UNITED NATIONS
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World Institute for Development
Economics Research

Working Paper No. 2012/14

Changes in Labour Market Conditions and Policies

Their Impact on Wage Inequality
during the Last Decade

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February 2012

Abstract

Labour market incomes have been a major contributor to the important fall in inequality in Latin America during the 2000s. Indeed, it was the main contributor in countries where inequality fell more dramatically. A proper understanding of the workings of the labour market is necessary to comprehend why inequality fell, what lies ahead of us and what we can do to achieve more equitable societies in Latin America. Social progress was real in the last decade but we should not overlook the structural deficits that still remain in Latin American labour markets. Inequality fell more dramatically in countries where formality rose faster and real minimum wages increased more significantly. Labour market institutions have a played positive role in reducing inequity in the last decade.

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Acknowledgement

We are grateful to Andrea Cornia and Richard Freeman for their stimulating comments. We thank Andrea Vigorito, Sergei Soares, Luis Lima, Nora Lustig, Gerardo Esquivel, Luis Beccaria, Carlos Acevedo and Maynor Cabrera for their valuable advice about Latin American household surveys. We are thankful to Ana Laura Fernández and Gustavo Vázquez for their statistical assistance.

Acronyms

ATT   average treatment effect on the treated

EIS   employment in the informal sector

PCFI per capita family income

1 Labour area approaches, polities and outcomes during the neoliberal era in Latin America

1.1 Theoretical underpinnings of the neoliberal policy model and main reforms pursued

Policy reformers in the 1990s behaved as if they believed in the reality of the Arrow-Debreu model and its welfare economics theorems. Their goal was to replace the statist-protectionist regime that had prevailed in Latin America until the 1980s with the 'self-regulating market', to use Polanyi's words (Polanyi 1944: Chapter 6). Privatization of state-owned enterprises (including natural monopolies), trade and capital account liberalization, deregulation of domestic financial markets, and fiscal adjustment, became the main reforms implemented in Latin America.

Flexibilization became the buzzword with regard to labour market reform in many Latin American countries. Labour market flexibility was seen as instrumental to the reallocation of labour needed to realize the expected efficiency gains from structural reform. Thus, labour legislation was often changed in order to: (i) introduce more flexible forms of employment, such as fixed-term contracts (along with traditional permanent contracts) that granted less or no protection to workers, (ii) facilitate outsourcing, (iii) reduce termination costs, (iv) lower other labour costs, such as employer contributions to social security, and (v) raise employer discretional powers to determining workdays and workweeks. This agenda, however, was not uniformly pursued in all countries: Argentina and Peru were the boldest reformers, and Brazil, Colombia, Ecuador and Panama also launched initiatives to make labour markets more flexible. Democratic Chile partially reverted some of Pinochet's deregulating reforms. In several countries, the large share of informal employment, an old regional structural feature, implied *de facto* flexibility.

Policies towards trade unions varied highly across countries. Brazil, Chile, Colombia and Costa Rica passed legislation intended to strengthen trade unions while Argentina and Peru did exactly the opposite. However, the general trend showed a decline of trade unions and collective bargaining in the 1990s.[1] Despite country-specific policy differences, Latin American labour markets were rated as less regulated and more flexible than the median and mean of a worldwide 58 country sample in 1999 (Gwartney and Lawson 2001).

The shift from 'pay-as-you-go' to prefunded pension systems, implemented after Chile's example in Argentina and Bolivia was another reform that had potential impact on the labour market implemented in the period. One of the reasons argued to justify the reform was to encourage registered employment. Although reviving growth was the main selling argument of the Washington consensus policy package, its advocates maintained that the poor should not fear the reform agenda, since according to the Heckscher-Ohlin model, in a relatively unskilled-labour abundant region, trade liberalization should increase demand for the former and reduce income inequality

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[1] Between the 1980s and the 1990s, trade union membership as a percentage of non-agricultural workers declined in nine out of ten Latin American countries, and the region's average fell from 23 to 15 per cent (ILO 1997: Table 1.2).

through higher employment/income levels for the unskilled.[2] So the countries went from one corner solution to another.

1.2 Labour outcomes of the neoliberal reforms

Facts did not bear out reformers' expectations. Labour market performance was disappointing. Unemployment and inequality rose in the 1990s so that, despite growth revival,[3] poverty hardly fell and remained above the 1980 levels. Labour market troubles in 1990s extended beyond higher unemployment rates. Not surprisingly, the share of informal employment, by any measure, (unskilled own-account workers, microenterprises employees and non-registered workers) increased significantly. There are several potential explanations.

