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International Labour Office

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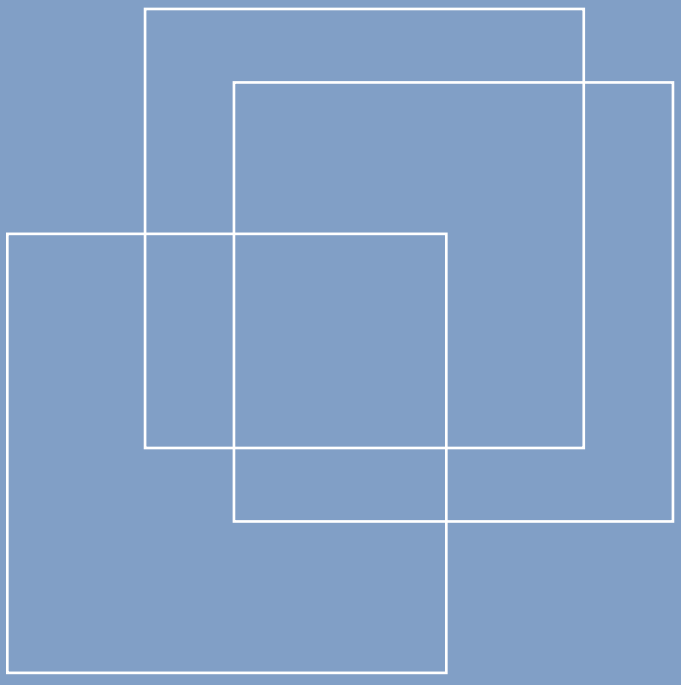
A dynamic approach

Roxana Maurizio



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Abstract

Inequality and labour informality are still distinctive characteristics of Latin America. However, most of the countries have succeeded in reversing the upward trends in both informality and inequality in the 1990s. These positive dynamics have been noteworthy in Argentina and Brazil. This paper analyses the processes of labour formalization in these countries and its interrelation with the evolution of income inequality over the 2000s. It contributes to two current debates. The first one refers to the role of labour market flexibilization in employment formalization. The second one is related to the reduction of income inequality. Most of the literature places emphasis on the evolution of the returns to education. This paper complements this approach by analysing the contribution of formalization to the reduction of inequality in these countries.

Keywords: Argentina, Brazil, income inequality, labour formalization, occupational mobility

JEL classification: D31; J46; J81; N36

1 Introduction

Inequality and informality are still distinctive characteristics of Latin American economies. However, over the past decade the region has exhibited positive labour market and income distribution trends associated, at least in part, with the high rhythm of economic growth experienced during the 2003–2008 period. This has become evident through the good pace of employment creation and the reduction of informality and inequality. These dynamics are in stark contrast with the experience of the previous decade and with the recent trends exhibited by other regions of the world such as Asia, where the remarkable performance in terms of economic growth has been accompanied by a low dynamism in employment generation and rising income inequality (ADB, 2012).

In this context, the cases of Argentina and Brazil are particularly outstanding because both countries have made important progress in improving working conditions, thus reversing the 1990s trend of increasing informality and precariousness. Also, the two countries have experienced a significant reduction in wage inequality.

The objective of this paper is to conduct an in-depth analysis of the dynamic aspects of labour formalization in Argentina and Brazil during the past decade. In particular, we aim to find out if this process took place for all groups of workers or if some of them – for example those that initially presented a higher degree of labour formality – especially benefited from these dynamics. The paper also discusses the possible causes of the improvement in labour conditions and their relation with labour institutions. Finally, it also looks into the interrelations between formalization and the evolution of labour income inequality.

This paper contributes to two current debates. The first one is concerned with labour market flexibility and the role of labour institutions and regulations in labour formalization. In particular, it is argued that these institutions and regulations cause informality and have negative effects on the output-employment elasticity. Given that both Argentina and Brazil have experienced an important process of labour formalization that has been concomitant with an acceleration of employment growth and an impressive real minimum wage increase, it seems relevant to discuss the validity of these arguments in the light of this evidence.

The second debate relates to the factors associated with the reduction of labour income inequality in Latin America. Most of the recent literature places emphasis on the distributive impacts of the returns to education. However, given that significant changes occurred in terms of labour formality and the reinforcement of certain labour institutions in both the countries, it seems relevant to assess to what extent these factors also played a role in the improvement of income distribution.

Although there are studies that describe the characteristics of the reduction of informality in each of these countries, most of them are static approaches based on cross-section data. There are very few studies that analyse labour market transitions in Latin America with a focus on labour informality. Among these we can mention Bosch and Maloney (2010), who analyse labour dynamics in Argentina, Brazil and Mexico in the 1990s. They conclude that a significant part of transitions towards informal self-employment are voluntary, whereas entry flows to informal wage-earning positions seem to be the result of the absence of better job alternatives.

Beccaria and Maurizio (2004) and Maurizio (2011) study labour transitions in Argentina over the same decade. They find that the higher degree of occupational instability was one of the consequences of the sharp deterioration of labour conditions that took place during that period. Moreover, the type of labour

relationship – formal wage-earners, informal wage-earners and independent workers – was the variable that contributed the most to explain the differences observed in the intensity of labour turnover. In particular, formality was associated with higher job stability and with more virtuous occupational dynamics. On the contrary, informal jobs were more unstable and the workers who entered this type of occupation usually came from unemployment and inactivity.

Using the administrative records of Argentina's pension system, Castillo et al. (2006) analyse labour mobility of registered wage-earners for the period 1996–2004. They find a mobility pattern towards exclusion since about half of the workers that were registered in 1996 were not in an occupation of the same type in 2004; rather, they were either unemployed, inactive or employed in informal occupations.

Ulyssea and Szerman (2006) study the determinants of job duration in the formal and informal sectors in Brazil between 2002 and 2005. They find an "informality trap", given that hazard rates of informality decrease monotonically with the duration of this state. In addition, whereas age and the educational level are positively associated with job duration in the formal sector, the contrary happens in the informal sector. The authors conclude that this is because the more qualified workers – who have greater job alternatives – prefer a formal job rather than an informal one.

This paper contributes to the existing empirical evidence and takes the debate forward by : (1) conducting an analysis of the occupational flows associated with labour formalization; (2) comparing the two countries; and (3) linking labour formalization with income inequality reduction. The paper is structured in the following manner. The next section provides a description of the data and methodology. Section 3 analyses the evolution of informality and inequality in Latin America, in general, and in Argentina and Brazil, in particular. Section 4 evaluates the intensity of flows to and from a formal job. Section 5 examines the anatomy of labour formalization. Section 6 introduces the analysis of the relationship between formalization and income distribution, while Section 7 assesses the contribution of the former to the reduction of labour income inequality in Argentina and Brazil. Finally, Section 8 concludes.

2 Data and methodology

2.1 Data

Data used in this paper comes from regular household surveys carried out by the national statistical institutes of each country. The period under analysis is 2003–2011, the years for which comparable data sets can be constructed for both countries. Although the surveys are not longitudinal, their rotating panel sample allows drawing flow data from them, i.e. a selected household is interviewed in successive moments or waves.

For Argentina, the data source is the Encuesta Permanente de Hogares (EPH). Micro-data are available for 31 urban areas and the survey provides quarterly data. Households are interviewed in two successive quarters, stay out of the sample in the two following quarters and are interviewed again for two more quarters. Therefore, the transitions that are susceptible of being analysed are those that occur between two yearly observations (in the same quarter of two successive years), or between two successive quarters.

For Brazil, the Pesquisa Mensal de Emprego (PME) was used. It covers six major urban areas and provides monthly information. 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, quarterly, and yearly panel data.

Therefore, panels of individuals that were interviewed during two successive quarters were built for both countries. In order to have enough observations, quarterly panels for the entire 2003–2011 period have been pooled, so that the results represent averages for the period.

Apart from using the panel structure of the sample, this paper also resorts to retrospective information. Specifically, all workers are asked about how long they have been at their present job, information that makes it possible to build the variable "tenure". This variable is used to identify whether a person employed both in t and in t+1 remained in the same job or moved to another one. When employed individuals inform having tenure of more than three months in the second wave, it is considered that the person did not change jobs between the two observations.1 Finally, those individuals with incomplete information and showing inconsistencies regarding job tenure and other personal or occupational variables were removed from the sample.

