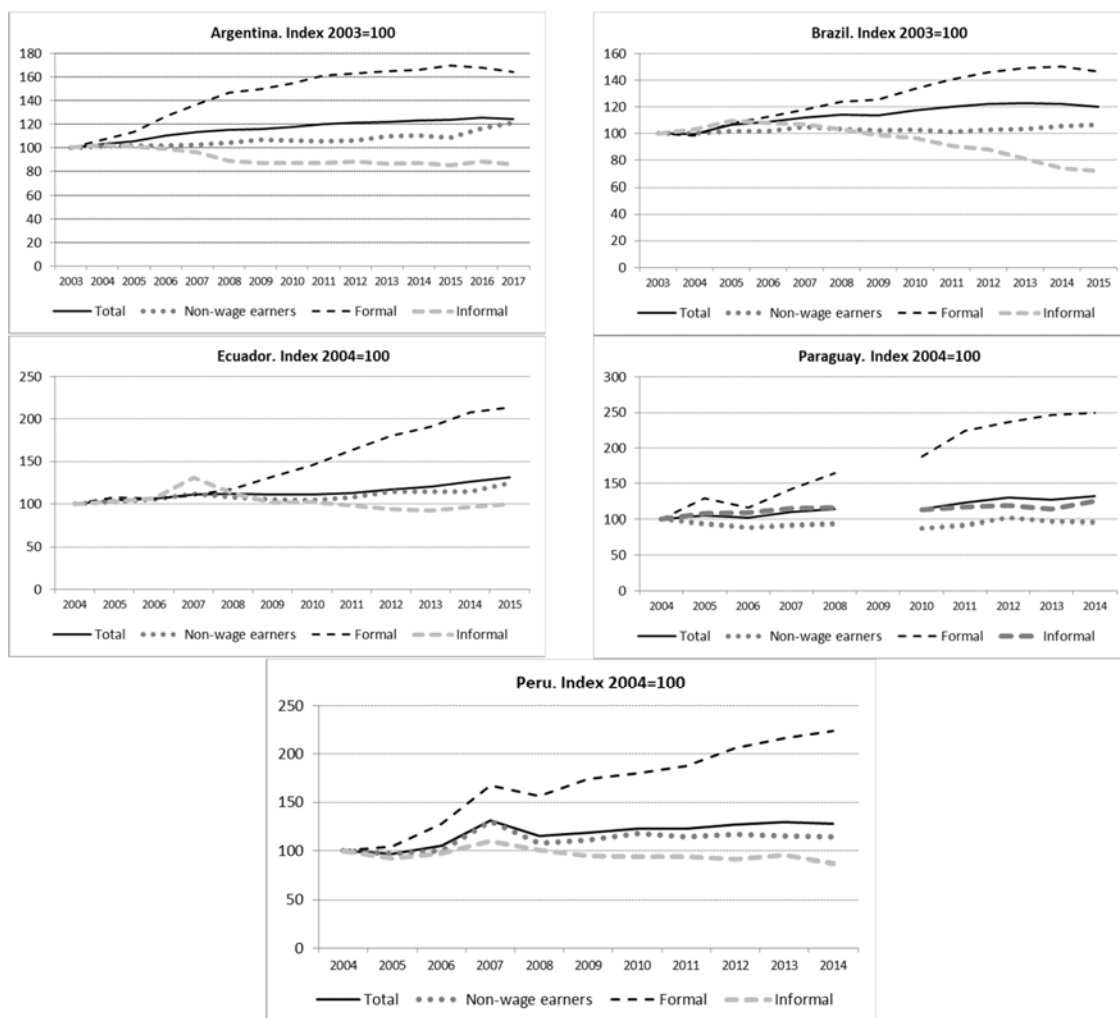


Source: Authors' elaboration based on Household Surveys

This process of labour formalization has to be evaluated even more positively because in some of these countries it took place in a period of strong total employment growth, which resulted in the creation of a significant volume of new formal wage-earning occupations (Graph 3).

For example, the number of formal jobs rose by almost 60% in Argentina between 2003 and 2017, while total employment increased by 20%. In Brazil, these numbers are 40% and 20%, respectively. As we said earlier, the process of formalization was even more pronounced in Ecuador, Paraguay and Peru, where the number of registered jobs more than doubled during the period under review.

Graph 3: Evolution of the number of jobs by occupational category



Source: Authors' elaboration based on Household Surveys



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## 4. Decomposition of changes in the formality rate

Our analysis of the characteristics of the process of reducing labour informality starts with a presentation of the results of the “aggregate” decomposition below. In particular, we quantify the shares of change in the formality rate that are explained by the coefficient and composition effects, respectively, in each of the following four labour dimensions: branch of activity, size of enterprise, level of education and age. This is followed by a presentation of the results of the microeconomic decomposition according to Yun (2004).

### 4.1 “Aggregate” decomposition

Table A1 (see Annex) presents the absolute contribution of each of the two effects to the formality rate in each of the four dimensions listed above. As can be observed, in every country, the change in the overall formality rate associated with the branch of activity stems for the most part from what happened with the formality rate specific to each sector (coefficient effect). In particular, the coefficients are highly significant and much more elevated in absolute value than those corresponding to the composition effect. Almost 100% of the formalization process can be attributed to the coefficient effect in every country. In Argentina, Ecuador and Paraguay, the composition effect is not statistically significant.

In some cases, the low statistical significance of the composition effect is the outcome of changes in the participation of certain sectors with different formality rates that compensate for each other. For example, in all cases a statistically significant reduction is observed in the participation of industry – one of the branches with the greatest initial formality – in salaried employment (except in Argentina, where there is a slight increase). In some countries, that reduction was offset by a reduction in the participation of domestic services, the sector which in all cases has the highest informality rate. In the case of Brazil, for example, we also observed an increase of 3.4 p.p. in financial services, a sector with high labour formality. That increase is as intense as the reduction in salaried manufacturing employment.

The relevance of the coefficient effect, for its part, is derived from the fact that, except in Paraguay, a statistically significant formalization process is observed in almost all branches of activity, even though it varies in intensity depending on the country.

When it comes to size of enterprise, the picture is similar in terms of the greater impact of the coefficient effect, even though the composition effect accounts more than above for changes in the formality rate (Table A1): it was significant in all countries except Ecuador.

Likewise, an extended process of formalization is observed in almost all countries in the three categories of enterprise defined by size, explaining the relevance of the coefficient effect.

When it comes to educational level, as for the previous labour characteristic, even where the coefficient effect accounts for the major part of the formalization process (except in Paraguay), the composition effect is statistically significant in all countries (Table A1).

The changes in occupational structure are related here to the increase in the participation of higher-skilled individuals, who are in turn those who have higher initial formality rates. In the case of Paraguay, the participation of lower educational levels in employment composition dropped sharply, a development translated by significant increases in the participation of workers with complete secondary or incomplete tertiary education.

The coefficient effect, for its part, is explained by an increase in registration in the majority of educational groups, except in Paraguay, where the increases were not statistically significant.

Lastly, the picture for age structure of the employed population is similar to that for branch of activity (Table A1). In particular, there was no change in the composition of employment that would explain the strong formalization process, even though in all cases the share of young people in total employment dropped. Except in Paraguay, the three age groups experienced an increase in the specific formality rate; in general, the process was observed as being more intense among middle-aged workers.

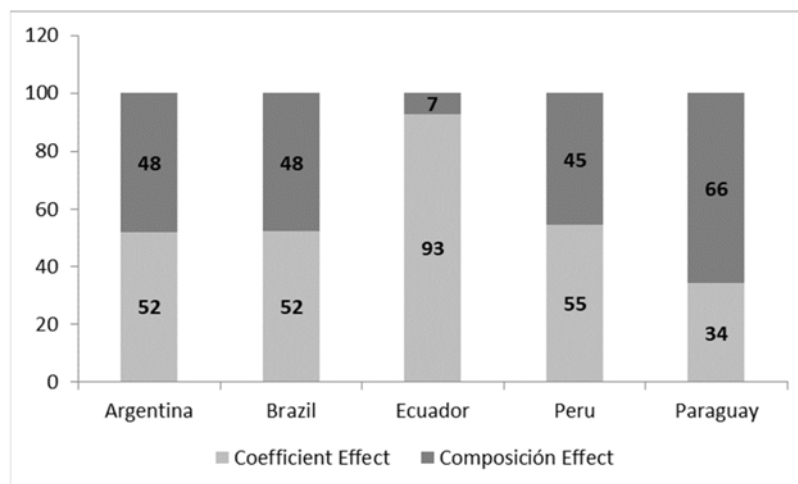
Thus, the coefficient effect predominates over the composition effect, indicating that, although in some cases changes in the composition of employment – skewed towards higher levels of education, the concentration of employment in large firms and the greater participation of middle-aged individuals – contributed to the increase in overall formality, their contribution was of a lesser magnitude than the changes in the coefficients.

As we said earlier, this analysis was carried out individually for every characteristic of the job and the worker. In the following paragraphs, the analysis is conditioned according to the methodology proposed by Yun (2004), as described in the section on methodology. This method serves to estimate the individual contribution of each attribute to the overall formalization process, through both channels, taking account of the other characteristics.

## 4.2 Yun micro-decomposition

In aggregate terms – i.e. when all the attributes are considered together – the predominance of the coefficient effect over the composition effect is once again confirmed, except in Paraguay, as shown in Graph 4. In the other countries, the coefficient effect accounts for between 52% and 93% of the overall formalization process.

Graph 4: Microeconometric decomposition of labour formalization



Source: Authors' elaboration based on Household Surveys

In order to analyse the contribution of each attribute to each of the two effects, it is interesting, in the first place, to study the relative probability of formality for each group of workers estimated on the basis of probit regressions. This, and the changes in the participation of each group of workers, are the factors determining the aggregate composition effect. On the other hand, changes in employment composition and the

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probability of being a formal salaried worker registered by each group of salaried workers determine the overall coefficient effect.

Table A2 shows the following regularities, in both the initial and the final observation:

- a positive correlation between formality and level of education;
- young people have lower rates of formality than other age groups;
- a strong positive correlation between formality and the size of the enterprise (except in Paraguay);
- no clear pattern between gender and formality, controlling for the other variables (while in some countries men have a higher formality rate than women, the opposite is the case in other countries; in Argentina and Brazil, the coefficient accompanying this variable is not statistically significant in the final observation);
- part-time workers have lower rates of formality than full-time workers;
- tenure has a positive impact on labour registration;
- the incidence of formality in the various branches of activity follows no clear pattern.

However, as a rule, construction and domestic services tend to have higher rates of informality.

Generally speaking, these regularities are consistent with those previously encountered in the international literature and with those resulting from the dynamic analysis set out in the following section.

As already stated, given the differences in the probability of being a formal salaried worker in those groups of workers, changes in the employment structure have an impact on the overall rate of formality. In this sense, in addition to the changes already mentioned (increase in the level of education of workers and reduction of youth employment, relative increase in employment in large firms and reduction of industrial employment in favour of employment in construction and financial services), the following regularities are observed (Table A3):

- reduction in part-time employment;
- greater participation by women in salaried employment;
- longer tenure of workers in their jobs.

The changes in employment structure and in the probabilities of being a formal worker derive from the contribution of each dimension to the composition and the coefficient effects, respectively. The results of the Yun composition are presented in Table A4. In particular, this table shows the standardised results serving to estimate the relative contribution of each dimension to formalization through each of the two effects.

Those tables confirm that changes in age group contributed to greater total formality. However, except in Ecuador, that contribution was of low relative magnitude compared to other dimensions.

The tables also confirm that the increase in participation at higher levels of education, from complete secondary and upwards, entailed increases in overall formality. Their relative contribution clearly exceeds that of age, accounting for between 16% in Brazil and 51% in Ecuador of the total composition effect.

The greater concentration of employment in larger enterprises also contributed, as already pointed out, to greater overall formality. The drop in part-time employment and the increase in tenure entailed additional increases in formality.

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Lastly, changes in the structure of employment according to the branch of activity, controlling for the other characteristics, did not have a significant impact on formality in hardly any of the countries analysed.

When it comes to the coefficient effect, the picture is less uniform, except for the relevance of the constant in all regressions. In fact, in all cases this is the variable that contributes to the greatest extent to the formalization process through the coefficient effect. That would seem to indicate that increased formality was observed in all the groups considered here, and that each individual dimension is therefore statistically less significant or even insignificant.

These results point to the need to identify the factors that led to relatively extended increases in the rate of formality among the various groups of workers. Section 8 focuses on this aspect. However, in order to obtain a more detailed picture of that process, the following three sections analyse labour formalization from a dynamic perspective, focusing on inflows to a job registered in the social security system.

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## 5. Occupational mobility and inflows to formality

The analysis of labour market dynamics is relevant for a better understanding of the labour market functioning, to evaluate household welfare dynamics and to design public policies. In this section, we therefore study the process of labour formalization in the Latin American countries being analysed from a dynamic and comparative perspective.

### 5.1 Transition matrix between labour states and jobs

Starting with the dynamic analysis, the year-on-year transition matrices between different states (employed, unemployed and inactive) and different types of occupation (formal wage earner, informal wage earner, own-account and employer) are analysed. Average results for the whole period (based on a pool of panels) are shown in Table A5.

The first observation is that, as was to be expected, in all cases formal workers are more likely to remain in a formal job for a period of one year. In particular, between 80% and 90% of initially formal wage earners were still formal workers one year later. Among informal workers, that percentage falls to about 50% (with the exception of Paraguay, where it is 65%). Own-account workers are in between, with about 60% to 70% remaining in a position of that kind for at least one year.

The lower labour stability of informal wage earners could be explained by the fact that they have low legal firing costs, thus making them attractive for employment in industries with unstable demand and for unstable occupations. An employer may also decide not to register an employee in order to test the worker's ability for longer than the official trial period, or just as an alternative to it. Moreover, employees who are not covered by social security and also self-employed workers have a greater presence in small scale and informal firms, which are regularly exposed to risks that make them more vulnerable. As they operate with low capital/labour ratios, the decision to interrupt economic activity is easier. The lower exit rates of registered wage-earners, in turn, may be explained by the existence of firing costs as well as by the fact that they receive more specific training.

Second, consistent with the process of formalization observed during the 2000s, there were greater flows from informal to formal jobs than vice versa. In particular, around 10% to 20% of wage earners who were initially informal during the first observation were in a formal job during the second; that percentage falls to 5% to 6% for flows going the other way.

Third, informal workers exiting that occupational category usually transitioned to formality (Brazil and Ecuador) and inactivity (Argentina and Paraguay). However, even in this second group of countries, transitions between informality and formality are relevant. Once again, this has to do with the process of formalization observed in the past ten years. In Peru, both outcomes were similar in number. At all events, half or more of those who were initially informal remained so one year later.

Fourth, in all cases non-salaried workers exiting that category (for the most part, in the non-professional own-account category) transitioned to an informal salaried job or to inactivity. This was to be expected, as the intermittence associated with certain occupations typical of such workers could imply that many of them do not actively look for work after leaving a job. The percentage of transitions to a formal job was extremely low (less than 6%) in all cases. Indeed, most non-professional own-accounts do not find jobs registered with social security; instead, their options are limited to precarious wage-earning positions or another form of own-account employment, probably also of inferior quality.

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Lastly, given that in the countries concerned periods of unemployment are relatively short – basically because of the absence of or low coverage by unemployment insurance – only about 20% to 30% of individuals who were initially unemployed remained so one year later. In most cases, this reflects the high number of transitions to inactivity (30-40%) and informal jobs (13-30%).

In conclusion, four groups of workers with different dynamics are observed in the countries concerned: (1) formal workers, almost all of whom remained in an occupation (the same or another) registered in social security system throughout the year in which they were observed; (2) informal wage earners who exhibited significant flows to inactivity or formal waged employment; (3) non-wage-earning workers with a low probability of entering a formal job and a higher probability of moving towards informality; and (4) the unemployed, who, while registering not insignificant flows to formality, also have a bigger chance of entering an unregistered job. It can therefore be expected that, except in the first group, transitions entail a vicious circle of low wages and lack of income,<sup>8</sup> especially given the limited access to social protection in the region.

## 5.2 Entries to a formal occupation

Considering that the period under study is characterised by a tendency towards labour formalization, the following analysis will be focused exclusively on flows into formality, but desegregating now these entries into the two channels of formalization, *in situ* formalization and entries to a formal occupation through transitions from other labour status.

As shown in Table 1, in all cases except Peru, the biggest source of formalization was that observed in the same job. Around 30% of new formal workers in Brazil and Peru, and 40% in Argentina, Ecuador and Paraguay became formal employees in the same job (*in situ* formalization). The high proportion of *in situ* formalization is striking. Below, we discuss in detail the public policies that could have generated the appropriate conditions for this process to take place.

From 26% in Brazil to 44% in Peru came from a non-formal job (non-registered wage-earning jobs or non-wage-earning occupations). This is the main channel of labour formalization in the latter country. The remaining 24% in Paraguay, and around 30/40% in the rest of the countries came from unemployment or inactivity, even though, as stated above, unemployed and inactive workers transited to informality more often than formality.

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<sup>8</sup> The close connection between unemployment and low paying jobs has also been explored by Cappellari and Jenkins (2008) in Britain.

Table 1: Formalization process in the same job and transits to formality

| Year t                               | Year t+1 (%) |             |             |             |             |
|--------------------------------------|--------------|-------------|-------------|-------------|-------------|
|                                      | ARGENTINA    | BRAZIL      | ECUADOR     | PARAGUAY    | PERU        |
| <b>Formalization In the same job</b> | <b>41.3</b>  | <b>30.3</b> | <b>38.7</b> | <b>41.0</b> | <b>28.0</b> |
| Informal wage earner                 | 32.7         | 23.6        | 31.1        | 38.5        | 23.4        |
| Non-wage earner                      | 8.6          | 6.6         | 7.6         | 2.4         | 4.6         |
| <b>Formalization by changing job</b> | <b>26.3</b>  | <b>26.0</b> | <b>32.4</b> | <b>33.4</b> | <b>43.7</b> |
| Informal wage earner                 | 18.9         | 18.8        | 23.1        | 27.2        | 24.9        |
| Non-wage earner                      | 7.5          | 7.2         | 9.3         | 6.2         | 18.9        |
| <b>Unemployed</b>                    | <b>15.9</b>  | <b>19.4</b> | <b>11.4</b> | <b>11.9</b> | <b>13.9</b> |
| <b>Inactive</b>                      | <b>16.5</b>  | <b>24.4</b> | <b>17.5</b> | <b>13.8</b> | <b>14.4</b> |
| <b>TOTAL</b>                         | <b>100</b>   | <b>100</b>  | <b>100</b>  | <b>100</b>  | <b>100</b>  |

Source: Authors' elaboration based on Household Surveys

Lastly, a closer look at the transitions reveals that non-registered wage earners in the first observation account for most of the entries to formality, Peru being the only exception.

As it follows we firstly analyse the personal attributes and the characteristics of the jobs of those workers that became formal through the first channel, and then we study the characteristics of those who become formal through the second channel.