Labour market reforms failed to promote employment but were instrumental in reducing social protection. Fixed-term contracts, outsourcing, lower termination costs and the greater discretion of employers, reduce workers' rights, something facilitated by weaker trade unions. These innovations probably lowered short-run labour costs, but favoured higher labour turnover, with likely deleterious effects on productivity growth and long-run labour costs. Outsourcing, poor enforcement of labour law due to weaker labour inspection,[4] and a general antiregulatory climate contributed to the rise in non-registered employment. Lower employer contributions to social security and the enactment of prefunded pension systems put pressure on the budget and pension benefits for retired workers. Labour market developments and the decline of trade unions reduced workers' bargaining power, making it more difficult for them to share the gains from economic growth. Finally, the alleged higher demand for unskilled labour did not materialized as the most abundant factors in most of the region are natural resources.[5]

2 The labour market during the 2000s: advances and structural deficits

2.1 The dynamics of employment generation and unemployment reduction

Recent fast per capita GDP growth (close to 4 per cent per annum) in Latin America––before the international crisis––has had a positive impact on social and labour market indicators. In 2003-08, unemployment decreased from 11 per cent to 7.4 per cent (Graph 1), the number of formal jobs increased and average wages slightly recovered.

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[2] See, for example, Matusz and Tarr (1999).

[3] Between 1990 and 1999, per capita GDP grew 1.5 per cent per annum, but unemployment almost doubled, from 5.8 to 11 per cent (Latin American weighted averages according to ECLAC). Gini indexes rose in South America, Costa Rica, Dominican Republic and El Salvador, remained stable in Mexico and Nicaragua and fell only in Guatemala and Honduras.

[4] For instance, in Argentina, the nation's labour ministry transferred labour inspection responsibilities to the provinces. In practice, this meant the termination of labour inspection.

[5] See Keifman (2006) for an elaboration of this critique.

Figure 1
GDP growth and unemployment rates in Latin America, 2003-09
(%)
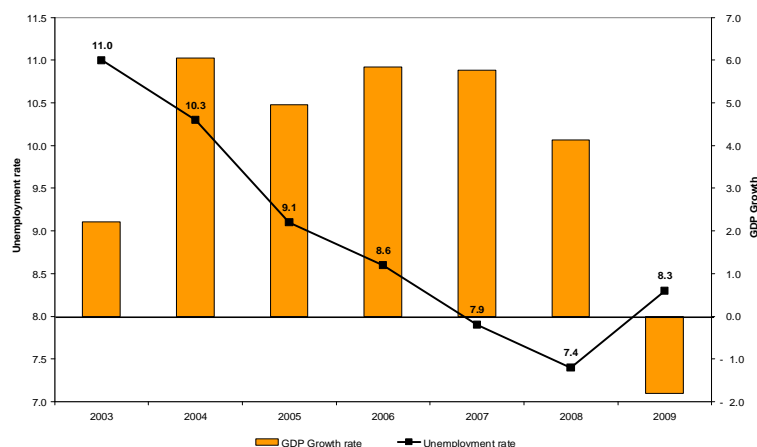
GDP annual growth accelerated from 3.2 per cent in the 1990s to 3.6 in 2000-08.[6] Its favourable impact on the labour market was compounded by the continuation of the demographic transition. Population annual growth slowed down from 1.6 per cent in the 1990s to 1.2 per cent in the 2000s. Therefore, per capita GDP annual growth escalated from 1.5 in the 1990s to 2.3 over 2000-08. On the other hand, labour supply's (as measured by the economically active population) annual growth fell significantly, from 3 to 2 per cent. The decrease in fertility rates from 2.9 in the 1990s to 2.4 in the first decade of the current millennium and the reduction in dependency ratios from 0.6 in 2000 to 0.53 in 2010, are some of the factors behind the deceleration in labour supply growth and, perhaps, the important increase in enrolment rates in all levels of education in the region. To appreciate the impact of these developments on the labour market, note that the difference between the annual growth rates of GDP and the labour supply––a better indicator of the change in labour excess demand—jumped from 0.1 in the 1990s to 1.4 in 2000-08 (Annex Table A1 in Annex IV).

However, given the heterogeneity of the process of the demographic transition in Latin America, it is no surprise that the impact of GDP growth on jobs creation varies across countries. Overall, there is a closer relationship between economic growth and formal jobs creation. In countries with high labour supply pressure, total employment is less associated with GDP growth because self-employment, usually in the informal economy, is preferred to open unemployment.