2.2 Approach and methodology

In this paper the "legal approach" to informality is adopted. This approach associates informality with the evasion of labour regulations, defining *informal employment* as the group of wage earners not covered by labour legislation.[2] The empirical identification of the wage earners' registration condition is based on the availability of information in the mentioned surveys. In Argentina, a wage earner is considered a formal worker if his/her employer makes payroll deductions to pay social security contributions. In Brazil, a wage earner is considered as registered if s/he has signed a labour contract.[3] Different methodologies are used to estimate the transitions to and from formality and the relationships of these transitions with the dynamics of income inequality. These methods are described below.

2.2.1 Analysis of occupational flows[4]

The formalization process can take place through two channels: (1) formalization *"in situ"*, i.e. a worker becomes formal maintaining the same occupation between *t* and *t+1*, and (2) entering into a formal occupation coming from a labour status other than a formal job (informal or independent job, unemployment or inactivity).

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

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[1] Further consistency analyses were carried out in order to ensure that this criterion was correctly applied.

[2] See ILO (2002) and Hussmanns (2004).

[3] These are the two definitions usually employed to identify formal labour relationships in the two countries. It is important to mention that these are both de jure definitions of formality since the existence of a labour contract or payroll deductions does not ensure that social security payments are actually made. In addition, the surveys employed do not allow identifying the registration condition for non-wage earners, and hence the formal/informal classification can only be made for wage-earning jobs. Nevertheless, this should not significantly alter the results since, the formalization process has been mostly explained by transitions from informal wage-earning positions.

[4] In the dynamic analysis, measurement errors may cause spurious transitions between, for example, formality and informality. However, given that the registration condition is a major feature of any job, it is reasonable to assume that workers are well informed in this regard, thus minimizing the probability of misclassification.

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

where:

- f_{ij} indicates the transition from state i (any labour status other than a formal job) in t to state j (formal job) in t + 1
- F_j indicates total transitions from any state in t to state j (formal job) in t + 1
- Si indicates the stock of non-formal individuals (informal or independent workers, unemployed or inactive) in t
- $P(E_{ij})$ indicates the probability of transition from state i in t to state j (formal job) in t + 1
- i≠ j

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

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

This decomposition allows evaluating to what extent transitions to formality of given groups of individuals are more associated with their relative participation in non-formal employment or with a higher probability of transiting to formality. It is also possible to find out if the higher probability is in turn associated with the fact that these individuals exit the initial state more frequently or because they have greater possibilities of moving to formality once they abandon their initial state (i.e. higher conditional probability).

2.2.2 Wage gap estimates

Wage equations are estimated to assess the existence and the evolution of income gaps associated with informality. In particular, we evaluate whether two salaried workers with equal personal attributes obtain different remunerations because one is a formal worker and the other one is an informal worker.

To do this, we employ the Unconditional Quantile Regression Method (UQR) by following the methodology proposed by Firpo et al. (2009) in order to measure the impact of informality on the whole unconditional distribution of wages. In particular, in the same way as OLS – that allows estimating the marginal effect of the covariates on the mean of incomes – UQR estimates the impact of a small change in the covariates on any functional of income, including the quantiles.

This method is based on regressions in which the dependent variable is a transformation – the so-called *Recentered Influence Function (RIF)* – of the outcome variable (in this case, the unconditional r-th quantile), and the covariates are those typically included in this type of analysis.[5]

[5] The RIF of different unconditional quantiles is obtained using the RIFREG Stata code (Firpo et al., 2009).

In particular, for each unconditional r-th quantile of the distribution, $q_{\tau,}$ the recentered influence function RIF is obtained by adding the quantile to its influence function $IF(y; q_r)$:

$$RIF(y; q_r) = q_\tau + IF(y; q_r)$$

In turn, the IF is defined as:

$$IF(y; q_r;\ F) = \lim_{\epsilon \to 0} \frac{\left(q_r(F_\epsilon) - q_r(F)\right)}{\epsilon}$$

where $F_\epsilon(y) = (1 - \epsilon)F + \epsilon\delta_y;\ 0 \leq \epsilon \leq 1$ and δ_y is a distribution that only assigns probability mass to the punctual value y.

The RIF method allows obtaining unconditional quantile estimates (in contrast to Quantile Regressions,[6] which estimate conditional quantiles). In particular, RIF regressions give the marginal effects of explanatory variables on the unconditional quantiles of the income distribution, which are then integrated over the values of X, as in standard regression analysis. This is:

$$\alpha(q_r) = \int \frac{dE(RIF(y; q_r)|X = x)}{dx} dF(x)$$

Lastly, given the interest in studying the effect of X on the unconditional quantiles of income, the influence function associated with such functional form is given by:

$$\phi(Y;\ q_r) = q_r + \frac{(r - \mathbb{I}\{Y \leq q_r\})}{f_Y(q_r)}$$

where f_Y is the marginal density function of *Y*, and $\mathbb{I}\ (\cdot)$ an indicator function.

2.2.3 Theil dynamic decomposition by groups

In order to relate the formalization process to the evolution of income distribution, the well-known Theil dynamic decomposition by groups is carried out. An important characteristic of this index is that it can be decomposed in an additive way into three effects. The first one – the between effect – captures the changes in the labour income gaps among the different groups considered. The second one – the within effect – captures the changes in wage variability within each group. Finally, the third effect – the composition effect – measures the distributive impacts of the changes in the relative participation of each worker category.[7]

In particular, we can start from following static decomposition of the index:

$$T = \sum \beta_g \alpha_g log \alpha_g + \sum \beta_g \alpha_g T_g$$

where $\beta_g = (n_g\ /N)$ is the proportion of individuals of group "g" (n_g) of the selected variable in the total number (N) of employed workers and α_g=$(m_g\ /m)$ is the relation between the average income of employed workers in the group "g" (m_g) and the global average income (m).

[6] Koenker and Bassett (1978).
[7] For further details, see Mookherjee and Shorrocks (1982).

From there, the changes in the index can be decomposed as follows:

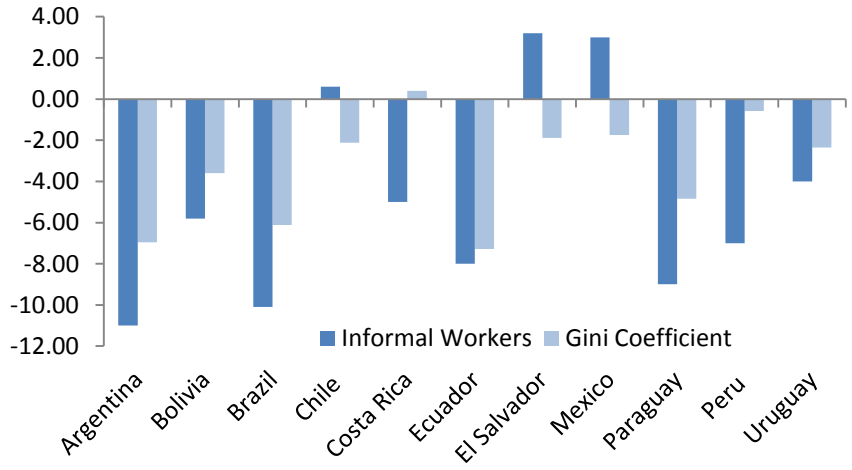
$$T_1 - T_0 = \left[\sum \beta_{g1}\ \alpha_{g1}\ log\alpha_{g1} + \sum \beta_{g1}\ \alpha_{g1}\ T_{g1}\right] - \left[\sum \beta_{g0}\ \alpha_{g0}\ log\alpha_{g0} + \sum \beta_{g0}\ \alpha_{g0}\ T_{g0}\right]$$
$$= \left[\sum \beta_{g1}\ \alpha_{g1}\ (T_{g1} - T_{g0})\right] + \left[\sum (\beta_{g1}\ \alpha_{g1} - \sum (\beta_{g0}\ \alpha_{g0})T_{g0}\ \right]$$
$$+ \left[\sum \beta_{g1}\ (\alpha_{g1}\ log\alpha_{g1} - \alpha_{g0}\ log\alpha_{g0}\right] + \left[\sum (\beta_{g1} - \beta_{g0})\alpha_{g0}\ log\alpha_{g0})\right]$$

The first term of the last expression reflects the change in the Theil index that is consequence of changes of inequality within groups, the following two correspond to the inequality between groups, while the last one is attributed to the impact of changes in the composition of the employment. In this paper, this decomposition will particularly allow assessing to what extent the process of formalization has contributed to the reduction of labour income inequality (composition effect).

