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Informality, labour transitions, and the livelihoods of workers in Latin America

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WIDER Working Paper 2021/19

Informality, labour transitions, and the livelihoods of workers in Latin America

Roxana Maurizio¹ and Ana Paula Monsalvo²

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Abstract: This paper studies the incidence and heterogeneity of labour informality in six Latin American countries—Argentina, Brazil, Ecuador, Mexico, Paraguay, and Peru. We divide workers into five work statuses: formal wage-employed, formal self-employed, upper-tier informal wage-employed, lower-tier informal wage-employed, and informal self-employed. We evaluate the patterns of the occupational turnover between these work statuses and assess their impact on wage dynamics. In all the countries, wages are highest for formal workers and lowest for lower-tier informal jobs. The proportion of formal workers who maintain their work status of origin or move up the job ladder is significantly higher than those who transition into lower-paying work statuses. However, despite the high labour turnover experienced by lower-tier informal wage employees, most failed to move up the wage ladder. Education plays an important role, as it increases the probability of transitioning into a better job and, within informality, the chance of better wages.

Key words: informality, occupational turnover, education, wage dynamics, Latin America

JEL classification: J31, J46, N36

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1 Introduction

Since the 2000s, an increasing trend in labour formality has been observed in several Latin American countries. However, despite this positive evolution, informal employment continues to be one of the most distinctive characteristics in this region.

Informal employment is a complex and heterogeneous phenomenon. It encompasses wage earners and the self-employed, including employers and own-account workers. Likewise, informality can be found in both big firms and microenterprises. However, the existence of a broad group of informal workers is mainly associated with a high presence of small, unstructured firms that operate with very low levels of productivity and competitiveness.

At the same time, labour informality is not reduced by a single determinant, but rather by a combination of various factors. In particular, sustained job-generating growth enhances labour market predictability, thus favouring an increase in long-term, formal contracts. However, while sustained economic growth seems to be a necessary condition for the process of employment formalization, it is the interaction between that process and specific policies, such as labour inspection or incentives for formalization, that determines the results in terms of labour registration.

The main aim of this paper is to carry out an in-depth study of the structural characteristics of the different segments of informal and formal workers, and their changes, since the beginning of the new millennium in six Latin American countries—Argentina, Brazil, Ecuador, Mexico, Paraguay, and Peru—from a comparative and dynamic perspective. In particular, this study: (1) assesses the intensity of occupational turnover, focusing on the movements between informal and formal employment; (2) estimates the likelihood of different segments of informal workers moving to a better position inside informal employment or to a formal occupation; and (3) assesses the impacts of labour mobility on wage dynamics.

This selection of countries allows us to have a broad picture of the Latin American labour markets as they have occupational structures and dynamics that greatly differ from one another. Additionally, they account for about 70 per cent of the total population in the region. The data come from regular household surveys carried out by the national statistical institutes of the selected countries. Although these surveys are not longitudinal, their rotating panel sample allows flow data to be drawn from them.

Three aspects of this study are worth emphasizing. First, it employs information on labour transitions in addition to the more traditional cross-section analysis. In this regard, the paper contributes to the scarce but growing literature on occupational mobility in Latin America.

Second, instead of only focusing on the dichotomy between formality and informality, we examine the heterogeneity of informal work, distinguishing between lower-tier and upper-tier informal workers. This differentiation allows us to assess whether informality is a last resort for the first segment of workers to earn income, and whether it is preferred over formal employment by the second segment.

Third, a comparative analysis is carried out with the six Latin American countries. Their differences regarding labour market structures and overall level of development provide insights for the analysis.

The results show that in all the countries considered wages are the highest for formal workers and the lowest for lower-tier informal workers. Two contrasting labour mobility patterns are found: on the one hand, the proportion of formal workers who maintain their work status of origin or move up the job ladder is significantly higher than the proportion who transition into lower-paying work statuses; on the other hand, despite the high labour turnover experienced by lower-tier informal wage employees, most of them failed to move up the wage ladder.

Education strongly correlates both with a higher probability of transitioning to a better job and with higher wages, even in an informal occupation. In other words, informal workers who remain in this work status can still improve their wages through higher education.

These results are particularly important considering the high informality that still persists in the region and the close association between informality, low productivity, and low wages. Therefore, the findings provide useful guidance for the design of public policies aimed at reducing informality and enhancing the livelihoods of workers and families in the region.

The paper follows with the literature review about the characteristics of formality in Latin America. Section 3 details the sources of information and the identification of formal, upper-tier and lower-tier informal workers in the countries under study. Section 4 describes the methodologies used. Section 5 analyses the evolution of labour formality during the 2000s and the current composition of employment. Section 6 identifies the patterns and characteristics of employment transitions. Section 7 assesses their impacts on wage dynamics. Section 8 concludes.

2 Literature review

There are different arguments about the existence and persistence of informality in the developing world and, in particular, in Latin America. From the ‘voluntary choice’ perspective, workers and firms choose their optimal level of engagement with the institutions of state depending on their valuation of the net benefits associated with formality and the state’s enforcement efforts.

In this line, De Soto (1986) argues that the origin and persistence of informality in developing countries is a response to the complicated and expensive regulations that production units, even small ones, must comply with. Similarly, Perry et al. (2007) conclude that workers and firms make cost–benefit analyses about whether to cross the line into formality, and frequently decide against it.

From another perspective, informality does not stem from workers’ preference based on economic rationality but rather, in many cases, it is the only opportunity for employment (ECLAC 2008). At a more aggregate level, a highly heterogeneous production structure maintains the informal sector due to the limited capacity of higher-productivity sectors to fully absorb the labour force (Infante 2011).

However, the heterogeneity that exists within informality allows both approaches to be complementary rather than mutually exclusive. In particular, Fields (1990) reconciles these two views by identifying different segments within informality: ‘easy-entry’ and ‘upper-tier’. While informality is a last resort for the first segment of workers, who seek to earn some income to survive, for the second segment, it is a preference over formal employment. Entry to the latter is restricted by financial capital and human capital requirements. Therefore, Fields (1990) emphasizes the duality that characterizes informal employment by differentiating between free-entry and restricted-entry components. For those workers excluded from formal employment and upper-

tier informal jobs, accepting a lower-paying informal position can be the only employment possibility.

The notion that informal employment is heterogeneous is also discussed by Kucera and Roncolato (2008). According to them: ‘The question is not whether there exists some voluntary informal employment in developing countries, but rather how widespread it is and how this might vary for countries at different levels of development and for different workers, particularly men and women’ (Kucera and Roncolato 2008: 2). Along this line, Kanbur (2017) discusses what exactly informality is, proposing an approach that moves away from considering informality as a uniform category. Other authors also recognize the existence of heterogeneity within informal employment (Basu et al. 2018; Chen 2012; De Vreyer and Roubaud 2013; Grimm et al. 2012).

Another widely studied dimension of informality has been the wage gap between formal and informal workers and the presence of wage segmentation. Tornarolli et al. (2014) confirm the existence of these gaps in almost all Latin American countries, both among women and men. Arias and Khamis (2008) also find significant wage penalties due to informality in Argentina. Tannuri-Pianto and Pianto (2002) use quantile wage regressions and selection models to analyse wages in formal, informal, and self-employed workers in Bolivia. Their results seem to confirm the existence of segmentation at the lower quantiles of the earnings distribution. However, findings at higher quantiles are more consistent with a voluntary choice by highly productive workers. Using different parametric and non-parametric econometric methods, Maurizio (2016) points to the existence of significant wage returns to formality in the six countries in the region—Argentina, Brazil, Chile, Mexico, Paraguay, and Uruguay. Moreover, the wage gaps are not constant across the income distribution but are larger at the lower extreme.

There are few studies on the characteristics of the labour formalization process observed in many Latin American countries over the 2000s. According to the International Labour Organization (ILO 2018), one of the most important transformations of Latin American labour markets is the process of formalization that has been observed since the beginning of the new millennium. Out of the 51 million jobs created in the region in the 2005–15 decade, 39 million were formal jobs, thus evidencing the reduction of the informal employment rate in this period.

Maurizio and Vázquez (2019) show that the process of labour formalization in some Latin American countries 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. For example, the number of formal jobs rose by almost 60 per cent in Argentina between 2003 and 2017, while total employment increased by 20 per cent. In Brazil, these numbers are 40 per cent and 20 per cent, respectively. In Ecuador, Paraguay, and Peru the number of registered jobs has more than doubled since the new millennium.

Bertranou et al. (2013) analyse the employment formalization in Argentina from 2003 to 2012 and the public policies associated with that process. They conclude that labour policies, such as labour inspection, must be accompanied by production, tax, social, and labour policies, along with stable economic growth in order to foster formality.

Along this line, Maurizio (2015) concludes that the interaction between job-generating growth and specific policies aimed at labour formalization determined the results observed in terms of labour registration in Argentina and Brazil. In addition, she finds that those informal workers that were initially located in the upper part of the distribution have the highest probability of becoming formal. This situation seems to be consistent with the fact that the process of formalization was more intense among those individuals that presented a ‘better’ vector of observable attributes. 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. Maurizio and Vázquez (2019) confirm these findings in six Latin American countries—Argentina, Brazil, Ecuador, Paraguay, and Peru.

Finally, some studies focus on the effects of the reduction of labour informality on labour income inequality (Amarante and Arim 2015; Beccaria et al. 2015; Beccaria et al. 2020; ECLAC and ILO 2014; Maurizio 2015; Maurizio and Vázquez 2015). One common finding is the positive correlation between the reduction in informality and the fall in wage inequality. ECLAC and ILO (2014) also study the impact of the formalization process on gender wage gaps finding a heterogeneous effect across countries. In Brazil, Ecuador, Panama, and Paraguay, the increase in formality narrowed the wage difference between men and women, given that among the latter the intensity of formalization was stronger. The formalization process was, however, unequalizing in the Plurinational State of Bolivia and Colombia.

3 Data and measurement of informality

3.1 Data

The data used in this paper come from regular household surveys carried out by the national statistical institutes of each country. Although these 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. Therefore, for each wave of the survey, one of these groups enters the sample while another one leaves. Consequently, it is possible to compare a given proportion of the sample between two or more waves.

For Argentina, the data source is the *Encuesta Permanente de Hogares* (EPH) carried out by the *Instituto Nacional de Estadística y Censos* (INDEC 2019). Micro-data are available for 31 urban areas. From 2003, after a major methodological change, the survey provides quarterly data. Households are interviewed in two successive quarters, stay out of the sample for the two following quarters, and are interviewed again for two more quarters. Therefore, the transitions that can be analysed are those that occur between two yearly observations (in the same quarter of two successive years) or between two successive quarters. The theoretical overlapping sample between one quarter and the same quarter of the following year, as well as between two successive quarters, is 50 per cent.

Brazil's data come from the *Pesquisa Mensal de Emprego* (PME) (IBGE 2016) and the *Pesquisa Nacional por Amostra de Domicílios Contínua* (PNADC) (IBGE 2020), conducted by the *Instituto Brasileiro de Geografia e Estatística* (IBGE). The PME covers six major urban areas and provides monthly information. In this survey, 25 per cent of the sample is replaced every month. Households are observed during four consecutive months, stay out of the sample for eight months, and are interviewed again for another four months, allowing the construction of monthly and yearly panel data. Until 2003, each of these groups represented 25 per cent of the total sampled households and, from that year on, the rotation groups represent one-eighth of the sample, two of which are interviewed each month. This scheme implies a theoretical overlapping of 75 per cent of the sample in two successive years and of 50 per cent every 12 months, thus avoiding 'blind periods' (periods with no sample overlapping). The PME ended in 2015. The PNADC began to be carried out in 2012. It covers urban and rural areas. The survey is planned to have quarterly information collecting data of the whole sample during the three months. The sample rotation scheme adopted is 1–2 (5). In this scheme, the household is interviewed for one month and leaves

the sample for two consecutive months; this sequence is repeated five times for each household before leaving the sample.

The *Encuesta Nacional de Empleo, Desempleo y Subempleo* (ENEMDU) in Ecuador is carried out by the *Instituto Nacional de Estadística y Censos* (INEC 2018). It has a rotating sample scheme that allows quarterly and yearly panels to be built by interviewing each household up to four times. Data are representative of urban and rural areas. It collects information in March, June, September, and December every year in 23 provinces of the country. Households are interviewed in two consecutive quarters, stay out of the sample for two quarters, and are interviewed again for two additional quarters. The sample is divided into four groups which represent 25 per cent of the sample, ensuring an overlapping of 50 per cent during the same month of two consecutive years. Contrary to the procedures followed by other surveys, the ENEMDU replaces households that do not respond to the survey and thus it has a very low non-response rate (of around 3 per cent of the initial sample).

The *Encuesta Nacional de Ocupación y Empleo* (ENOE) is the source of data for Mexico. It is conducted by the *Instituto Nacional de Estadística y Geografía* (INEGI 2007) and has national representativeness. The sample rotation scheme involves keeping 80 per cent of the sample overlapped between quarters and rotating the remaining 20 per cent. Each household remains in the sample for five consecutive quarters before leaving the sample.

The Paraguayan *Encuesta Continua de Empleo* (ECE) is carried out by the *Dirección General de Estadística, Encuestas y Censos* (2017) and has national coverage. The scheme used corresponds to a panel sample, which implies visiting the same households a maximum of five times.