The behaviour of employment rates in regard with economic growth reveals that there are two groups of countries. Argentina, Brazil, Barbados, Chile, El Salvador, Mexico, the Bolivarian Republic of Venezuela, Trinidad-Tobago, and Uruguay show positive and greater than 0.5 correlation coefficients between both variables. However, in Colombia, Ecuador, Honduras, Jamaica, Peru and the Dominican Republic, this correlation coefficient is too low and in the Plurinational State of Bolivia, even

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6   Since Latin American GDP and per capita GDP peaked in 2000 rather than in 2003, it is more accurate to use the 2000-08 period in order to measure the growth of potential output.

negative. The level of per capita GDP is significantly lower and labour supply growth faster in the second group of countries (CEPAL/OIT 2010).

Progress in employment formalization (proxied by the proportion of workers making contributions to social security) was also observed in several countries, reverting the negative trends verified during the 1990s (Beccaria and Maurizio 2011). At the same time, the proportion of wage earners who receive an annual complementary salary increased from 52 per cent to 56 per cent (simple average of eight countries) while the proportion of dependent workers with signed contracts expanded from 55 per cent to 58 per cent (simple average of six countries)[7] during the period 2002-07 (Weller and Roethlisberger 2011).[8]

2.2 Structural deficits in Latin American labour markets

Despite the progress achieved during the expansion phase before the crisis and the policy responses during this crisis, the region still shows significant deficits in the labour dimension expressed by high levels of unemployment, underemployment, informality, precariousness, inequality and low average wages. Unemployment rate was about 7 per cent in 2010, after reaching 8.1 per cent in 2009. As will be shown below, the lack of sufficient job creation is even worse when taking into account the very low unemployment protection that portrays the region.

Labour informality is another category of analysis that contributes the most to the characterization of labour conditions in Latin America. There are at least two different approaches with different associated concepts of labour informality, as shown next:

Approach	Related concepts
Productive	Informal Sector (IS)/Formal Sector (FS). Employment in the IS/Employment in the FS
Legal	Informal Employment (informal workers)/Formal Employment (formal workers)

The concept of the *informal sector* (IS) emerged in the early 1970s in the International Labour Organization's documents for African countries (ILO 1972). It was then developed in Latin America by the Regional Employment Programme for Latin America and the Caribbean ('PREALC' for 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. Under this 'productive approach', informality reflects the inability of these economies to generate sufficient employment in the formal sector in comparison to the growth of the labour force. The IS is usually associated with small productive units with low levels of productivity and where the aim is rather survival than accumulation. Jobs generated in this sector constitute *employment in the informal sector* (EIS).

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7 Bolivia, Chile, Guatemala, Mexico, Panama and Dominican Republic.

8 See also ILO (2010a and 2010b).

Along with this 'productive approach'-based concept, *informal employment* (IE) is another concept that has been proposed in 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 the employment of workers not covered by labour legislation. Annex II explains how to measure informality according to these approaches.

In this section both the 'productive approach' and the 'legal approach' will be considered so as to present a general outlook of the importance and characteristics of IE and EIS, and the interrelation between them.

Annex Table A2 shows that employment in the informal sector and informal employment represents more than a third of total workers in all countries under study. Bolivia and Paraguay are placed in one extreme, where EIS (including domestic service workers) represents about 65 per cent of the employed workforce whereas IE (including informal domestic service workers) reaches 80 per cent of total workers. On the other extreme, these figures in Chile, Uruguay and Costa Rica fall to 34 per cent and 40 per cent. In all cases (with the only exception of Uruguay) IE is higher than EIS.

Different categories that arise from the double classification of informality also indicate important discrepancies among countries. For example, the larger participation of informal non-wage earners stands out in Peru, Bolivia, Ecuador, El Salvador and Paraguay, where they represent approximately one-third of total employment. With the exception of El Salvador, informal non-wage earners in the rest of the cases constitute the biggest group of workers. In Argentina, Brazil, Chile, Costa Rica and Uruguay, on the contrary, about half of total workers are formal wage earners in the formal sector. Finally, the percentage of non-registered wage earners in total wage earners is very high in all countries, ranging from a minimum of 19 per cent in Uruguay to a maximum of 69 per cent in Bolivia (Figure 2).

Figure 2
Proportion of non-registered wage earners in total wage earners
Urban employment
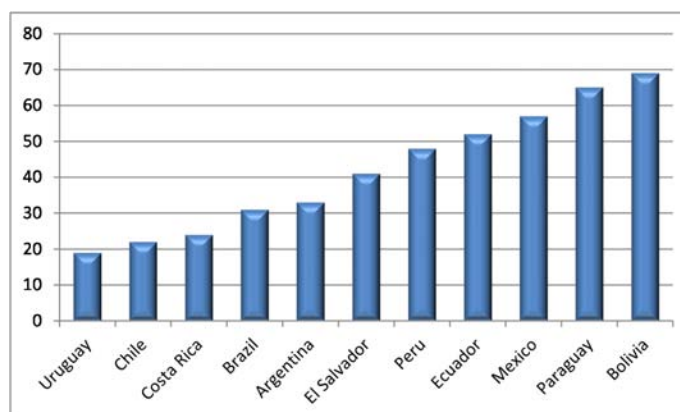
Source: Authors' elaboration based on household surveys.