3 The evolution of informality and inequality in Latin America: The outstanding performance of Argentina and Brazil

Although labour informality continues to be one of the region's distinctive characteristics,[8] its incidence has fallen in a significant number of countries, especially over the past decade. As can be observed in Figure 1, eight out of 11 countries have gone through a reduction in the proportion of non-registered wage earners in total wage earners during the 2000s. The exceptions are Chile, where this proportion has remained fairly constant, and El Salvador and Mexico, where informality has continued to grow. In parallel to this process, the region has also experienced a generalized reduction in labour income concentration. As shown in this figure, the Gini of hourly wages fell for all the countries with the exception of Costa Rica.

Figure 1: Evolution of labour informality and hourly wage inequality, Latin American countries, 2000–2009

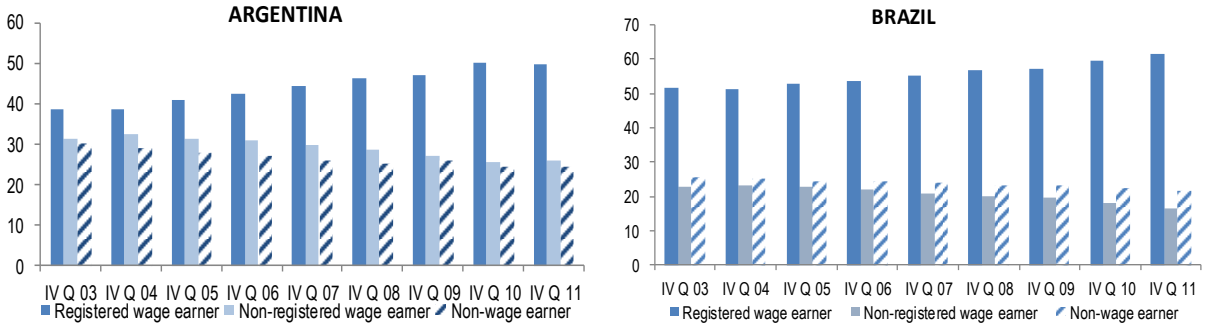


Source: Authors' elaboration based on Household Surveys

[8] See, for instance, Weller and Roethlisberger (2011), Maurizio (2012).

Argentina and Brazil stand out when it comes to these positive dynamics. In particular, the participation of formal jobs in total employment increased 11 percentage points (p.p.) in Argentina (from 38.6 per cent to 49.7 per cent), and 10 p.p. in Brazil (from 51.6 per cent to 61.6 per cent) between 2003 and 2011 (Figure 2). In the latter country, this process had already started in the mid-1990s, whereas in Argentina it began after the change in the macroeconomic regime that took place in 2002. In both countries, the growth of formal employment took place together with a reduction in the proportion of informal and non-wage earner workers in total occupations. In Argentina, this reduction is observed with similar intensity for both groups (around 5 p.p.) while in Brazil the share of non-registered wage earners fell by 6 p.p. and that of independent workers by 4 p.p.

Figure 2: Evolution of employment composition by type of worker, Argentina and Brazil, 2003–2011



Source: Authors' elaboration based on Household Surveys

This strong process of labour formalization has to be evaluated even more positively because it took place in a period of strong total employment growth, which resulted in the creation of a significant volume of new wage-earning occupations that are registered in the social security system. In fact, the number of this type of job rose by almost 60 per cent in Argentina between 2003 and 2011, while total employment increased by 22 per cent. In the case of Brazil, these figures are 43 per cent and 20 per cent, respectively.

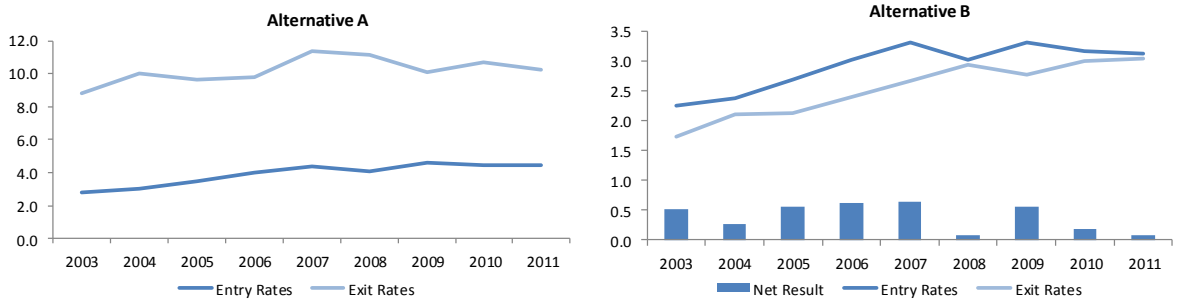
When analysing the contribution of each of these categories to total employment generation, it is remarkable that formal jobs explain 100 per cent of the net creation of new occupations in Argentina, while in Brazil the proportion is about 111 per cent. In Argentina, the creation of informal wage-earning jobs grew until 2006 and then declined. However, the number of independent jobs remained relatively stable throughout the whole period. The relatively stable behaviour of non-wage earners is also observed in Brazil since 2004, though the number of informal jobs decreased by around 13 per cent. It is possible that for both countries an important part of the reduction observed in the number in informal jobs results from in situ formalization processes, i.e. the formalization of occupations that were previously informal, an issue we discuss later in this paper.

4 A dynamic perspective: The intensity of flows to and from a formal job

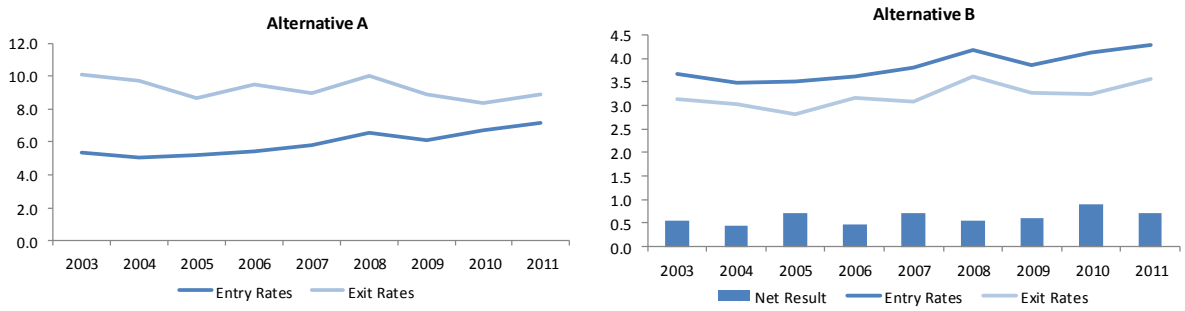
Starting with the dynamic approach, entry and exit rates to and from formality will be estimated in order to assess the importance of these movements in the evolution of formality. Two indicators will be employed. In Alternative A (first indicator), formality entry rates are calculated as the proportion of non-formal individuals (non-registered wage earners, non-wage earners, unemployed and inactive) in t that become formal in t+1. Exit rates are computed as the proportion of formal workers in t that become non-formal in t+1. Alternative B (second indicator) is based on the total number of observations: entry rates are calculated as the quotient between the number of individuals entering into formality and the total number of individuals in both observations. The same criterion is applied to estimate exit rates. The difference between the two rates indicates the net formal job creation.