Finally, in the case of Peru, the *Encuesta Nacional de Hogares* (ENAHO), the regular household survey conducted by the *Instituto Nacional de Estadística e Informática* (INEI 2020), also covers urban and rural areas. The ENAHO panel for the period under analysis includes two types of rotation scheme. The first one corresponds to the period 2002 to 2006 when the panel was fixed. The second type began in 2007; since then the rotation scheme renews the sample by 20 per cent each year.

The period under analysis corresponds to the period since the start of the new millennium. However, the specific years considered vary in each country according to data availability. In Argentina all years between 2003 and 2019 are analysed, 2003–19 for Brazil (2003–15 PME, 2015–19 PNADC), 2003–19 for Ecuador, 2002–19 for Peru, 2005–19 for Mexico, and 2010–17 for Paraguay.

To obtain datasets that could be compared between countries, we included one transition for each individual, based on a one-year interval between observations. This enables us, for instance, to assess whether each person remained employed, became unemployed, or left the labour force. In addition, yearly transitions between different work statuses are also identified.

Our study is restricted to male workers between 15 and 65 years of age and female workers between 15 and 60. The upper limits correspond to the compulsory retirement ages in the countries being analysed, and we have used them in an attempt to minimize the bias that might come from the exits of older individuals from the labour force. Those individuals for whom information was incomplete or inconsistent regarding personal or occupational variables were removed from the sample.

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 only

covers urban areas. To obtain sufficient observations, yearly panels have been pooled in each country, so the results are the average for the period.

One potential problem arises from the fact that not every labour transition can be captured when matching two observations with a one-year observation window. Given that a transition is identified by comparing these two waves, two or more symmetrical changes in the work status (or in other variables) might take place between those two moments without being captured by the observed data.

Another limitation of panel information is that the proportion of households and individuals that are actually interviewed at two successive moments can be smaller than the proportion of those that should be re-interviewed according to the sample rotation scheme. This loss of cases ('attrition') is caused by different factors, e.g. people abandoning the panel or difficulties in the data collection process. If this loss is not random, it can introduce bias in the sample. However, there was no available information in the databases that allowed us to differentiate loss of data due to attrition associated with the survey rotation scheme. Therefore, an attrition bias correction was not possible. An indirect way to assess potential attrition effects (although it is not enough proof to discard its impact) is to compare key descriptive statistics from panel and cross-section data. We computed the formality rate among different groups of workers and found no relevant differences between them (Table A1).

3.2 Identification of formal, upper-tier, and lower-tier informal workers

Labour informality is one of the categories of analysis that has greatly contributed to the characterization of labour conditions in Latin America.

The concept of the informal sector (IS) emerged for the first time in the early seventies, in the ILO's documents for African countries (ILO 1972). It was then developed in the Latin American region by the Regional Employment Program for Latin American and the Caribbean (PREALC as its acronym in Spanish), with the objective of explaining the growth of wide sectors of the population that were not able to participate in the processes of productive modernization through a formal labour market, in a context of relatively low levels of unemployment and light countercyclical behaviour.

Under this 'productive approach', informality reflects the inability of the economies of the region to generate enough formal jobs in relation to the growth of the labour force. Given the shortage or lack of social protection mechanisms that provide an income to those who cannot access a job, some individuals decide to embark on any activity that would allow them to obtain an income that is sometimes barely enough to survive on.

In the nineties, the ILO (1993) defined a 'productive informal sector unit' as one characterized by fixed assets that do not belong to the company but rather to their owners; therefore, it is often not possible to distinguish which expense should be borne by the company and which corresponds to the household. Also, labour relationships in these units are mainly based on personal and social ties. Given these characteristics, the IS is usually associated with small productive units with no clear separation between capital and labour and with low levels of productivity. For this approach, the functioning logic of enterprises in informal employment (IE) is survival more than accumulation. The jobs generated in this sector constitute the employment in the informal sector (EIS).

The 15th and 17th International Conference of Labour Statistics (ICLS) of ILO established the classification criteria for formal and informal workers: according to the 'productive approach', the

EIS is defined as the workers employed in small productive units which are not legally registered as firms, employ a reduced amount of capital, and make limited use of technology.

However, given that household surveys do not inquire in depth into the characteristics of the firms, the ILO suggests adopting a measurement criterion based on the combination of occupational categories, occupation groups defined according to job qualifications, and the size of the firm. In this way, it is possible to identify the two major components of the IS: (1) family units comprising own-account workers and family workers; and (2) microenterprises comprising employers and wage earners in establishments with less than five employees. In the case of independent workers, only those with no professional skills (approximated by those individuals with incomplete university studies) are considered as part of the IS, as an operational way to leave only independent workers with low productivity in this sector. The public sector is excluded from the IS.

Along with these conceptual developments based on a 'productive approach', IE is another concept that has developed in more recent years. Based on a 'legal approach', IE refers to a different dimension of informality because it focuses directly on job conditions. In particular, this approach associates informality with the evasion of labour regulations, defining IE as that of workers not covered by labour legislation.¹

In recent years, the ILO has gone further in the distinction between IE and EIS. According to Hussmanns (2004: 2):

'Employment in the informal sector' and 'informal employment' are both measures that are useful for analytical and policy-making purposes, as they refer to different aspects of the 'informalisation' of employment and to different targets for policymaking. One of the two concepts cannot replace the other. However, the two concepts need to be defined and measured in such a way that they are consistent and that one can be clearly distinguished from the other. (Hussmanns 2004: 2)

The ILO recommendations indicate that wage earners 'are considered to have informal jobs if their employment relationship is, in law or in practice, not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits'.² The empirical identification of informal wage jobs in each country is based on available information derived from household surveys.

By combining these two approaches (and based on comparable available data across countries), this study identifies five different work statuses among workers, as described in Box 1.

¹ ILO (2002), Hussmanns (2004).

² Hussmanns (2004: 6).

Box 1: Identification and measurement of five work statuses

Work status	Measurement
Formal wage employees	<ul style="list-style-type: none"> - Argentina: those who answer that their employers make payroll deductions to pay social security contributions. - Brazil: those who have signed a labour contract. - Paraguay, Mexico, and Peru: those enrolled in a pension system. - Ecuador: those indicating that they receive social insurance from the job.
Upper-tier informal wage employees	Informal wage employees working in firms with more than five employees
Lower-tier informal wage employees	Informal wage employees working in firms with up to five employees
Formal self-employed	Owners in enterprises with more than five employees, and professional own-account workers
Informal self-employed	Owners in enterprises with up to five employees, non-professional own-account workers and unpaid family workers.

Source: authors' elaboration.

When putting the legal approach into practice, we seek to make comparable the formal wage-earners identification criterion, which does not necessarily imply the same empirical implementation in each country given that household surveys capture this dimension in different ways. However, comparability is not affected much because, although every country chooses different variables, they all share the same notion of informality, i.e. the non-fulfilment, or evasion, of the labour legislation and social security regulations.

4 Methodology

In addition to the descriptive analysis based on cross-sectional data, this study relies on econometric exercises from annual panel data. Starting with the dynamic analysis, the year-on-year transition matrices between different states (employed, unemployed, and inactive) and different

work statuses are computed. Then, multinomial logit regressions are estimated in order to evaluate how these transitions vary according to observable workers' attributes. Finally, wage dynamic equations are performed to estimate the impact of the mobility across work statuses on labour income changes.

4.1 Multinomial logit regressions

As mentioned, multinomial logit regressions are estimated to identify the observed characteristics associated with changes in the initial work status, differentiating those attributes positively correlated with transitions into higher-paying occupations from those correlated with higher transitions to lower-paying occupations. Specifically, from these regressions we estimate the probability of being in an employment status k at time $t = 1$ (S_{i1}) depending on the initial work status at time $t = 0$ (S_{i0}) and on observed individual characteristics (X_{i0}).

The statistical model can be formulated as follows:

$$\pi_{i1k} = P(S_{i1} = k | S_{i0}, X_{i0}) = \frac{e^{S_{i0}\theta_k + X_{i0}\beta_k}}{1 + \sum_{j=1}^K e^{S_{i0}\theta_j + X_{i0}\beta_j}} \quad (1)$$

Where π_{i1k} represents the transition probability from the base status S_{i0} to status $S_{i1} = k$ for the individual i . Thus, the θ_k and β_k are the regression parameters associated with outcome status k .

Then, equation (1) can be expressed using the logit link for a generalized linear model in order to estimate the parameters

$$\log\left(\frac{\pi_{i1k}}{\pi_{i1(k+1)}}\right) = S_{i0}\theta_k + X_{i0}\beta_k \quad (2)$$

We estimate employment transition equations between three work statuses: (1) formal wage employees and formal self-employed; (2) upper-tier informal wage employees; and (3) lower-tier informal wage employees and informal self-employed. In this way, we obtain three multinomial logit equations for each country under study, one for each work status, and three outcomes in each one: stay in the same work status or transit to one of the other two possible statuses.

For identifiability, the base category chosen stays at the initial work status in all cases.

4.2 Wage dynamics regressions

After evaluating the characteristics associated with different patterns of labour mobility, we estimate the correlation between work status changes and wage dynamics, controlling for observable worker attributes. For this purpose, we regress the change in the logarithm of labour earnings between time $t = 0$ and time $t = 1$ (Δy_1) on the individual's initial log earnings (y_0), the initial worker characteristics like education, age, gender, branch of activity (X_0), and a set of dummies to model transitions from the initial job status to each one of the remaining statuses (D_{ij}). Our dynamic income model also considers year and region fixed effects (equation 3).

$$\Delta y_{1i} = \beta_{0i} + \beta_{1i}y_{0i} + \beta_{2i}X_{0i} + \sum_j \vartheta_{ji}D_{ji} + \mu_i \quad (3)$$

The subscripts i and j represent lower-tier informal, upper-tier informal, and formal work status, and $i \neq j$. The base category i means the worker did not change status between periods. The coefficients ϑ_{ji} can be interpreted as the premium or penalty when the worker moves from i -work status to j -work status relative to the worker who remains in the same work status i .

5 Evolution of labour informality and labour composition in Latin America during the 2000s

5.1 The labour formalization process

As mentioned before, Latin America has experienced a reducing trend in the informality rate among wage employees since the beginning of the new millennium. In the six countries under study, labour formalization led to an increase of around 14 percentage points (pp) in Argentina and 8 pp in Brazil in the formality rate among salaried workers in the period under study. This process has been even more intense in Ecuador, Paraguay, and Peru, where the share of formal workers grew by between 17 pp and 23 pp. Mexico, in contrast, only experienced a slight increase, about 2 pp, between the two ends of the period (Figure 1).

The labour formalization process in these countries during the 2000s has been associated, on the one hand, with greater dynamism in the generation of new jobs in a macroeconomic context characterized by a relatively high and stable growth rate, and, on the other hand, with the implementation of specific public policies aimed at reducing the costs of informality through various incentive mechanisms.