Beyond these differences, this general overview emphasizes the importance of the informal sector, informal employment and non-registered wage earners in the occupational structure in all countries analysed. Besides, independent workers comprise between 25 per cent and 40 per cent of the labour force in the region. Informality and independent work clearly narrow the scope of labour institutions and labour market policies.

At the same time, there is a close correlation between being a non-registered wage earner and a worker in the informal sector (Annex Table A3). This suggests the precarious character of the jobs generated in the informal sector where, probably, the combination of low productivity and non-fulfilment of labour regulation derives from low wages. However, it is important to point out that between 30 per cent and 60 per cent of non-registered wage earners work in the formal sector, that is to say, in establishments with more than five employees, a fact which suggests that there is scope to significantly reduce the levels of labour precariousness in the region.

On the other hand, given the importance that the labour market has in the generation of household income, especially in a region where social protection coverage is limited, those precarious conditions often give rise to poverty. Thus, the phenomenon of the 'working poor' in these countries shows that having a job is no guarantee against poverty. For instance, around 20-30 per cent of heads of poor households in Argentina, Brazil, Costa Rica, Ecuador and Peru are employed as informal workers (Beccaria et al. 2011). According to ECLAC (2009), 25 per cent of urban workers and 41 per cent of rural workers were poor in the period 2004-08.

As for the composition of informality in terms of different attributes, some common patterns arise (Annex Table A4). In all cases a very high proportion of workers who have not finished secondary school are observed among informal workers. The opposite situation is verified among formal workers.

In most countries, women have a higher proportion in informality than in total occupation, except in Argentina, Brazil, Mexico and Uruguay where there is a balance between sexes. The higher incidence of informality among women is particularly evident in the case of Peru, where while men are concentrated in almost one-half of informal employment, their share increases to 63 per cent in formal jobs. In Paraguay, Bolivia and El Salvador, the gap of informality against women is also very important.

It is also observed that the share of young workers is higher in informal jobs than in total employment (Costa Rica is the only exception). In turn, workers older than 45 are, in most cases also overrepresented in the informal sector. For wage earners, this could be due to the presence of retirement-aged workers who work in the informal economy because of lack of pension benefits.

Summing up, the less educated, the young and women are overrepresented in the group of informal workers. This differential structure suggests *a priori* that informal workers will have lower average incomes than formal workers because they have a vector of personal characteristics that are usually less remunerated; that is to say, there is a 'composition effect' against the informal. The next section analyses to what extent this panorama is also accompanied by differences in the returns obtained by *formal* and *informal* workers for each of the considered characteristics.

2.3 Labour incomes and their distribution

Mean real wages recovered during the years before the crisis along with strong jobs creation, though with different intensity in different countries (Figure 3). Nevertheless, the gains of wages purchasing power have been significantly smaller than the employment gains. In fact, average real wages are still below the levels achieved in 2000 in several countries, as a result of losses experienced at the beginning of the millennium.

Figure 3
Mean real wages 1990-2009
Index 2000=100
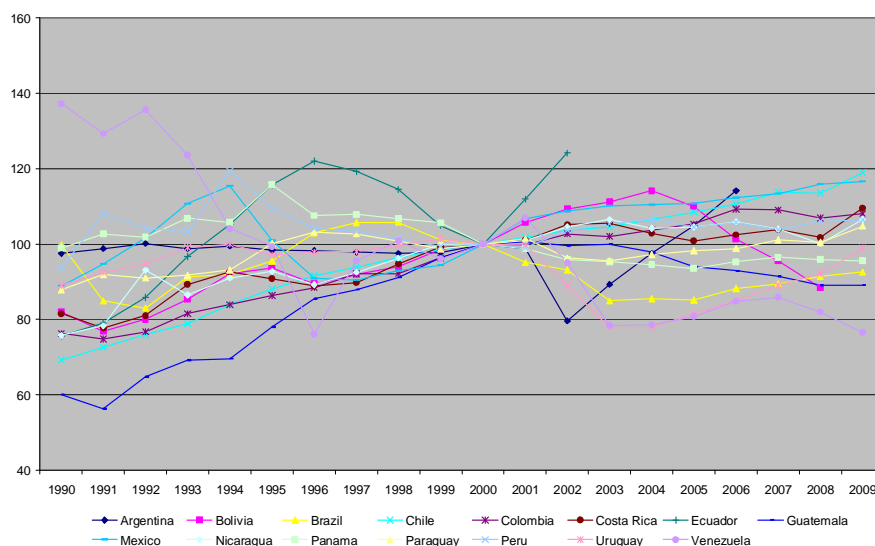
Source: Authors' elaboration based on data from ECLAC