Figure 3: Formality exit and entry rates to and from any state

Argentina, 2003-2011



Brazil, 2003-2001



Source: Authors' elaboration based on Household surveys

In Argentina, entry rates increase throughout the whole period, while exit rates show an initial growth followed by a slight reduction (Figure 3). If entry and exit rates are calculated considering all the individuals (Alternative B), the difference between them remains fairly constant until 2008. The growing trend exhibited by exit rates in a period of strong employment generation stands out. Figure3 shows that at the beginning of the period around 2.3 per cent of the population was entering into formality, while 1.7 per cent was exiting that state. Towards 2011, these figures became 3.1 per cent and 3 per cent, respectively. However, entry rates remained above exit rates throughout the whole period, thus resulting in a net increase of formal jobs.

In the case of Brazil, the growing trend of entry rates and the declining trend of exit rates throughout the period is more evident (Alternative A). In Alternative B, a relatively constant net result is observed,

with 3.5 per cent of the population entering into formality and 3 per cent exiting that state at the beginning of the period, and rates of 4 per cent and 3.5 per cent, respectively towards 2011. These figures suggest that Brazil exhibits a relatively higher rotation around formality compared to Argentina. The period under study is characterized by a tendency towards labour formalization. Although it was not exempt of episodes in the opposite direction, as already pointed out, the analysis that follows will focus exclusively on flows into formality.

5 The anatomy of the labour formalization process

This section aims to study the characteristics of the individuals that entered into formality in the period under analysis. It assesses whether formalization was a phenomenon that took place for all groups of individuals or if some of them – for example those that initially presented a higher degree of labour formality – have particularly benefited from these dynamics. It also presents a quantification of the relative contribution that each group of individuals has made to this process.

As mentioned earlier, the formalization process can take place through two channels: (1) formalization in situ, and (2) entering into a formal occupation coming from a labour status different from a formal job. Table 1 shows that around 60 per cent of new formal workers in Argentina became formal employees in the same job, 9 per cent came from another non-formal job (non-registered wage earning jobs or non-wage earning occupations), and the remaining 31 per cent came from unemployment or inactivity in almost equal parts. In the case of Brazil, a similar process is observed, with percentages of 54 per cent, 10 per cent and 36 per cent, respectively. At the same time, wage earners that were not registered in the social security system in the first observation explain about 50 per cent of the total number of formalization episodes in both the countries.

Table 1: Formalization process in the same job and transits to formality, Argentina and Brazil. Pool of panels 2003-2011

	Quarter t+1	
Quarter t	**Argentina**	**Brazil**
Formalization in the same job	60.1	53.8
Non-registered wage earner	44.6	42.3
Prof. Own account	3.4	1.5
Non-Prof. Own account	6.2	7.0
Employer	5.4	2.7
Non-paid family worker	0.4	0.2
Formalization by changing occupation	9.2	10.1
Non-registered wage earner	6.9	7.6
Prof. Own account	0.5	0.2
Non-Prof. Own account	1.5	2.1
Employer	0.2	0.2
Non-paid family worker	0.1	0.1
Unemployed	14.7	15.7
Inactive	16.0	20.3
Total	**100**	**100**

Source: Authors' elaboration based on Household Surveys

The high proportion of in situ formalization is quite striking. It is possible that certain public policies could have generated the appropriate conditions for this process to take place. In turn, transits from unemployment and inactivity are at least in part associated with the strong process of employment creation exhibited by the two countries along this period. We first analyse the personal attributes and the characteristics of the positions of those workers that became formal through the first channel, and then study the characteristics of those who become formal through the second channel.

5.1 In situ formalization (without changing jobs)

Table 2 presents for different groups of workers: (1) the formality rate in 2003 (initial percentage of formal wage earners in total employment); (2) the probability of becoming a formal worker between 2003 and 2011 (percentage of non-formal workers in 2003 that became formal between those years); and (3) the contribution of each group of workers to the process of in situ formalization. Two important results can be deciphered from this table: first, the process of formalization took place for all the categories of workers; second, the groups of workers that had a relatively higher formality rate at the beginning of the period benefited from this process more intensely.

As a matter of fact, both the formality rate at the beginning of the period and the speed of the formalization process grew with the educational levels in both the countries. This means that workers with a university degree have a higher probability of becoming formal (about three times) than individuals with incomplete secondary education. However, given that workers with intermediate educational level – i.e. complete secondary and incomplete tertiary education – constitute the largest group of non-formal workers, they made the highest contribution to this process (representing around 42 per cent of total episodes of formalization in the same job).

Regarding the distribution of formalization by gender, although men and women exhibited similar formality rates in 2003, men benefited more from this process than women. Also, given their numeric majority, they also made the highest contribution to formalization. An inverted U shape is found for the relationship between formalization and age (both in terms of formality rates at the beginning of the period and formalization rates): prime-age people – between 25 and 44 years old – faced the highest probability of becoming formal in the same job during the period, and explained more than one half of total transitions to formality in both countries.

A positive trend is found for the probability of becoming formal as the size of the firm increases in both countries. In fact, this probability was about three times higher for workers in companies with more than 40 employees than for workers in microenterprises. As a result, the differences observed between the formality rates of large and small companies at the beginning of the period rose. In this regard, in 2011 60 per cent of informal wage earners in Argentina and 50 per cent in Brazil belonged to microenterprises. Therefore, even though the enforcement of labour legislation in large companies needs to be continued and strengthened in the two countries, it is also necessary to move towards more comprehensive approaches that also take into consideration the particular situation of small and microenterprises.

Table 2: Labour formalization in the same job by different groups of individuals, Argentina and Brazil. Pool of panels 2003-2011

Characteristics	Argentina			Brazil		
	Initial Formality Rate (2003)	Probability to become a formal worker between 2003 and 2011	Contribution to formal-ization in the same job	Initial Formality Rate (2003)	Probability to become a formal worker between 2003 and 2011	Contribution to formal-ization in the same job
Education						
Less compl. secondary	26.5	5.4	39.6	42.0	9.6	41.6
Comp. Secon-incomp. Terc.	43.8	10.0	41.5	59.7	15.6	43.6
Complete Terciary	60.2	18.7	18.9	66.3	23.5	14.7
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Gender						
Women	38.6	7.4	43.9	51.8	11.7	48.3
Men	38.6	8.4	56.1	51.5	14.2	51.7
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Age						
Less than 25	22.3	6.4	22.5	49.3	12.0	28.3
25-45	45.2	9.4	57.6	57.1	13.9	51.1
More than 45	36.5	6.9	19.9	42.7	11.8	20.6
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Size of firms						
Less 6 (Arg) or 11 (Bra) workers	8.8	5.1	41.6	13.7	6.9	24.8
6 or 11-40 workers	61.7	11.2	36.3	50.2	12.7	7.7
More than 40	86.0	18.9	22.1	77.3	19.0	67.5
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Sector of activity						
Industry	42.8	8.3	12.6	60.9	14.7	14.1
Construction	11.5	5.0	7.8	25.5	8.3	4.8
Trade	24.7	8.1	23.6	39.6	12.8	20.5
Transport	42.9	6.8	6.4	56.9	14.0	5.6
Financial services	45.8	14.6	12.6	62.4	16.8	14.8
Personal serv.	53.6	13.1	6.4	77.3	18.1	7.5
Domestic serv.	4.7	4.2	12.3	34.9	6.7	12.1
Public serv.	90.0	19.8	9.8	86.0	28.2	14.4
Other sectors	30.8	10.3	8.5	31.6	9.8	6.2
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Labour intensity						
Under-occupied	27.0	5.5	31.0	29.0	9.0	21.4
Full-time	54.0	11.6	33.9	61.6	15.5	53.6
Over-occupied	38.5	8.8	35.1	48.9	13.0	25.0
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*
Tenure						
1-3 months	10.7	5.9	17.6	28.9	12.3	22.0
3-6 months	20.6	7.5	9.9	41.9	12.9	11.6
6-1 year	26.6	7.5	11.7	49.5	12.2	13.2
1-5 years	40.5	8.6	38.8	57.1	12.8	33.6
More than 5 years	55.8	10.1	22.1	54.6	14.2	19.5
TOTAL	*38.6*	*8.0*	*100.0*	*51.6*	*12.9*	*100.0*

Source: Authors' elaboration based on Household Surveys

Full-time workers exhibited the highest probabilities of becoming formal, followed by the over-employed and then by part-time workers. Again, this situation tended to deepen the formality-rate gaps observed at the beginning of the period between these groups of workers. In the case of Brazil, another factor explaining the relatively higher contribution of full-time workers to formalization is related to the high participation of this group in non-formal workers (thus explaining around 50 per cent of formalization episodes). In Argentina, on the other hand, the contribution of these three groups of workers to the process of formalization has been quite similar.