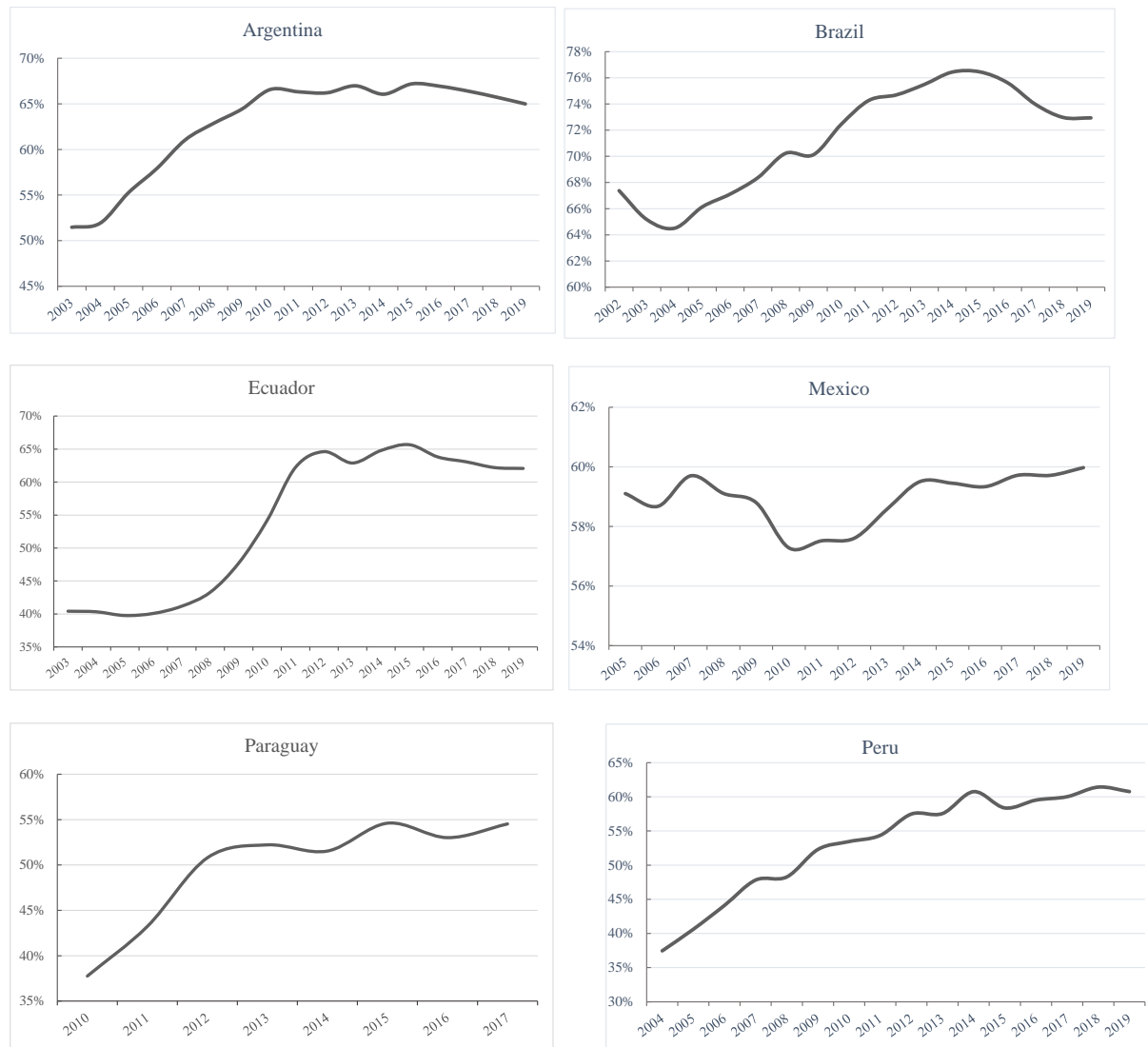
Indeed, the business cycle is a relevant factor to consider when analysing the drivers of the decline in labour informality. There are theoretical arguments on both the demand and supply sides of the labour market that account for the countercyclical nature of informality. As mentioned earlier, sustained job-generating growth enhances labour market predictability, thus favouring an increase in long-term, formal contracts. In addition, a period of sustained growth in labour demand may also lower the expected probability of layoffs and consequently the probability of employers having to face the costs of firing a formal worker. Hence, the incentives to maintain informal labour relations are reduced. In this context, employers can benefit from productivity increases as a result of the accumulation of specific human capital. There is evidence regarding the positive impact of the economic cycle on formalization (Boeri and Garibaldi 2007; Bosch and Esteban-Pretel 2009; Bosch and Maloney 2010; Corsueil and Foguel 2012).

Even when the evidence supports the procyclical behaviour of labour formality, economic growth seems a necessary but insufficient condition. In particular, some of the specific policies implemented in these countries, such as incentives for employment formalization and labour inspections, may also account for the process of formalization. Some studies have found positive impacts of the reduction of employers' contributions or the simplification of administrative procedures to register workers on formal labour demand (Castillo et al. 2012; Delgado et al. 2007; Fajnzylber et al. 2009; Monteiro and Assunção 2012), while others have not found significant impacts (Chacaltana 2001, 2008; Cruces et al. 2010). In addition, the few studies evaluating the impact of inspections seem to confirm that they have a positive effect on labour market formality (Almeida and Carneiro 2009; Berg 2010; de Andrade et al. 2013; Ronconi 2010; World Bank 2012).

However, after the significant increase in labour formality in the countries under analysis (except in Mexico), this process has slowed down, stopped, or reversed in recent years, hand in hand with the weakening of the macroeconomic performance. As shown in Figure 1, the turning point seems to have been around 2014/15. In Argentina, after some stagnation between 2010 and 2015, the formality rate fell by 2 pp between that year and 2019. A similar situation is observed in Ecuador, with a slowdown in the increase in formality between 2012 and 2015 and a subsequent reduction of 4 pp over the last four years.

These two contrasting phases are also observed in Brazil where there was an increasing trend in formality until 2015 and a fall between 2015 and 2019 (-3.5 pp). After the strong formalization process in Peru and Paraguay until 2014 and 2015, respectively, the proportion of formal workers remained relatively constant. Mexico experienced a different process from the rest of the countries considered; initially, between 2007 and 2010, the formality rate reduced by 3 pp, then remained at this level until 2012, and then experienced a slight increase of 2 pp mainly between 2012 and 2014. As mentioned earlier, as a net result of these contrasting dynamics the formality rate only increased by 2 pp throughout the period considered.

Figure 1: Evolution in the formality rate among urban salaried employment during the 2000s



Source: authors' elaboration based on household surveys.

5.2 Labour composition

Behind these common patterns, the composition of employment is highly heterogeneous among the countries considered in this study, which gives greater worth to the comparative analysis. As we can see in Figure 2, Brazil exhibits the highest level of wage formality in salaried employment (73 per cent), followed by Argentina (65 per cent), Ecuador, Peru, and Mexico (about 60 per cent) and, finally, by Paraguay (54 per cent).

The ranking of countries, however, is somewhat different when considering the share of formality in total employment due to the dissimilar incidence of self-employment. While in Brazil and Argentina around half of the urban employed are formal wage earners, this drops to 44 per cent and 41 per cent in Mexico and Paraguay, respectively, and to 36 per cent in Peru and Ecuador. Therefore, these figures show that formal wage earners, those covered by labour regulation, represent a small portion (at most half) of the total urban employed. In Ecuador and Peru, this group of workers is even lower numerically than non-salaried workers. In all these cases, then, the more recent behaviour of labour informality is particularly worrisome given that this phenomenon is far from negligible in the region.

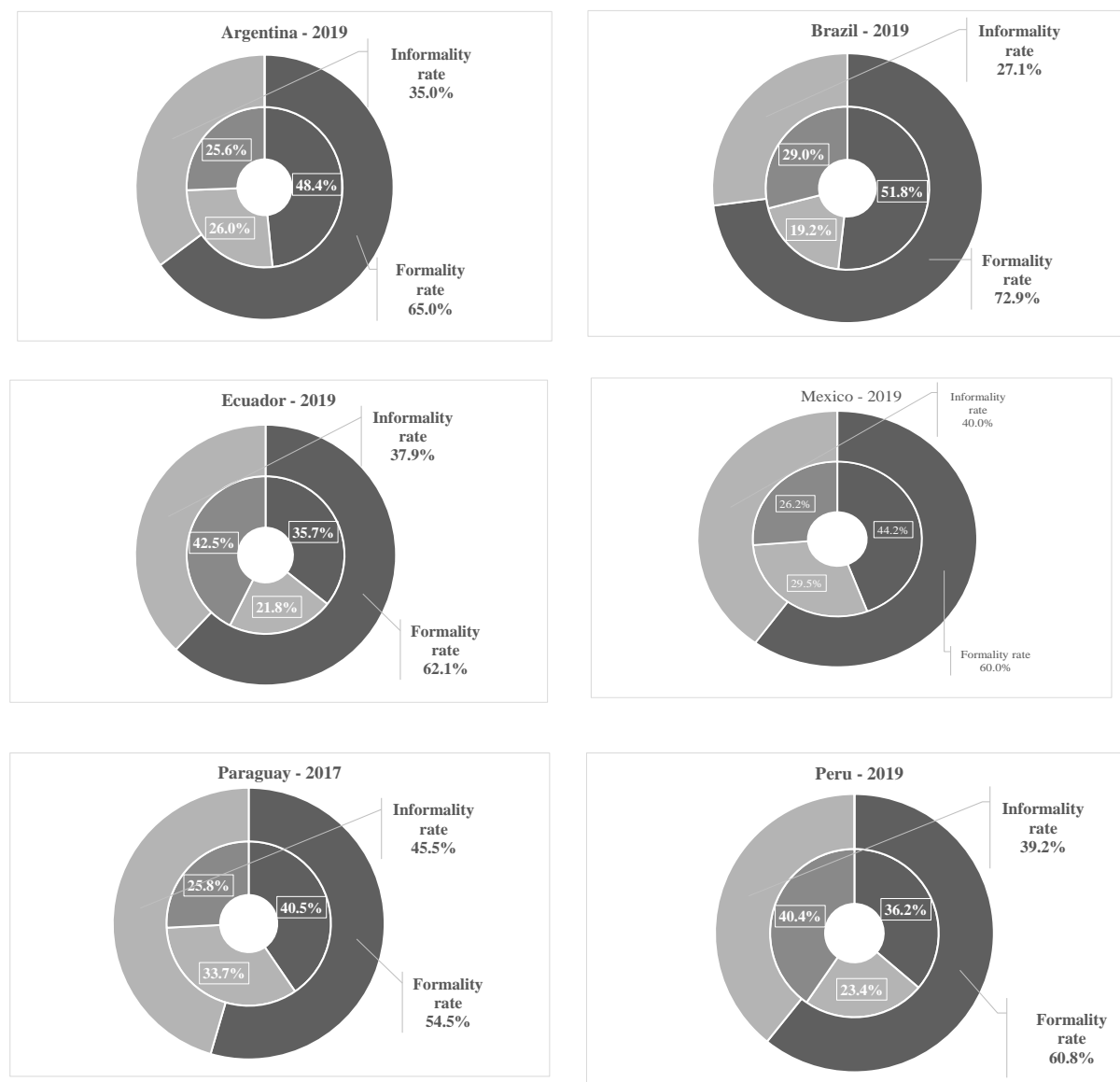
In order to have a more detailed look at the composition of employment, Table A2 presents the distribution of different groups of individuals across the five work statuses (formal wage employment, upper-tier informal wage employment, lower-tier informal wage employment, formal self-employment, and informal self-employment) unemployment, and labour inactivity.

As already mentioned, employment in Brazil is more formal than in the other countries considered. Together, formal wage employees and the formal self-employed account for about 35 per cent of the working-age population (58 per cent of total workers). At the other end, these two groups of workers represent only 21 per cent in Peru (30 per cent of total workers).

Except in Peru, formal wage employees are the biggest group among the five work statuses. In any case, the outlook is very alarming since this group of workers represents at most only half of total urban employment. This work status is followed by the informal self-employed. They represent around 20 per cent of the total workers in Argentina, about 25 per cent in Brazil, Mexico, and Paraguay, 31 per cent in Ecuador, and 40 per cent in Peru. Formal self-employed workers are a very small group, comprising 5 per cent or less of total employment in all countries.

The relevance of informal non-salaried workers in the Latin American labour market is more evident within total informal workers (even more so among self-employed workers), where they account for about 40 per cent in Argentina and Paraguay, about 50 per cent in Mexico, and more than 50 per cent in Brazil, Ecuador, and Peru. In turn, although in all countries they represent 80 per cent or more of the total self-employed workers, the proportion of formal self-employed workers is around 20 per cent in Argentina and Brazil, while it is 10 per cent or less in Ecuador and Paraguay.

Figure 2: Employment composition in six Latin American countries



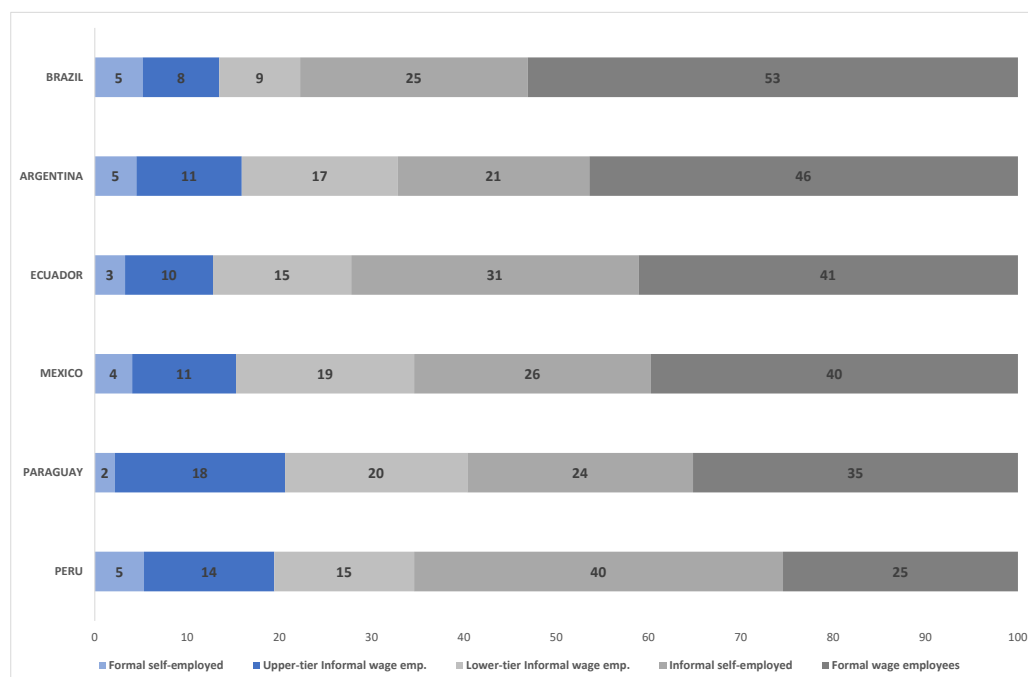
- Formal wage earners
- Informal wage earners
- Non-wage earners

Source: authors' elaboration based on household surveys.

The number of lower-tier informal wage employed is larger than the number of upper-tier informal salaried workers. The gap between these two groups is particularly significant in Argentina, Ecuador, and Mexico, where the first group represents between 50 per cent and 70 per cent more than the second group.