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## 6. The anatomy of labour formalization

### 6.1 In situ formalization

Table A6 presents for different groups of workers: (1) the formality rate in 2003 (initial percentage of formal wage earners in total employment), (2) the probability of becoming a salaried formal worker between two successive years during the period under analysis (percentage of non-formal salaried workers in  $t$  that became formal in  $t+1$ ), and (3) the contribution of each group of workers to the in situ formalization process (the proportion of total new formal salaried workers coming from different initial labour states).

The table shows two important results for all countries considered. First, formalization reached all categories of workers. Second, the groups of workers that presented a relatively higher formality rate at the beginning of the period benefited more intensely from this process.

In particular, both the initial formality rate and the speed of the formalization process grow with educational level in all the countries. However, given that workers with an intermediate educational level — i.e. complete secondary and incomplete tertiary education — constituted the largest group of non-formal workers, they made the highest contribution to this process.

Regarding gender, men have been more benefited from this process than women (except in Ecuador). However, the differences in the intensity of the formalization process between men and women were not very important.

An inverted U-shape is found for the relationship between formalization and age in Argentina, Brazil and Paraguay: middle-aged people experienced the highest probability of becoming formal in the same job during the period. In Ecuador and Peru a positive correlation between age and the probability to become a formal worker is found. In all cases, therefore, young people were the least likely to become formalised, while the formality gaps between age groups were widening. Likewise, in all countries, middle-aged people accounted for more than half of total transitions to formality.

A positive correlation between the probability of becoming formal and the size of the firm is found in all countries. As a result, the initial differences between the formality rates of large and small companies rose, considering the also positive relationship between the initial formality rate and the size of the enterprise.

Full-time workers exhibited the highest probabilities of becoming formal (except in Paraguay), followed by the over-employed and then by part-time workers. Again, this situation tended to deepen the formality rate gaps observed at the beginning of the period between these groups of workers.

Regarding sector of activity, both the initial formality rates and the probabilities of formalization show the same results. In particular, workers in the public sector face the highest probabilities of becoming formal in all the countries, while workers in construction and domestic services face, in general, the lowest. When it comes to the particular situation of domestic services, it can be seen that despite the application of specific measures that aimed to promote the formalization of workers (which are described below), this sector continues to exhibit very high informality rates.

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Finally, in situ formalization has shown a positive relationship with tenure (except in Ecuador). This means that employers have preferred to take out of informality those employees that had worked for a longer period of time in the same job. Again the initial formality gap increased during the decade.

To sum up, even though the process of formalization in the same job took place for all groups of workers under analysis, the rhythm of this process has not been homogenous across the groups. Those in their prime, men, those with higher skills, working full time, in larger companies and with higher tenure, in particular, have benefited from this improvement in working conditions. This has tended to widen the initial formality gap observed between individuals defined according to these categories.

Since it is assumed that labour informality is mainly the result of a decision made by the employer<sup>9</sup> and given that, as shown above, a great deal of the formalization process took place through the in situ formalization of informal wage earners, it seems important to identify the factors that may have induced employers to favour the workers that presented a 'better' vector of characteristics.

On the one hand, based on the Efficiency Wage theory, it can be said that the growth of vacancies can increase the voluntary turnover of employees in the search for better employment opportunities, causing a higher number of exits that result in greater costs for employers. Moreover, the higher the level of investment made by the employer in the specific training of the employee, the greater the costs incurred when they exit the firm. These costs also tend to increase with tenure. In addition, since educational level is often highly correlated with qualification for a position and given the complementarity of specific and general human capital, the most educated workers are usually the ones involved in training activities. Thus, employers want to retain them, and even more as they become more experienced in their jobs. One way to do so is by offering them better working conditions, for example, through formalization. This might therefore help explain why employees with higher educational levels and tenure were preferred for in situ formalization.

On the other hand, the tightening of controls through labour legislation might have increased the potential costs of noncompliance. Given that these costs increase with wages, this might be an additional explanation for the greater formalization rate of those with higher educational level and tenure (this is discussed in greater detail below). Finally, the greater intensity of formalization within large companies might also be explained by the fact that controls are generally tighter in this type of company.

## 6.2 Individuals entering into a formal job

The second channel of labour formalization deals with entry into salaried formal occupations from a labour status different from a wage-earning job registered in the social security system. Table A7 presents the results of the decomposition detailed above. Column I shows the stock of non-formal individuals in the first observation ( $S_i$ ), column II the probability of exit from this initial state ( $P(E_i)$ ), column III the conditional probability of transiting to a formal job ( $P(E_j | E_i)$ ), column IV the entry rate to a formal job ( $P(E_{ij})$ ), and column V the contribution of each group to the formalization process, mediated by a change of occupation or labour status ( $f_{ij}/F_j$ ).

In all countries (except in Brazil), the major contribution to new formal jobs comes from individuals who were non-registered wage earners, inactive or unemployed (in that

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<sup>9</sup> For further discussion regarding this issue see Kucera and Roncolato (2008).

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order) in the first observation. In Brazil, the higher inflows to formality come from inactivity, unemployment and informality.

In the case of inactive individuals, the high contribution derives mainly from the fact that they represent a relatively large group among initially non-formal workers. In contrast, the group of unemployed, although smaller in number, exhibits higher exit rates from that state and higher conditional probabilities of transiting to formality after exiting unemployment, in comparison with inactive. Finally, the higher importance of non-registered wage earners in this kind of flows in comparison with unemployed is only because the former constitute a larger group since they exhibit both higher retention rates in informality and lower conditional probabilities.

These relatively higher exit rates from unemployment and, therefore, the relatively shorter duration of these episodes compared to those of employment are expected, especially in countries where unemployment benefits are very low or null. This is because when it becomes a matter of survival, individuals are quick to accept any labour opportunity that they are offered.

However, it is noteworthy that after exiting the initial state, informal wage earners present lower probabilities of transiting to formality than the unemployed. This finding is particularly relevant because it is related to the discussion of whether informal employment constitutes a stepping stone towards formality. Under this assumption, informal jobs might increase the human capital of workers and expand their social network, which would provide them with better information on job vacancies. Both factors would result in informal workers having a higher probability of transiting to formality than the unemployed. However, our results demonstrate that the opposite is true, which could suggest that informality produces a greater scarring effect than unemployment. It could also be the result of a composition effect, given that the lack of unemployment insurance in developing countries means that individuals that remain unemployed are, at least in part, able to afford to continue the search for a better job, for instance, a formal job. This is certainly a matter that needs to be explored further in future research.

In all countries, as in the case of in-situ formalization, individuals with an intermediate educational level contribute to a larger extent to the transitions between non-formality and formality, as in the case of in situ formalization. The relatively smaller contribution made by workers with a university education to these transitions is mainly explained by their smaller number and, in Argentina, Brazil and Paraguay, also by their relatively lower probability of exiting the initial job. Nevertheless, in all the cases, once they have exited a non-formal job they have a significantly higher conditional probability of entering a formal job. In short, education contributes in some countries to higher stability in the initial occupation (even when not monotonically) and, in all countries, to a higher conditional probability of transiting to a formal job once the initial state has been left. As already mentioned, workers with higher education usually receive more training, and this makes employers try to retain them, thus resulting in relatively lower exit rates for this group. On the other hand, such workers are better qualified to obtain a formal job once they have left the initial informal position.

Differences between women and men are more significant here in comparison with the formalization in the same occupation; here, a higher entry rates to formal jobs can be found among men. This is mostly explained by the fact that they have a relatively higher conditional probability of transiting to formality after leaving the initial state. This is in line with the results found in the international literature which suggest that women suffer greater difficulties obtaining a formal job than men.<sup>10</sup>

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<sup>10</sup> See, for instance, Blau et al. (2002).

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Young workers made the greatest contribution to inflows towards formality (except in Peru). In all the cases, the importance of these workers is mainly explained by the greater instability of their initial position. Strikingly, in some countries, in addition, once they exit their jobs they face higher probabilities of entering a new formal job than workers in their prime. This is the opposite of what was observed in respect of *in situ* formalization, where young people benefitted less than other age groups. In part, young people have a greater conditional probability of transiting to a formal salaried position than adults because adults are more likely to start from a non-wage-earning position, from which, as we have seen, the level of transitions to formality is low.

Individuals working in large companies in the initial observation had the highest probability of transiting to a formal job. This is the result of higher conditional probabilities of transiting to a formal job. In Brazil, Ecuador and Peru it is also a consequence of the increasing exit rate from a non-formal job according to the size of the firm.

It is worth mentioning that a significant part of non-formal workers from large companies transited to another large company after leaving the initial position. Therefore, these transitions might be associated with the fact that formality rates are higher in this type of firm compared to the rest. Also, workers in large companies are more likely to have a wider social network that provides them with more information on employment opportunities in other companies with the same characteristics. Lastly, there could be a *signalling* effect whereby workers from large companies might be considered more suitable by future employers to occupy a formal position.

Finally, unlike the process of *in situ* formalization, workers with lower tenure have made the greatest contribution to the flows between non-formality and formality in most of the countries considered. This is for two reasons: on the one hand, a longer duration on the job reduces exit rates;<sup>11</sup> on the other hand, the conditional probability of entering formality decreases as tenure increases. This pattern is really striking because it means that workers with lower tenure have greater chances of entering a formal job once they have abandoned their initial informal occupation. Going back to the *scarring hypothesis*, it could be said that going through informality results in lower chances of getting a formal job, and that the chances get smaller as the duration of the informality episode increases.<sup>12</sup>

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<sup>11</sup> Evidence for this negative relationship between the latter variables is commonly found in the international literature:

<sup>12</sup> All these descriptive results were confirmed by Cox duration models which estimate the independent effect of different covariates on both the probability of exiting any other state that is not a formal job and the conditional probability of entering into formality.

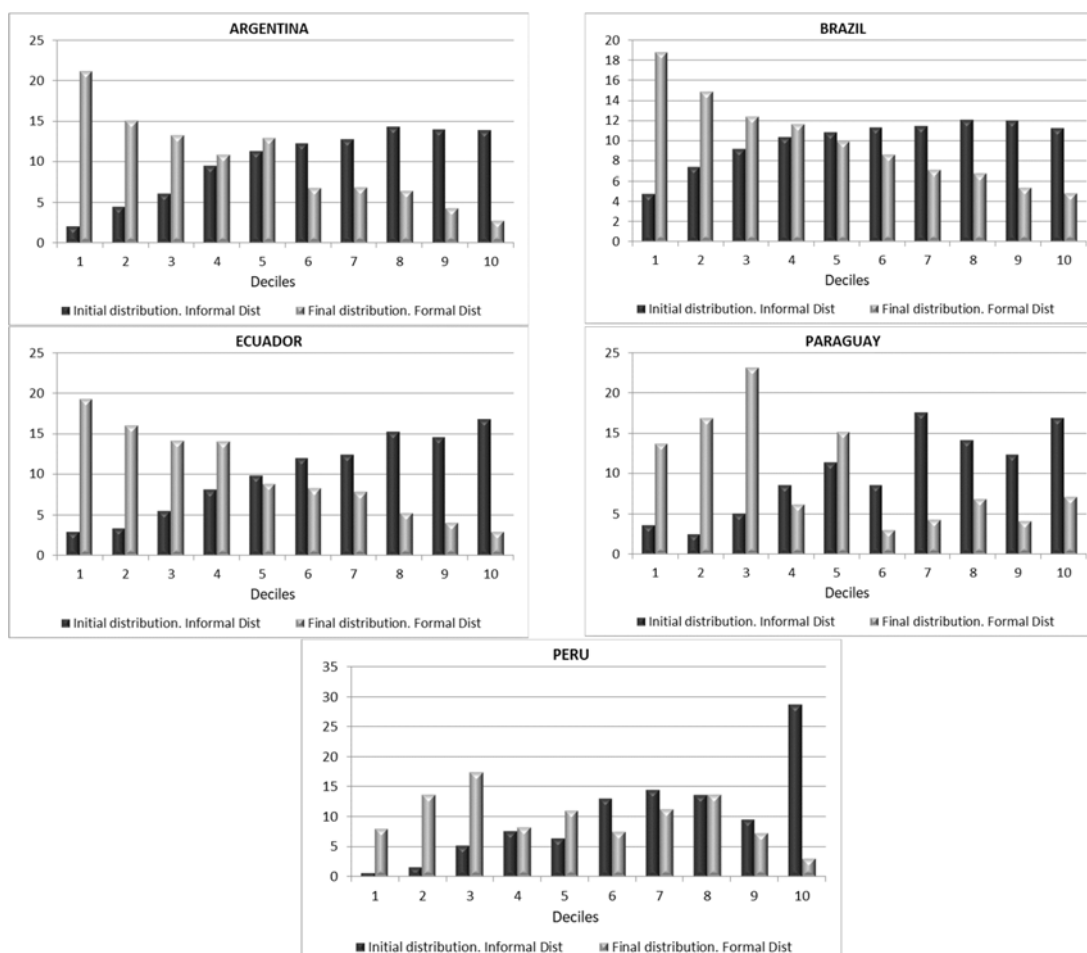
## 7. Transitions towards a formal job by income decile of origin and destination

In addition to the individual and occupational attributes analysed above, it is interesting to study the intensity of transitions to a formal job, by considering the before and after positions in the labour income distribution of the individuals experiencing the transitions.

Graph 5 presents the distribution of workers that became formal ordered according to the position they had in the labour income distribution before and after the change (red columns). In particular, blue columns show the distribution of informal workers ordered according to the position they had in their own income distribution before the change. Red columns show their position in the distribution of formal workers after the formalization process.

It is very clear that in all countries those informal workers that were initially located in the upper part of the distribution faced higher chances of becoming formal. This situation is consistent with the fact that the process of formalization was more intense among those individuals that presented a “better” vector of characteristics, as already shown. However, they ended up in the lower deciles of the formal wage earners’ distribution. In other words, they transitioned from the upper part of the income distribution of informal wage earners to the lower part of the income distribution of formal wage earners.

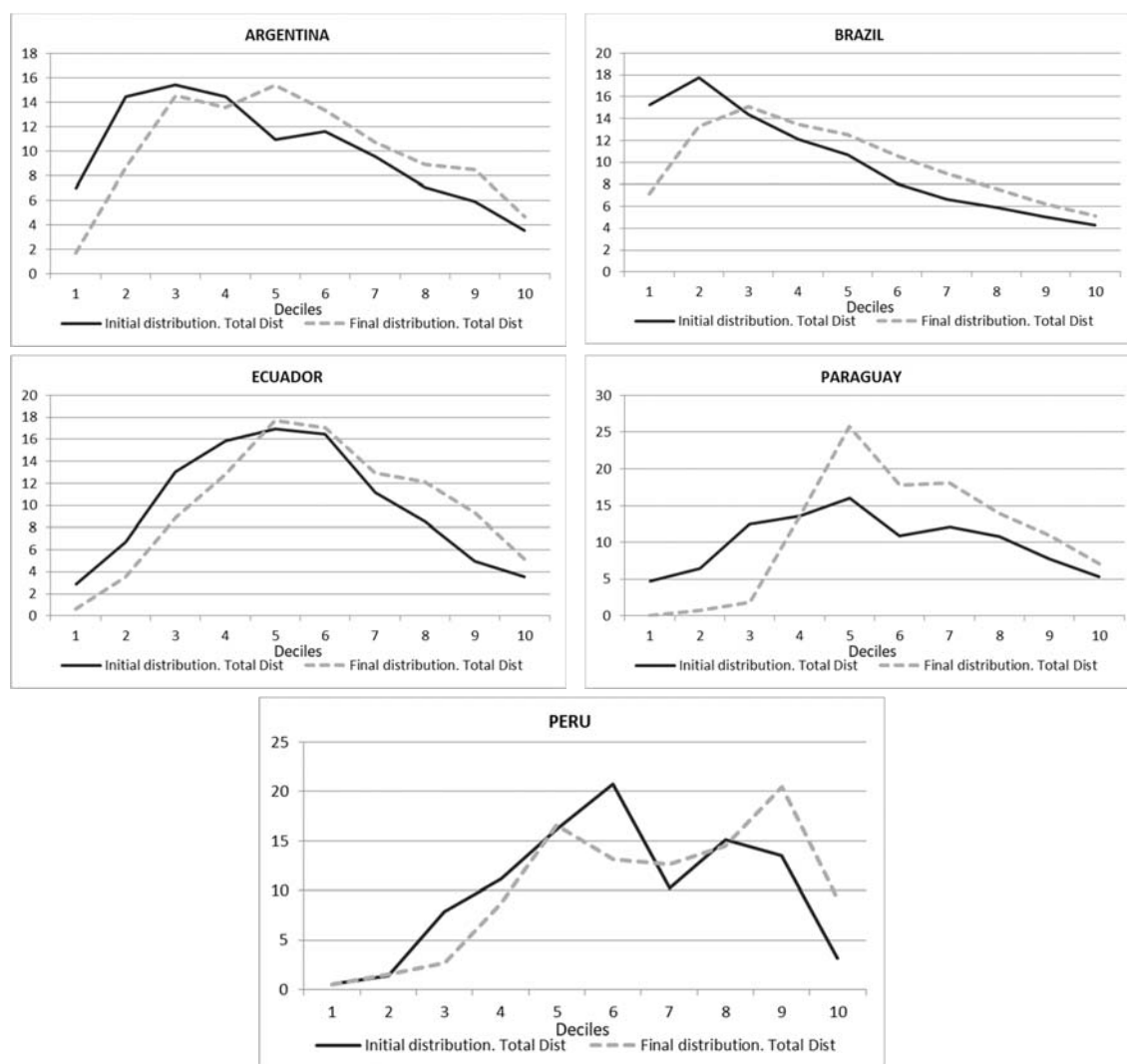
Graph 5: Distribution of workers who transit to formality by deciles of labour income of origin. Own wage distribution.



Source: Own elaboration based on household surveys

However, when the analysis is made considering the global income distribution (including all workers), it can be seen that formalization took place more intensely in the middle or upper part of the distribution (blue line) (Graph 6). In all cases, the formalization also entailed a "shift to the right" in the position those individuals occupied in the distribution, indicating that the process was associated with an increase in remuneration (red line).

Graph 6: Distribution of workers who transit to formality by deciles of labour income of origin. Whole wage distribution.



Source: Own elaboration based on household surveys

The contrast between the former (when considering the specific income distribution, for formal or informal workers) and latter (when considering the join income distribution) behaviour reflects the fact that, as a whole, informal workers are concentrated in the lower tail of the global income distribution. Thus, even when the wage earners who were formalised are initially positioned among informal workers with higher salaries, those salaries were relatively low on the general scale of labour income.

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The shift to the right associated with this process also had an equalizing impact. This shows that formalization entailed not just greater social security coverage, it was also one of several factors contributing to a reduction in wage inequality in those countries. Several studies have obtained similar results for those countries.<sup>13</sup>

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<sup>13</sup> Amarante and Arim (2015), Beccaria et al. (2015), Maurizio (2015) and Maurizio and Vázquez (2015) find equalizing effect of labour formalization in several Latin American countries.