Figure 4
Gini coefficients of hourly wages
Selected years around 2000 and 2010
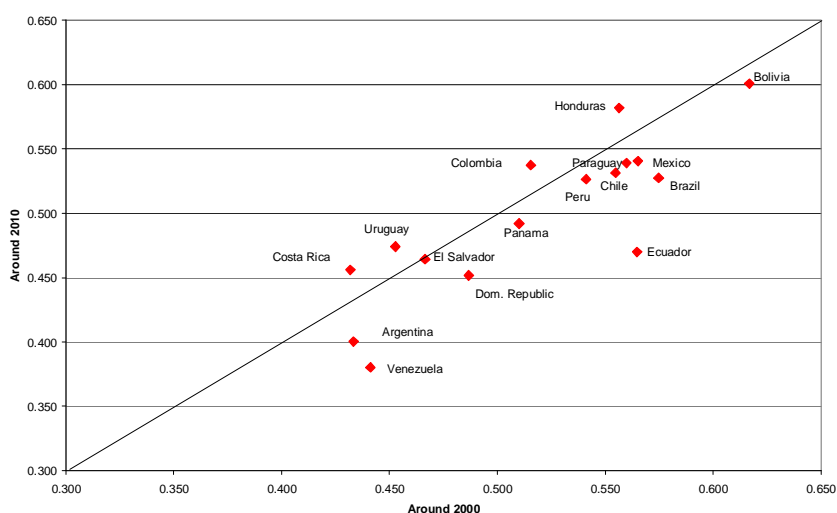
Source: Authors' elaboration based on SEDLAC.

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The behaviour of real wages has not been homogenous among the different groups of employed people. Particularly, wage inequality has decreased along with the fall in the concentration of family incomes in several countries. The fall in inequality has reversed in economies hard hit by the international crisis, such as Mexico, Central America and some Andean countries, since 2008. Anyway, according to SEDLAC estimates of the hourly wages Gini coefficients, labour incomes concentration in the late 2000s was below the early 2000s level, in most countries (Figure 4). Against this general background, Argentina and Brazil show a sustained fall in inequality in stark contrast to what had happened in the 1990s.

Improvements in labour markets together with less inequality helped to reduce poverty and extreme poverty incidence. In the growth period 2003-08, the region experienced a drop of 11 pp in poverty and 6 pp in extreme poverty (ECLAC 2010a). Both rates are at their lowest levels in 20 years.

Despite these positive developments, inequality is still very high in several countries, and in some extreme cases, Gini coefficients are around to 0.60 (Bolivia), 0.58 (Honduras), 0.54 (Mexico) and 0.53 (Brazil).

Class of worker and labour income gap

These earnings differentials are associated, among other factors, with the occupational category of the workers: registered and non-registered wage earners, own-account workers (professional and non-professional) and employers.

Figure 5 shows the non-parametric kernel density functions of the log of hourly wages. Four clear facts arise from this graph. First, with the only exception of Mexico and Costa Rica, non-registered wage earners (informal workers) have the lowest average hourly wages. However, it is important to point out that in most cases, non-professional own-account workers have the highest left tail in the income distribution; but, since they exhibit at the same time a wider range of values (higher intra-group inequality), the average income ends up being higher than that of informal wage earners. In Mexico and Costa Rica, non-professional own-account workers constitute, as a whole, the poorest group.

Second, employers are placed in the other extreme of the income distribution. The only exceptions to this pattern are Argentina and El Salvador, where professional own-account workers are the group with the highest average labour income. Third, the leftward position of the distribution of non-registered wage earners in comparison to registered wage earners is verified in all countries considered.

Finally, in all countries but Chile, registered wage earners are located in the middle of the labour income distribution, with higher wages than non-registered and non-professional own-account workers but with lower wages than professional own-account and employers.