In summary, with the exception of Peru, the ranking of work statuses according to their relative importance in total employment is as follows: formal wage employees, informal self-employed, lower-tier informal wage employees, upper-tier informal wage employees, and formal self-employed. In Peru the first two positions are exchanged, with the rest being the same (Figure 3).

Figure 3: Detailed employment composition in six Latin American countries



Note: countries are ranked by the proportion of formal wage employees in total employment.

Source: authors' elaboration based on household surveys.

5.3 Individual characteristics of workers and wages according to their status

Table A3 shows the main personal attributes of workers according to their status. As found in the empirical literature for Latin American countries (Alaniz et al. 2020; Amarante and Arim 2015; Bertranou and Casanova 2013; Bertranou et al. 2013; ECLAC 2006, 2013; ILO 2014; Maurizio and Vázquez 2019), education level is highly and positively correlated with formality. In particular, formal workers are over-represented among workers with complete tertiary/university education (TC). However, informal non-salaried and lower-tier informal workers exhibit, on average, the lowest education levels (secondary incomplete (SI) or secondary complete/university incomplete (SC/TT)). Upper-tier informal wage employees are in between.

Except in Ecuador, women are over-represented among lower-tier informal wage employment. However, the distribution of the other work categories significantly differs between countries. In Argentina and Brazil, the higher female presence in the informal lower tier is offset by the lower proportion of women among informal self-employed workers. As a consequence, the composition of the remaining work categories by gender is relatively similar to the proportion of women and men in total employment. However, in Ecuador, Mexico, Paraguay, and Peru, women are over-represented among the informal self-employed. In all countries, the proportion of men in upper-tier informal positions is higher than the proportion in total employment. In addition, men are over-represented among formal wage employees only in Peru.

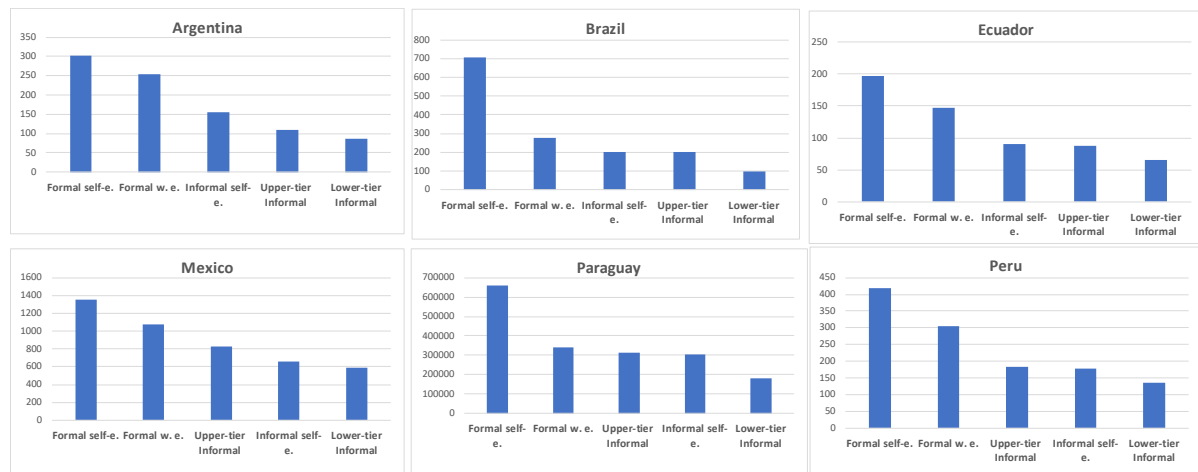
As previous studies (Bertranou and Maurizio 2011; Maurizio 2020) have shown, self-employment is not an 'entry door' to the labour market for young workers in Latin America. Rather, young people work mostly in informal salaried positions. However, the likelihood of being a formal employee or in informal self-employment grows linearly with age: older workers are over-represented in these two work statuses. In addition, there is U-shaped behaviour in the association between age and formal salaried employment, where its incidence is highest among workers aged 25–45 years.

In order to have a broader description of employment in the six Latin American countries, Table A4 presents weekly hours and hourly wages (in local currencies) by work status. As the abovementioned empirical literature for the region has widely found, informal workers earn lower wages than formal workers. This is verified both among wage earners and among the self-employed.

In addition, among wage employees the mean hours worked are highest for formal workers in all countries, followed by upper-tier informal and then by lower-tier informal salaried workers. Therefore, the gaps in monthly labour income are even wider than those found in hourly labour income. Among the non-salaried workers, the differences in working hours between formal and informal are (except in Paraguay) less significant.

Figure 4 shows the monthly wages by work category. In all countries, formal self-employed workers are located at the upper tail of the wage distribution, followed by formal wage employees. Depending on the country, the third position is occupied by the upper-tier informal wage employees or by informal self-employed workers.

Figure 4: Mean monthly wages by work status



Source: authors' elaboration based on household surveys.

In order to test for statistically significant differences in average hourly earnings across these work statuses, Figure 5 presents the coefficient of the fitted one-way ANOVA model, where the dependent variable is the log hourly earnings of each group of workers and the covariates are the work status dummies. The base category is formal wage employment.

The results prove that the formal self-employed exhibit the highest average hourly earnings, followed by formal wage employees. This wage difference is significant in all countries. Except in Paraguay, informality is associated with a statistically significant earnings penalty, with lower-tier informal jobs being the lowest paid. The gap between upper-tier informal wage employees and the informal self-employed is significant in Argentina, Brazil, and Mexico.

Figure 5: ANOVA of mean hourly income across work status groups



Note: coefficient estimates and 95% confidence interval of fitted one-way ANOVA model of mean hourly labour income using formal wage employees as the base category.

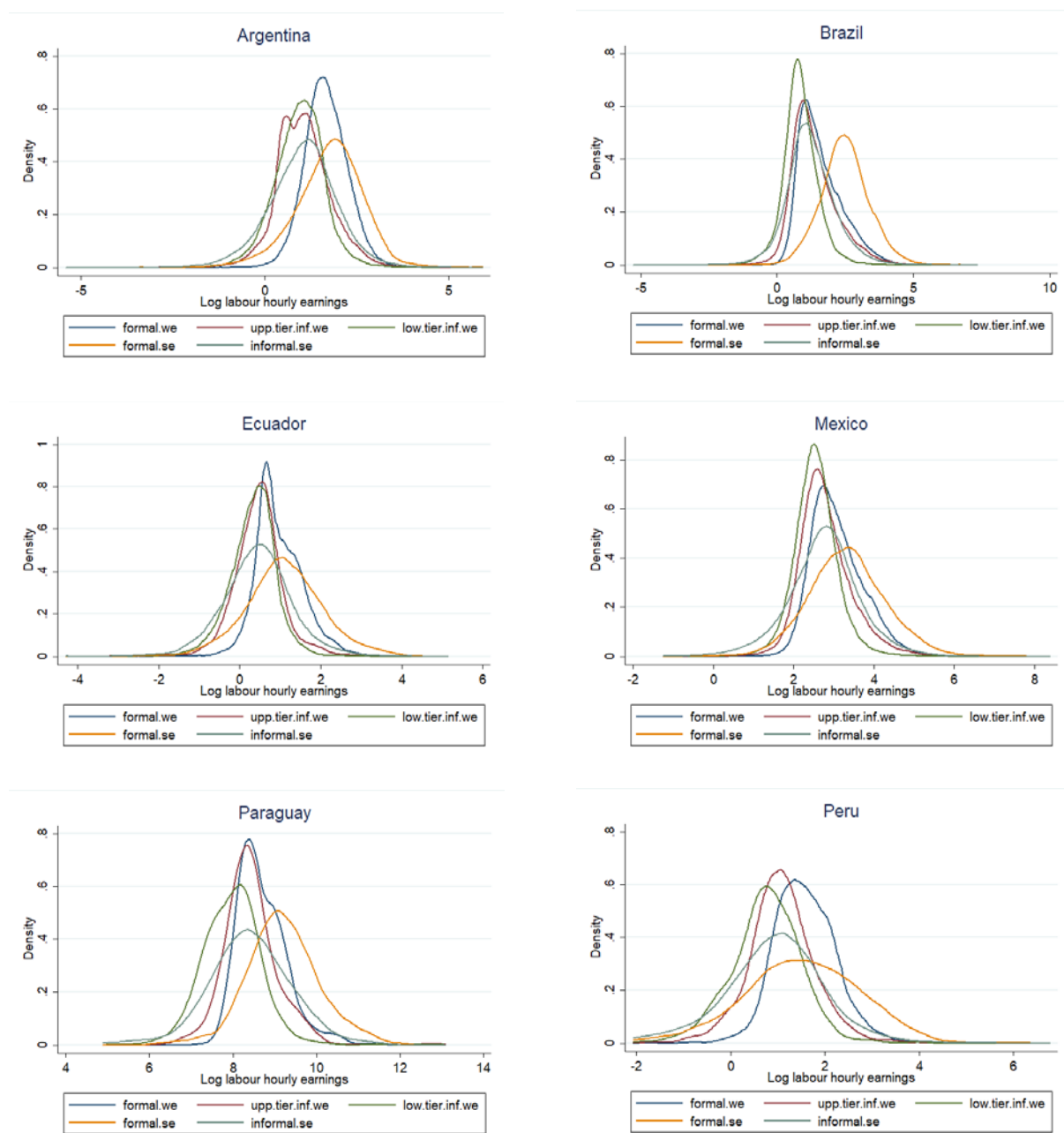
Source: authors' elaboration based on household surveys.

Finally, Kernel density functions give us a more detailed picture not only of the position of each work status on the wage ladder, but also of within-group dispersion (Figure 6). It is clear that variance is greater within self-employed workers than within wage earners. Therefore, when a comparison is made between formal workers, the abovementioned higher average earnings of the formal self-employed compared to the formal salaried workers is due to the skewness towards the right of the distribution of the former compared with the latter.

A similar situation appears when comparing the informal self-employed with the worst-paying position, i.e. the lower-tier informal wage employees: even if, on average, the former have higher earnings, the lowest labour incomes are registered in this group.

From this non-conditional analysis, however, we cannot conclude that the wage differences indicate a true wage penalty for certain groups of workers as they may reflect the different composition of characteristics and personal attributes by work status. In addition, these results suggest that it is relevant to investigate the extent to which the different degree of within-group inequality is explained, at least in part, by a different return to individual attributes in each of these work statuses. The conditional analysis carried out in Section 7, based on econometric estimates, will provide insight on this issue.

Figure 6: Density functions of hourly wage by work status



Source: authors' elaboration based on household surveys.

To sum up, the distribution of workers in each work status is not random in any country. Prime-aged workers and those with a higher educational level are more likely to be formal than the other workers. In turn, wages are statistically higher among formal than informal positions. Formal wage earners are, additionally, covered by labour legislation and receive social security benefits, such as paid vacation, maternity leave, and future contributory pension. Overall, this evidence suggests that formal work is the most preferred.

The following analysis will contribute to a better understanding of the characteristics and patterns of mobility of each work status.

6 Employment transitions

6.1 Transition matrices

Starting with the dynamic analysis, the year-on-year transition matrices between different states (employed, unemployed, and inactive) and different work statuses are analysed. Table A5 presents the average results for the whole period.

The first finding is that, as expected, formal workers in all the countries studied are more likely to remain in a formal job than the other workers. In particular, between 80 per cent and 90 per cent of initially formal wage earners were still formal workers one year later. The higher occupational stability among formal wage earners may be explained by the existence of firing costs as well as by the fact that they are more concentrated in big, more stable companies.

For the remaining 10–20 per cent, the most frequent destination after leaving a formal salaried position is upper-tier informal wage employment in Mexico, Paraguay, and Peru, or inactivity in Argentina, Brazil, and Ecuador. However, even in these last three countries, transitions between formality and upper-tier informality are common.

However, in all countries, very few formal employees go into lower-tier informal salaried employment and even fewer into formal self-employment (2 per cent at most). As formal self-employment is made up of professional own-accounts and employers in firms with five or more employees, these types of transitions imply that formal employees become independent professionals or employers in medium or large firms. Therefore, it is not easy for salaried employees without a university degree, in particular, to become employers in medium or large companies. This may explain why transitions to an informal self-employment position are more frequent, albeit very low. In any case, outflows from formal salaried occupations to informal wage positions are more important in all countries than those going into independent occupations.

Informal wage employees (considered to be both segments within this group) are the most mobile group of workers. Self-employed workers are in between. The lower labour stability of informal wage earners could be explained by the fact that they have low or no legal firing costs, thus making them attractive for employment in industries with unstable demand and for unstable occupations. Moreover, informal employees have a greater presence in small-scale firms which are regularly exposed to risks that make them more vulnerable. As they operate with low capital/labour ratios, it is easier to decide to interrupt economic activity.

Beyond this general outlook, in all countries, upper-tier informal wage employees are even more mobile than formal workers and lower-tier informal workers. Except in Paraguay, they are the most unstable group of workers. Only about one-third of them stay in this work status from year to year in Brazil, Ecuador, and Mexico, 40 per cent in Argentina and Peru, and 50 per cent in Paraguay. These figures compare with 44 per cent and up to 53 per cent of lower-tier informal workers. It is striking that a better work status, at least in terms of average earnings, is less stable than those considered to be of worse status.