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## 8. Drivers of labour formalization

Given that the upward trend of formal salaried employment in countries under analysis cannot be completely attributed to an increase in the participation of those groups of workers with higher formality rates in total employment, and has rather mostly been associated with rises in labour formality across the board, the question that arises is what were the causes of this process in each country? While providing an exhaustive assessment of each cause is beyond the scope of this article, the next section presents theoretical arguments and empirical evidence for some causal factors.

### 8.1 Business Cycle

The business cycle is a relevant factor to consider when analysing the causes of the decline in labour informality. There are theoretical arguments on both the demand and supply sides of the labour market that account for the countercyclical nature of informality.

On the one hand, the functioning of the labour market becomes more predictable as a result of sustained economic growth, thus favouring an increase in long-term contracts. In this context, formalization becomes more feasible. On the other hand, a period of sustained growth in labour demand might also lower the expected probability of layoffs and consequently the probability of employers having to face the relatively higher costs of firing a formal worker compared to an informal one. Hence, the incentives to maintain informal labour relations, associated with the relatively lower costs of staff reductions in downward phases of the business cycle, are reduced. In this context, employers can benefit from the positive effects of long-term labour relations: productivity increases as a result of the intensification of training activities and higher levels of job engagement.

Latin America initiated at the beginning of the 2000s a period of high and sustained economic expansion. It was particularly intensive between 2003 and 2008 when per capita GDP rose at an annual average pace of 3.7%, an unprecedented performance in the region in terms of rate and duration. Growth was rapidly resumed after the 2008/09 crisis although the intensity was somewhat lower –1.8% between 2009 and 2015–, with a reduction in the last year.

This high economic growth had a positive impact on regional social and labour market indicators through the creation of jobs –especially formal ones–, and the reduction of unemployment. Employment rates showed a positive trend, rising from 52.7% to 55.7% between 2003 and 2015. During this period, the regional unemployment rate fell from 11.2% to 6.6%. Concerning the employment situation, advances continued after the 2008/09 crisis but also at a slower pace than before.

The positive macroeconomic situation seems to have also facilitated the recovery of wages, a situation that in some countries was also favoured by the implementation of active real minimum wage policies<sup>14</sup> and the reactivation of collective bargaining, together with measures that promoted the formalization of employment. Precisely, the share of wage-earners covered by social security<sup>15</sup> rose from 67.6% in 2000 to 79.4% in 2015. Furthermore,

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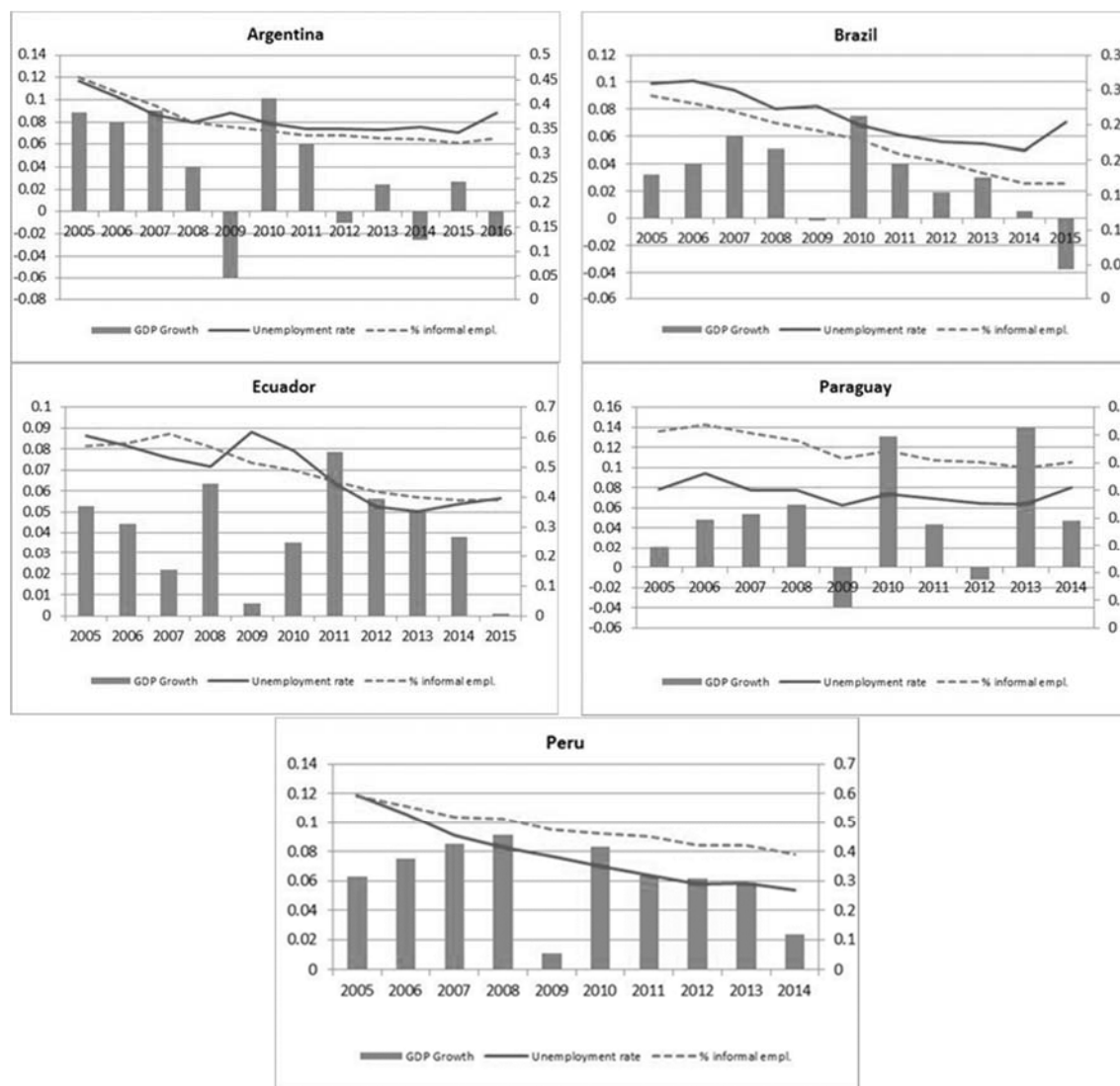
<sup>14</sup> Amarante et al. (2009), Marinakis (2014), Maurizio and Vázquez (2016).

<sup>15</sup> Data from ILO and refer to the share of those covered by social security in terms of pensions.

these measures also had a positive impact on reducing inequality<sup>16</sup> at the same time that they extended the coverage of labour institutions to previously excluded groups.

In this context, the countries of Latin America considered here experienced similar changes in GDP and employment as the rest of the region, and unemployment and informality were countercyclical (Graph 7). This is in stark contrast to the trends observed in the 1990s, when the unemployment rate and informality rose.

Graph 7: Evolution of real GDP, unemployment and informality among salaried workers



Source: Own elaboration based on household surveys

Clearly, therefore, in the countries recording the highest growth rates alongside more pronounced reductions in the unemployment rate, the process of formalization was more intense.

Bosch and Esteban-Pretel (2009) evaluate the role of the economic cycle in informality from a two-sector search and matching model where firms can choose between hiring formal or informal workers. In the former case, firms can take full advantage of the productivity of

<sup>16</sup> Amarante and Arim (2015), Beccaria et al. (2015).

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the matching by facing the cost of complying with labour regulations. In the latter case, firms avoid these costs but they can be penalized if they are caught. As in the traditional matching models, vacancies grow in the expansion phase of the cycle and therefore the number of matches between firms and workers also increases. The model also predicts that firms engage more intensely in formal contracts during booms, since this type of contract allows them to further benefit from the increase in productivity. Both effects boost rates of entry into formal jobs. Moreover, the rate of job destruction — both formal and informal — decreases and unemployment falls accordingly. In their article, the authors verify these predictions for the 1983–2001 period in Brazil.

Under a similar perspective, Boeri and Garibaldi (2007) use a two-sector formal/informal model to predict a positive correlation between unemployment and informality.

Bosch and Maloney (2010) study the cyclical labour movements in Brazil and Mexico. They find that unemployment is countercyclical due to the increase of job separations of informal workers during downturns. The share of formality/informality is procyclical mainly associated to lower probability of transiting from inactivity, unemployment or informality to a formal job rather than to higher exit rates from formality during recessions.

Corsueil and Foguel (2012) also find formality to be procyclical. They model transitions between formality and informality and also between those states and unemployment in the expansion phases of the cycle. The reservation wage of the unemployed is assumed to be lower than that of informal workers. Hence, when the pool of unemployed is large, firms can obtain workers from the pool at low wages. Initially, the probability of workers finding jobs in small and less productive firms is higher since they are greater in number than large, formal firms. Firms are also assumed to offer either formal (in the case of large firms) or informal (in the case of small firms) jobs. Hence, employment in small firms rises at the initial stage of the recovery phase. However, workers continue to look for better jobs among large firms given the higher wages they offer. Consequently, as unemployment falls in the expansion phase of the cycle the probability of transiting from informality to formality increases and the share of formal workers grows. This prediction is verified for Brazil during the 2003–08 period.

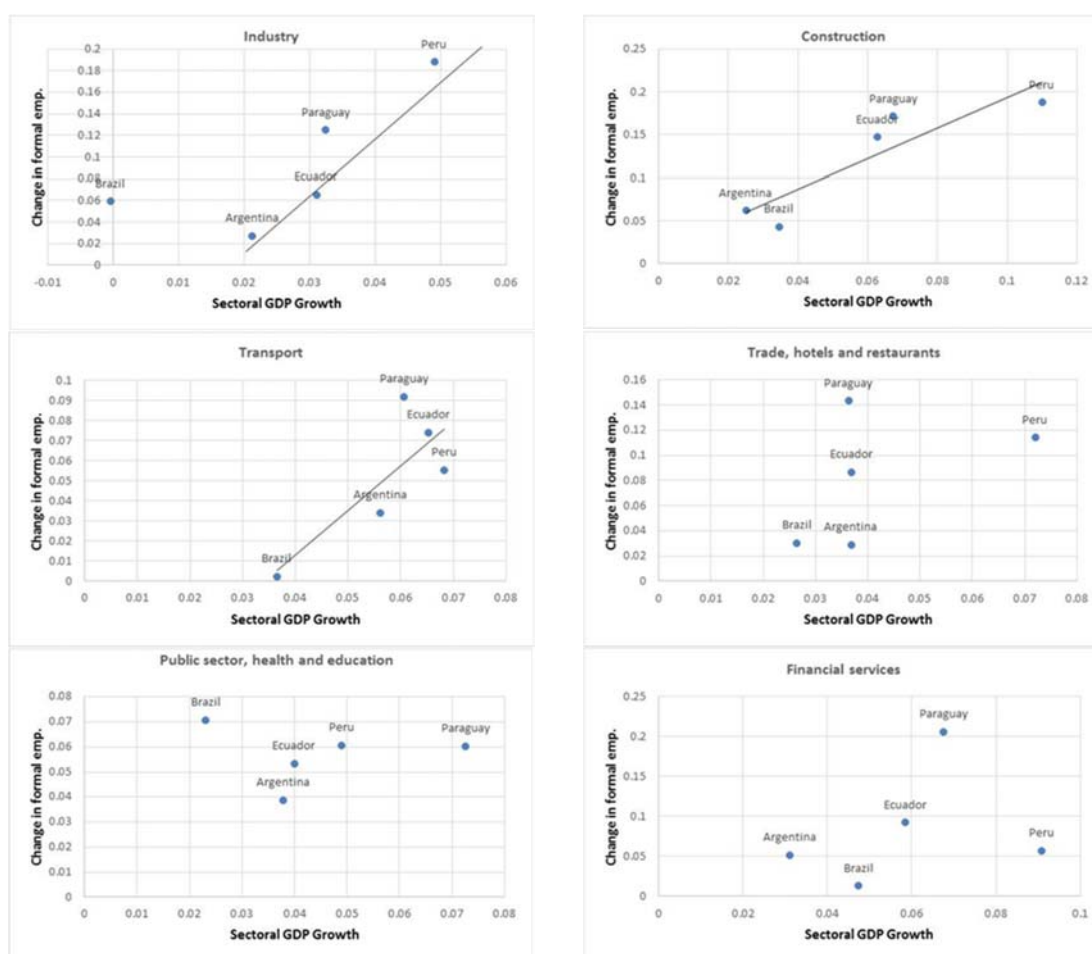
Goñi Pacchioni (2013) analyses the impact of the economic cycle on entry flows (to) and exit flows (from) labour informality in the Andean countries from a dynamic perspective. He finds that job finding and job-to-job transitions are procyclical whereas job exits are countercyclical. He also finds that the creation of informal jobs in Ecuador has been strongly countercyclical, and that the increase in the rate of formality is attributable to both lower entry flows into informality and higher exit flows from that state to a registered job. In Peru, the increase in formal salaried jobs during the 2000s is mainly explained by the raise of inflows from informal wage-earners. At the same time, the reduction of unemployment is driven by the fall in the inflows coming from all other labour status.

Finally, with the growth of employment and the decline in unemployment, workers' bargaining power and reservation wage rise. This can lead to an improvement in working conditions and have a positive impact on formalization. Arias and Sosa Escudero (2007) assess the relationship between informality, informal/formal wages and unemployment in Argentina during the 1985–2003 period using Panel VAR methods. They find evidence consistent with the exclusion hypothesis, which states that workers are pushed into informal jobs due to a lack of better employment opportunities. In this context, informality is countercyclical: higher unemployment induces workers to accept informal positions and earn lower salaries than formal wage earners, thus raising informality.

However, even if, clearly, from the theoretical and empirical points of view, a positive correlation is observed at aggregate level between economic growth and formality, the picture is less uniform when it comes to sectors.

Graph 8 shows the annual average variation in GDP for each sector on the x-axis and the annual variation in sectoral registered employment for each country considered on the y-axis.

Graph 8: Average annual variation of sectoral GDP and formal employment



Source: Own elaboration based on household surveys

In the case of industry, a positive correlation is observed between growth and formalization in all the countries considered here except Brazil. Brazil recorded zero growth in industrial GDP, but it also recorded an increase in formality in that branch of activity. A positive linear correlation was also observed in construction and transport.

The situation is different in the other three sectors: financial services, the public sector, and trade, hotels and restaurants. In those sectors, there is no evidence showing that differences in the rates of formalization may have been directly associated with growth in sector GDP. In any case, even in those sectors, while "registered employment-product elasticity" is different in each country, in all countries positive variations were observed in both indicators.

Thus, while growth in global and sectoral product is positively correlated to changes in formal wage-earning employment, variations are observed between countries and branches of activity that are not explained by the country's economic development. Some of the specific policies that may also account for the process of formalization are analysed below.

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## 8.2 Incentives for business and employment formalization

Labour costs are another relevant factor in labour demand. It is often argued that these costs should be reduced and administrative procedures to register workers should be simplified in order to stimulate the creation of formal employment. LACs have implemented this kind of programme aimed at creating greater incentives for formalization.

### *Labour cost reduction*

Argentina implemented several reductions in employers' contributions. In 2001, the cut applied to every new worker hired by firms that were expanding their personnel. In 2004, the reduction was restricted to firms with up to eighty employees, and later, in 2008, it was extended to all employers while the tax rate was further reduced. Castillo et al. (2012) evaluate the impact of the 2008 reform and find that it contributed to sustaining formal labour demand in the group of treated firms: 96,000 new jobs were created in these firms, compared to a loss of 5,000 jobs in the control group.

Cruces et al. (2010), on the contrary, assess the impact of the reduction in social contributions observed in Argentina during the period 1995–2001 on aggregate employment and wages. They find no significant impact on the first variable, but find increases in the pay of formal workers when employer contributions are reduced.

In Ecuador, reform measures have also been introduced since 2010 to simplify access to coverage by the Ecuadorean Social Security Institute. Before the reform, workers had to have six months of uninterrupted contributions to obtain access to health services, and certain collectives of individuals were excluded from coverage. The reform measures made the conditions more flexible, reducing the waiting period and enabling the inclusion of part-time workers and of the members' spouses (with a reduced contribution) and dependent children under the age of 18 (children were previously covered up to the age of 7). All those changes may have stimulated the growth in formality observed in Ecuador.

On the contrary, Chacaltana (2001) finds that the Peruvian labour market reforms of the 1990s, which deregulated hiring and dismissal, did not generate an increase in labour formalization. At the same time the important reduction of labour cost for SMEs first in 2003 and then in 2008 had little or null effects on registration (Chacaltana 2008).

Kugler and Kugler (2009), Bernal et al. (2015) and Kugler et al. (2017) assess the impacts of different tax reforms in Colombia since the nineties. The first study evaluates the *raise* in payroll taxes during the 1980s and 1990s in this country. Authors find that a 10% increase in payroll taxes implies a reduction in formal employment by about 4/5% in manufacturing firms in this country. The second study assesses the *reduction* in payroll taxes and employer health contributions and the increase in corporate income taxes put in place in 2012. Authors find a positive impact of this tax reform on labour formality: 4.3% increase of formal employment and 2.7% increase of average wages. The impacts are larger in micro and small enterprises. Finally, the third also studies this tax reform and reaches positive impacts on formal and permanent employment.

It can therefore be observed that policies of this kind may or may not have a significant impact on registration. On the one hand, they may result in the "legalization" of workers previously hired informally without modifying the number of employees; but even thus, they would have a beneficial effect in terms of social security coverage and labour legislation. On the other hand, they may indeed generate new formal jobs. They may also have no impact on either formality or total employment, because the incentives are insufficient to encourage firms with informal workers to register them. Here, too, the explanations may differ: low returns that make it impossible to take on other costs associated with formality (minimum

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wage, dismissal costs, etc.), uncertainty about the future or the fact that the labour relationship is in fact being hidden as part of a broader tax evasion scheme.

#### *Monotax and one-stop shops*

In Brazil, the programme *Simples Nacional* implemented in 1996 aimed at simplifying the procedures for registration and reducing taxes for small and micro enterprises. In turn, the *Lei do Microempreendedor Individual* (Individual Entrepreneur Law) passed in 2009 also simplified the process of registration for microenterprises with up to one employee, and reduced the costs of social security contributions. Fajnzylber et al. (2009), Delgado et al. (2007) and Monteiro and Assunção (2012) find positive effects of the *Simples* programme on registration levels. Berg (2010) and Krein and Dos Santos (2012) also conclude that this programme has been positive in the growth of formality.

On the contrary, Bruhn and McKenzie (2013) find a zero effect of administrative simplification on business registration. They study the case of the opening of *Minas Fácil Expresso* offices (in the state of Minas Gerais, Brazil) to facilitate registration in remote municipalities in this state. Authors conclude that this policy was not successful to increase registration and, therefore, it is needed to take into account other difficulties that firms face to formalize.

Andrade et al. (2013) also evaluate the *SIMPLES* programme in Brazil. They find zero impact of more information and exemption in registration fees on firm registration.

Similarly to Brazil, in 2006 Argentina launched the programme *Mi Simplificación*, a registry simplification programme that establishes a single procedure for the registration of workers and employers and for the subsequent control of compliance with labour norms. Ronconi and Colina (2011) find positive although small effects on registration levels.