Regarding the relationship between formality and the activity sector, both the initial formality rates and the probabilities of formalization show the same behaviour: workers in the public sector face the highest probabilities of becoming formal both in Argentina and Brazil, while workers in construction, trade, and domestic services face the lowest. The relative importance of trade activity in both total and non-formal employment is reflected in the relatively high amount of in situ formalization episodes registered in this sector, which represented around 20 to 25 per cent of total formalization in the same job.

When it comes to the particular situation of domestic services, it can be seen that despite the application of specific measures that aimed to promote the formalization of workers, this sector continues to exhibit very high informality rates. In 2011, only 17 per cent and 39 per cent of workers in this sector were formal in Argentina and Brazil, respectively. This calls for increased efforts to enforce labour regulations and reduce the high degree of labour precariousness that still prevails in these activities. Moreover, reducing informality in these activities is crucial to increase formality in the labour market as a whole, given that in both Argentina and Brazil around one quarter of non-registered salaried employment is concentrated in this sector.

In situ formalization has shown a positive relationship with tenure in Argentina. This means that employers have preferred to take out of informality those employees that had worked for a longer period of time in the same job. In Brazil, even when no clear pattern can be observed in this regard, those workers with more tenure also faced a higher probability of becoming formal in the same position than the rest. Regarding the contribution made to the formalization process, those employees with one to five years of tenure accounted for around 30 to 40 per cent of the total number of in situ formalization episodes in both countries.

The analysis thus shows that, even though the process of formalization in the same job took place for all groups of workers, the rhythm of this process has not been homogenous across the groups. Prime-aged workers, men, those with higher skills, working full time, those in larger companies and with longer tenure have particularly benefited from this improvement in the working conditions. This has tended to widen the initial formality gap observed between individuals defined according to these categories.

Since we consider that labour informality is mainly a result of a decision made by the employer and given that, a great deal of the formalization process took place through the in situ formalization of informal wage earners, it seems important to identify the factors that may have induced employers to favour workers that presented a "better" vector of characteristics. Based on the efficiency wage theory, it is possible to say that the growth of labour demand can increase the voluntary turnover of employees in search of better employment opportunities, causing a higher number of exits that can result in greater costs for the employers. Then, the higher the level of investment made by the employer in specific training of the employee, the greater the costs incurred when they exit the firm. Also, these costs tend

to increase with tenure. Moreover, since the educational level is often highly correlated with the qualifications of the position and given the complementary nature often found between specific and general human capital, the most educated workers are the ones usually involved in training activities. Then, employers want to retain them, especially as they become more experienced in their jobs. One way to do so is by offering them better working conditions, for example, through formalization. This might therefore contribute to explain why employees with higher educational level and tenure have been preferred to go through the process of in situ formalization.

Finally, it is possible that the tightening of controls on labour legislation might have increased the potential costs of non-compliance. Given that these costs increase with the wage, this might have been an additional reason to explain the relatively greater formalization rate of those with higher educational levels and tenure. Moreover, the relatively greater intensity of formalization within large companies might also have been explained by the fact that controls are generally tighter in these type of companies.

5.2 Individuals entering into a formal job

The second channel of labour formalization deals with the entries into formal occupations coming from a labour status different from a job registered in the social security system. Table 3 presents the results of the decomposition shown in Section 2. In the two countries, the major contribution to new formal jobs comes from individuals who were inactive, unemployed or non-registered wage earners (in that order) in the first observation. In the case of inactive individuals, the high contribution derives mainly from the fact that they represent a relatively large group. On the contrary, the group of the unemployed, although numerically smaller, exhibits higher exit rates from that state and higher conditional probabilities of transiting to formality after exiting unemployment. At the same time, even though non-registered wage earners constitute a larger group in comparison with the unemployed, they present a lower entry rate to formal employment, both because of higher retention rates in informality and lower conditional probabilities.

These relatively higher exit rates from unemployment and, therefore, the relatively shorter duration of these episodes compared to those of employment are certainly to be expected, especially in countries with low coverage of unemployment assistance. This is because, in the search of incomes for subsistence, individuals tend to quickly accept any labour opportunity that arises. However, it is noteworthy that after exiting the initial state, informal wage earners present lower probabilities of transiting to formality than the unemployed. This evidence is particularly relevant because it is related to the discussion of whether informal employment constitutes a stepping stone towards formality, i.e. if the probability of getting a formal job is positively associated with previous experience in an informal occupation. Under this assumption, informal jobs might increase the human capital of workers or expand their social network, which would provide them with better information on job vacancies. Both factors would result in informal workers having higher probabilities of transiting to formality than the unemployed. However, the results found show the opposite situation, which could be suggesting that informality produces a greater scarring effect than unemployment. It could also be a result of a composition effect, given that the lack of unemployment insurance in developing countries means that the individuals that remain unemployed are, at least in part, those that can afford to continue in the search for a better job, for instance, a formal job. This is certainly a matter that needs to be addressed in future.

Table 3: Labour formalization through job change by different groups of individuals, Argentina and Brazil. Pool of panels 2003-2011