However, upper-tier informal workers are more likely to transition into formal wage employment than into lower-tier informal salaried employment. In fact, in all countries, formal salaried employment is the most frequent destination for those workers. At least in part, this may be associated with the characteristics of the salaried formalization process observed in the region for most of the period under study. In particular, as found by Maurizio and Vázquez (2019) and Beccaria et al. (2020), a significant proportion of the new formal workers in Latin America actually

became formal employees in the same job (in situ formalization); i.e. a worker becomes formal maintaining the same occupation between t and $t + 1$. In addition, a positive relationship is found between the probability of becoming formal and the size of the firm. Therefore, the low job stability of upper-tier informal workers did not always imply that they actually left their position, but that some of them became formalized in the initial job. This may explain part of the ‘apparent’ transitions from this work status to formality as this process was observed with greater intensity in medium and big companies.

Mobility patterns are very different in the case of lower-tier informal wage employees who, as shown before, are located on the lowest rung of the job ladder. While between 44 per cent and 53 per cent of them remain in this work status for at least one year, when leaving this position, they are more likely to go into informal self-employment than any other work status. Fewer than 10 per cent of these workers move to formal salaried employment.

Between 60 per cent and 70 per cent of those workers in an informal self-employed position (non-professional own-account, unpaid family worker, or employer in small enterprises) remain in this status over the following year. The most frequent destination for those workers who leave their initial occupation is inactivity. This was to be expected as the intermittence associated with certain typical occupations of such workers could imply that many do not actively seek a new job while ‘waiting’ for new demand for their services or products.

In contrast, most informal self-employed workers do not find formal jobs. Indeed, the percentage of transitions to formal jobs is extremely low (less than 5 per cent) in all countries. Those workers and inactive individuals are the two groups with the least probability of moving towards formality, even lower than the unemployed. Instead, their options are limited to precarious wage-earning positions or another form of own-account employment, probably also of low quality.

Therefore, transitions between the two categories of informality—informal self-employment and lower-tier salaried employment—are very frequent. In fact, for each of these categories, the other category is the main occupational destination after leaving the initial position.

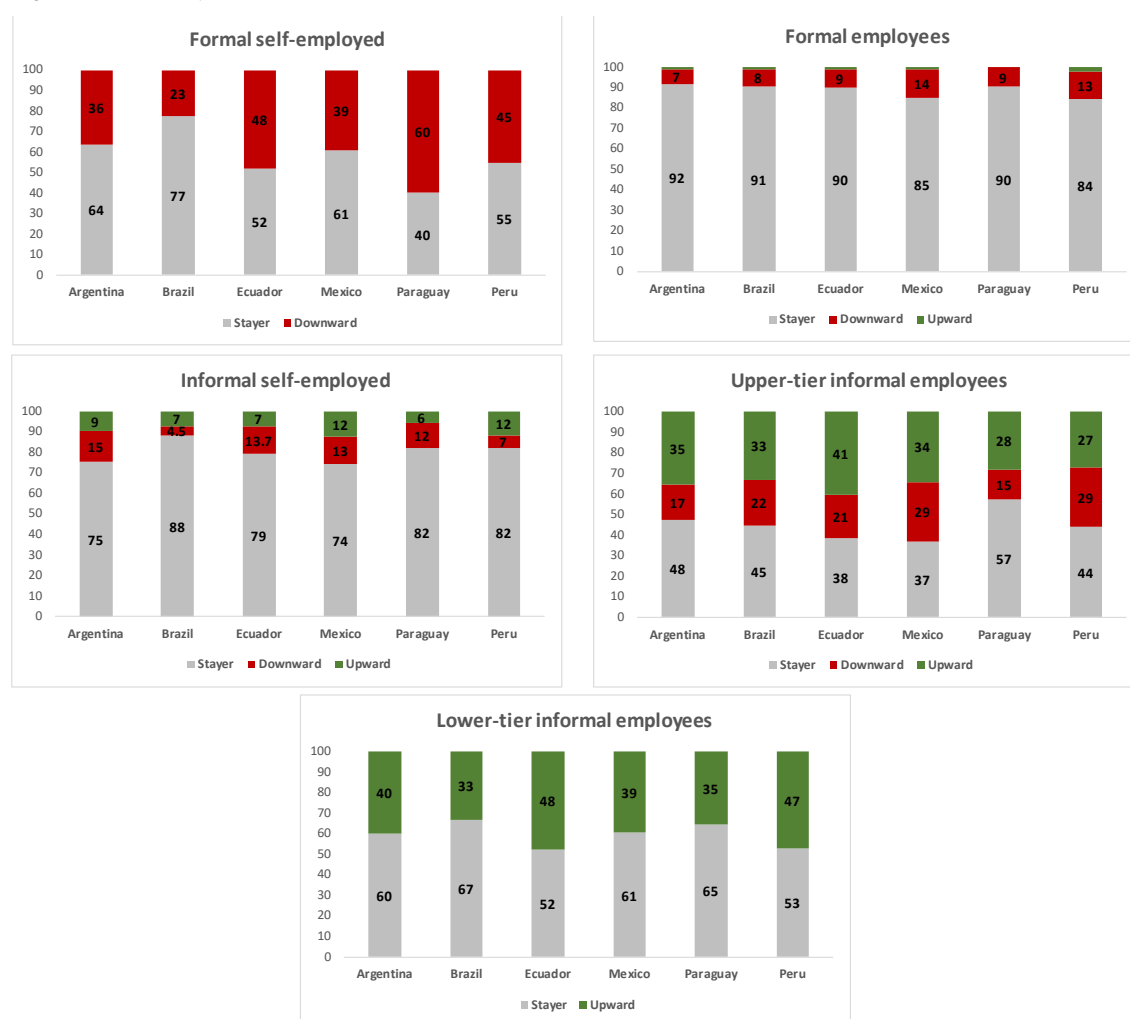
Lastly, given that in Latin America, including the countries concerned, unemployment spells are relatively short—basically because of a lack or low coverage of unemployment insurance—only about 15 per cent to 27 per cent of individuals who were initially unemployed remained so one year later. In most cases, this reflects the high number of transitions to inactivity (20–30 per cent) and informal jobs (13–35 per cent). In all cases, it is evident that although the unemployed quickly leave this initial state, this does not translate into intense entries into formality, since in almost all cases (except in Mexico) less than 16 per cent of those unemployed in one year are in formal employment one year later. The same is the case for the inactive group, for whom the probability of entering the workforce through a formal occupation is very low. As mentioned earlier, transitions between informal, self-employment, and inactivity are very frequent in all countries.

This evidence allows us to evaluate whether informality is a persistent state or whether it is a steppingstone towards a better-paid occupation. The results suggest that there is significant labour turnover of workers from lower-tier informal salaried occupations. In fact, together with upper-tier informal wage employees, these are the more mobile categories of workers. In contrast, the informal self-employed exhibit a relatively high level (60–70 per cent) of job stability from year to year.

Complementary to this, the destinations after leaving the initial position also help to answer that question. Figure 7 summarizes the share of stayers for each work status, the share of transitions into a higher-paying job, and the share of transitions into a lower-paying job. This classification is

based on the mean hourly earnings of each status presented earlier. Therefore, unemployment and economic inactivity were not considered in these clusters.

Figure 7: Year-to-year transitions up and down the job ladder (%)



Source: authors' elaboration based on household surveys.

As the lower-tier informal wage employees are in the worst-paying work status, they only have two alternatives: remaining in this type of occupation or transitioning up the job ladder. More than a half (between 52 per cent and 67 per cent) are part of the first group, meaning that a lower share of informal workers improve their employment position by moving to a higher-paying occupation: about 30–35 per cent in Brazil and Paraguay, 40 per cent in Argentina and Mexico, and about 48 per cent in Ecuador and Peru. This suggests that an important group of workers who were in this position in year t were in a better work status in year $t+1$. However, even in the period under analysis, characterized by improvements in the labour markets and by a strong formalization process, most failed to move up the wage ladder. Furthermore, as shown before, only a small proportion (less than one-third) of workers transitioned from a lower-tier informal wage job to a formal salaried position.

The greater stability of informal self-employment positions (mostly non-professional own-account workers) together with the high level of transitions between these occupations and lower-tier informal wage employment result in a very low percentage of transitions to a higher-paying job status (less than 13 per cent).

As mentioned earlier, in all countries, upper-tier informal wage employees are more likely to transition into formal wage employment than into lower-tier informal salaried employment or informal self-employed. However, when we consider those who stay and those who transition into a lower work status, together they account for about two-thirds or more of total transitions.

Finally, for the two formal groups of workers (formal self-employed and formal wage employees) the percentage of those who maintain their initial work status (and those formal wage employees moving up the job ladder) is significantly higher than the share of workers transitioning into lower-paying work statuses (except in Paraguay in the case of formal self-employed).

6.2 Characteristics associated with work status transitions

This heterogenous overview of labour turnover suggests that, in addition to the work status of origin, observed personal attributes are also associated with different probabilities of transitioning into higher- or lower-paying occupations.

Table A6 presents the results of the multinomial logit regressions. As mentioned previously, for this analysis we collapsed the employment transition equations into three work statuses: (1) formal wage employees and formal self-employed; (2) upper-tier informal wage employees; and (3) lower-tier informal wage employees and informal self-employed.

With a few exceptions, education is highly correlated with movements from low-paid informal positions to better-paid jobs. In particular, higher education promotes transitions from lower-tier and upper-tier informal positions to formal positions. These results seem to be consistent with previous findings on the characteristics of labour formalization in Latin America. For example, Maurizio (2016) found that skilled workers benefited from this process more than other categories of workers.

Education also plays a role in improving the position within informality, as it tends to be correlated positively with transitions from lower-tier to upper-tier informal jobs. Conversely, having secondary or university education reduces the chances of leaving formality and moving towards either of the other two work statuses. Therefore, the positive correlation between education and formality is observed through two channels: it contributes to higher stability in formal jobs and it fosters entries to this type of job.

In addition, in almost all cases, the linear coefficient of age (used as a proxy of general labour experience) is statistically significant and negative, and the quadratic coefficient is positive. This means that the primed-aged are more stable in formal jobs than the other workers. The roles of education and age may be explained by the accumulation of specific human capital, which usually complements general human capital. Formal workers with higher levels of education tend to receive more specific training, and thus employers try to retain them.

Finally, gender is another dimension associated with different patterns of labour mobility. Except in Paraguay, men have a greater probability of moving to a better position than women. This seems consistent with the greater difficulties faced by women in the Latin American labour market, a stylized fact largely documented in the empirical literature for the region (Alaniz et al. 2020; Beccaria and Paz 2016; ECLAC and ILO 2019; ILO 2014). However, unexpectedly, in Brazil, Ecuador, and Mexico, men also experience some more-intensive movement in the opposite direction.