Mullainathan and Schnabl (2010) also find a positive impact of the simplification of municipal licensing processes in Peru. In particular, this policy implied an increase of 43% in the number of registered firms. About 75% of these new formal enterprises were previously operating as informal enterprises and decided to formalize after this reform. However, most of them asked for a provisional license. This is because the owners of the firm think that the probability of survival more than one year is very low.

Castillo et al. (2007) nevertheless indicate that there is no evidence showing that the simplification of procedures has had a positive impact in terms of reducing informality in Latin America. This is at least partly owing to the fact that the costs of registering the productive activity are a lesser proportion of total costs. They also argue that the problem resides in the low productivity of firms, the solution to which does not appear to be only or even essentially the simplification of registration procedures, but rather more comprehensive and complex strategies that include better access to credit, markets and technology, among other determinants.

Those results therefore seem to suggest that schemes to simplify registration are necessary to support the formalization of small firms but are clearly not sufficient to achieve that objective, and that a wide range of instruments promoting the productive development of such establishments is therefore needed, as discussed below.

As mentioned, one factor usually associated with informality is the limited capacity of low-profit firms to pay contributions, thus reducing their chances of affording the labour costs of formal positions. In this regard, policies aimed at raising productivity levels of such companies can also contribute to labour formalization.

According to some studies conducted in Brazil, measures applied to increase the production and efficiency of small firms have contributed to labour formalization. Almeida (2008) evaluates the experience of three manufacturing clusters where small enterprises received subsidies and credit to improve their competitiveness and were also given a grace period to fulfil their tax and labour contributions. These policies proved successful in that all firms started to comply with both obligations.

Berg (2010) mentions another similar experience in the Brazilian footwear sector. In 1995 the government signed a technical cooperation agreement with the sector's business association in order to find ways to increase the profitability of firms so that they could become formal enterprises and register their workers. To do so they set a grace period to comply with the law. The programme led to a significant increase in the quantity of firms registered and in the number of formal workers in the sector, which rose from 3,121 in 1995 to 12,490 in 2005.

In Argentina, initiatives have been taken to that end. They are coordinated by the Ministry of Industry and are based on four action lines: credit for production, financing to train human resources, strengthening of business management and promotion of associativity between enterprises. While the generation of formal jobs is not a specific objective thereof, there is every reason to think that it could be one of the results of greater returns and improvements in the contributory capacity of enterprises.

### **8.3 Labour Inspection**

Another factor associated with the decline in informality is labour inspection. It is argued that the threat of greater controls or tougher sanctions for non-compliance with labour regulations should act as incentive for the regularization of labour relations.

However, an intensification of labour inspections may also produce the opposite effect as it could destroy informal jobs, resulting in a negative impact on unemployment (Boeri and Garibaldi, 2007). From a political economy point of view, this negative effect could in turn weaken efforts related to labour inspection in downward phases of the business cycle.

Following the first line of reasoning, Ashenfelter and Smith (1979) model the firms' incentives to comply with minimum wage legislation. Even though the study focuses on this labour institution, its conclusions can be extended to other labour market regulations. The model states the following equation for the expected net benefit of the firm under the condition of non-compliance with labour legislation:

$$E(\pi) = (1 - \lambda)\pi(w, r, p) + \lambda\pi(M, r, p) - \lambda D$$

where  $M$  is the wage level set by law,  $w$  is the wage that the employer would pay in the absence of the legislation,  $r$  the costs of other production factors,  $p$  the product's market price,  $\lambda$  the probability of being inspected and caught cheating and  $D$  the penalty faced in such a case. Based on this, employers would engage in non-compliance if the expected net benefit of such a decision ( $E(\pi)$ ) is higher than the known benefit of complying with the norm ( $\pi(M, r, p)$ ):

$$E(\pi) - \pi(M, r, p) = (1 - \lambda)[\pi(w, r, p) - \pi(M, r, p)] - \lambda D > 0$$

The decision for non-compliance is positively correlated with the difference between the wage set by law and the wage level that the employer would pay in the absence of the regulation, and negatively correlated with the probability of being caught cheating and with the penalty's expected value.

In several LACs, the costs of non-formalization faced by employers rose as a result of the measures implemented to strengthen and improve labour inspection. The *Plan Nacional de Regularización Laboral* (National Plan for Labour Regularization) established in Argentina in 2004 tightened controls to detect salaried employment not registered in the social security system. With this plan the Ministry of Labour reclaimed the national coordination role for this type of activity. Also, the technologies employed improved and the number of inspectors rose from forty in 2003 to 470 in 2011. Out of the total number of inspections conducted during that period, 28% of workers were not duly registered and around 37% of the latter were formalised after the inspection. Ronconi (2010) finds a positive impact of inspections on formalization in Argentina. In fact, the number of formalised workers increased due to inspections throughout that period from 17,000 in 2005 to 47,000 in 2011, with a 10 percentage point increase in the formalization rate between 2005 and 2012 (Ministry of Labour).

In Brazil, the strengthening of labour inspection was not associated with an increase in the number of inspectors but rather with higher effectiveness of inspection due to the implementation of organizational changes and reforms in the structure of incentives. According to Pires (2009), in the mid-1990s a bond system was introduced for inspectors that linked part of their wages to individual and group performance. Then, special inspection teams were created to deal with more complex situations in certain sectors. Berg (2010) points out that these two new approaches had significant positive effects on labour formalization in Brazil.

Furthermore, Almeida and Carneiro (2009) find that regions with stricter controls in Brazil presented lower informality rates. They do not find negative effects of inspections on total employment, which suggests that informal employment was substituted for formal employment. The results of the impact evaluation of de Andrade et al. (2013) also show that inspection was the only effective instrument in Belo Horizonte (Brazil) to induce formalization since neither higher levels of information nor monetary incentives had a significant impact on labour regularization.

In Ecuador, a process to strengthen the institution of labour inspection was also carried out. In 2011, the *Trabajo Digno* (Dignified Work) programme was launched. In that context, the Ministry of Labour Relations increased the number of inspectors (from 65 in 2006 to 245 in 2011) and modified the organization of their work. A World Bank study (2012) based on a 2011 business survey in Ecuador highlights the role of inspection in fighting informality, stating that inspections are increasingly frequent, with approximately 60% of firms in the sample stating that they were inspected at least once during the previous year. The study also found a positive and statistically significant correlation between the fact of having been inspected and compliance with legal and labour rules. That correlation is nevertheless not perfect. For example, around 12% of firms inspected continued to operate without having a tax identification number. At the same time, while the percentage of firms complying with labour legislation was around 30 p.p. higher among those that had been inspected than among those that had not, half of the former had not registered their workers with the Ecuadorean Social Security Institution (IESS).

In 2011, a national referendum and public consultation was held on various aspects, including the question of penalization for failure to comply with social security obligations on the part of employers. The question read: “Do you agree that the National Assembly,

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*without delay in terms of the deadline established in the Law on the Legislative Function, once the results of the referendum have been published, should classify as a criminal offence the failure to affiliate dependent workers with the Ecuadorean Social Security Institution?”* The proposal was approved.

While the impact of that reform has not been directly evaluated, in 2011 affiliation with social security grew significantly, consistent with the increase in labour formality mentioned above. Specifically, according to information provided by the IESS,<sup>17</sup> affiliation with social security rose from 33% in 2010 to 38% in 2011. The number of registered employers rose by almost 50% in those two years.

According to the World Bank (2012), while it is not possible to assert that this increase is due only to the change in legislation, which had not entered into force for that year, the signal sent in terms of non-tolerance of informality (which reinforced the agenda initiated with the change of the Constitution in 2008) is thought to have helped stimulate registration.

In short, the few studies evaluating the impact of inspections seem to confirm that they have a positive effect on labour market formality. Some have also found negative effects on total employment or on wages. That would reinforce the idea that *certain* firms, as has already been stated, especially the smallest, operate informally because they cannot pay the costs associated with regularization of the firm and its workers. The combination and coordination of inspection with policies of various natures promoting productive growth, profitability and competitiveness are indispensable in those cases.

## **8.4 Labour formalization in domestic service**

Domestic service sector requires specific efforts in terms of formalization because of their nature and their still very high informality rate. This is due, at least in part, to the fact that domestic tasks are carried out in fragmentary and dispersed fashion, to the personal relationship that tends to be established with the employer, to the low levels of awareness of labour and trade union rights, and, often, to the fact that the worker is a legal or illegal migrant, which sharply limits her room for action. Also, given the place of work is the home, inspection is clearly a very complex affair.

Several of the countries considered here have therefore implemented specific policies to increase the degree of formality in the sector, approving legislation that tends to equate the rights of the sector's wage earners with those of all workers and adopting mechanisms for its effective implementation.

In 2006, the Argentine government enabled employers of domestic workers who were making contributions to a special social security regime for domestic workers to deduct the sums paid from the tax base on which they paid income tax. Even though there are no studies directly evaluating the impact of this reform, the measure seems to have contributed to the increase in formality observed in the sector of domestic work. Bertranou et al. (2013) argue that this change might at least in part explain the increase in the number of social security registrations, which increased from 78,000 in 2005 to 280,000 in 2011. Moreover, most of the increase in registration rates took place from 2006. In 2013 a new law for the sector was sanctioned that tended to equalise their working conditions with those of the rest of the employees.

Furthermore, in Argentina and in Brazil measures have been implemented to facilitate worker registration using various electronic platforms.

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<sup>17</sup> See <http://www.iess.gob.ec/documents/10162/83914/DIRECCION+GENERAL.pdf>.

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In Brazil in 2006, similar to Argentina, a new law allows employers to deduct labour social security contributions from their personal income taxes. But unlike in Argentina, the reform does not seem to have had significant positive effects on the domestic work sector. In this regard, Madalozzo and Bortoluzzo (2011) argue that the incentives were too insignificant and the number of eligible employers too small. These factors could explain the differences in the reforms' results between Brazil and Argentina. Brazil has also strengthened inspection campaigns in the sector.

Finally, in Ecuador, a campaign was launched in 2010, *Trabajo Doméstico Digno* (Dignified Domestic Work), for the purpose of promoting formalization in the sector. The programme started with an intensive public relations campaign on the rights and obligations of domestic workers. Visits were then made to homes in order to detect failures to register domestic personnel or comply with the labour standards established for the sector (FORLAC, 2014). While no impact evaluations have been found that allow us to assert that this initiative has had significant effects, more descriptive analyses suggest that it contributed to the process of formalization, although there also appears to have been a drop in the total number of jobs in the sector (Bosch et al., 2013). Concretely, while the number of domestic workers affiliated to the IESS grew after 2005, the IESS experienced an increase of 37% in 2010 compared to 2009, which may suggest that the measure had a direct impact. The new Penal Code approved in 2014, for its part, stipulates that employers not affiliating their workers to mandatory social security can be sentenced to between 3 to 7 days in prison. All these measures seem to have had a positive impact, as registration in the sector rose from 11% in 2003 to 42% in 2013.

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## 9. Final remarks

Since the 2000s a trend towards increase in formality has been observed in several developing countries around the world. This has happened in many Latin American countries and also in Africa and Asia.

There is a broad discussion on the drivers behind this process. Among them, economic growth, structural transformation processes and specific policies fostering the transition from informality to formality can be observed. At the same time, reductions in labour informality are not caused by a single determinant, but rather by a combination of diverse factors that vary in nature.

This paper analysed the evolution of labour formality among employees in five Latin American countries: Argentina, Brazil, Ecuador, Paraguay and Peru. It assessed the intensity and characteristics of this process, analysed the inflows to a formal salaried job and identified the main drivers of this positive labour dynamics. It also discussed the role of labour cost reduction policies, monotax and one-stop shops, productive policies aimed at formalization of firms, labour inspection and policies addressing informality in specific sectors such as domestic service.

The conclusion is that sustained job-generating growth enhances labour market predictability, which may work in favour of long-term contracts. In this context, formalization is more feasible.

However, even though stable, job-generating growth seems to have been a necessary condition for the employment formalization process, it was the interaction between that process and specific policies that ultimately determined policy effectiveness and the tangible results observed in terms of labour registration in the countries studied.

Similarly, the dynamic analysis confirms that the formalization process spread across all categories of workers, although middle-aged men with higher skills, working full-time, in larger companies and with longer tenure benefited more from the process. This has further widened the initial formality gaps observed between groups of workers.

The empirical analysis also shows that labour formalization had equalizing effects. Most of the recent literature has been focused on the distributive impacts of the returns to education. This study complements this approach by proving that the improvements in the working conditions are another factor that contributes to explain the decreasing trend of inequality observed in Latin American countries. These distributive impacts are expected to grow as this process of formalization continues and reaches the group of informal workers with lower incomes.

Despite the strong process of formalization, these labour markets still exhibit a high degree of labour precariousness. To a certain extent, this is associated with the countries' productive structures, where there is a very high proportion of firms with low productivity and competitiveness levels that restrains the improvement of working conditions. Therefore, in order to secure the trends of employment generation with labour formalization and the consolidation of labour institutions productive policies that promote high efficiency and systemic competitiveness need to be continuously strengthened within a long-term economic development strategy.



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## Annex

Table A1. “Aggregate” decomposition of changes in formality rate

Argentina

|                           | Initial<br>formality<br>rate (T42003) | Final<br>formality<br>rate (T42014) | Initial<br>participation<br>(T42003) | Final<br>participation<br>(T42014) | Change in<br>formality | Change in<br>participation | Coefficient<br>Effect | Composition<br>Effect |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|------------------------|----------------------------|-----------------------|-----------------------|
| <b>Branch of activity</b> | 0.509                                 | 0.660                               | 1.000                                | 1.000                              | 0.150 ***              | 0.000                      | 0.155 ***             | -0.005                |
| Industry                  | 0.589                                 | 0.734                               | 0.127                                | 0.133                              | 0.145 ***              | 0.006 **                   | 0.019 ***             | 0.003 **              |
| Construction              | 0.224                                 | 0.301                               | 0.053                                | 0.069                              | 0.078                  | 0.016 *                    | 0.005                 | 0.003                 |
| Trade                     | 0.449                                 | 0.580                               | 0.179                                | 0.165                              | 0.131 ***              | -0.014                     | 0.022 **              | -0.006                |
| Transport                 | 0.535                                 | 0.700                               | 0.072                                | 0.073                              | 0.165 **               | 0.001                      | 0.012 **              | 0.000                 |
| Financial serv.           | 0.673                                 | 0.808                               | 0.082                                | 0.085                              | 0.135 ***              | 0.002 *                    | 0.011 ***             | 0.002 *               |
| Personal serv.            | 0.637                                 | 0.781                               | 0.072                                | 0.067                              | 0.144 **               | -0.005 **                  | 0.010 **              | -0.003                |
| Domestic serv.            | 0.047                                 | 0.229                               | 0.102                                | 0.100                              | 0.182 ***              | -0.003                     | 0.018 ***             | 0.000                 |
| Public sector             | 0.682                                 | 0.909                               | 0.229                                | 0.216                              | 0.227 ***              | -0.014                     | 0.049 ***             | -0.009 ***            |
| Others                    | 0.499                                 | 0.589                               | 0.083                                | 0.093                              | 0.091                  | 0.010                      | 0.008                 | 0.005                 |
| <b>Size of firm</b>       | 0.509                                 | 0.660                               | 1.000                                | 1.000                              | 0.150 ***              | 0.000                      | 0.118 ***             | 0.032 ***             |
| <5                        | 0.177                                 | 0.301                               | 0.344                                | 0.301                              | 0.124 ***              | -0.043 ***                 | 0.037 ***             | -0.008 ***            |
| [6-40]                    | 0.550                                 | 0.695                               | 0.324                                | 0.307                              | 0.145 ***              | -0.018 ***                 | 0.044 ***             | -0.010 **             |
| >40                       | 0.814                                 | 0.908                               | 0.331                                | 0.392                              | 0.094 ***              | 0.061 ***                  | 0.037 ***             | 0.049 ***             |
| <b>Age</b>                | 0.509                                 | 0.660                               | 1.000                                | 1.000                              | 0.150 ***              | 0.000                      | 0.145 ***             | 0.005                 |
| <25                       | 0.259                                 | 0.384                               | 0.165                                | 0.148                              | 0.124 **               | -0.017                     | 0.018 **              | -0.004                |
| [25-44]                   | 0.550                                 | 0.697                               | 0.531                                | 0.546                              | 0.147 ***              | 0.015                      | 0.081 ***             | 0.008                 |
| >=45                      | 0.574                                 | 0.726                               | 0.304                                | 0.306                              | 0.152 ***              | 0.002                      | 0.046 ***             | 0.001                 |
| <b>Level of education</b> | 0.509                                 | 0.660                               | 1.000                                | 1.000                              | 0.150 ***              | 0.000                      | 0.112 ***             | 0.038 ***             |
| Less complete primary     | 0.243                                 | 0.397                               | 0.068                                | 0.036                              | 0.154                  | -0.033 ***                 | 0.006                 | -0.008 ***            |
| Complete primary          | 0.359                                 | 0.497                               | 0.233                                | 0.163                              | 0.138 ***              | -0.069 ***                 | 0.023 ***             | -0.025 ***            |
| Incom. Secondary          | 0.368                                 | 0.498                               | 0.181                                | 0.167                              | 0.130 **               | -0.013 *                   | 0.022 *               | -0.005 **             |
| Complete secondary        | 0.556                                 | 0.668                               | 0.215                                | 0.276                              | 0.112 ***              | 0.061 ***                  | 0.031 ***             | 0.034 ***             |
| Incomplete tertiary       | 0.625                                 | 0.742                               | 0.118                                | 0.129                              | 0.117 ***              | 0.011 **                   | 0.015 ***             | 0.007 **              |
| Complete tertiary         | 0.807                                 | 0.879                               | 0.185                                | 0.229                              | 0.072                  | 0.043 **                   | 0.017                 | 0.035 **              |

Nota: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1 (a partir de errores estándar bootstrap sobre 100 réplicas).