Characteristics	ARGENTINA					BRAZIL				
	Number of non-formal individuals	Exit rate from the initial state	Conditional probability of transiting to a formal job	Entry rate to a formal job	Contribution to total inflows to a formal job	Number of non-formal individuals	Exit rate from the initial state	Conditional probability of transiting to a formal job	Entry rate to a formal job	Contribution to total inflows to a formal job
	S_i	$P(E_i)$	$P(E_j\|E_i)$	$P(E_{ij})$	f_{ij}/F_j	S_i	$P(E_i)$	$P(E_j\|E_i)$	$P(E_{ij})$	f_{ij}/F_j
Occupational category										
Non-registered	27.891.088	31,2	3,9	1,2	17,2	80.807.753	20,3	11,4	2,3	16,5
Prof. Ow account	3.259.753	11,6	6,5	0,8	1,2	7.320.123	6,1	8,9	0,5	0,4
Non-Prof. Own account	17.471.189	24,3	1,8	0,4	3,8	65.023.113	12,5	6,3	0,8	4,5
Employer	4.663.922	6,7	3,4	0,2	0,5	17.971.636	4,2	6,7	0,3	0,4
Non-paid familiy	1.015.790	42,8	0,7	0,3	0,1	2.616.399	24,5	2,9	0,7	0,2
Unemployed	13.004.201	64,8	8,7	5,6	36,8	43.736.865	53,7	16,4	8,8	34,1
Inactive	59.064.021	17,8	7,6	1,4	40,2	199.609.125	16,2	15,4	2,5	44,0
TOTAL	126.369.964	26,1	6,0	1,6	100,0	417.085.014	19,7	13,8	2,7	100,0
Education										
Less compl. Secondary	72.376.894	25,6	3,6	0,9	33,3	245.642.395	19,2	10,6	2,0	43,8
Comp. Secon-incomp. Terc.	43.699.879	28,4	8,5	2,4	52,9	139.673.287	22,1	18,0	4,0	48,9
Complete Terciary	10.293.191	19,6	13,6	2,7	13,9	31.769.332	13,4	19,6	2,6	7,3
TOTAL	126.369.964	26,1	6,0	1,6	100,0	417.085.014	19,7	13,8	2,7	100,0
Gender										
Women	69.049.352	25,4	5,5	1,4	48,9	233.189.410	19,8	12,0	2,4	48,6
Men	57.320.612	26,9	6,6	1,8	51,1	183.895.604	19,6	16,2	3,2	51,4
TOTAL	126.369.964	26,1	6,0	1,6	100,0	417.085.014	19,7	13,8	2,7	100,0
Age										
Less than 25	45.975.740	27,6	6,2	1,7	39,8	125.218.686	25,7	14,2	3,7	40,4
25-45	47.076.890	27,3	7,2	2,0	46,6	162.425.279	20,8	15,2	3,2	45,3
More than 45	33.317.334	22,4	3,6	0,8	13,6	129.441.049	12,4	10,1	1,3	14,3
TOTAL	126.369.964	26,1	6,0	1,6	100,0	417.085.014	19,7	13,8	2,7	100,0
Size of firms										
Less 6 (Arg) or 11 (Bra) workers	42.964.704	26,1	2,3	0,6	56,6	120.308.744	14,1	6,9	1,0	47,1
6 or 11-40 workers	8.624.296	25,4	5,9	1,5	28,3	9.920.403	15,2	10,6	1,6	6,4
More than 40	2.712.742	24,6	10,3	2,5	15,1	43.509.877	18,0	14,8	2,7	46,6
TOTAL	54.301.742	25,9	3,2	0,8	100,0	173.739.024	15,1	9,5	1,4	100,0
Sector of activity										
Industry	6.802.936	26,2	3,2	0,8	12,7	23.839.071	16,3	9,9	1,6	15,5
Construction	7.475.287	35,5	2,5	0,9	14,3	20.429.410	17,5	10,6	1,9	15,3
Trade	16.854.165	24,1	2,6	0,6	23,3	52.084.017	14,6	8,7	1,3	26,6
Transport	3.629.399	20,1	6,7	1,3	10,7	11.287.518	11,4	13,8	1,6	7,1
Financial services	5.094.716	18,8	7,0	1,3	14,6	20.604.116	11,8	13,8	1,6	13,5
Personal serv.	2.561.386	20,8	5,1	1,1	6,0	4.328.907	18,8	9,9	1,8	3,2
Domestic serv.	6.725.416	30,4	1,5	0,5	6,7	18.668.937	17,8	5,9	1,1	7,9
Public serv.	1.103.717	18,5	7,1	1,3	3,2	5.322.516	16,4	9,4	1,5	3,3
Other sectors	4.054.720	26,8	3,6	1,0	8,6	17.174.532	14,5	7,6	1,1	7,6
TOTAL	54.301.742	25,9	3,2	0,8	100,0	173.739.024	15,1	9,5	1,4	100,0
Labour intensity										
Under-occupied	21.355.445	36,3	2,5	0,9	43,1	46.192.132	21,8	6,9	1,5	27,9
Full-time	12.243.347	22,3	4,2	0,9	24,9	69.961.610	14,7	11,6	1,7	47,9
Over-occupied	20.702.950	17,3	4,1	0,7	32,0	57.585.282	10,3	10,1	1,0	24,2
TOTAL	54.301.742	25,9	3,2	0,8	100,0	173.739.024	15,1	9,5	1,4	100,0
Tenure										
1-3 months	8.889.491	52,4	4,0	2,1	40,9	23.315.341	40,2	12,3	5,0	46,3
3-6 months	3.932.488	37,0	3,6	1,3	11,3	12.851.742	22,6	10,5	2,4	12,3
6-1 year	5.091.173	32,8	2,3	0,7	8,4	17.146.484	18,8	9,7	1,8	12,5
1-5 years	17.597.685	22,1	3,1	0,7	26,5	57.944.695	11,4	7,6	0,9	20,1
More than 5 years	18.790.905	12,7	2,5	0,3	12,9	62.480.762	6,8	5,2	0,3	8,8
TOTAL	54.301.742	25,9	3,2	0,8	100,0	173.739.024	15,1	9,5	1,4	100,0

Source: Authors' elaboration based on Household Surveys

Regarding the rest of the attributes of both the individuals and the jobs, the analysis of the flows towards formality shows some patterns that are similar to those found for the process of in situ formalization, while others are clearly different. For instance, in both countries the group of individuals with an intermediate educational level contributes to a larger extent to the transitions between non-formality and formality, as in the case of in situ formalization. The relatively smaller contribution made by workers with university education to these transitions is explained by their smaller number, but also by the relatively lower probability of exiting the initial job faced by this group. Nevertheless, once they have exited a non-formal job, they have a significantly higher conditional probability of entering into a formal job. In short, education contributes both to a higher stability in the initial occupation (even when not monotonically) and, especially, to a higher conditional probability of transiting to a formal job once the initial state has been left. Workers with a higher education usually receive greater specific training, and this makes employers try to retain them, thus resulting in relatively lower exit rates for this group. On the other hand, such workers have better credentials to obtain a formal job once they have left the initial informal position.

As in the case of formalization in the same occupation, men present relatively higher entry rates to formal jobs. This is mostly explained by the fact that they face relatively higher conditional probabilities of transiting to formality after leaving the initial state. This is consistent with evidence in international literature which suggests that women face greater difficulties to obtain a formal job than men. This situation could be associated with labour segmentation leading to a higher proportion of informal jobs compared to men, all other attributes being equal.

In both the countries, prime-age workers made the greatest contribution to inflows towards formality. However, whereas in Argentina these workers presented an entry rate to formal jobs similar to that of younger workers, in Brazil the rate was significantly higher for the latter group of workers. In both cases, the importance of young workers in these flows is mainly explained by the greater instability of their initial positions, since once they exit their jobs, they face lower probabilities of entering into a new formal job than prime-age workers.

The higher occupational instability among young workers has been studied in international literature and, in particular, in Latin America. It is said that this instability could be associated with (1) the participation of these group in other activities that compete with work, like studying; (2) the fact that young people are at an early stage of their labour career, in which many important movements occur in the search of a job that matches their qualifications; and (3) the fact that they are younger than adults and consequently have lower tenure, a factor that also contributes to greater instability. On the other hand, the relatively smaller flows of young workers to formal occupations might be due to the fact that they choose to work in informal positions that have other convenient characteristics. On the contrary, they could be a result of an occupational segregation phenomenon causing this group to face a higher proportion of informal, low-quality and low-skilled jobs.

With regard to the relationship between formalization and the number of working hours, in Brazil the pattern is very similar to that found for the process of in situ formalization. In particular, full-time workers face relatively higher probabilities of transiting to a formal job and constitute the group that contributes the most to this process. In Argentina, this behaviour is observed for part-time workers. This is because they constitute the largest group within non-formal workers (while in Brazil full-time workers are the largest group) and face a relatively higher exit rate from the initial position. However,

once they have left the initial state they face relatively lower probabilities of entering into a formal job than the rest of the employed. The latter two phenomena are also verified in Brazil.

As discussed earlier, large companies made the highest contribution to the process of in situ formalization both in Argentina and Brazil. The same pattern is observed for the flows towards a new formal occupation: individuals that were working in large companies in the initial observation faced the highest probability of making this type of transition. In Argentina, this is the result of both lower exit rates (greater job stability) and higher conditional probabilities of transiting to a formal job. In the case of Brazil, only the latter behaviour is observed. Hence, in both countries, non-formal workers from large companies exhibit the highest probabilities of getting a new formal job after leaving the initial occupation.

It is worth mentioning that a significant part of this group of workers that went through formalization transited to another large company. Therefore, these transitions might be associated with the fact that formality rates are higher in this type of firm compared to the rest. Also, workers in large companies are more likely to have a wider network of contacts that provides them with more information on employment opportunities in other companies with the same characteristics. Lastly, there could be a signalling effect for which workers coming from large companies might be considered more convenient by future employers to occupy a formal position.

Finally, individuals with higher tenure have been preferred for the process of in situ formalization. Conversely, both in Argentina and Brazil, workers with lower tenure have made the greatest contribution to the flows between non-formality and formality. This could be because a longer duration on the job favours the stability of the initial occupation, which is reflected in the negative correlation found between this variable and exit rates. While, the relatively greater contribution of low-tenure workers to the second type of formalization also be due to the decreasing trend observed for the conditional probability of entering formality as tenure increases. This pattern is really striking because it means that workers with lower tenure have greater chances of entering into a formal job once they have abandoned their initial occupation. Going back to the scarring hypothesis, one could say that getting an informal job initially results in lower chances of getting a formal job, and that the chances get smaller as the duration of the informality episode increases.