Figure 5
Kernel density functions
Hourly labour income

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PARAGUAY

Paraguay.2009
Hourly Labour Income

PERU

Peru. 2009
Hourly Labour Income

URUGUAY

Uruguay. 2010
Hourly Labour Income
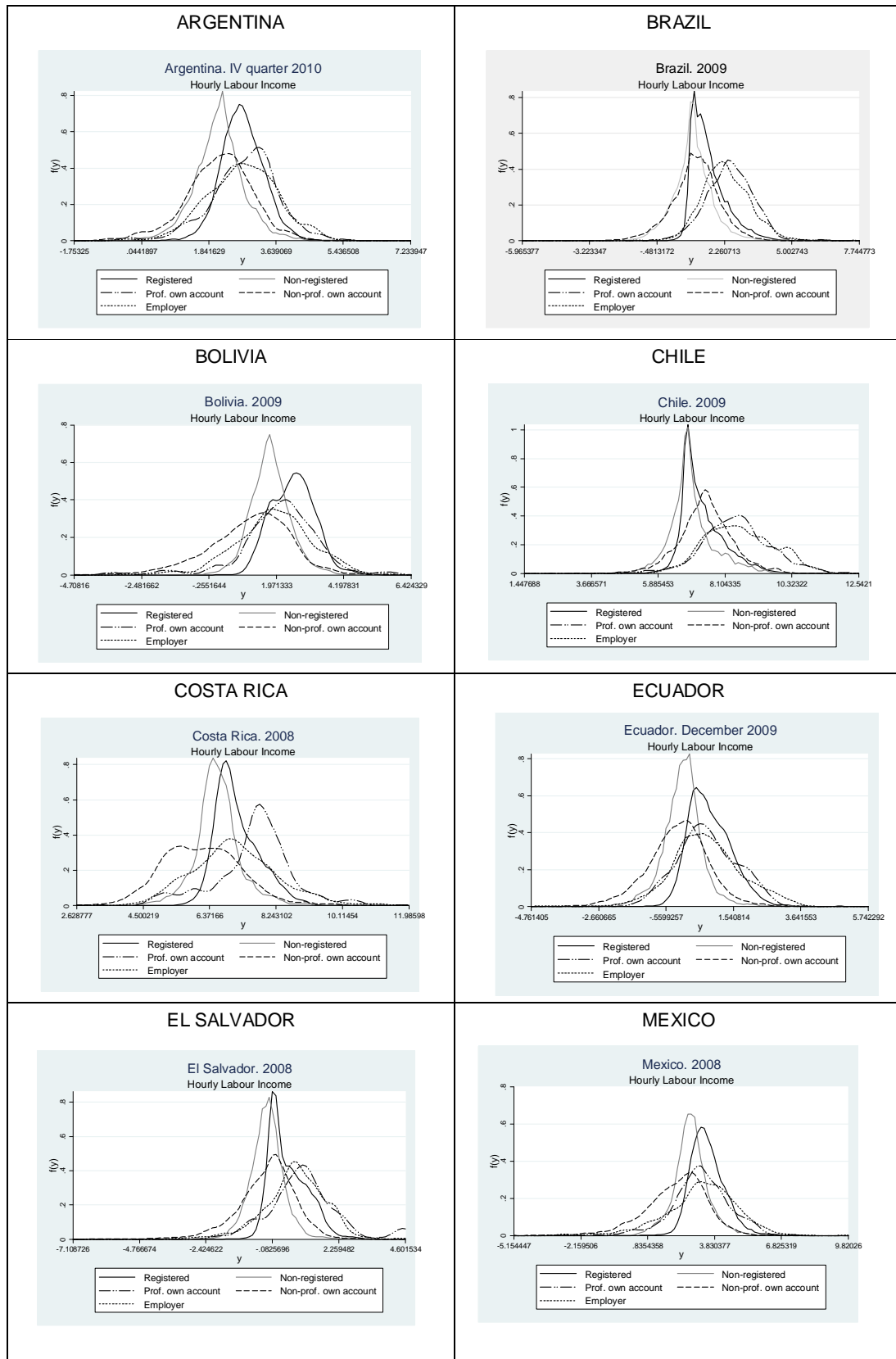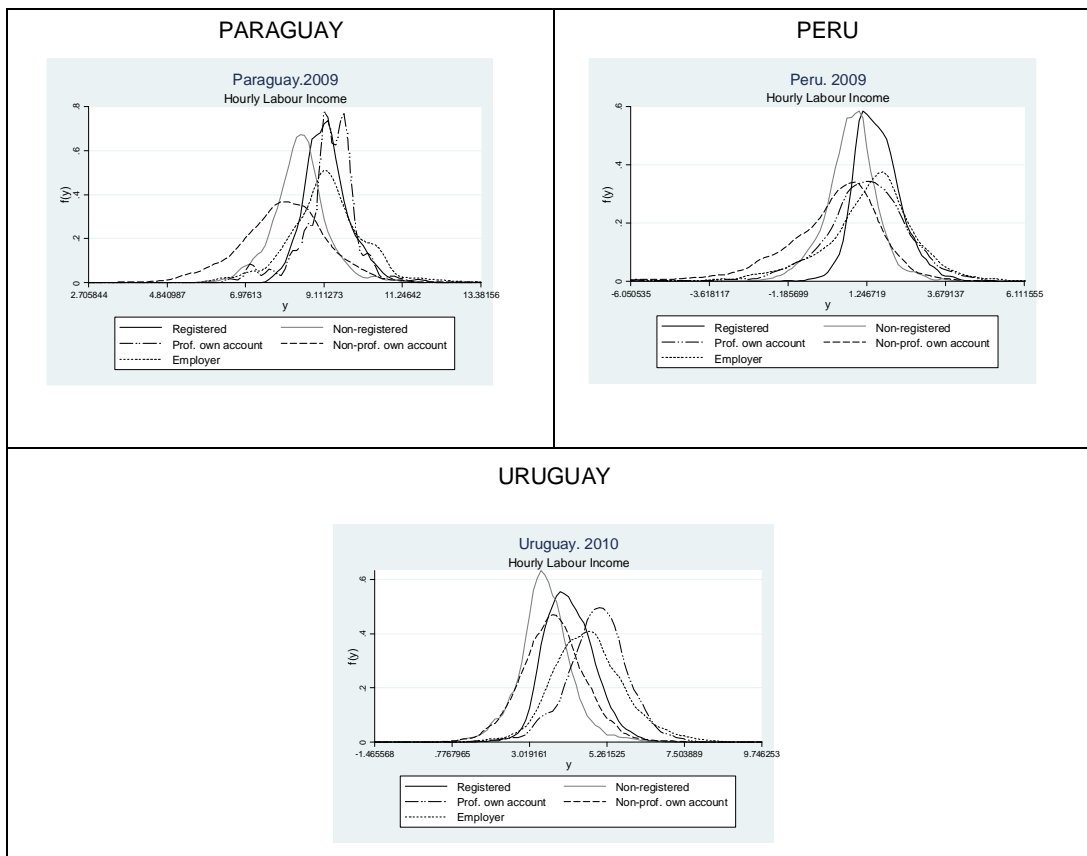
Source: Authors' elaboration based on household surveys.