Brazil

|                           | Initial<br>formality<br>rate (T42003) | Final<br>formality<br>rate (T42014) | Initial<br>participation<br>(T42003) | Final<br>participation<br>(T42014) | Change in<br>formality | Change in<br>participation | Coefficient<br>Effect | Composition<br>Effect |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|------------------------|----------------------------|-----------------------|-----------------------|
| <b>Branch of activity</b> | 0.698                                 | 0.827                               | 1.000                                | 1.000                              | 0.129 ***              | 0.000                      | 0.119 ***             | 0.010 ***             |
| Industry                  | 0.776                                 | 0.897                               | 0.178                                | 0.144                              | 0.120 ***              | -0.034 ***                 | 0.017 ***             | -0.026 ***            |
| Construction              | 0.526                                 | 0.762                               | 0.048                                | 0.053                              | 0.236 ***              | 0.005 ***                  | 0.012 ***             | 0.002                 |
| Trade                     | 0.662                                 | 0.830                               | 0.199                                | 0.202                              | 0.168 ***              | 0.002 ***                  | 0.034 ***             | 0.002                 |
| Transport                 | 0.771                                 | 0.895                               | 0.069                                | 0.081                              | 0.124 ***              | 0.012 ***                  | 0.010 ***             | 0.009 ***             |
| Financial serv.           | 0.784                                 | 0.895                               | 0.144                                | 0.179                              | 0.111 ***              | 0.034 ***                  | 0.020 ***             | 0.027 ***             |
| Personal serv.            | 0.761                                 | 0.875                               | 0.072                                | 0.079                              | 0.114 ***              | 0.007 ***                  | 0.009 ***             | 0.006 ***             |
| Domestic serv.            | 0.345                                 | 0.427                               | 0.102                                | 0.079                              | 0.082 ***              | -0.023 ***                 | 0.006 ***             | -0.008 ***            |
| Public sector             | 0.862                                 | 0.891                               | 0.126                                | 0.128                              | 0.029 ***              | 0.002 ***                  | 0.004 ***             | 0.002                 |
| Others                    | 0.609                                 | 0.728                               | 0.062                                | 0.056                              | 0.119 ***              | -0.006 ***                 | 0.007 ***             | -0.004 **             |
| <b>Size of firm</b>       | 0.698                                 | 0.827                               | 1.000                                | 1.000                              | 0.129 ***              | 0.000                      | 0.092 ***             | 0.037 ***             |
| <5                        | 0.330                                 | 0.432                               | 0.212                                | 0.146                              | 0.102 ***              | -0.066 ***                 | 0.015 ***             | -0.022 ***            |
| [6-40]                    | 0.600                                 | 0.725                               | 0.066                                | 0.041                              | 0.125 ***              | -0.025 ***                 | 0.005 ***             | -0.015 ***            |
| >40                       | 0.814                                 | 0.902                               | 0.723                                | 0.814                              | 0.088 ***              | 0.091 ***                  | 0.072 ***             | 0.074 ***             |
| <b>Age</b>                | 0.698                                 | 0.827                               | 1.000                                | 1.000                              | 0.129 ***              | 0.000                      | 0.120 ***             | 0.009 ***             |
| <25                       | 0.564                                 | 0.738                               | 0.230                                | 0.162                              | 0.173 ***              | -0.068 ***                 | 0.028 ***             | -0.038 ***            |
| [25-44]                   | 0.748                                 | 0.863                               | 0.547                                | 0.531                              | 0.115 ***              | -0.015 ***                 | 0.061 ***             | -0.011 ***            |
| >=45                      | 0.711                                 | 0.811                               | 0.224                                | 0.307                              | 0.099 ***              | 0.083 ***                  | 0.031 ***             | 0.059 ***             |
| <b>Level of education</b> | 0.698                                 | 0.827                               | 1.000                                | 1.000                              | 0.129 ***              | 0.000                      | 0.090 ***             | 0.038 ***             |
| Less complete primary     | 0.557                                 | 0.695                               | 0.236                                | 0.126                              | 0.138 ***              | -0.110 ***                 | 0.017 ***             | -0.062 ***            |
| Complete primary          | 0.682                                 | 0.754                               | 0.144                                | 0.107                              | 0.072 ***              | -0.037 ***                 | 0.008 ***             | -0.025 ***            |
| Incom. Secondary          | 0.604                                 | 0.707                               | 0.096                                | 0.067                              | 0.102 ***              | -0.030 ***                 | 0.007 ***             | -0.018 ***            |
| Complete secondary        | 0.774                                 | 0.872                               | 0.310                                | 0.380                              | 0.097 ***              | 0.070 ***                  | 0.037 ***             | 0.055 ***             |
| Incomplete tertiary       | 0.684                                 | 0.780                               | 0.077                                | 0.093                              | 0.097 ***              | 0.017 ***                  | 0.009 ***             | 0.011 ***             |
| Complete tertiary         | 0.859                                 | 0.912                               | 0.137                                | 0.227                              | 0.054 ***              | 0.090 ***                  | 0.012 ***             | 0.077 ***             |

Nota: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1 (a partir de errores estándar bootstrap sobre 100 réplicas).

## Ecuador

|                           | Initial<br>formality<br>rate (T42003) | Final<br>formality<br>rate (T42014) | Initial<br>participation<br>(T42003) | Final<br>participation<br>(T42014) | Change in<br>formality | Change in<br>participation | Coefficient<br>Effect | Composition<br>Effect |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|------------------------|----------------------------|-----------------------|-----------------------|
| <b>Branch of activity</b> | 0.323                                 | 0.507                               | 1.000                                | 1.000                              | 0.184 ***              | 0.000                      | 0.193 ***             | -0.010                |
| Industry                  | 0.387                                 | 0.553                               | 0.128                                | 0.119                              | 0.166 ***              | -0.009 ***                 | 0.020 ***             | -0.003 **             |
| Construction              | 0.070                                 | 0.210                               | 0.082                                | 0.096                              | 0.140 ***              | 0.014 ***                  | 0.013 ***             | 0.001                 |
| Trade                     | 0.288                                 | 0.441                               | 0.158                                | 0.187                              | 0.153 ***              | 0.029 **                   | 0.029 ***             | 0.008 ***             |
| Transport                 | 0.232                                 | 0.527                               | 0.054                                | 0.046                              | 0.295 ***              | -0.008 ***                 | 0.013 ***             | -0.002                |
| Financial serv.           | 0.518                                 | 0.864                               | 0.054                                | 0.063                              | 0.347 ***              | 0.009 ***                  | 0.022 ***             | 0.004                 |
| Personal serv.            | 0.434                                 | 0.861                               | 0.049                                | 0.034                              | 0.427 ***              | -0.015 ***                 | 0.015 ***             | -0.006 **             |
| Domestic serv.            | 0.067                                 | 0.447                               | 0.069                                | 0.050                              | 0.379 ***              | -0.019 ***                 | 0.019 ***             | -0.001 *              |
| Public sector             | 0.808                                 | 0.990                               | 0.144                                | 0.128                              | 0.182 ***              | -0.016 **                  | 0.023 ***             | -0.013                |
| Others                    | 0.152                                 | 0.295                               | 0.263                                | 0.277                              | 0.143 ***              | 0.014 **                   | 0.040 ***             | 0.002 **              |
| <b>Size of firm</b>       | 0.323                                 | 0.507                               | 1.000                                | 1.000                              | 0.184 ***              | 0.000                      | 0.179 ***             | 0.004                 |
| <5                        | 0.068                                 | 0.146                               | 0.392                                | 0.442                              | 0.078 ***              | 0.049 **                   | 0.034 ***             | 0.003 **              |
| [6-40]                    | 0.288                                 | 0.525                               | 0.287                                | 0.199                              | 0.238 ***              | -0.089 **                  | 0.047 ***             | -0.025 ***            |
| >40                       | 0.668                                 | 0.940                               | 0.320                                | 0.359                              | 0.272 ***              | 0.039 **                   | 0.098 ***             | 0.026 ***             |
| <b>Age</b>                | 0.323                                 | 0.507                               | 1.000                                | 1.000                              | 0.184 **               | 0.000                      | 0.168 **              | 0.02 ***              |
| <25                       | 0.160                                 | 0.324                               | 0.286                                | 0.217                              | 0.164 **               | -0.069 **                  | 0.036 ***             | -0.01 ***             |
| [25-44]                   | 0.378                                 | 0.580                               | 0.483                                | 0.522                              | 0.202 **               | 0.039 **                   | 0.105 **              | 0.01 ***              |
| >=45                      | 0.411                                 | 0.512                               | 0.231                                | 0.261                              | 0.102 **               | 0.030 **                   | 0.027 ***             | 0.01 ***              |
| <b>Level of education</b> | 0.323                                 | 0.507                               | 1.000                                | 1.000                              | 0.184 **               | 0.000                      | 0.161 **              | 0.02 ***              |
| Less complete primary     | 0.082                                 | 0.186                               | 0.157                                | 0.142                              | 0.104 **               | -0.015 ***                 | 0.015 ***             | 0.00 ***              |
| Complete primary          | 0.164                                 | 0.333                               | 0.267                                | 0.228                              | 0.170 **               | -0.039 **                  | 0.039 ***             | -0.01 ***             |
| Incom. Secondary          | 0.237                                 | 0.400                               | 0.164                                | 0.138                              | 0.163 **               | -0.026 **                  | 0.022 ***             | -0.01 ***             |
| Complete secondary        | 0.438                                 | 0.579                               | 0.176                                | 0.250                              | 0.141 **               | 0.074 **                   | 0.035 ***             | 0.03 ***              |
| Incomplete tertiary       | 0.595                                 | 0.783                               | 0.122                                | 0.117                              | 0.187 **               | -0.005 ***                 | 0.022 ***             | 0.00 ***              |
| Complete tertiary         | 0.686                                 | 0.908                               | 0.114                                | 0.124                              | 0.222 **               | 0.010 ***                  | 0.028 ***             | 0.01 ***              |

Nota: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1 (a partir de errores estándar bootstrap sobre 100 réplicas).

## Paraguay

|                           | Initial<br>formality<br>rate (T42003) | Final<br>formality<br>rate (T42014) | Initial<br>participation<br>(T42003) | Final<br>participation<br>(T42014) | Change in<br>formality | Change in<br>participation | Coefficient<br>Effect | Composition<br>Effect |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|------------------------|----------------------------|-----------------------|-----------------------|
| <b>Branch of activity</b> | 0.209                                 | 0.343                               | 1.000                                | 1.000                              | 0.135 ***              | 0.000                      | 0.110 ***             | 0.005                 |
| Industry                  | 0.145                                 | 0.334                               | 0.157                                | 0.144                              | 0.189 ***              | -0.013 **                  | 0.027 ***             | -0.002                |
| Construction              | 0.032                                 | 0.078                               | 0.069                                | 0.097                              | 0.047                  | 0.028 *                    | 0.005                 | 0.001                 |
| Trade                     | 0.170                                 | 0.314                               | 0.185                                | 0.236                              | 0.144 *                | 0.051 **                   | 0.034 *               | 0.009 ***             |
| Transport                 | 0.244                                 | 0.479                               | 0.057                                | 0.049                              | 0.235 **               | -0.008 **                  | 0.011 **              | -0.002 ***            |
| Financial serv.           | 0.182                                 | 0.481                               | 0.039                                | 0.067                              | 0.299 ***              | 0.028 **                   | 0.020 ***             | 0.005 *               |
| Personal serv.            | 0.294                                 | 0.368                               | 0.030                                | 0.034                              | 0.074                  | 0.003                      | 0.002                 | 0.001                 |
| Domestic serv.            | 0.014                                 | 0.024                               | 0.182                                | 0.120                              | 0.010                  | -0.062                     | 0.001                 | -0.001                |
| Public sector             | -                                     | -                                   | -                                    | -                                  | -                      | -                          | -                     | -                     |
| Others                    | 0.763                                 | 0.813                               | 0.150                                | 0.108                              | 0.049                  | -0.042 **                  | 0.010                 | -0.006 **             |
| <b>Size of firm</b>       | 0.209                                 | 0.343                               | 1.000                                | 1.000                              | 0.135 ***              | 0.000                      | 0.088 ***             | 0.046 ***             |
| <5                        | 0.053                                 | 0.088                               | 0.535                                | 0.421                              | 0.035                  | -0.114 ***                 | 0.015                 | -0.006                |
| [6-40]                    | 0.310                                 | 0.442                               | 0.344                                | 0.401                              | 0.132 ***              | 0.056 **                   | 0.053 ***             | 0.017 **              |
| >40                       | 0.609                                 | 0.723                               | 0.121                                | 0.178                              | 0.114                  | 0.057 **                   | 0.020                 | 0.035 **              |
| <b>Age</b>                | 0.209                                 | 0.343                               | 1.000                                | 1.000                              | 0.135 ***              | 0.000                      | 0.120 ***             | 0.014 ***             |
| <25                       | 0.063                                 | 0.170                               | 0.380                                | 0.319                              | 0.107 ***              | -0.061 **                  | 0.034 ***             | -0.004 **             |
| [25-44]                   | 0.297                                 | 0.423                               | 0.467                                | 0.488                              | 0.126 **               | 0.021                      | 0.061 ***             | 0.006                 |
| >=45                      | 0.297                                 | 0.426                               | 0.154                                | 0.193                              | 0.129                  | 0.040 **                   | 0.025                 | 0.012                 |
| <b>Level of education</b> | 0.209                                 | 0.343                               | 1.000                                | 1.000                              | 0.135 ***              | 0.000                      | 0.052                 | 0.083 ***             |
| Less complete primary     | 0.039                                 | 0.127                               | 0.237                                | 0.110                              | 0.087                  | -0.127 ***                 | 0.010                 | -0.005 ***            |
| Complete primary          | 0.125                                 | 0.190                               | 0.203                                | 0.131                              | 0.065                  | -0.072 ***                 | 0.009                 | -0.009 **             |
| Incom. Secondary          | 0.117                                 | 0.154                               | 0.242                                | 0.234                              | 0.036                  | -0.008                     | 0.008                 | -0.001                |
| Complete secondary        | 0.332                                 | 0.392                               | 0.141                                | 0.215                              | 0.060                  | 0.073 **                   | 0.013                 | 0.024 ***             |
| Incomplete tertiary       | 0.543                                 | 0.573                               | 0.144                                | 0.276                              | 0.030                  | 0.133 ***                  | 0.008                 | 0.072 ***             |
| Complete tertiary         | 0.625                                 | 0.758                               | 0.033                                | 0.035                              | 0.133                  | 0.002                      | 0.005                 | 0.001                 |

Nota: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1 (a partir de errores estándar bootstrap sobre 100 réplicas).

# Peru

|                           | Initial formality rate (T42003) | Final formality rate (T42014) | Initial participation (T42003) | Final participation (T42014) | Change in formality | Change in participation | Coefficient Effect | Composition Effect |
|---------------------------|---------------------------------|-------------------------------|--------------------------------|------------------------------|---------------------|-------------------------|--------------------|--------------------|
| <b>Branch of activity</b> | 0.328                           | 0.537                         | 1.000                          | 1.000                        | 0.210 ***           | 0.000                   | 0.197 ***          | 0.013 **           |
| Industry                  | 0.374                           | 0.536                         | 0.135                          | 0.118                        | 0.162 ***           | -0.016 ***              | 0.019 ***          | -0.006 ***         |
| Construction              | 0.188                           | 0.442                         | 0.058                          | 0.102                        | 0.254 ***           | 0.044 ***               | 0.026 ***          | 0.008 ***          |
| Trade                     | 0.235                           | 0.413                         | 0.161                          | 0.193                        | 0.177 ***           | 0.032 ***               | 0.034 ***          | 0.008 ***          |
| Transport                 | 0.198                           | 0.578                         | 0.057                          | 0.052                        | 0.380 ***           | -0.004 ***              | 0.020 ***          | -0.001 ***         |
| Financial serv.           | 0.521                           | 0.751                         | 0.064                          | 0.080                        | 0.230 ***           | 0.016 *                 | 0.018 ***          | 0.008 *            |
| Personal serv.            | 0.392                           | 0.656                         | 0.042                          | 0.052                        | 0.263 ***           | 0.010 **                | 0.014 ***          | 0.004 ***          |
| Domestic serv.            | 0.034                           | 0.131                         | 0.096                          | 0.052                        | 0.097               | -0.045 ***              | 0.005 ***          | -0.002 ***         |
| Public sector             | 0.702                           | 0.866                         | 0.178                          | 0.178                        | 0.165 ***           | 0.001                   | 0.029 ***          | 0.001              |
| Others                    | 0.187                           | 0.367                         | 0.209                          | 0.172                        | 0.180 ***           | -0.037 ***              | 0.031 ***          | -0.007 ***         |
| <b>Size of firm</b>       | 0.328                           | 0.537                         | 1.000                          | 1.000                        | 0.210 ***           | 0.000                   | 0.169 ***          | 0.041 ***          |
| <5                        | 0.062                           | 0.175                         | 0.377                          | 0.317                        | 0.112 ***           | -0.059 ***              | 0.036 ***          | -0.004 ***         |
| [6-40]                    | 0.223                           | 0.423                         | 0.249                          | 0.236                        | 0.200 ***           | -0.013 ***              | 0.047 ***          | -0.003 ***         |
| >40                       | 0.664                           | 0.856                         | 0.375                          | 0.447                        | 0.192 ***           | 0.072 ***               | 0.086 ***          | 0.048 ***          |
| <b>Age</b>                | 0.328                           | 0.537                         | 1.000                          | 1.000                        | 0.210 ***           | 0.000                   | 0.183 ***          | 0.027 ***          |
| <25                       | 0.068                           | 0.259                         | 0.291                          | 0.239                        | 0.191 ***           | -0.052 ***              | 0.046 ***          | -0.004 **          |
| [25-44]                   | 0.397                           | 0.603                         | 0.496                          | 0.465                        | 0.206 ***           | -0.030 ***              | 0.096 ***          | -0.012 ***         |
| >=45                      | 0.520                           | 0.659                         | 0.214                          | 0.296                        | 0.140 ***           | 0.082 ***               | 0.041 ***          | 0.043 ***          |
| <b>Level of education</b> | 0.328                           | 0.537                         | 1.000                          | 1.000                        | 0.210 ***           | 0.000                   | 0.188 ***          | 0.022 ***          |
| Less complete primary     | 0.113                           | 0.190                         | 0.094                          | 0.073                        | 0.078 **            | -0.021 ***              | 0.006 **           | -0.002 ***         |
| Complete primary          | 0.127                           | 0.282                         | 0.088                          | 0.070                        | 0.154 ***           | -0.019 ***              | 0.011 ***          | -0.002 **          |
| Incom. Secondary          | 0.139                           | 0.270                         | 0.161                          | 0.126                        | 0.131 ***           | -0.034 ***              | 0.017 ***          | -0.005 ***         |
| Complete secondary        | 0.268                           | 0.481                         | 0.293                          | 0.304                        | 0.213 ***           | 0.011 *                 | 0.065 ***          | 0.003 *            |
| Incomplete tertiary       | 0.303                           | 0.565                         | 0.095                          | 0.132                        | 0.262 ***           | 0.037 ***               | 0.035 ***          | 0.011 ***          |
| Complete tertiary         | 0.654                           | 0.844                         | 0.269                          | 0.295                        | 0.189 ***           | 0.026 *                 | 0.056 ***          | 0.017 *            |

Nota: \*\*\*p<0.01, \*\*p<0.05, \*p<0.1 (a partir de errores estándar bootstrap sobre 100 réplicas).