6 Formalization and inequality: A puzzling relationship

The discussion so far has shown that Argentina and Brazil have gone through similar processes of formalization, both in terms of their intensity and the characteristics of the groups that have benefited from these dynamics. In this section, we try to assess whether these common patterns have been associated with similar dynamics in terms of income distribution. In particular, it is possible to argue that, given that formalization took place more intensely for some groups of people than others, both within group wage inequality of formal and informal workers and the informality-related wage gap between these groups might have changed throughout the period, thus altering total wage dispersion. On the other hand, the changes in total wage dispersion will also depend on the initial position of the workers that became formal in the income distribution.

6.1 Evolution of within-group inequality

In both the countries, registered wage earners have exhibited lower labour incomes dispersion than informal workers throughout the decade (Table 4). However, while in Argentina the reduction of the Gini index was quite similar for both groups of workers, in Brazil the decline was greater for informal wage earners. Several factors can account for this reduction in within group wage inequality. One of them could be related to changes that occurred in the composition of each of these groups as a result of the formalization process. In particular, the fact that within the group of non-registered wage earners those that had a 'better' vector of characteristics and were receiving the highest incomes in the group became formal with greater intensity might have resulted in a decline of the wage dispersion within informal workers. It is also possible that, the strengthening of certain institutions might explain the reduction of wage dispersion among formal workers, and probably also among informal workers in the case of Brazil, as will be discussed in the following section.

Table 4: Gini coefficient of hourly wages. Formal and informal wage earners, Argentina and Brazil. IV quarter 2003 and 2011

	Argentina			Brazil		
Wage earners	**2003**	**2011**	**Var.**	**2003**	**2011**	**Var.**
Registered	0.3683	0.3280	-10.9%	0.5101	0.4721	-7.4%
Non-registered	0.4237	0.3771	-11.0%	0.5363	0.4807	-10.4%

Source: Authors' elaboration based on Household Surveys

6.2 Evolution of the informality-related wage gap

Table 5 presents the informality-related wage gaps along the unconditional income distribution. The dependent variable is the log of hourly wage. There is a significant penalty associated with informality in both countries in the two years considered. Although this gap is verified along the whole unconditional distribution, it is bigger in the lower part of the wage distribution. For example, in the first decile, informal workers in Argentina earned in 2011 only 50 per cent of the hourly salary of a formal worker with equal observable attributes. In Brazil, this figure was around 80 per cent, suggesting a penalty of 20 per cent. In dynamic terms, in Argentina the gap between formal and informal workers at the lower part of the distribution widened between 2003 and 2011, while the opposite took place in the upper tail. On the contrary, in Brazil the penalty associated with informality decreased for all income deciles except for the ninth.

The evolution of the real minimum wage (MW), among other factors, might contribute to explain these patterns. As already mentioned, its real value has recovered very intensely during the last decade in both countries. Therefore, it could be argued that if the MW becomes binding exclusively (or mostly) for formal workers at the lower part of the distribution, it may widen the wage gap between the workers that are subject to the effects of such labour institution and those who are not. However, if the MW also has an effect on the wages of informal workers (the so-called lighthouse effect), its recovery does not necessarily imply a widening of the wage gap between these two groups of workers. Empirical literature suggests that whereas in Argentina the MW seems to affect mainly formal workers, in Brazil its impact seems to reach informal workers as well. However, as mentioned earlier, the changes in the composition

of formal and informal employment could also have affected the wage gaps between them, which is discussed in the next sub-section.

Table 5: Wage gaps associated with labour informality, unconditional quantile regression, Argentina and Brazil. IV quarter 2003 and 2011

Country/ Year	Unconditional quantile regression								
	q10	q20	q30	q40	q50	q60	q70	q80	q90
Argentina									
2011	-0.762***	-0.702***	-0.651***	-0.535***	-0.384***	-0.301***	-0.205***	-0.141***	-0.0530***
	[0.0584]	[0.0184]	[0.0150]	[0.0151]	[0.0192]	[0.0233]	[0.0111]	[0.0213]	[0.00844]
2003	-0.641***	-0.602***	-0.578***	-0.517***	-0.406***	-0.328***	-0.215***	-0.127***	-0.0748**
	[0.0415]	[0.0229]	[0.0476]	[0.0192]	[0.0201]	[0.0303]	[0.0190]	[0.0262]	[0.0381]
Brazil									
2011	-0.172***	-0.148***	-0.139***	-0.109***	-0.112***	-0.106***	-0.100***	-0.123***	-0.134***
	[0.0189]	[0.00513]	[0.00323]	[0.00471]	[0.0117]	[0.00683]	[0.00822]	[0.00852]	[0.0112]
2003	-0.305***	-0.262***	-0.228***	-0.186***	-0.167***	-0.159***	-0.163***	-0.138***	-0.128***
	[0.0140]	[0.00732]	[0.00675]	[0.00255]	[0.00748]	[0.00681]	[0.00282]	[0.0134]	[0.00946]

Source: Authors' elaboration based on Household Surveys

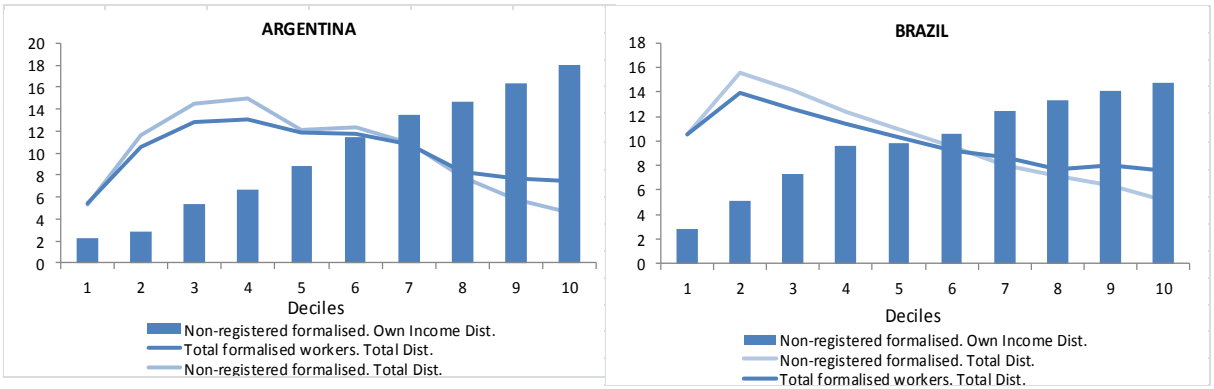
6.3 Transitions towards a formal job by income decile of origin and destination

Figure 4 presents the distribution of workers that became formal, ordered according to the position they had in the total labour income distribution before the change. The dark blue line represents the distribution of total formalized workers while the light blue line corresponds to the distribution of non-registered wage earners that were formalized (non-registered formalized). The figure also shows the distribution of those informal workers, ordered according to the position they had in their own income distribution before the change (in bars).

In Argentina, individuals located between the third and sixth decile of the distribution experienced this type of transition more frequently. This is verified for both total workers and for those who were informal wage earners in the first observation. The situation is quite different in Brazil. The probability of transiting to formality shows a slight upward trend up to the second decile and then it begins to decrease as income grows.

Nevertheless, if the analysis is made considering the initial position of non-registered wage earners in their own income distribution, it can be seen that those workers that were initially located in the upper part of the distribution faced higher chances of becoming formal. This situation is consistent with the fact that the process of formalization was more intense among those individuals that presented a 'better' vector of characteristics and who were therefore located in the upper part of the informal workers' income distribution. The contrast between this behaviour and the one observed for the distribution of total labour incomes reflects the fact that, as a whole, informal workers are concentrated in the lower tail of the latter distribution, while the higher tail is occupied by professional own-account workers and employers, and the centre by formal workers.