Therefore, the significant wage gap among salaried workers (who represent the majority of employment, even in those countries with a high proportion of non-wage earners) is an important stylized fact in the region, together with the prevalence of very high labour informality. However, so far we cannot claim that these differentials necessarily reflect a labour segmentation phenomenon associated with informality, since they might be fully explained by the worker's personal attributes and the characteristics of the job. This topic will be addressed below.

After analysing the position of these different groups of workers in the labour income distribution, it is worth evaluating the degree of inequality within each of them. The Lorenz curves in Annex V illustrate this point. In all countries, non-wage earners––both own-account worker and employers––show a higher level of labour income gap than wage earners as a whole.

Furthermore, according to these graphs, registered wage earners are the most homogenous group in Argentina, Uruguay and Paraguay. In Brazil, Chile, Costa Rica and Peru, though the Lorenz curves of registered wage earners show no dominance compared with non-registered wage earners, the Gini coefficients confirm that in these countries they too are more homogenous than all other employed people. The exceptions are Bolivia, Mexico (where both groups of salaried workers have the same intra-group inequality), Ecuador and El Salvador (where the wage gap among non-registered workers is smaller than it is among formal workers).

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Therefore, formality seems to be associated with a lower spread in labour incomes in many countries under study, which implies that it is crucial to take into account the advances in formalization processes made in recent years in the analysis of distributive changes.

Informality and income segmentation

As mentioned before, another important dimension potentially associated with informality is income segmentation. This concept is used here to refer to labour income differentials that are not explained by workers' individual attributes, that is to say, income gaps associated with certain characteristics of the job. In particular, this section evaluates 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.

Informality defined according to the 'legal approach' (which, as mentioned before, distinguishes between registered and non-registered wage earners) is consistent with both the existence and the lack of income segmentation. Informality without segmentation can take place if formal and informal wage earners end up receiving equal net remunerations even when in the first case the employers face additional costs related to labour regulations. On the contrary, there are other arguments that account for the existence of income segmentation. For example, it could be said that the fulfilment of labour norms (such as minimum wages and collective bargaining) not only affects total labour costs but also the net wages paid to workers. Therefore, an additional source of wage segmentation may come from the fact that certain workers are protected by labour legislation or unions while others with equal attributes are not. However, an important condition to obtain these results is the presence of a deficit in the creation of formal jobs, which makes workers accept lower remunerations or more precarious working conditions. This behaviour is, in turn, encouraged by the lack or weakness of social protection mechanisms. To a greater or lesser extent, this is the case of Latin American countries.