Source: Authors' elaboration based on Household Surveys

Table A2. Probability of being a formal salaried worker

|                           | Argentina |           | Brazil     |            | Ecuador   |           | Peru      |          | Paraguay  |           |
|---------------------------|-----------|-----------|------------|------------|-----------|-----------|-----------|----------|-----------|-----------|
|                           | T1        | T0        | T1         | T0         | T1        | T0        | T1        | T0       | T1        | T0        |
| Men                       | 0.0409    | 0.136**   | 0.0230     | -0.0297**  | 0.0894**  | -0.150*** | 0.211***  | 0.198*** | -0.145**  | -0.413*** |
| <b>Age</b>                |           |           |            |            |           |           |           |          |           |           |
| [25-44]                   | 0.306***  | 0.293***  | 0.320***   | 0.277***   | 0.319***  | 0.259***  | 0.581***  | 0.739**  | 0.438***  | 0.638***  |
| >=45                      | 0.308***  | 0.326***  | 0.144***   | 0.0144     | 0.264***  | 0.377***  | 0.800***  | 1.130*** | 0.487***  | 0.843***  |
| <b>Level of education</b> |           |           |            |            |           |           |           |          |           |           |
| Less complete primary     | -0.0792   | -0.265**  | -0.0648*** | -0.198**   | -0.333*** | -0.294*** | -0.263*** | -0.205   | -0.113    | -0.253    |
| Complete primary          | 0.145**   | 0.0831    | -0.133***  | -0.102**   | 0.102**   | 0.289***  | 0.0591    | 0.276**  | 0.109     | 0.295**   |
| Incom. Secondary          | 0.395***  | 0.486***  | 0.232***   | 0.154***   | 0.335***  | 0.609***  | 0.449***  | 0.514*** | 0.680***  | 0.786***  |
| Complete secondary        | 0.513***  | 0.561***  | -0.248***  | -0.247**   | 0.612***  | 0.708***  | 0.670***  | 0.505**  | 0.867***  | 1.243***  |
| Incomplete tertiary       | 0.615***  | 0.723***  | 0.145***   | 0.0795***  | 0.809***  | 0.780***  | 1.126***  | 1.048*** | 1.005***  | 0.962***  |
| Complete tertiary         | 0.114***  | 0.0836    | 0.0170     | 0.0832***  | 0.236***  | 0.212***  | 0.229***  | 0.129*   | 0.184***  | 0.167*    |
| <b>Branch of activity</b> |           |           |            |            |           |           |           |          |           |           |
| Construction              | -0.472*** | -0.382*** | -0.294***  | -0.350**   | -0.797*** | -0.825*** | 0.223***  | 0.0590   | -1.014*** | -0.747**  |
| Trade                     | -0.0419   | 0.0961    | -0.0226    | -0.0600*** | 0.155**   | 0.0274    | 0.150***  | -0.0495  | -0.232*** | -0.179    |
| Transport                 | -0.178**  | -0.0840   | -0.0260    | -0.0475*   | 0.168*    | -0.363*** | 0.175**   | -0.419** | -0.0767   | -0.259*   |
| Financial serv.           | 0.296***  | 0.253**   | 0.0554**   | 0.0909***  | 0.588***  | 0.212**   | 0.290***  | 0.273*   | -0.0453   | -0.592*** |
| Personal serv.            | -0.139    | -0.0169   | -0.0967*** | -0.118**   | 0.523***  | -0.0799   | -0.0277   | -0.242   | -0.737*** | -0.541**  |
| Domestic serv.            | -0.162*   | -0.846*** | -0.158***  | -0.0133    | 1.181***  | -0.0433   | -0.0383   | -0.278   | -0.983*** | -0.958*** |
| Public sector             | 0.234***  | -0.0350   | -0.268***  | -0.0239    | 0.504***  | 0.248***  | -0.110*   | -0.337** | -0.320*** | -0.165    |
| Others                    | -0.272*** | -0.0304   | -0.526***  | -0.399**   | -0.457*** | -0.434*** | -0.0539   | -0.304** | 0.890***  | 0.692***  |
| <b>Size of firm</b>       |           |           |            |            |           |           |           |          |           |           |
| [6-40]                    | 0.737***  | 0.753***  | 0.726***   | 0.675***   | 1.283***  | 0.806***  | 0.598***  | 0.470**  | 1.434***  | 1.276***  |
| >40                       | 1.373***  | 1.294***  | 1.415***   | 1.250***   | 2.543***  | 1.494***  | 1.670***  | 1.524*** | -0.165    | -0.174    |
| Parttime                  | -0.810*** | -0.792*** | -1.167***  | -1.000**   | -1.128*** | -0.651*** | -0.111*   | -0.0981  | 0.283     | 0.745**   |
| <b>Tenure</b>             |           |           |            |            |           |           |           |          |           |           |
| [3-6 months]              | -0.0629   | -0.0403   | 0.253***   | 0.371***   | 0.411***  | 0.284***  | 0.242***  | 0.177    | 0.387*    | 0.551*    |
| [7-12 months]             | 0.241***  | 0.267***  | 0.388***   | 0.583***   | 0.390***  | 0.411***  | 0.247***  | -0.124   | 0.599***  | 0.931***  |
| [1-5 years]               | 0.634***  | 0.542***  | 0.646***   | 0.960***   | 0.260***  | 0.419***  | 0.349***  | 0.346*** | 0.987***  | 1.349***  |
| > 5 years                 | 1.150***  | 1.338***  | 0.764***   | 1.212***   | 0.181***  | 0.541***  | 0.599***  | 0.655*** | -0.166    | 0.205     |
| Observations              | 17,348    | 11,471    | 100,716    | 90,024     | 32,046    | 17,440    | 24,092    | 6,629    | 4,721     | 4,830     |
| R <sup>2</sup>            | 0.381     | 0.410     | 0.233      | 0.252      | 0.557     | 0.395     | 0.412     | 0.415    | 0.365     | 0.415     |

Source: Authors' elaboration based on Household Surveys

Table A3. Composition of employment

|                           | Argentina |       | Brazil |       | Ecuador |       | Peru  |       | Paraguay |       |
|---------------------------|-----------|-------|--------|-------|---------|-------|-------|-------|----------|-------|
|                           | T1        | T0    | T1     | T0    | T1      | T0    | T1    | T0    | T1       | T0    |
| Men                       | 0.556     | 0.554 | 0.510  | 0.545 | 0.615   | 0.668 | 0.596 | 0.625 | 0.613    | 0.622 |
| <b>Age</b>                |           |       |        |       |         |       |       |       |          |       |
| <25                       | 0.152     | 0.169 | 0.162  | 0.230 | 0.218   | 0.286 | 0.237 | 0.286 | 0.315    | 0.379 |
| [25-44]                   | 0.545     | 0.528 | 0.531  | 0.547 | 0.522   | 0.483 | 0.466 | 0.500 | 0.490    | 0.467 |
| >=45                      | 0.302     | 0.303 | 0.307  | 0.224 | 0.261   | 0.231 | 0.298 | 0.214 | 0.195    | 0.154 |
| <b>Level of education</b> |           |       |        |       |         |       |       |       |          |       |
| Less complete primary     | 0.037     | 0.068 | 0.126  | 0.236 | 0.142   | 0.156 | 0.072 | 0.092 | 0.108    | 0.235 |
| Complete primary          | 0.163     | 0.230 | 0.107  | 0.144 | 0.228   | 0.267 | 0.068 | 0.087 | 0.131    | 0.203 |
| Incom. Secondary          | 0.166     | 0.181 | 0.067  | 0.096 | 0.138   | 0.164 | 0.124 | 0.157 | 0.230    | 0.242 |
| Complete secondary        | 0.279     | 0.220 | 0.380  | 0.310 | 0.251   | 0.177 | 0.307 | 0.296 | 0.217    | 0.141 |
| Incomplete tertiary       | 0.129     | 0.120 | 0.093  | 0.077 | 0.117   | 0.122 | 0.132 | 0.096 | 0.279    | 0.146 |
| Complete tertiary         | 0.227     | 0.181 | 0.227  | 0.137 | 0.124   | 0.115 | 0.297 | 0.272 | 0.035    | 0.033 |
| Head of household         | 0.479     | 0.497 | 0.440  | 0.441 | 0.431   | 0.442 | 0.360 | 0.365 | 0.289    | 0.329 |
| <b>Branch of activity</b> |           |       |        |       |         |       |       |       |          |       |
| Industry                  | 0.136     | 0.129 | 0.144  | 0.178 | 0.118   | 0.128 | 0.117 | 0.132 | 0.144    | 0.157 |
| Construction              | 0.070     | 0.053 | 0.053  | 0.048 | 0.096   | 0.082 | 0.101 | 0.057 | 0.098    | 0.069 |
| Trade                     | 0.165     | 0.179 | 0.202  | 0.199 | 0.186   | 0.159 | 0.191 | 0.158 | 0.240    | 0.185 |
| Transport                 | 0.073     | 0.073 | 0.081  | 0.069 | 0.045   | 0.053 | 0.052 | 0.056 | 0.049    | 0.056 |
| Financial serv.           | 0.089     | 0.086 | 0.179  | 0.144 | 0.063   | 0.054 | 0.081 | 0.063 | 0.067    | 0.040 |
| Personal serv.            | 0.066     | 0.073 | 0.079  | 0.072 | 0.034   | 0.048 | 0.051 | 0.041 | 0.034    | 0.030 |
| Domestic serv.            | 0.093     | 0.093 | 0.079  | 0.102 | 0.050   | 0.069 | 0.050 | 0.094 | 0.111    | 0.180 |
| Public sector             | 0.209     | 0.231 | 0.128  | 0.126 | 0.127   | 0.144 | 0.188 | 0.194 | 0.104    | 0.150 |
| Others                    | 0.092     | 0.083 | 0.056  | 0.062 | 0.276   | 0.263 | 0.170 | 0.205 | 0.421    | 0.535 |
| <b>Size of firm</b>       |           |       |        |       |         |       |       |       |          |       |
| <5                        | 0.300     | 0.344 | 0.146  | 0.212 | 0.443   | 0.392 | 0.317 | 0.377 | 0.401    | 0.345 |
| [6-40]                    | 0.307     | 0.325 | 0.041  | 0.066 | 0.199   | 0.287 | 0.236 | 0.249 | 0.178    | 0.121 |
| >40                       | 0.393     | 0.331 | 0.814  | 0.723 | 0.358   | 0.320 | 0.447 | 0.375 | 0.081    | 0.078 |
| Parttime                  | 0.092     | 0.191 | 0.010  | 0.031 | 0.082   | 0.120 | 0.056 | 0.124 | 0.090    | 0.146 |
| <b>Tenure</b>             |           |       |        |       |         |       |       |       |          |       |
| <3 months                 | 0.098     | 0.151 | 0.068  | 0.110 | 0.255   | 0.286 | 0.221 | 0.188 | 0.056    | 0.088 |
| [3-6 months]              | 0.046     | 0.055 | 0.062  | 0.076 | 0.097   | 0.104 | 0.097 | 0.088 | 0.070    | 0.088 |
| [7-12 months]             | 0.063     | 0.083 | 0.101  | 0.108 | 0.204   | 0.184 | 0.091 | 0.083 | 0.393    | 0.342 |
| [1-5 years]               | 0.337     | 0.330 | 0.446  | 0.403 | 0.175   | 0.153 | 0.296 | 0.298 | 0.391    | 0.335 |
| > 5 years                 | 0.455     | 0.380 | 0.323  | 0.303 | 0.269   | 0.273 | 0.295 | 0.344 | 0.095    | 0.133 |

Source: Authors' elaboration based on Household Surveys

Table A4. Yun decomposition. Standardised results

|                                   | Argentina  | Brazil     | Ecuador    | Peru       | Paraguay   |
|-----------------------------------|------------|------------|------------|------------|------------|
| Composition effect                | 0.067      | 0.063      | 0.014      | 0.091      | 0.089      |
| Coefficient effect                | 0.073      | 0.069      | 0.176      | 0.109      | 0.047      |
| <b>% Total Composition effect</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |
| Gender                            | 0.0        | -0.3       | -5.9       | 0.7        | 1.5        |
| Age                               | 1.4        | 3.5        | 31.4       | 17.3       | 1.1        |
| Education                         | 19.8       | 16.3       | 51.1       | 33.3       | -0.1       |
| Head of household                 | -0.9       | 0.0        | -1.4       | -0.3       | 0.1        |
| Branch of activity                | -4.4       | 2.5        | -72.2      | 10.5       | 33.5       |
| Size of firm                      | 25.0       | 49.8       | 6.7        | 40.0       | 33.6       |
| Parttime                          | 29.6       | 11.1       | 62.2       | 3.7        | -0.1       |
| Tenure                            | 28.2       | 16.9       | 14.2       | -9.8       | 1.1        |
| Región                            | 1.2        | 0.2        | 14.0       | 4.7        | -0.2       |
| <b>% Total Coefficient effect</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |
| Gender                            | -15.4      | 10.4       | 20.3       | 1.6        | 0.4        |
| Age                               | 0.9        | -2.0       | 2.6        | 2.3        | 26.8       |
| Education                         | -6.3       | 7.5        | 0.1        | -1.4       | -69.5      |
| Head of household                 | 4.5        | -10.5      | 1.3        | 7.2        | -3.9       |
| Branch of activity                | 10.6       | 0.4        | -16.5      | -1.6       | -21.7      |
| Size of firm                      | -0.1       | 18.2       | -5.1       | -0.8       | -22.2      |
| Parttime                          | -1.0       | -1.9       | -7.3       | -0.4       | -20.1      |
| Tenure                            | -4.4       | -27.5      | -3.9       | -10.8      | -47.9      |
| Región                            | -1.6       | 5.4        | -2.9       | 5.1        | 8.3        |
| Constant                          | 112.9      | 100.2      | 111.4      | 98.8       | 12.0       |

Source: Authors' elaboration based on Household Surveys

Table A5. Transition Matrix

## Argentina

|             | Formal | Informal | Own-account | Unemployed | Inactive | Total |
|-------------|--------|----------|-------------|------------|----------|-------|
| Formal      | 87.8   | 4.5      | 2.2         | 2.4        | 3.0      | 100   |
| Informal    | 13.3   | 52.6     | 9.4         | 8.4        | 16.3     | 100   |
| Own-account | 4.0    | 9.7      | 69.7        | 4.7        | 11.9     | 100   |
| Unemployed  | 9.0    | 17.4     | 5.3         | 33.0       | 35.2     | 100   |
| Inactive    | 1.8    | 6.0      | 2.1         | 7.8        | 82.3     | 100   |
| Total       | 28.0   | 13.9     | 13.8        | 7.6        | 36.7     | 100   |

## Brazil

|             | Formal | Informal | Own-account | Unemployed | Inactive | Total |
|-------------|--------|----------|-------------|------------|----------|-------|
| Formal      | 84.9   | 4.5      | 2.0         | 3.0        | 5.6      | 100   |
| Informal    | 23.7   | 49.4     | 9.1         | 5.3        | 12.5     | 100   |
| Own-account | 5.8    | 6.7      | 76.1        | 1.7        | 9.7      | 100   |
| Unemployed  | 23.3   | 13.0     | 3.9         | 29.0       | 30.9     | 100   |
| Inactive    | 5.3    | 4.3      | 1.6         | 5.9        | 82.9     | 100   |
| Total       | 38.8   | 10.4     | 14.2        | 5.3        | 31.3     | 100   |

## Ecuador

|             | Formal | Informal | Own-account | Unemployed | Inactive | Total |
|-------------|--------|----------|-------------|------------|----------|-------|
| Formal      | 85.1   | 5.3      | 3.2         | 2.4        | 4.0      | 100   |
| Informal    | 16.2   | 53.7     | 13.8        | 5.8        | 10.5     | 100   |
| Own-account | 3.4    | 9.3      | 71.0        | 2.7        | 13.6     | 100   |
| Unemployed  | 14.3   | 19.0     | 9.6         | 21.2       | 35.9     | 100   |
| Inactive    | 2.8    | 5.8      | 4.4         | 6.4        | 80.6     | 100   |
| Total       | 24.7   | 15.1     | 22.5        | 5.1        | 32.7     | 100   |

## Paraguay

|             | Formal | Informal | Own-account | Unemployed | Inactive | Total |
|-------------|--------|----------|-------------|------------|----------|-------|
| Formal      | 86.1   | 6.7      | 1.8         | 3.2        | 2.2      | 100   |
| Informal    | 8.7    | 65.7     | 8.4         | 7.6        | 9.7      | 100   |
| Own-account | 1.2    | 8.7      | 71.2        | 5.1        | 13.8     | 100   |
| Unemployed  | 5.8    | 31.9     | 5.8         | 29.4       | 27.1     | 100   |
| Inactive    | 1.7    | 9.7      | 5.5         | 11.3       | 71.7     | 100   |
| Total       | 18.7   | 24.5     | 20.7        | 8.7        | 27.3     | 100   |

## Peru

|             | Formal | Informal | Own-account | Unemployed | Inactive | Total |
|-------------|--------|----------|-------------|------------|----------|-------|
| Formal      | 81.6   | 6.5      | 4.5         | 3.7        | 3.8      | 100   |
| Informal    | 12.2   | 56.2     | 12.9        | 6.1        | 12.6     | 100   |
| Own-account | 3.7    | 10.0     | 71.0        | 3.5        | 11.8     | 100   |
| Unemployed  | 10.0   | 20.5     | 9.0         | 23.5       | 37.0     | 100   |
| Inactive    | 3.2    | 14.0     | 9.5         | 10.6       | 62.7     | 100   |
| Total       | 18.9   | 20.4     | 29.5        | 7.1        | 24.1     | 100   |