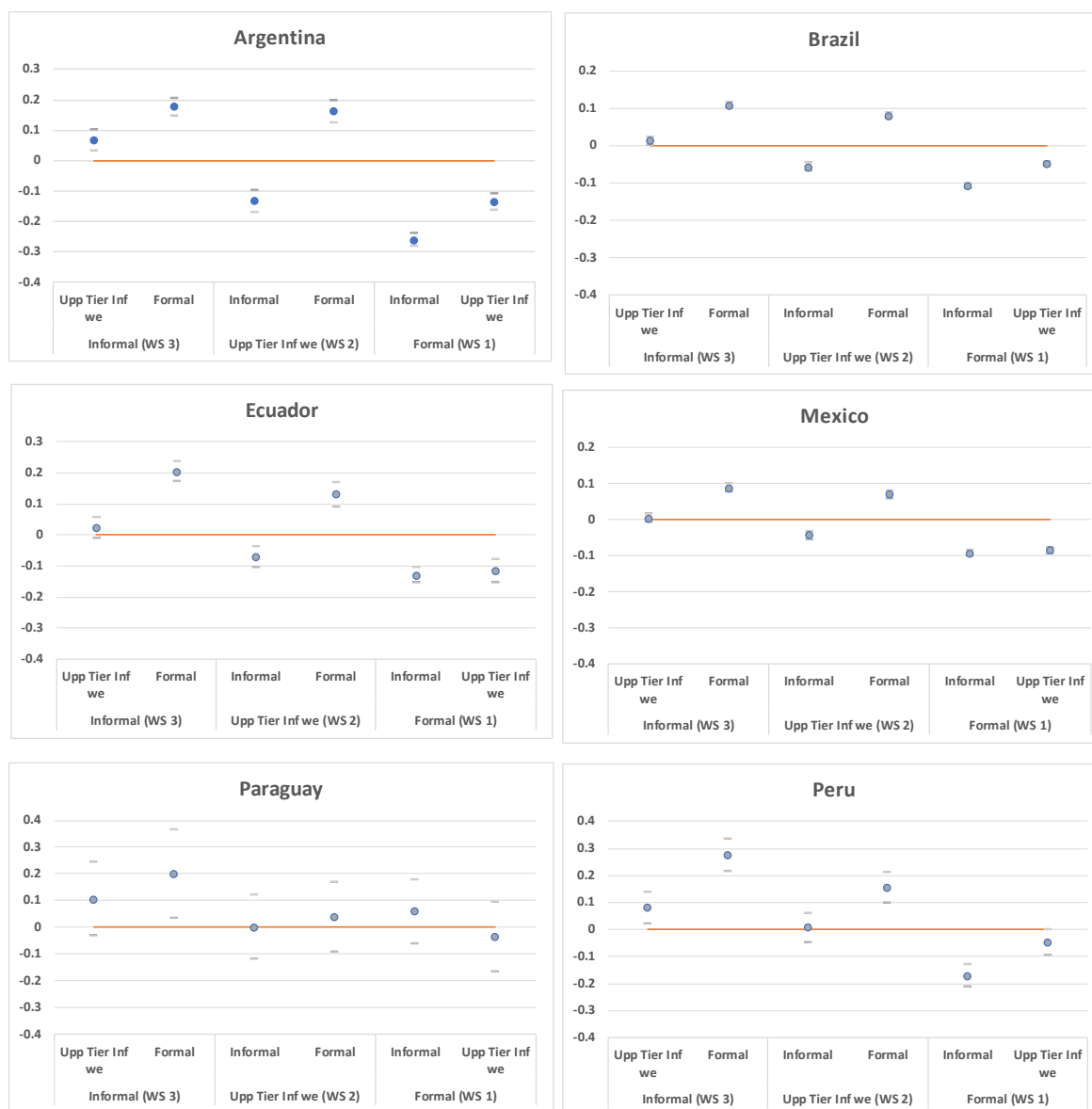
7 Wage dynamics

Finally, this section aims to evaluate the wage dynamics associated with labour turnover. Table A7 presents the results of the wage dynamic equation described in Section 4. For each work status of origin, we estimate the proportional change in wages between year t and year $t+1$ associated with changes in the initial status, controlled by a set of personal and job characteristics. Therefore, unlike in the previous (non-conditional) descriptive analysis, by following the same worker over a year, we can evaluate whether the particular labour transition experienced implies an increase or a fall in wages, all other observable variables being constant.

As in the previous section, we have grouped the previous five work statuses into three groups: (1) formal wage employees and formal self-employed; (2) upper-tier informal wage employees; and (3) lower-tier informal wage employees and informal self-employed. Each column in Table A7 indicates the work status of origin. The transition dummies take the value zero if the worker remains in the same position, and the value one if moving into another work status. Also, Figure 8 displays the estimated marginal effect on changes in log earnings by initial and destination employment status.

In almost all the countries except Paraguay, the econometric results confirm the findings from the descriptive analysis. The sign and the magnitude of the transition effect indicate that formal work status is preferred to upper-tier informal work, and the latter is preferred to a lower-tier informal job. In particular, transition from formality to any other work status implies a loss of wage. This happens with greater intensity when workers move to a lower-tier informal position or informal self-employment. In contrast, transitions from lower-tier informal employment to formality always increase wages. However, transitions from lower-tier to upper-tier imply a true wage premium only in Argentina, Brazil, and Peru. Finally, upper-tier informal workers are the ‘intermediate’ group, as they obtain an increase in wages when they move into a formal position, but they experience a wage reduction when they transit to lower-tier informal work.

Figure 8: Labour income dynamics



Note: each point shows the estimated marginal effect on changes in log earnings by initial and destination employment state. The grey lines show the 95% confidence intervals.

Source: authors' elaboration based on household surveys.

The rest of the coefficients represent the effect on the wage changes where the worker remains in the same job status over both periods. In almost all countries (except Paraguay) the gender dimension is statistically significant: women experience a wage penalty in all work statuses, suggesting wage discrimination against them. It is interesting, however, to note that the magnitude of this grows as we move down the job ladder: the wage penalty reaches the highest value among lower-tier informal workers and the lowest level among formal workers. This contributes to intensifying the observed higher incidence of poverty and of the working-poor phenomenon among women in the region (Amarante and Colacce 2019; Maurizio 2018).

As expected, education is one of the most relevant dimensions in wage determination and is positively correlated with wages in all work statuses. Again, the returns to education are lower

among formal workers than among low-paying informal workers. Age is also correlated with higher wages (except in Paraguay and Peru, where some coefficients were not statistically significant). In Argentina, Brazil, Ecuador, and Mexico, this variable reaches the highest (lowest) positive influence in lower-tier informal and informal self-employed work statuses (formal jobs).

Therefore, wage gaps associated with different observable variables appear to be lower in formality than in informality. This seems to be consistent with the abovementioned lower within-variance in the first group than in the second. Labour institutions, such as minimum wage or collective bargaining, and labour regulations could account for the lower wage dispersion among formal wage earners (Amarante and Arim 2015; Keifman and Maurizio 2014). In particular, to the extent that these institutions are binding and provide an income floor, they can reduce inequality within the group of workers covered by them.

At the same time, these results show that informal workers who remain in their position of origin can improve their wages by increasing their level of education.

Finally, the initial wage has a strong and negative impact on the change in earnings. That is, the higher the initial wage, the lower its real growth during the period under analysis. It is interesting to note that this is verified in a statistically significant way in each work status, but with even greater intensity in the lowest categories of the job ladder. This pattern seems to be consistent with the reducing trend in inequality observed in Latin America and, in particular, in these countries over the 2000s (Cornia 2012; ECLAC 2017; Lustig et al. 2013; Maurizio and Vázquez 2016).

8 Final remarks

This paper analysed, from a comparative and dynamic perspective, the heterogeneity of formal and informal employment in six Latin American countries: Argentina, Brazil, Ecuador, Mexico, Paraguay, and Peru. This selection of countries gives us a broad picture of the Latin American labour markets, as they have occupational structures and dynamics that greatly differ from one another. Additionally, they account for about 70 per cent of the total population in the region.

We distinguished five particular work statuses: formal wage-employed, formal self-employed, upper-tier informal wage-employed, lower-tier informal wage-employed, and informal self-employed. We evaluated the intensity and patterns of the labour turnover between these work statuses and assessed its impact on wages.

In all the countries, formal workers earn the highest wages and lower-tier informal workers earn the lowest. Two contrasting labour mobility patterns were found: on the one hand, the proportion of formal workers who maintain their work status of origin or move up the job ladder is significantly higher than the proportion who transition into lower-paying work statuses; on the other hand, despite the high labour turnover experienced by lower-tier informal wage employees, most of them failed to move up the wage ladder.

Education plays an important role by increasing the probability of transitioning to a better job and by increasing wages, even in informal occupations. In other words, informal workers who remain in this work status can improve their wages by increasing their level of education.

Different types of public policies are needed to improve labour conditions in Latin American countries. As shown, after the significant increase in labour formality in the countries under analysis (except Mexico), this process has slowed down, stopped, or reversed in recent years. This

is particularly worrisome given that labour informality is far from negligible in the region. Therefore, progress in employment formalization and the strengthening of labour institutions' policies are essential to enable jobs to become an effective mechanism to overcome poverty and achieve social protection.

In turn, efforts are required to increase investment in human capital. This should be complemented by a coherent system of training as well as other active labour policies.

In addition, to progress towards greater global efficiency and better labour conditions, there is a need for a medium- and long-run development path which generates continuous demand for greater human capital and enables the offer of education to be reflected in higher wages and better working conditions. It is also essential that the institutional design of these programmes ensures that they last over time, so that such programmes become permanent state policies to achieve both short- and long-term objectives.

Finally, all these policies should be framed within an economic development strategy based on an integrated productive structure leading to high efficiency and systemic competitiveness. Productive convergence within a framework of high productivity standards is a necessary condition for sustained growth, employment promotion, and wage increases over time.

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Appendix

Table A1: Formality rate from cross-section and panel data

Groups	ARGENTINA				BRAZIL				ECUADOR				MEXICO				PARAGUAY				PERU			
	CROSS		PANEL		CROSS		PANEL		CROSS		PANEL		CROSS		PANEL		CROSS		PANEL		CROSS		PANEL	
	2003	2019	2003	2019	2003	2015	2003	2015	2004	2019	2004	2019	2005	2019	2005	2019	2010	2017	2010	2017	2004	2018	2004	2018
Education																								
Less comp. sec.	17	13	17	13	29	20	25	21	10	12	9	14	13	7	12	7	8	8	9	9	4	5	4	6
Comp. secondary	20	29	21	31	30	42	32	40	20	31	28	28	21	25	21	25	26	43	24	44	13	26	12	28
Incomp. tertiary																								
Complete tertiary	15	23	14	22	12	21	16	22	11	19	14	17	18	19	20	18	4	3	2	3	21	30	18	28
TOTAL	52	65	52	66	70	83	73	82	41	62	52	59	52	52	53	51	38	55	35	56	37	61	34	62
Gender																								
Women	20	28	20	29	30	38	32	39	17	26	21	24	20	21	20	19	17	23	13	25	13	24	11	24
Men	32	37	32	37	40	45	41	44	24	36	31	35	32	31	33	32	21	31	22	31	25	37	23	38
TOTAL	52	65	52	66	70	83	73	82	41	62	52	59	52	52	53	51	38	55	35	56	37	61	34	62
Age																								
Less than 25	5	5	5	3	13	11	14	11	4	6	5	5	9	7	9	6	5	8	5	9	2	7	1	8
25–45	30	37	31	41	42	48	38	41	23	36	30	35	32	30	32	29	24	35	24	34	23	34	22	32
More than 45	17	23	17	21	15	24	21	30	13	20	17	20	11	16	13	16	8	12	6	13	12	21	11	22
TOTAL	52	65	52	66	70	83	73	82	41	62	52	59	52	52	53	51	38	55	35	56	37	61	34	62
Firm size																								
Less 6 employees	6	9	7	8	7	6	6	6	3	7	2	7	3	2	3	2	2	3	2	3	3	7	3	7
6–40 employees	18	21	19	22	4	3	3	4	9	13	13	12	19	18	19	18	12	17	13	20	7	13	6	14
More than 40	28	35	27	35	59	74	63	72	29	43	37	41	30	31	31	30	21	35	18	33	28	41	25	40
TOTAL	52	65	52	66	70	83	73	82	41	62	52	59	52	51	54	50	35	55	33	56	37	61	34	61
Tenure																								
1 year or less	7	5	7	5	14	15	14	10	18	29	21	26	8	8	8	7	7	9	7	10	8	21	8	21
>1–5 years	15	19	15	19	31	40	31	42	7	15	10	14	19	20	18	20	12	18	12	20	13	19	10	19
More than 5	30	41	30	41	25	29	28	30	15	19	22	19	25	24	27	25	19	27	16	26	20	21	21	22
TOTAL	52	65	52	66	70	83	73	82	41	62	52	59	52	52	54	51	38	55	35	56	42	61	39	62

Source: authors' elaboration based on household surveys.

Table A2: Distribution of individuals across employment and work statuses

	Working-age population	Labour force	All workers	Informal workers	Self-employment	Wage employment
ARGENTINA						
Formal wage employees	28	42	46	-	-	62
Upper-tier informal wage emp.	7	10	11	23	-	15
Lower-tier informal wage emp.	10	15	17	34	-	23
Formal self-employed	3	4	5	-	18	-
Informal self-employed	12	19	21	42	82	-
Unemployed	7	10	-	-	-	-
Inactive	34	-	-	-	-	-
TOTAL	100	100	100	100	100	100
BRAZIL						
Formal wage employees	31	48	53	-	-	76
Upper-tier informal wage emp.	5	7	8	20	-	12
Lower-tier informal wage emp.	5	8	9	21	-	12
Formal self-employed	3	5	5	-	17	-
Informal self-employed	14	22	25	59	83	-
Unemployed	6	10	-	-	-	-
Inactive	35	-	-	-	-	-
TOTAL	100	100	100	100	100	100
ECUADOR						
Formal wage employees	25	39	41	-	-	63
Upper-tier informal wage emp.	6	9	10	17	-	15
Lower-tier informal wage emp.	9	14	15	27	-	23
Formal self-employed	2	3	3	-	10	-
Informal self-employed	19	29	31	56	90	-
Unemployed	4	6	-	-	-	-
Inactive	34	-	-	-	-	-
TOTAL	100	100	100	100	100	100

MEXICO						
Formal wage employees	24	38	40	-	-	57
Upper-tier informal wage emp.	7	11	11	20	-	16
Lower-tier informal wage emp.	12	18	19	34	-	27
Formal self-employed	2	4	4	-	14	-
Informal self-employed	16	24	26	46	86	-
Unemployed	3	5	-	-	-	-
Inactive	36	-	-	-	-	-
TOTAL	100	100	100	100	100	100
PARAGUAY						
Formal wage employees	23	31	35	-	-	48
Upper-tier Informal wage emp.	12	16	18	29	-	25
Lower-tier Informal wage emp.	13	18	20	32	-	27
Formal self-employed	1	2	2	-	8	-
Informal self-employed	16	22	24	39	92	-
Unemployed	8	11	-	-	-	-
Inactive	25	-	-	-	-	-
TOTAL	100	100	100	100	100	100
PERU						
Formal wage employees	17	23	25	-	-	47
Upper-tier informal wage emp.	10	13	14	20	-	26
Lower-tier informal wage emp.	10	14	15	22	-	28
Formal self-employed	4	5	5	-	12	-
Informal self-employed	27	36	40	58	88	-
Unemployed	7	9	-	-	-	-
Inactive	25	-	-	-	-	-
TOTAL	100	100	100	100	100	100

Source: authors' elaboration based on household surveys.