Figure 4: Distribution of workers who transit to formality by deciles of labour income of origin, Argentina and Brazil, IV quarter 2011

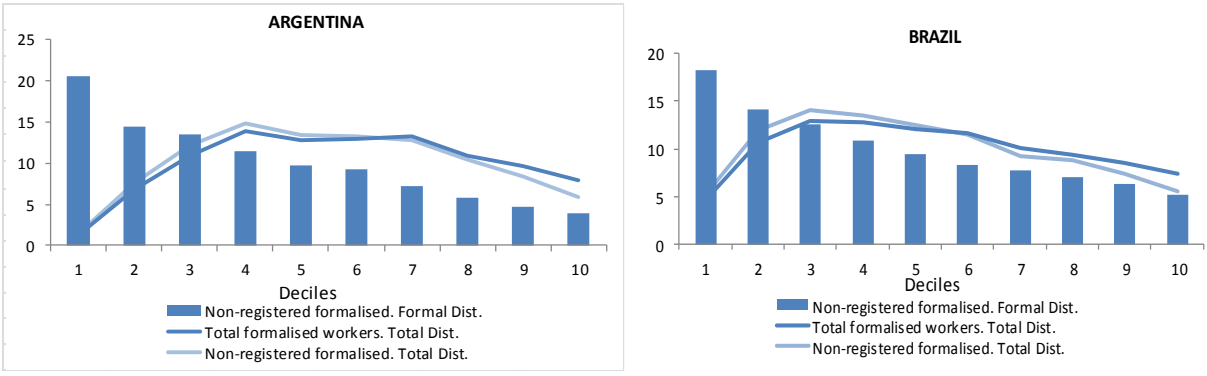


Source: Authors' elaboration based on Household Surveys

Regarding the position of workers that became formal in the total labour income distribution after formalization, deciles 4 to 7 in Argentina, and 3 to 6 in Brazil appear as the more frequent destinations (Figure 5). Yet again, it can be seen that the new formal workers mostly end up in the lower tail of the distribution of registered wage earners (in columns).

Hence, in both countries those who became formal belonged to the upper deciles of the informal workers' income distribution before the change and transited to the lower deciles of the formal wage earners' distribution. However, when the analysis is made considering the global income distribution, it can be seen that formalization took place more intensely in the middle part of the distribution both in Argentina and Brazil, while in the latter country exit flows from the lowest deciles were also important. Lastly, these transitions might be associated with the reduction of wage dispersion observed within the group of informal workers. This does not seem to be the case of formal workers, for whom the MW and collective bargaining, among other factors, might explain the reduction of inequality observed within this group.

Figure 5: Distribution of workers who transit to formality by deciles of labour income of destination, Argentina and Brazil. IV quarter 2011



Source: Authors' elaboration based on Household Surveys

7 Assessing the impact of labour formalization on wage distribution: A Theil decomposition exercise

This section aims at assessing the distributional impacts of labour formalization. Table 6 presents the results of the Theil-index dynamic decomposition. As can be seen, the "composition effect" is positive for both countries, suggesting that the rising trend in labour formality had equalizing effects. This is explained by the fact that formal workers show a relatively lower degree of within inequality and also because they are mostly located in the central part of the income distribution.

Table 6: Theil-index dynamic decomposition, Argentina and Brazil. IV quarter 2003 and 2011

	Effect (%)			
	Between	**Within**	**Composition**	**Total**
Argentina	-19.4	89.8	29.6	100.0
Brazil	10.2	85.0	4.8	100.0

Source: Authors' elaboration based on Household Surveys

The between effect is negative in Argentina, thus indicating a widening of the informality-related wage gap. The contrary is observed for Brazil, where the gap decreased. In both cases, however, the most important contribution to the reduction of inequality came from the decrease of the within inequality in each of the two groups of workers. It is therefore possible to conclude that the increase in the participation of registered wage earners in total employment has been a positive phenomenon, not only because it induced higher wages and the expansion of the social security system coverage, but also because it had equalizing effects.

Moreover, the results suggest that the relationship between labour formalization and the dynamics of income distribution becomes quite complex when it is influenced by the relative position of workers in the income distribution, the degree of inequality within each group of workers, and the position (of origin and destination) within the wage distribution of those who became formal. There is therefore room for future studies to provide new elements for this analysis and to integrate these results with the analysis of other factors that might have also had an impact on the wage distribution of both countries.

8 Concluding remarks

The high rhythm of economic growth experienced by Latin America during the past decade has had a positive impact on labour market and social indicators. These improvements were especially outstanding in Argentina and Brazil. In particular, along the 2003–2011 period, the proportion of jobs registered in the social security system in total employment increased 11 p.p. in Argentina and 10 p.p. in Brazil. This strong process of labour formalization has to be evaluated even more positively considering that it took place in a period of high total employment growth, which resulted in the creation of a significant volume of salaried jobs registered in the social security system.

This upward trend of formal employment in Argentina and Brazil was not explained by a 'composition effect', i.e. by an increase in the participation of those groups of workers with higher formality rates in

total employment; rather, it has been mostly associated with rises in employment registration across-the-board. Therefore, one important aspect of this result has to do with the factors that favoured the process of formalization in both countries.

In this regard, it can be said that the functioning of the labour market has become more foreseeable as a result of the process of sustained economic growth with employment generation that took place in both countries, thus favouring the growth of long-term contracts. In this context, formalization becomes more feasible. This process of sustained labour demand growth might have also lowered the expected probability of layoffs and consequently the probability of employers having to face the relatively higher costs when firing a formal worker compared to an informal one. In addition, the costs of non-formalization faced by employers rose as a result of the measures implemented to strengthen and improve labour inspection in both countries. At the same time, the two countries have implemented programmes aimed at creating greater incentives for formalization. Lastly, the measures applied to increase the production, efficiency and formalization of small enterprises also seem to have contributed to the registration of their employees.

Therefore, it seems possible to identify a set of factors that tended to reduce the direct and indirect costs of formality and increase the costs of non-formality, with positive consequences on employment formalization. Nevertheless, it is worth mentioning that some of the policies that explicitly sought to increase labour formalization were already present in these countries in the 1990s – although in an isolated manner – with no positive effects on labour formalization. Therefore, it is reasonable to think that all of these factors need to act jointly in a context of steady growth and employment creation in order to succeed in curbing informality and promoting better working conditions.

It is also interesting to analyse the process of formalization in relation to the evolution of labour regulation in the period under study. In the debate around labour market flexibilization it is argued that tighter labour regulations are associated with higher levels of informality. However, both in Argentina and Brazil the process of formalization took place in a context of strong recovery of the minimum wage. Moreover, the tripartite dialogue was also strengthened through collective bargaining in this period. Therefore, it is possible to conclude that during the 2000s Argentina and Brazil have gone through a process of strong employment formalization in a context of high employment generation and more – not less – controls and regulations on working conditions compared to past periods. Contrary to this, in the 1990s the process of flexibilization took place together with an increase of informality and a reduction of the output-employment elasticity. All of these patterns cast doubts on the arguments that call for a deeper flexibilization and deregulation of the labour market to increase labour demand and formalization.

The formalization process spread across all the categories of workers, although with different intensities. In particular, middle-aged men, with higher skills, working full time, in larger companies and with longer tenure have particularly benefited from this improvement in the working conditions. This has further widened the initial formality gaps observed between the groups of workers.

The empirical analysis also confirms that the increase in the participation of registered wage earners in total employment has been a positive phenomenon, not only because it induced higher wages and the expansion of the social security system coverage, but also because it had equalizing effects. In this regard, most of the recent literature has focused on the distributional impacts of the returns to education.

This study complements this approach by proving that improvements in working conditions are another factor that contributes to explaining the decreasing trend of inequality observed in Argentina and Brazil. These distributive impacts are expected to grow as this process of formalization continues and reaches the group of informal workers with lower incomes.

Despite the strong process of formalization experienced by these countries during the last decade, informal wage earners still represent an important proportion of total employment, showing that these labour markets still exhibit a high degree of labour precariousness. Therefore, the trends of employment generation with labour formalization and the consolidation of labour institutions need to be continued and strengthened. At the same time, these policies need to be complemented with the development of a comprehensive social protection system based not only on traditional social insurance pillars but also on non-contributory components. Finally, all these policies should be framed within a long-term economic development strategy built on the basis of an integrated productive structure leading to high efficiency, systemic competitiveness and increasing labour demand.

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