Source: Authors' elaboration based on Household Surveys



Table A6. Labour formalization in the same job by different groups of individuals

| Characteristics           | ARGENTINA                     |                                       |                                               | BRAZIL                        |                                       |                                               | ECUADOR                       |                                       |                                               | PARAGUAY                      |                                       |                                               | PERU                          |                                       |                                               |
|---------------------------|-------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------------|-----------------------------------------------|
|                           | Initial Formality Rate (2003) | Probability to become a formal worker | Contribution to formalization in the same job | Initial Formality Rate (2003) | Probability to become a formal worker | Contribution to formalization in the same job | Initial Formality Rate (2003) | Probability to become a formal worker | Contribution to formalization in the same job | Initial Formality Rate (2003) | Probability to become a formal worker | Contribution to formalization in the same job | Initial Formality Rate (2003) | Probability to become a formal worker | Contribution to formalization in the same job |
| <b>Education</b>          |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Less compl. Secondary     | 28.4                          | 5.5                                   | 38.2                                          | 41.9                          | 9.4                                   | 33.8                                          | 12.0                          | 6.3                                   | 39.4                                          | 7.9                           | 3.2                                   | 36.3                                          | 7.8                           | 1.9                                   | 10.1                                          |
| Comp. Secon-incomp. Terc. | 45.5                          | 10.6                                  | 41.9                                          | 57.6                          | 14.1                                  | 43.4                                          | 40.0                          | 11.5                                  | 44.7                                          | 30.7                          | 7.8                                   | 62.5                                          | 14.4                          | 5.7                                   | 53.0                                          |
| Complete Tertiary         | 61.8                          | 20.5                                  | 19.9                                          | 62.4                          | 24.8                                  | 22.8                                          | 55.6                          | 24.4                                  | 15.9                                          | 58.9                          | 5.0                                   | 1.2                                           | 45.8                          | 15.0                                  | 37.0                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.5                          | 5.9                                   | 100.0                                         |
| <b>Gender</b>             |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Women                     | 40.0                          | 7.3                                   | 47.8                                          | 52.0                          | 12.6                                  | 54.0                                          | 28.8                          | 10.8                                  | 41.1                                          | 16.9                          | 3.0                                   | 24.5                                          | 13.2                          | 4.9                                   | 39.7                                          |
| Men                       | 42.3                          | 9.8                                   | 52.2                                          | 52.1                          | 13.9                                  | 46.0                                          | 29.5                          | 8.5                                   | 58.9                                          | 18.9                          | 6.7                                   | 75.5                                          | 24.0                          | 6.8                                   | 60.3                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |
| <b>Age</b>                |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Less than 25              | 24.6                          | 6.4                                   | 19.4                                          | 53.4                          | 11.2                                  | 25.0                                          | 19.5                          | 5.5                                   | 16.5                                          | 8.7                           | 3.4                                   | 22.5                                          | 5.7                           | 3.0                                   | 18.2                                          |
| 25-45                     | 45.9                          | 9.8                                   | 57.9                                          | 57.4                          | 15.0                                  | 44.9                                          | 29.6                          | 10.7                                  | 61.3                                          | 21.6                          | 6.6                                   | 61.2                                          | 21.1                          | 7.4                                   | 62.5                                          |
| More than 45              | 41.3                          | 7.8                                   | 22.7                                          | 44.6                          | 12.7                                  | 30.1                                          | 34.3                          | 11.0                                  | 22.1                                          | 19.7                          | 4.6                                   | 16.3                                          | 22.0                          | 8.0                                   | 19.3                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |
| <b>Size of firms</b>      |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Less 6 employess          | 9.5                           | 5.3                                   | 42.8                                          | 12.9                          | 7.2                                   | 24.2                                          | 2.2                           | 5.4                                   | 32.0                                          | 1.3                           | 1.5                                   | 15.2                                          | 2.2                           | 1.3                                   | 11.8                                          |
| 6-40 employees            | 65.4                          | 12.4                                  | 34.2                                          | 50.8                          | 13.0                                  | 7.0                                           | 38.3                          | 11.1                                  | 37.5                                          | 26.4                          | 8.0                                   | 49.1                                          | 20.5                          | 8.8                                   | 46.6                                          |
| More than 40              | 89.2                          | 23.6                                  | 23.0                                          | 76.6                          | 18.7                                  | 68.8                                          | 80.9                          | 21.3                                  | 30.5                                          | 65.9                          | 11.8                                  | 35.6                                          | 73.2                          | 14.4                                  | 41.5                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |
| <b>Sector of activity</b> |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Industry                  | 43.7                          | 9.0                                   | 12.0                                          | 59.1                          | 14.8                                  | 12.0                                          | 29.8                          | 10.7                                  | 15.4                                          | 16.9                          | 5.6                                   | 14.0                                          | 21.3                          | 3.6                                   | 10.5                                          |
| Construction              | 11.0                          | 3.3                                   | 4.3                                           | 23.7                          | 7.0                                   | 3.2                                           | 8.9                           | 2.7                                   | 4.8                                           | 1.7                           | 0.9                                   | 2.2                                           | 12.9                          | 7.2                                   | 10.0                                          |
| Trade                     | 27.7                          | 10.4                                  | 24.6                                          | 38.2                          | 12.2                                  | 16.8                                          | 13.0                          | 8.1                                   | 19.7                                          | 10.1                          | 7.4                                   | 34.6                                          | 4.8                           | 4.1                                   | 14.6                                          |
| Transport                 | 47.7                          | 8.4                                   | 6.8                                           | 59.2                          | 14.1                                  | 5.1                                           | 14.7                          | 9.0                                   | 8.7                                           | 42.9                          | 8.2                                   | 7.4                                           | 8.7                           | 7.7                                   | 12.3                                          |
| Financial services        | 43.9                          | 14.1                                  | 9.7                                           | 60.5                          | 15.2                                  | 15.4                                          | 52.4                          | 14.2                                  | 8.3                                           | 34.7                          | 10.3                                  | 10.1                                          | 27.3                          | 6.7                                   | 6.8                                           |
| Personal serv.            | 55.0                          | 16.7                                  | 7.8                                           | 72.2                          | 19.6                                  | 10.5                                          | 43.3                          | 23.8                                  | 14.5                                          | 35.5                          | 7.6                                   | 26.9                                          | 31.5                          | 14.0                                  | 17.7                                          |
| Domestic serv.            | 3.6                           | 4.2                                   | 15.6                                          | 32.6                          | 7.6                                   | 13.3                                          | 7.7                           | 8.4                                   | 8.4                                           | 1.4                           | 0.0                                   | 0.0                                           | 10.1                          | 0.1                                   | 0.2                                           |
| Public serv.              | 91.4                          | 32.0                                  | 13.4                                          | 86.2                          | 27.5                                  | 17.2                                          | 88.8                          | 32.4                                  | 8.9                                           |                               | 10.6                                  | 4.8                                           | 78.8                          | 16.6                                  | 19.0                                          |
| Other sectors             | 46.7                          | 8.1                                   | 5.8                                           | 36.7                          | 10.1                                  | 6.4                                           | 15.2                          | 6.9                                   | 11.4                                          | 4.7                           | #DIV/0!                               | 0.0                                           | 11.4                          | 4.9                                   | 8.8                                           |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 53.0                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |
| <b>Labour intensity</b>   |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| Under-occupied            | 29.9                          | 5.2                                   | 30.5                                          | 33.6                          | 9.8                                   | 25.9                                          | 10.6                          | 5.1                                   | 11.0                                          | 10.5                          | 3.2                                   | 16.1                                          | 12.4                          | 2.8                                   | 14.8                                          |
| Full-time                 | 56.2                          | 12.2                                  | 32.5                                          | 62.3                          | 15.7                                  | 52.3                                          | 48.8                          | 10.4                                  | 47.2                                          | 27.7                          | 5.3                                   | 22.2                                          | 30.3                          | 11.3                                  | 32.2                                          |
| Over-occupied             | 40.3                          | 11.1                                  | 37.1                                          | 47.3                          | 13.6                                  | 21.9                                          | 21.1                          | 10.3                                  | 41.8                                          | 18.2                          | 5.9                                   | 61.8                                          | 19.3                          | 6.0                                   | 53.0                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |
| <b>Tenure</b>             |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |                               |                                       |                                               |
| 1-3 months                | 12.1                          | 4.7                                   | 13.0                                          | 32.0                          | 9.9                                   | 13.6                                          | 20.0                          | 6.1                                   | 25.6                                          | 4.0                           | 3.1                                   | 12.7                                          | 12.8                          | 3.4                                   | 22.1                                          |
| 3-6 months                | 15.2                          | 7.7                                   | 8.8                                           | 43.1                          | 11.6                                  | 10.9                                          | 22.8                          | 12.6                                  | 13.7                                          | 5.0                           | 7.6                                   | 15.0                                          | 15.7                          | 5.8                                   | 9.7                                           |
| 6-1 year                  | 27.3                          | 7.7                                   | 11.0                                          | 51.8                          | 12.8                                  | 13.2                                          | 28.5                          | 11.8                                  | 22.3                                          | 6.3                           | 3.3                                   | 9.7                                           | 16.4                          | 5.6                                   | 11.4                                          |
| 1-5 years                 | 38.2                          | 9.6                                   | 40.8                                          | 56.3                          | 14.2                                  | 38.4                                          | 26.3                          | 12.0                                  | 19.4                                          | 17.2                          | 4.5                                   | 29.1                                          | 13.2                          | 6.8                                   | 31.4                                          |
| More than 5 years         | 57.4                          | 11.6                                  | 26.4                                          | 54.4                          | 15.6                                  | 24.0                                          | 39.3                          | 9.6                                   | 19.0                                          | 30.2                          | 8.2                                   | 33.5                                          | 27.3                          | 12.1                                  | 25.5                                          |
| TOTAL                     | 41.2                          | 8.4                                   | 100.0                                         | 52.1                          | 13.2                                  | 100.0                                         | 29.2                          | 9.3                                   | 100.0                                         | 18.0                          | 5.1                                   | 100.0                                         | 18.6                          | 5.9                                   | 100.0                                         |

Table A7. Labour formalization through job change by different groups of individuals

## Argentina

| Characteristics              | Number of non-formal workers | Exit rate from the initial state | Conditional probability of transiting to a formal job | Entry rate to a formal job | Contribution to total inflows to a formal job |
|------------------------------|------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Occupational category</b> |                              |                                  |                                                       |                            |                                               |
| Non-registered               | 18,689,237                   | 51.5                             | 9.5                                                   | 4.9                        | 32.2                                          |
| Prof. Ow account             | 2,617,788                    | 18.2                             | 9.9                                                   | 1.8                        | 1.7                                           |
| Non-Prof. Own account        | 12,575,566                   | 35.8                             | 5.8                                                   | 2.1                        | 9.2                                           |
| Employer                     | 3,331,290                    | 12.9                             | 9.0                                                   | 1.2                        | 1.4                                           |
| Non-paid family              | 734,034                      | 56.9                             | 3.4                                                   | 2.0                        | 0.5                                           |
| Unemployed                   | 8,465,880                    | 67.0                             | 13.5                                                  | 9.0                        | 27.1                                          |
| Ineactive                    | 44,633,061                   | 17.7                             | 10.1                                                  | 1.8                        | 28.1                                          |
| TOTAL                        | 91,046,856                   | 31.8                             | 9.8                                                   | 3.1                        | 100                                           |
| <b>Education</b>             |                              |                                  |                                                       |                            |                                               |
| Less compl. Secondary        | 49,476,129                   | 32.2                             | 6.2                                                   | 2.0                        | 34.8                                          |
| Comp. Secon-incomp. Terc.    | 33,786,836                   | 33.2                             | 13.5                                                  | 4.5                        | 53.3                                          |
| Complete Terciary            | 7,783,891                    | 23.6                             | 18.3                                                  | 4.3                        | 11.8                                          |
| TOTAL                        | 91,046,856                   | 31.8                             | 9.8                                                   | 3.1                        | 100                                           |
| <b>Gender</b>                |                              |                                  |                                                       |                            |                                               |
| Women                        | 55,769,650                   | 30.9                             | 7.5                                                   | 2.3                        | 45.8                                          |
| Men                          | 35,277,206                   | 33.4                             | 13.0                                                  | 4.3                        | 54.2                                          |
| TOTAL                        | 91,046,856                   | 31.8                             | 9.8                                                   | 3.1                        | 100                                           |
| <b>Age</b>                   |                              |                                  |                                                       |                            |                                               |
| Less than 25                 | 31,226,889                   | 35.0                             | 12.0                                                  | 4.2                        | 46.3                                          |
| 25-45                        | 35,535,729                   | 33.9                             | 10.3                                                  | 3.5                        | 43.8                                          |
| More than 45                 | 24,284,238                   | 24.8                             | 4.7                                                   | 1.2                        | 10.0                                          |
| TOTAL                        | 91,046,856                   | 31.8                             | 9.8                                                   | 3.1                        | 100                                           |
| <b>Size of firms</b>         |                              |                                  |                                                       |                            |                                               |
| Less 6 employess             | 31,030,002                   | 40.6                             | 6.5                                                   | 2.7                        | 64.9                                          |
| 6-40 employees               | 5,313,386                    | 41.4                             | 14.5                                                  | 6.0                        | 25.1                                          |
| More than 40                 | 1,604,527                    | 39.5                             | 20.0                                                  | 7.9                        | 10.0                                          |
| TOTAL                        | 37,947,915                   | 40.7                             | 8.2                                                   | 3.3                        | 100                                           |
| <b>Sector of activity</b>    |                              |                                  |                                                       |                            |                                               |
| Industry                     | 4,487,720                    | 41.9                             | 9.1                                                   | 3.8                        | 13.4                                          |
| Construction                 | 4,896,509                    | 47.5                             | 8.6                                                   | 4.1                        | 15.8                                          |
| Trade                        | 11,229,602                   | 37.5                             | 7.4                                                   | 2.8                        | 24.6                                          |
| Transport                    | 2,317,219                    | 31.1                             | 11.7                                                  | 3.6                        | 6.6                                           |
| Financial services           | 3,402,856                    | 27.3                             | 14.0                                                  | 3.8                        | 10.3                                          |
| Personal serv.               | 1,983,916                    | 29.3                             | 12.2                                                  | 3.6                        | 5.6                                           |
| Domestic serv.               | 5,999,921                    | 55.6                             | 4.0                                                   | 2.2                        | 10.6                                          |
| Public serv.                 | 666,958                      | 33.1                             | 26.0                                                  | 8.6                        | 4.5                                           |
| Other sectors                | 2,958,663                    | 41.8                             | 8.9                                                   | 3.7                        | 8.6                                           |
| TOTAL                        | 37,943,364                   | 40.7                             | 8.2                                                   | 3.3                        | 100                                           |
| <b>Labour intensity</b>      |                              |                                  |                                                       |                            |                                               |
| Under-occupied               | 15,547,327                   | 54.4                             | 6.5                                                   | 3.5                        | 43.1                                          |
| Full-time                    | 8,421,390                    | 35.4                             | 9.7                                                   | 3.4                        | 22.8                                          |
| Over-occupied                | 13,979,198                   | 28.6                             | 10.8                                                  | 3.1                        | 34.1                                          |
| TOTAL                        | 37,947,915                   | 40.7                             | 8.2                                                   | 3.3                        | 100                                           |
| <b>Tenure</b>                |                              |                                  |                                                       |                            |                                               |
| 1-3 months                   | 5,967,961                    | 74.6                             | 8.3                                                   | 6.2                        | 29.0                                          |
| 3-6 months                   | 2,462,777                    | 62.6                             | 9.5                                                   | 5.9                        | 11.5                                          |
| 6-1 year                     | 3,324,890                    | 56.4                             | 9.1                                                   | 5.1                        | 13.5                                          |
| 1-5 years                    | 12,362,481                   | 38.6                             | 8.3                                                   | 3.2                        | 31.3                                          |
| More than 5 years            | 13,829,806                   | 20.2                             | 6.7                                                   | 1.4                        | 14.8                                          |
| TOTAL                        | 37,947,915                   | 40.7                             | 8.2                                                   | 3.3                        | 100                                           |

# Brazil

| Characteristics              | Number of non-formal workers | Exit rate from the initial state | Conditional probability of transiting to a formal job | Entry rate to a formal job | Contribution to total inflows to a formal job |
|------------------------------|------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Occupational category</b> |                              |                                  |                                                       |                            |                                               |
| Non-registered               | 65,710,890                   | 41.7                             | 25.1                                                  | 10.5                       | 26.9                                          |
| Prof. Ow account             | 11,163,102                   | 16.2                             | 19.7                                                  | 3.2                        | 1.4                                           |
| Non-Prof. Own account        | 56,625,891                   | 24.1                             | 14.4                                                  | 3.5                        | 7.7                                           |
| Employer                     | 17,877,628                   | 9.5                              | 14.2                                                  | 1.3                        | 0.9                                           |
| Non-paid family              | 1,963,191                    | 37.3                             | 10.7                                                  | 4.0                        | 0.3                                           |
| Unemployed                   | 30,542,219                   | 71.0                             | 32.7                                                  | 23.3                       | 27.8                                          |
| Ineactive                    | 169,042,865                  | 17.1                             | 31.0                                                  | 5.3                        | 35.0                                          |
| TOTAL                        | 352,925,786                  | 27.2                             | 26.7                                                  | 7.2                        | 100                                           |
| <b>Education</b>             |                              |                                  |                                                       |                            |                                               |
| Less compl. Secondary        | 175,681,579                  | 25.0                             | 21.8                                                  | 5.5                        | 37.5                                          |
| Comp. Secon-incomp. Terc.    | 135,699,076                  | 32.0                             | 31.0                                                  | 9.9                        | 52.7                                          |
| Complete Terciary            | 41,545,131                   | 20.3                             | 29.7                                                  | 6.0                        | 9.8                                           |
| TOTAL                        | 352,925,786                  | 27.2                             | 26.7                                                  | 7.2                        | 100                                           |
| <b>Gender</b>                |                              |                                  |                                                       |                            |                                               |
| Women                        | 201,356,568                  | 25.6                             | 23.1                                                  | 5.9                        | 46.6                                          |
| Men                          | 151,569,218                  | 29.3                             | 30.8                                                  | 9.0                        | 53.4                                          |
| TOTAL                        | 352,925,786                  | 27.2                             | 26.7                                                  | 7.2                        | 100                                           |
| <b>Age</b>                   |                              |                                  |                                                       |                            |                                               |
| Less than 25                 | 94,235,221                   | 42.1                             | 31.2                                                  | 13.1                       | 48.3                                          |
| 25-45                        | 107,935,452                  | 30.0                             | 29.8                                                  | 9.0                        | 37.8                                          |
| More than 45                 | 150,755,113                  | 15.8                             | 14.9                                                  | 2.4                        | 13.9                                          |
| TOTAL                        | 352,925,786                  | 27.2                             | 26.7                                                  | 7.2                        | 100                                           |
| <b>Size of firms</b>         |                              |                                  |                                                       |                            |                                               |
| Less 6 employess             | 107,272,983                  | 25.8                             | 16.1                                                  | 4.2                        | 47.0                                          |
| 6-40 employees               | 8,304,007                    | 28.0                             | 24.8                                                  | 6.9                        | 6.1                                           |
| More than 40                 | 37,763,712                   | 40.5                             | 29.2                                                  | 11.8                       | 46.9                                          |
| TOTAL                        | 153,340,702                  | 29.6                             | 21.0                                                  | 6.2                        | 100                                           |
| <b>Sector of activity</b>    |                              |                                  |                                                       |                            |                                               |
| Industry                     | 18,858,279                   | 32.2                             | 21.1                                                  | 6.8                        | 13.7                                          |
| Construction                 | 16,182,069                   | 28.0                             | 23.6                                                  | 6.6                        | 11.4                                          |
| Trade                        | 41,829,408                   | 28.8                             | 19.4                                                  | 5.6                        | 24.9                                          |
| Transport                    | 9,829,092                    | 24.0                             | 27.1                                                  | 6.5                        | 6.8                                           |
| Financial services           | 20,459,737                   | 27.8                             | 27.2                                                  | 7.6                        | 16.5                                          |
| Personal serv.               | 4,624,455                    | 43.7                             | 27.7                                                  | 12.1                       | 6.0                                           |
| Domestic serv.               | 15,302,865                   | 33.0                             | 13.0                                                  | 4.3                        | 7.0                                           |
| Public serv.                 | 5,405,640                    | 43.8                             | 21.9                                                  | 9.6                        | 5.5                                           |
| Other sectors                | 15,502,707                   | 27.6                             | 17.8                                                  | 4.9                        | 8.1                                           |
| TOTAL                        | 147,994,252                  | 30.0                             | 21.1                                                  | 6.3                        | 100                                           |
| <b>Labour intensity</b>      |                              |                                  |                                                       |                            |                                               |
| Under-occupied               | 43,718,037                   | 41.0                             | 17.4                                                  | 7.1                        | 32.8                                          |
| Full-time                    | 62,620,171                   | 28.7                             | 24.2                                                  | 6.9                        | 45.7                                          |
| Over-occupied                | 47,002,494                   | 20.1                             | 21.7                                                  | 4.4                        | 21.5                                          |
| TOTAL                        | 153,340,702                  | 29.6                             | 21.0                                                  | 6.2                        | 100                                           |
| <b>Tenure</b>                |                              |                                  |                                                       |                            |                                               |
| 1-3 months                   | 15,021,181                   | 70.7                             | 27.1                                                  | 19.2                       | 30.3                                          |
| 3-6 months                   | 10,939,192                   | 56.4                             | 23.8                                                  | 13.5                       | 15.5                                          |
| 6-1 year                     | 13,207,742                   | 47.8                             | 23.6                                                  | 11.3                       | 15.6                                          |
| 1-5 years                    | 51,661,397                   | 26.6                             | 19.6                                                  | 5.2                        | 28.3                                          |
| More than 5 years            | 62,511,190                   | 13.5                             | 11.6                                                  | 1.6                        | 10.3                                          |
| TOTAL                        | 153,340,702                  | 29.6                             | 21.0                                                  | 6.2                        | 100                                           |