Table A3: Descriptive statistics by work status

Education	Argentina			Brazil			Ecuador		
	SI	SC-TI	TC	SI	SC-TI	TC	SI	SC-TI	TC
Formal wage employees	28	43	29	28	47	25	22	50	28
Upper-tier informal wage emp.	50	35	15	33	48	20	52	39	9
Lower-tier informal wage emp.	64	32	4	68	28	3	65	33	3
Formal self-employed	4	11	85	5	13	82	3	7	90
Informal self-employed	55	40	4	55	40	5	58	40	3
TOTAL	41	38	21	36	43	21	42	42	17

Gender	Argentina		Brazil		Ecuador	
	Women	Men	Women	Men	Women	Men
Formal wage employees	41	59	46	54	41	59
Upper-tier informal wage emp.	42	58	45	55	27	73
Lower-tier informal wage emp.	56	44	69	31	37	63
Formal self-employed	45	55	42	58	36	64
Informal self-employed	34	66	37	63	45	55
TOTAL	43	57	46	54	40	60

Age	Argentina			Brazil			Ecuador		
	<26	25–46	>46	<26	25–46	>46	<26	25–46	>46
Formal wage employees	9	58	33	17	49	33	10	59	31
Upper-tier informal wage emp.	24	53	22	33	39	28	24	55	20
Lower-tier informal wage emp.	25	47	28	18	38	44	23	52	25
Formal self-employed	2	49	49	2	41	57	2	54	44
Informal self-employed	8	44	47	5	36	59	8	47	46
TOTAL	13	52	35	16	45	40	12	54	34

Education	Mexico			Paraguay			Peru		
	SI	SC-TI	TC	SI	SC-TI	TC	SI	SC-TI	TC
Formal wage employees	19	45	36	20	74	6	12	40	48
Upper-tier informal wage emp.	33	46	21	42	55	3	28	52	20
Lower-tier Informal wage emp.	49	46	6	64	35	0	40	49	10
Formal self-employed	4	7	89	13	31	55	2	5	92
Informal self-employed	47	46	6	54	46	1	47	49	4
TOTAL	33	44	23	41	55	4	32	45	23

Gender	Mexico		Paraguay		Peru	
	Women	Men	Women	Men	Women	Men
Formal wage employees	39	61	40	60	35	65
Upper-tier informal wage emp.	36	64	31	69	40	60
Lower-tier informal wage emp.	42	58	52	48	46	54
Formal self-employed	39	61	44	56	41	59
Informal self-employed	43	57	46	54	52	48
TOTAL	40	60	42	58	44	56

Age	Mexico			Paraguay			Peru		
	<26	25–46	>46	<26	25–46	>46	<26	25–46	>46
Formal wage employees	14	58	27	14	66	20	10	59	31
Upper-tier informal wage emp.	29	51	21	30	58	12	34	50	16
Lower-tier informal wage emp.	28	47	25	28	53	19	35	47	19
Formal self-employed	3	53	44	1	57	43	5	59	36
Informal self-employed	12	45	43	7	52	40	16	45	39
TOTAL	18	52	31	18	58	24	19	50	31

Source: authors' elaboration based on household surveys.

Table A4: Weekly hours and hourly wages by work status

Work status	Argentina		Brazil		Ecuador	
	Weekly hours	Hourly wages	Weekly hours	Hourly wages	Weekly hours	Hourly wages
Formal wage employees	41.0	6.2	41.1	6.7	43.5	3.4
Upper-tier informal wage emp.	35.4	3.1	36.9	5.4	43.0	2.0
Lower-tier informal wage emp.	32.7	2.7	36.5	2.7	40.0	1.6
Formal self-employed	41.9	7.2	41.2	17.1	39.9	4.9
Informal self-employed	42.6	3.6	41.1	5.0	38.6	2.3

Work status	Mexico		Paraguay		Peru	
	Weekly hours	Hourly wages	Weekly hours	Hourly wages	Weekly hours	Hourly wages
Formal wage employees	45.7	23.5	47.1	7249.6	44.9	6.8
Upper-tier informal wage emp.	43.7	19.0	47.4	6612.2	44.3	4.1
Lower-tier informal wage emp.	41.9	14.1	43.8	4139.4	43.0	3.2
Formal self-employed	42.4	31.8	47.5	13833.6	41.5	10.1
Informal self-employed	40.6	16.2	44.0	6889.3	43.2	4.1

Source: authors' elaboration based on household surveys.

Table A5: Year-to-year conditional probabilities of transitions (%)

Country	Employment status in Year t		Employment status in Year t + 1							Total
			Formal wage employees	Informal wage employees		Self-employed		Un-employed	Inactive	
				Upper-tier	Lower-tier	Formal	Informal			
Argentina	Formal wage employees		87.4	2.7	2.4	0.8	1.8	1.9	2.9	100
	Informal wage employees	Upper-tier	18.7	39.4	14.3	2.2	8.3	5.9	11.1	100
		Lower-tier	9.4	9.0	46.3	0.9	11.1	7.3	16.0	100
	Self-employed	Formal	8.2	5.2	3.0	59.0	17.0	2.1	5.6	100
		Informal	4.1	4.2	8.5	3.8	62.9	4.5	11.9	100
	Unemployed		10.4	8.5	13.8	1.3	11.2	26.5	28.4	100
	Inactive		2.5	2.8	5.6	0.5	4.3	6.1	78.1	100
Brazil	Formal wage employees		79.0	2.6	2.2	0.9	2.6	5.8	6.9	100
	Informal wage employees	Upper-tier	21.4	33.3	7.2	3.0	9.3	11.1	14.5	100
		Lower-tier	7.0	2.9	46.4	0.6	12.4	9.6	21.1	100
	Self-employed	Formal	3.7	2.4	1.0	71.2	13.8	2.6	5.3	100
		Informal	1.8	1.2	3.5	2.6	69.0	5.2	16.6	100
	Unemployed		7.1	2.9	5.5	1.4	10.4	41.8	30.9	100
Inactive		1.2	0.8	2.2	0.4	5.6	8.8	81.1	100	
Ecuador	Formal wage employees		85.1	2.8	2.1	1.0	3.3	2.1	3.5	100
	Informal wage employees	Upper-tier	22.1	33.9	18.5	1.5	12.1	4.4	7.6	100
		Lower-tier	9.4	10.8	44.5	0.7	19.8	4.5	10.3	100
	Self-employed	Formal	12.8	4.6	3.3	47.0	22.3	2.5	7.6	100
		Informal	3.8	3.4	8.2	2.3	67.0	2.2	13.1	100
	Unemployed		15.1	7.0	13.6	2.9	13.5	18.2	29.7	100
Inactive		2.9	1.9	4.0	0.6	8.4	5.0	77.2	100	
Mexico	Formal wage employees		77.8	6.1	3.8	1.1	2.7	2.7	5.8	100
	Informal wage employees	Upper-tier	26.5	30.9	16.3	1.9	7.9	4.1	12.4	100
		Lower-tier	8.5	9.2	49.1	0.8	13.4	3.3	15.7	100
	Self-employed	Formal	8.9	4.8	4.7	50.8	14.6	2.3	13.9	100
		Informal	4.1	3.5	10.5	2.4	59.6	1.6	18.2	100
	Unemployed		21.9	9.9	14.4	2.4	9.0	14.9	27.6	100
Inactive		3.8	2.7	5.7	0.8	7.8	2.5	76.6	100	
Paraguay	Formal wage employees		86.8	5.0	1.5	0.2	2.5	2.1	1.9	100
	Informal wage employees	Upper-tier	15.6	50.9	13.0	0.6	8.6	7.1	4.2	100
		Lower-tier	5.3	12.5	52.9	0.1	10.7	7.5	11.0	100
	Self-employed	Formal	5.2	5.0	2.2	36.8	42.7	6.6	1.5	100
		Informal	1.9	3.1	7.3	2.7	67.8	5.4	11.8	100
	Unemployed		9.8	16.5	18.0	0.5	7.8	27.8	19.6	100
Inactive		2.3	4.0	8.0	0.2	7.9	9.5	68.2	100	
Peru	Formal wage employees		78.9	6.3	2.3	2.0	4.0	3.5	3.0	100
	Informal wage employees	Upper-tier	20.5	36.9	13.1	2.0	11.3	5.7	10.6	100
		Lower-tier	6.2	14.3	43.5	1.0	17.4	5.4	12.3	100
	Self-employed	Formal	10.9	3.6	4.8	48.4	20.3	3.9	8.1	100
		Informal	2.9	4.0	5.6	3.0	70.5	3.3	10.6	100
	Unemployed		11.3	8.8	11.4	2.5	12.2	20.8	33.0	100
Inactive		2.8	5.1	6.1	1.3	13.3	9.2	62.1	100	

Note: each row indicates work status in the initial year and each column indicates work status in the next year. The likelihood of staying in the same employment status conditional on the base year employment status is highlighted in grey.

Source: authors' elaboration based on household surveys.

Table A6: Year-to-year transitions up and down the job ladder (%)

Argentina	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
Age	-0.0345**	-0.0313***	-0.0105	0.0616***	-0.129***	-0.201***
Age*Age	-0.000105	0.000148	0.000150	-0.000899***	0.00155***	0.00206***
Gender (female)						
Male	0.161**	0.148***	0.0358	0.127*	-0.0265	-0.0312
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	-0.112**	0.582***	-0.0887	0.635***	-0.211***	-0.745***
Complete tertiary	0.126	2.090***	-1.309***	1.149***	0.111*	-0.315***
Sector of activity (manufacture)						
Construction	-0.185**	-0.0701	0.250**	-0.232	1.193***	1.041***
Trade	-0.383***	0.0165	0.0371	-0.0793	0.376***	0.280**
Transport	0.325***	0.483***	-0.285**	-0.510***	-0.321***	0.212
Financial services	-0.114	0.859***	-0.109	-0.314**	-0.268***	0.322***
Personal services	0.651***	0.955***	-0.665***	-0.335**	-0.607***	0.414***
Domestic services	-0.973***	0.639***	0.962	-11.05	1.296***	-1.185***
Public sector	-0.671	2.202***	-1.585***	-0.339***	-1.825***	-0.134
Other activity	-0.594***	0.171*	-0.286**	-0.262*	0.0258	0.359***
Region FE	YES	YES	YES	YES	YES	YES
Constant	-0.666**	-1.688***	0.121	-1.825***	-0.261	1.219***
Observations	23,890	23,890	5,926	5,926	39,805	39,805

Brazil	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
Age	-0.111***	-0.0476***	0.113***	0.0223***	0.0217***	-0.143***
Age*Age	0.000930***	0.000143***	-0.00112***	-0.000403***	-1.24e-05	0.00162***
Gender (female)						
Male	0.183***	0.236***	0.0765***	0.0506***	0.239***	-0.0128
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	0.0812***	0.398***	-0.237***	0.207***	-0.160***	-0.0206
Complete tertiary	0.181***	1.694***	-1.485***	0.549***	-0.209***	0.149***
Sector of activity (manufacture)						
Construction	-0.440***	0.101***	0.572***	0.0218	0.888***	0.175***
Trade	-0.160***	-0.0179	0.254***	0.0900***	0.526***	0.0725**
Transport	0.314***	0.0234	0.0869	0.0213	-0.0127	-0.102**
Financial services	0.620***	0.556***	-0.316***	-0.137***	0.116***	0.161***
Personal services	1.375***	1.043***	-0.451***	-0.0808**	-0.376***	0.0590
Domestic services	-0.922***	0.746***			1.380***	-1.305***
Public sector			0.0183	-0.392***	0.402***	0.486***
Other activity	-0.0585	-0.185***	-0.488***	-0.176***	-0.104**	0.0188
Region FE	YES	YES	YES	YES	YES	YES
Constant	0.191	-0.380***	-2.600***	-0.173*	-3.745***	-0.430***
Observations	178,814	178,814	58,208	58,208	439,990	439,990

Ecuador	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
Age	-0.0773***	-0.0379***	0.0290	0.0290	-0.0420***	-0.124***
Age*Age	0.000462***	0.000144	-0.000274	-0.000274	0.000692***	0.00123***
Gender (female)						
Male	0.816***	0.266***	0.151	0.151	0.212***	0.106
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	-0.215***	0.997***	-0.0700	-0.0700	-0.255***	-0.602***
Complete tertiary	0.00954	2.886***	-0.500***	-0.500***	0.0553	-0.527***
Sector of activity (manufacture)						
Construction	0.463***	0.0680	0.485***	0.485***	1.050***	0.595***
Trade	-0.346***	-0.231***	0.405***	0.405***	0.475***	-0.225*
Transport	-0.366***	-0.151	0.540***	0.540***	0.780***	-0.193
Financial services	0.489***	0.818***	-0.0185	-0.0185	0.171*	-0.339**
Personal services	0.997***	1.103***	-0.578***	-0.578***	-0.354***	0.120
Domestic services	-0.101	0.798***			0.595***	-1.982***
Public sector	///	///	///	///	///	///
Other activity	0.346***	-0.299***	-0.662***	-0.662***	0.0743	0.272**
Region FE	YES	YES	YES	YES	YES	YES
Constant	-0.781***	-1.833***	-0.772**	-0.772**	-2.038***	0.0560
Observations	25,202	25,202	4,934	4,934	18,510	18,510