# Ecuador

| Characteristics              | Number of non-formal workers | Exit rate from the initial state | Conditional probability of transiting to a formal job | Entry rate to a formal job | Contribution to total inflows to a formal job |
|------------------------------|------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Occupational category</b> |                              |                                  |                                                       |                            |                                               |
| Non-registered               | 2,605,623                    | 44.6                             | 15.4                                                  | 6.9                        | 37.6                                          |
| Prof. Ow account             | 228,510                      | 27.1                             | 18.7                                                  | 5.1                        | 2.4                                           |
| Non-Prof. Own account        | 2,612,013                    | 30.5                             | 5.2                                                   | 1.6                        | 8.7                                           |
| Employer                     | 496,055                      | 14.0                             | 9.6                                                   | 1.3                        | 1.4                                           |
| Non-paid family              | 542,960                      | 41.8                             | 5.6                                                   | 2.3                        | 2.7                                           |
| Unemployed                   | 622,439                      | 78.8                             | 18.1                                                  | 14.3                       | 18.6                                          |
| Ineactive                    | 4,860,806                    | 19.4                             | 14.5                                                  | 2.8                        | 28.6                                          |
| TOTAL                        | 11,968,406                   | 31.3                             | 12.7                                                  | 4.0                        | 100                                           |
| <b>Education</b>             |                              |                                  |                                                       |                            |                                               |
| Less compl. Secondary        | 6,481,120                    | 27.5                             | 6.2                                                   | 1.7                        | 23.1                                          |
| Comp. Secon-incomp. Terc.    | 4,709,688                    | 36.0                             | 17.4                                                  | 6.3                        | 61.9                                          |
| Complete Tertiary            | 777,598                      | 34.6                             | 26.6                                                  | 9.2                        | 15.0                                          |
| TOTAL                        | 11,968,406                   | 31.3                             | 12.7                                                  | 4.0                        | 100                                           |
| <b>Gender</b>                |                              |                                  |                                                       |                            |                                               |
| Women                        | 6,687,754                    | 32.7                             | 9.5                                                   | 3.1                        | 43.4                                          |
| Men                          | 5,280,652                    | 29.6                             | 17.3                                                  | 5.1                        | 56.6                                          |
| TOTAL                        | 11,968,406                   | 31.3                             | 12.7                                                  | 4.0                        | 100                                           |
| <b>Age</b>                   |                              |                                  |                                                       |                            |                                               |
| Less than 25                 | 3,884,890                    | 38.2                             | 14.9                                                  | 5.7                        | 46.4                                          |
| 25-45                        | 5,055,293                    | 32.2                             | 13.5                                                  | 4.4                        | 46.2                                          |
| More than 45                 | 3,028,223                    | 20.9                             | 5.6                                                   | 1.2                        | 7.4                                           |
| TOTAL                        | 11,968,406                   | 31.3                             | 12.7                                                  | 4.0                        | 100                                           |
| <b>Size of firms</b>         |                              |                                  |                                                       |                            |                                               |
| Less 6 employess             | 5,190,694                    | 34.2                             | 7.8                                                   | 2.7                        | 55.1                                          |
| 6-40 employees               | 939,820                      | 39.0                             | 18.8                                                  | 7.3                        | 27.4                                          |
| More than 40                 | 354,647                      | 49.8                             | 25.0                                                  | 12.5                       | 17.5                                          |
| TOTAL                        | 6,485,161                    | 35.7                             | 10.9                                                  | 3.9                        | 100                                           |
| <b>Sector of activity</b>    |                              |                                  |                                                       |                            |                                               |
| Industry                     | 884,204                      | 32.4                             | 13.5                                                  | 4.4                        | 15.4                                          |
| Construction                 | 621,633                      | 28.3                             | 12.2                                                  | 3.4                        | 8.6                                           |
| Trade                        | 2,608,238                    | 36.0                             | 8.6                                                   | 3.1                        | 32.2                                          |
| Transport                    | 656,704                      | 27.0                             | 13.1                                                  | 3.5                        | 9.3                                           |
| Financial services           | 336,908                      | 45.9                             | 17.3                                                  | 7.9                        | 10.7                                          |
| Personal serv.               | 242,488                      | 40.5                             | 13.1                                                  | 5.3                        | 5.1                                           |
| Domestic serv.               | 242,747                      | 53.9                             | 4.2                                                   | 2.3                        | 2.2                                           |
| Public serv.                 | 66,776                       | 44.1                             | 32.7                                                  | 14.4                       | 3.8                                           |
| Other sectors                | 810,088                      | 39.6                             | 9.9                                                   | 3.9                        | 12.6                                          |
| TOTAL                        | 6,469,786                    | 35.7                             | 10.8                                                  | 3.9                        | 100                                           |
| <b>Labour intensity</b>      |                              |                                  |                                                       |                            |                                               |
| Under-occupied               | 1,670,668                    | 55.3                             | 7.1                                                   | 3.9                        | 25.9                                          |
| Full-time                    | 2,255,377                    | 33.2                             | 13.9                                                  | 4.6                        | 41.3                                          |
| Over-occupied                | 2,559,116                    | 25.1                             | 12.8                                                  | 3.2                        | 32.8                                          |
| TOTAL                        | 6,485,161                    | 35.7                             | 10.9                                                  | 3.9                        | 100                                           |
| <b>Tenure</b>                |                              |                                  |                                                       |                            |                                               |
| 1-3 months                   | 1,621,345                    | 67.7                             | 14.6                                                  | 9.8                        | 63.4                                          |
| 3-6 months                   | 572,329                      | 42.3                             | 9.7                                                   | 4.1                        | 9.3                                           |
| 6-1 year                     | 1,252,559                    | 34.7                             | 8.3                                                   | 2.9                        | 14.4                                          |
| 1-5 years                    | 1,215,072                    | 23.1                             | 6.6                                                   | 1.5                        | 7.3                                           |
| More than 5 years            | 1,823,856                    | 14.4                             | 5.4                                                   | 0.8                        | 5.6                                           |
| TOTAL                        | 6,485,161                    | 35.7                             | 10.9                                                  | 3.9                        | 100                                           |

# Paraguay

| Characteristics              | Number of non-formal workers | Exit rate from the initial state | Conditional probability of transiting to a formal job | Entry rate to a formal job | Contribution to total inflows to a formal job |
|------------------------------|------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Occupational category</b> |                              |                                  |                                                       |                            |                                               |
| Non-registered               | 720,571                      | 51.2                             | 7.0                                                   | 3.6                        | 46.1                                          |
| Prof. Ow account             | 20,527                       | 28.1                             | 28.8                                                  | 8.1                        | 3.0                                           |
| Non-Prof. Own account        | 439,475                      | 36.4                             | 1.1                                                   | 0.4                        | 3.2                                           |
| Employer                     | 134,834                      | 12.8                             | 0.0                                                   | 0.0                        | 0.0                                           |
| Non-paid family              | 64,482                       | 52.7                             | 7.1                                                   | 3.7                        | 4.3                                           |
| Unemployed                   | 195,904                      | 70.6                             | 8.2                                                   | 5.8                        | 20.1                                          |
| Ineactive                    | 776,419                      | 28.3                             | 6.0                                                   | 1.7                        | 23.4                                          |
| TOTAL                        | 2,352,212                    | 40.1                             | 6.0                                                   | 2.4                        | 100                                           |
| <b>Education</b>             |                              |                                  |                                                       |                            |                                               |
| Less compl. Secondary        | 1,407,520                    | 39.7                             | 3.1                                                   | 1.2                        | 30.6                                          |
| Comp. Secon-incomp. Terc.    | 893,849                      | 41.5                             | 9.9                                                   | 4.1                        | 65.0                                          |
| Complete Terciary            | 50,843                       | 28.9                             | 16.8                                                  | 4.9                        | 4.4                                           |
| TOTAL                        | 2,352,212                    | 40.1                             | 6.0                                                   | 2.4                        | 100                                           |
| <b>Gender</b>                |                              |                                  |                                                       |                            |                                               |
| Women                        | 1,314,201                    | 38.5                             | 6.2                                                   | 2.4                        | 55.7                                          |
| Men                          | 1,038,011                    | 42.2                             | 5.7                                                   | 2.4                        | 44.3                                          |
| TOTAL                        | 2,352,212                    | 40.1                             | 6.0                                                   | 2.4                        | 100                                           |
| <b>Age</b>                   |                              |                                  |                                                       |                            |                                               |
| Less than 25                 | 874,891                      | 49.6                             | 6.6                                                   | 3.3                        | 50.8                                          |
| 25-45                        | 868,175                      | 38.5                             | 7.2                                                   | 2.8                        | 42.5                                          |
| More than 45                 | 609,146                      | 28.9                             | 2.1                                                   | 0.6                        | 6.7                                           |
| TOTAL                        | 2,352,212                    | 40.1                             | 6.0                                                   | 2.4                        | 100                                           |
| <b>Size of firms</b>         |                              |                                  |                                                       |                            |                                               |
| Less 6 employess             | 1,019,516                    | 41.9                             | 3.6                                                   | 1.5                        | 48.5                                          |
| 6-40 employees               | 247,547                      | 46.7                             | 9.9                                                   | 4.6                        | 35.9                                          |
| More than 40                 | 112,826                      | 37.9                             | 11.6                                                  | 4.4                        | 15.5                                          |
| TOTAL                        | 1,379,889                    | 42.5                             | 5.4                                                   | 2.3                        | 100                                           |
| <b>Sector of activity</b>    |                              |                                  |                                                       |                            |                                               |
| Industry                     | 167,082                      | 38.3                             | 3.1                                                   | 1.2                        | 6.2                                           |
| Construction                 | 142,658                      | 57.1                             | 2.3                                                   | 1.3                        | 5.8                                           |
| Trade                        | 519,511                      | 37.2                             | 5.7                                                   | 2.1                        | 34.5                                          |
| Transport                    | 56,716                       | 42.6                             | 8.0                                                   | 3.4                        | 6.1                                           |
| Financial services           | 77,910                       | 41.6                             | 16.5                                                  | 6.9                        | 16.8                                          |
| Personal serv.               | 233,148                      | 41.0                             | 6.5                                                   | 2.6                        | 19.4                                          |
| Domestic serv.               | 149,019                      | 57.4                             | 4.2                                                   | 2.4                        | 11.3                                          |
| Public serv.                 | 33,845                       | 29.1                             | 0.0                                                   | 0.0                        | 0.0                                           |
| Other sectors                | 0                            | #i DIV/0!                        | #i DIV/0!                                             | #i DIV/0!                  | 0.0                                           |
| TOTAL                        | 1,379,889                    | 42.5                             | 5.4                                                   | 2.3                        | 100                                           |
| <b>Labour intensity</b>      |                              |                                  |                                                       |                            |                                               |
| Under-occupied               | 406,511                      | 53.7                             | 4.1                                                   | 2.2                        | 27.9                                          |
| Full-time                    | 267,180                      | 42.5                             | 7.1                                                   | 3.0                        | 25.3                                          |
| Over-occupied                | 706,198                      | 36.0                             | 5.9                                                   | 2.1                        | 46.8                                          |
| TOTAL                        | 1,379,889                    | 42.5                             | 5.4                                                   | 2.3                        | 100                                           |
| <b>Tenure</b>                |                              |                                  |                                                       |                            |                                               |
| 1-3 months                   | 208,228                      | 78.4                             | 6.2                                                   | 4.9                        | 31.9                                          |
| 3-6 months                   | 95,547                       | 60.5                             | 9.2                                                   | 5.5                        | 16.6                                          |
| 6-1 year                     | 165,178                      | 51.7                             | 2.7                                                   | 1.4                        | 7.2                                           |
| 1-5 years                    | 420,715                      | 36.0                             | 5.3                                                   | 1.9                        | 25.4                                          |
| More than 5 years            | 490,221                      | 26.2                             | 4.7                                                   | 1.2                        | 18.9                                          |
| TOTAL                        | 1,379,889                    | 42.5                             | 5.4                                                   | 2.3                        | 100                                           |

| Characteristics              | Number of non-formal workers | Exit rate from the initial state | Conditional probability of transiting to a formal job | Entry rate to a formal job | Contribution to total inflows to a formal job |
|------------------------------|------------------------------|----------------------------------|-------------------------------------------------------|----------------------------|-----------------------------------------------|
| <b>Occupational category</b> |                              |                                  |                                                       |                            |                                               |
| Non-registered               | 5,926,739                    | 64.0                             | 9.8                                                   | 6.3                        | 34.5                                          |
| Prof. Ow account             | 914,910                      | 37.6                             | 25.8                                                  | 9.7                        | 8.2                                           |
| Non-Prof. Own account        | 6,314,081                    | 36.5                             | 6.0                                                   | 2.2                        | 12.9                                          |
| Employer                     | 1,070,905                    | 20.7                             | 10.3                                                  | 2.1                        | 2.1                                           |
| Non-paid family              | 1,289,501                    | 58.6                             | 4.1                                                   | 2.4                        | 2.9                                           |
| Unemployed                   | 2,076,114                    | 76.5                             | 13.0                                                  | 10.0                       | 19.2                                          |
| Ineactive                    | 6,729,975                    | 37.3                             | 8.6                                                   | 3.2                        | 20.1                                          |
| TOTAL                        | 24,322,225                   | 47.4                             | 9.3                                                   | 4.4                        | 100                                           |
| <b>Education</b>             |                              |                                  |                                                       |                            |                                               |
| Less compl. Secondary        | 9,003,223                    | 43.8                             | 4.4                                                   | 1.9                        | 16.1                                          |
| Comp. Secon-incomp. Terc.    | 12,280,961                   | 50.4                             | 9.7                                                   | 4.9                        | 55.6                                          |
| Complete Tertiary            | 3,023,652                    | 45.7                             | 22.0                                                  | 10.1                       | 28.2                                          |
| TOTAL                        | 24,307,836                   | 47.4                             | 9.4                                                   | 4.4                        | 100                                           |
| <b>Gender</b>                |                              |                                  |                                                       |                            |                                               |
| Women                        | 13,911,322                   | 48.0                             | 5.8                                                   | 2.8                        | 35.9                                          |
| Men                          | 10,410,903                   | 46.5                             | 14.3                                                  | 6.6                        | 64.1                                          |
| TOTAL                        | 24,322,225                   | 47.4                             | 9.3                                                   | 4.4                        | 100                                           |
| <b>Age</b>                   |                              |                                  |                                                       |                            |                                               |
| Less than 25                 | 8,292,956                    | 59.7                             | 8.0                                                   | 4.8                        | 36.9                                          |
| 25-45                        | 10,195,468                   | 46.8                             | 10.9                                                  | 5.1                        | 48.5                                          |
| More than 45                 | 5,833,801                    | 30.8                             | 8.8                                                   | 2.7                        | 14.6                                          |
| TOTAL                        | 24,322,225                   | 47.4                             | 9.3                                                   | 4.4                        | 100                                           |
| <b>Size of firms</b>         |                              |                                  |                                                       |                            |                                               |
| Less 6 employess             | 12,374,098                   | 45.1                             | 7.2                                                   | 3.2                        | 61.2                                          |
| 6-40 employees               | 2,125,137                    | 59.1                             | 12.3                                                  | 7.3                        | 23.7                                          |
| More than 40                 | 1,016,901                    | 57.9                             | 16.8                                                  | 9.7                        | 15.2                                          |
| TOTAL                        | 15,516,136                   | 47.8                             | 8.8                                                   | 4.2                        | 100                                           |
| <b>Sector of activity</b>    |                              |                                  |                                                       |                            |                                               |
| Industry                     | 2,062,303                    | 51.5                             | 5.7                                                   | 2.9                        | 9.2                                           |
| Construction                 | 952,408                      | 54.9                             | 16.6                                                  | 9.1                        | 13.3                                          |
| Trade                        | 6,208,711                    | 44.1                             | 6.5                                                   | 2.9                        | 27.3                                          |
| Transport                    | 2,041,828                    | 35.4                             | 12.0                                                  | 4.2                        | 13.2                                          |
| Financial services           | 715,821                      | 55.6                             | 14.6                                                  | 8.1                        | 8.9                                           |
| Personal serv.               | 698,065                      | 55.1                             | 12.2                                                  | 6.7                        | 7.2                                           |
| Domestic serv.               | 814,871                      | 58.7                             | 3.7                                                   | 2.2                        | 2.7                                           |
| Public serv.                 | 400,023                      | 55.5                             | 12.4                                                  | 6.9                        | 4.2                                           |
| Other sectors                | 1,622,106                    | 55.1                             | 10.2                                                  | 5.6                        | 14.0                                          |
| TOTAL                        | 15,516,136                   | 47.8                             | 8.8                                                   | 4.2                        | 100                                           |
| <b>Labour intensity</b>      |                              |                                  |                                                       |                            |                                               |
| Under-occupied               | 5,585,134                    | 63.0                             | 7.6                                                   | 4.8                        | 40.7                                          |
| Full-time                    | 2,206,751                    | 47.1                             | 5.9                                                   | 2.8                        | 9.4                                           |
| Over-occupied                | 7,724,251                    | 37.1                             | 11.4                                                  | 4.2                        | 49.9                                          |
| TOTAL                        | 15,516,136                   | 47.8                             | 8.8                                                   | 4.2                        | 100                                           |
| <b>Tenure</b>                |                              |                                  |                                                       |                            |                                               |
| 1-3 months                   | 3,466,260                    | 80.1                             | 10.2                                                  | 8.1                        | 43.1                                          |
| 3-6 months                   | 1,100,295                    | 66.0                             | 7.2                                                   | 4.8                        | 8.0                                           |
| 6-1 year                     | 1,607,010                    | 60.4                             | 9.1                                                   | 5.5                        | 13.5                                          |
| 1-5 years                    | 4,619,355                    | 41.5                             | 8.1                                                   | 3.4                        | 23.7                                          |
| More than 5 years            | 4,723,216                    | 21.8                             | 7.3                                                   | 1.6                        | 11.6                                          |
| TOTAL                        | 15,516,136                   | 47.8                             | 8.8                                                   | 4.2                        | 100                                           |

Source: Authors' elaboration based on Household Surveys

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