Mexico	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
Age	-0.0407***	-0.0176***	0.00852**	0.0211***	-0.0520***	-0.0947***
Age*Age	7.96e-05*	-4.20e-05	-4.13e-05	-0.000226***	0.000725***	0.000974***
Gender (female)						
Male	0.456***	0.364***	0.172***	0.0325*	0.261***	0.104***
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	0.0149	0.508***	-0.00606	0.455***	-0.217***	-0.381***
Complete tertiary	0.577***	2.342***	-0.887***	1.003***	-0.631***	-0.622***
Sector of activity (manufacture)						
Construction	-0.0964***	0.178***	0.892***	0.0353	1.252***	0.993***
Trade	-0.494***	-0.118***	0.312***	0.0893***	0.590***	0.271***
Transport	-0.476***	-0.143***	0.0741*	-0.0509	0.227***	0.280***
Financial services	0.220***	0.500***	0.0182	0.185***	0.495***	0.519***
Personal services	0.527***	0.576***	-0.544***	-0.351***	0.475***	0.803***
Domestic services	-0.745***	-0.0307			2.712***	0.0268
Public sector	1.145***	1.154***	-0.921***	-0.121***	-0.810***	0.127***
Other activity	-0.207***	-0.247***	0.235***	-0.486***	0.748***	0.564***
Region FE	YES	YES	YES	YES	YES	YES
Constant	-1.063***	-1.950***	-0.379***	-0.649***	-1.499***	-0.680***
Observations	344,339	344,339	85,893	85,893	412,095	412,095

Paraguay	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
25–45	-0.970***	-0.254	-0.218	0.00287	0.335	-0.890**
More than 45	-1.327***	-0.429	0.0585	-0.273	0.0977	-1.249**
Gender (female)						
Male	0.370	0.515*	0.169	0.283	0.0498	-0.317
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	-0.0288	1.537***	-0.0171	0.643**	-0.747**	0.192
Complete tertiary	-11.46	2.797***	-13.92	1.042	0.683*	0.474
Sector of activity (manufacture)						
Construction	0.636	-0.669	0.607	-0.441	1.029*	-0.384
Trade	0.0178	-0.175	-0.286	-0.656	0.519	-0.673
Transport	0.298	-0.748	0.110	-0.648	0.590	0.382
Financial services	0.737	-0.702	-0.864*	-0.459	-0.276	-0.797
Personal services	0.771	-0.395	-0.728	-1.320**	-0.613	-1.141**
Domestic services	0.0521	-0.637			18.50	-0.0955
Public sector	0.950	-1.843**	-0.126	-2.783***	0.392	-0.580
Other activity						
Region FE	NO	NO	NO	NO	NO	NO
Constant	-2.076***	-3.112***	-0.662	-0.996*	-2.649***	-1.476**
Observations	1,048	1,048	443	443	1,002	1,002

Peru	From Work Status 3		From Work Status 2		From Work Status 1	
	To WS 2	To WS 1	To WS 3	To WS 1	To WS 3	To WS 2
Age						
Age	-0.0437***	0.0125	0.0424*	0.0647**	-0.0171	-0.110***
Age*Age	-7.64e-05	-9.34e-05	-0.000459	-0.000678*	0.000340	0.00101***
Gender (female)						
Male	0.286***	0.580***	-0.130	0.417***	0.0308	0.135
Education (less comp. secondary)						
Comp. secondary. Incomp. tertiary	0.147**	1.021***	-0.234**	0.941***	-0.546***	-0.221*
Complete tertiary	0.880***	2.644***	-0.714***	1.838***	-0.477***	-0.756***
Sector of activity (manufacture)						
Construction	0.525***	0.621***	0.437***	0.683***	0.638***	0.402**
Trade	-0.591***	-0.224**	0.135	0.575***	0.485***	0.212
Transport	-0.495***	-0.00623	0.471**	-0.157	0.797***	-0.162
Financial services	0.264*	0.419***	-0.0387	0.419**	-0.162	-0.192
Personal services	1.226***	0.387	-0.999***	0.176	-0.346**	-0.126
Domestic services	-0.380**	0.118			1.395***	-0.838
Public sector	-20.29	4.919*	-0.337**	0.324**	-2.269***	-0.296**
Other activity	0.192	0.550***	-0.105	-0.0635	0.164	0.745***
Region FE	YES	YES	YES	YES	YES	YES
Constant	-0.828***	-4.074***	-0.828*	-3.487***	-1.270***	0.386
Observations	17,271	17,271	3,426	3,426	11,825	11,825

Note: *** p<0.01, ** p<0.05, * p<0.1.

Source: authors' elaboration based on household surveys.

Table A7: Wage change regressions

Argentina	Origin work status		
	Lower-tier / informal self- employed	Upper-tier informal	Formal wage- employed and self-employed
Log of hourly wage in t	-0.731***	-0.696***	-0.575***
Age (less than 25)			
25–45	0.104***	0.0417**	0.0718***
More than 45	0.153***	0.105***	0.109***
Gender (female)			
Male	0.129***	0.0663***	0.0453***
Education (less comp. secondary)			
Comp. secondary. Incomp. tertiary	0.178***	0.112***	0.131***
Complete tertiary	0.326***	0.428***	0.292***
Sector of activity (manufacture)			
Construction	-0.0206	-0.0408	-0.0227*
Trade	-0.136***	-0.00606	-0.0585***
Transport	-0.0104	-0.0626**	0.00977
Financial services	0.140***	0.122***	0.0411***
Personal services	0.123***	0.118***	0.0303***
Domestic services	0.0334*	0.782	-0.122***
Public sector	-0.177	0.0558**	0.0726***
Other activity	-0.0117	0.0503*	0.0326***
Region FE	YES	YES	YES
Years FE	YES	YES	YES
Dummy to Status 35	--	-0.131***	-0.259***
Dummy to Status 2	0.0683***	--	-0.133***
Dummy to Status 14	0.178***	0.163***	--
Constant	0.699***	0.801***	0.790***
Observations	22,642	5,748	40,284

Table A7: Wage change regressions (cont.)

Brazil	Origin work status		
	Lower-tier / informal self- employed	Upper-tier informal	Formal wage- employed and self- employed
Log of hourly wage in t	-0.388***	-0.347***	-0.252***
Age (less than 25)			
25–45	0.0876***	0.0266***	0.0359***
More than 45	0.100***	0.0647***	0.0757***
Gender (female)			
Male	0.0899***	0.0657***	0.0560***
Education (less comp. secondary)			
Comp. secondary. Incomp. teritary	0.128***	0.144***	0.0963***
Complete tertiary	0.427***	0.411***	0.298***
Sector of activity (manufacture)			
Construction	-0.00247	0.0177*	0.00593*
Trade	0.00107	-0.0208***	-0.0306***
Transport	0.111***	0.00575	-0.00996***
Financial services	0.131***	0.0450***	0.00579***
Personal services	0.00441	0.0333***	-0.00968***
Domestic services	-0.00692	--	-0.0422***
Public sector	--	0.00518	0.0437***
Other activity	0.0315***	0.0291***	0.00548*
Region FE	YES	YES	YES
Years FE	YES	YES	YES
Dummy to Status 35	--	-0.0578***	-0.108***
Dummy to Status 2	0.0109**	--	-0.0505***
Dummy to Status 14	0.107***	0.0793***	--
Constant	0.0478***	0.161***	0.159***
Observations	178,814	58,208	439,990

Table A7: Wage change regressions (cont.)

Ecuador	Origin work status		
	Lower-tier / informal self-employed	Upper-tier informal	Formal wage-employed and self-employed
Log of hourly wage in t	-0.709***	-0.656***	-0.504***
Age (less than 25)			
25–45	0.109***	0.0757***	0.0649***
More than 45	0.110***	0.0855***	0.123***
Gender (female)			
Male	0.139***	0.0831***	0.0353***
Education (less comp. secondary)			
Comp. secondary. Incomp. tertiary	0.130***	0.119***	0.153***
Complete tertiary	0.454***	0.351***	0.357***
Sector of activity (manufacture)			
Construction	0.105***	0.0723***	0.0456**
Trade	0.0110	-0.0348	-0.0230**
Transport	0.0771***	0.0228	0.0136
Financial services	0.121***	0.150***	0.0104
Personal services	0.0884**	0.0228	0.0225
Domestic services	-0.00546	--	-0.0454**
Public sector	--	--	--
Other activity	-0.00410	-0.0146	0.0505***
Region FE	NO	NO	NO
Years FE	YES	YES	YES
Dummy to Status 35	--	-0.0701***	-0.129***
Dummy to Status 2	0.0240	--	-0.114***
Dummy to Status 14	0.205***	0.132***	--
Constant	-0.0481*	-0.0302	0.247***
Observations	24,043	4,892	18,250

Table A7: Wage change regressions (cont.)

Mexico	Origin work status		
	Lower-tier / informal self- employed	Upper-tier informal	Formal wage- employed and self-employed
Log of hourly wage in t	-0.655***	-0.565***	-0.495***
Age (less than 25)			
25–45	0.123***	0.0670***	0.0505***
More than 45	0.118***	0.0601***	0.0710***
Gender (female)			
Male	0.122***	0.0679***	0.0530***
Education (less comp. secondary)			
Comp. secondary. Incomp. tertiary	0.0735***	0.0697***	0.0676***
Complete tertiary	0.279***	0.366***	0.286***
Sector of activity (manufacture)			
Construction	0.0820***	0.0933***	0.0704***
Trade	-0.0133**	0.00918	-0.0471***
Transport	-0.0241***	0.0378***	0.0459***
Financial services	0.123***	0.0563***	0.0387***
Personal services	0.255***	0.117***	0.0697***
Domestic services	0.0417***		0.0175
Public sector	1.279**	0.104***	0.169***
Other activity	-0.0326***	0.0221***	0.0400***
Region FE	YES	YES	YES
Years FE	YES	YES	YES
Dummy to Status 35	--	-0.0422***	-0.0906***
Dummy to Status 2	0.00482	--	-0.0839***
Dummy to Status 14	0.0893***	0.0710***	--
Constant	1.531***	1.400***	1.303***
Observations	166,385	48,999	216,002

Table A7: Wage change regressions (cont.)

Paraguay	Origin work status		
	Lower-tier / informal self- employed	Upper-tier informal	Formal wage- employed and self-employed
Log of hourly wage in t	-0.549***	-0.465***	-0.382***
Age (less than 25)			
25–45	0.0910	0.0147	0.0649
More than 45	0.130**	0.00934	0.147***
Gender (female)			
Male	0.0594	-0.00394	-0.0141
Education (less comp. sec)			
Comp. secondary. Incomp. tertiary	0.249***	0.172***	0.146***
Complete tertiary	0.394*	0.592***	0.300***
Sector of activity (manufacture)			
Construction	-0.00751	-0.00628	-0.0847
Trade	-0.0976	-0.0649	-0.0892
Transport	0.105	0.0207	0.0686
Financial services	0.0442	0.0576	0.0401
Personal services	-0.0728	0.0998	0.0567
Domestic services	-0.266***	--	-0.346
Public sector	-0.0933	0.101	-0.0623
Other activity	--	--	--
Region FE	NO	NO	NO
Years FE	YES	YES	YES
Dummy to Status 35	--	-0.000879	0.0572
Dummy to Status 2	0.104	--	-0.0364
Dummy to Status 14	0.198**	0.0366	--
Constant	4.310***	3.822***	3.123***
Observations	1,065	471	1,057

Table A7: Wage change regressions (cont.)

Peru	Origin work status		
	Lower-tier / informal self- employed	Upper-tier informal	Formal wage- employed and self-employed
Log of hourly wage in t	-0.682***	-0.569***	-0.444***
Age (less than 25)			
25–45	0.0928***	-0.0495*	0.0142
More than 45	0.0206	-0.0648*	0.0127
Gender (female)			
Male	0.355***	0.157***	0.108***
Education (less comp. secondary)			
Comp. secondary. Incomp. tertiary	0.109***	0.0288	0.0429**
Complete tertiary	0.349***	0.265***	0.201***
Sector of activity (manufacture)			
Construction	0.135***	0.242***	0.180***
Trade	-0.0447*	0.0850**	-0.0223
Transport	-0.0219	0.159***	0.0411
Financial services	0.184***	0.211***	0.110***
Personal services	-0.178**	0.226***	-0.0199
Domestic services	-0.0490	--	0.0326
Public sector	-0.233	0.226***	0.0844***
Other activity	-0.0893**	0.0337	0.0375
Region FE	YES	YES	YES
Years FE	YES	YES	YES
Dummy to Status 35	--	0.00841	-0.169***
Dummy to Status 2	0.0810***	--	-0.0480**
Dummy to Status 14	0.277***	0.156***	--
Constant	0.103**	0.246***	0.271***
Observations	15,096	3,402	11,997

Note: *** p<0.01, ** p<0.05, * p<0.1

Source: authors' elaboration based on household surveys.