To estimate income gaps associated with informality, several parametric and non-parametric methods were performed in order to give greater robustness to the results. Each of these methods is described in detail in Annex III.

Table 1 shows the results of selectivity-corrected wage equations estimated by Heckman's two-step procedure. These figures correspond to the coefficients of the dummy variables that identify informality in the income equations. The dependent variable is the log of hourly wages.

A statistically significant and important 'penalty' due to informality is verified in all countries, suggesting the presence of income segmentation. The magnitude varies across countries, however. Specifically, the gap of the hourly log wage between informal and formal workers is above 40 per cent in Argentina and Ecuador, greater than 30 per cent in Uruguay and above 20 per cent in the other countries.

OLS estimates the effects of the covariates only in the centre of the conditional distribution. For this reason it is of interest to know, additionally, the impact of the covariates along the whole conditional income distribution. Therefore, quantile regression is applied to hourly labour incomes. The estimated coefficients of informality

are shown in Table 2 and they reveal that the gap associated with informality is not constant across the income distribution but larger at the lower extreme. This pattern could suggest the impact of certain labour institutions, such as the minimum wage.

The implementation of the Oaxaca-Blinder decomposition to hourly wage equations estimates (corrected by bias selection) of formal and informal workers, yields very interesting findings reported in Table 3. First, in all cases the total difference of mean incomes is significantly larger than that found using OLS. Second, when this difference

Table 1
Heckman two-step estimator

Argentina 2010	Bolivia 2009	Brazil 2009	Chile 2009	Costa Rica 2008	Ecuador 2009
-0.423***	-0.267***	-0.280***	-0.257***	-0.206***	-0.412***
[0.0100]	[0.0318]	[0.00392]	[0.00519]	[0.0134]	[0.0124]

El Salvador 2008	Mexico 2008	Paraguay 2009	Peru 2009	Uruguay 2010
-0.210***	-0.260***	-0.275***	-0.246***	-0.325***
[0.0114]	[0.00801]	[0.0276]	[0.0135]	[0.00873]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on household surveys.

Table 2
Quantile regressions

	q10	q25	q50	q75	q90
Argentina	-0.582***	-0.489***	-0.395***	-0.319***	-0.267***
	[0.0511]	[0.0268]	[0.0198]	[0.00187]	[0.00432]
Bolivia	-0.280***	-0.291***	-0.243***	-0.226***	-0.265***
	[0.0286]	[0.00213]	[0.0562]	[0.0272]	[0.0220]
Brazil	-0.651***	-0.348***	-0.231***	-0.181***	-0.136***
	[0.00117]	[0.00357]	[0.00149]	[0.000627]	[0.00724]
Chile	-0.477***	-0.261***	-0.134***	-0.121***	-0.126***
	[0.0173]	[0.00607]	[0.00440]	[0.00848]	[0.00654]
Costa Rica	-0.313***	-0.235***	-0.182***	-0.146***	-0.108***
	[0.0152]	[0.0108]	[0.00886]	[0.00706]	[0.0266]
Ecuador	-0.547***	-0.432***	-0.356***	-0.323***	-0.317***
	[0.0251]	[0.0107]	[0.00275]	[0.00658]	[0.0174]
El Salvador	-0.356***	-0.256***	-0.176***	-0.157***	-0.140**
	[0.0209]	[0.00676]	[0.0106]	[0.0191]	[0.0612]
Mexico	-0.361***	-0.263***	-0.223***	-0.219***	-0.191***
	[0.0132]	[0.00336]	[0.00172]	[0.000227]	[0.00656]
Paraguay	-0.379***	-0.308***	-0.230***	-0.224***	-0.199***
	[0.0534]	[0.0625]	[0.0302]	[0.00854]	[0.0589]
Peru	-0.276***	-0.224***	-0.231***	-0.234***	-0.256***
	[0.0127]	[0.00248]	[0.00745]	[0.0117]	[0.00316]
Uruguay	-0.564***	-0.380***	-0.285***	-0.215***	-0.169***
	[0.0134]	[0.000716]	[0.000109]	[0.00819]	[0.0111]

Source: Authors' elaboration based on household surveys.

is decomposed into three components, namely, the 'endowments effects' (which arises from the differences in the vector of characteristics of each group), the 'coefficient effects' (which comes from the differences in the returns to those attributes) and the 'interaction effect', in all cases the 'coefficient effect' is statistically significant and negative. Therefore, the segmentation hypothesis is verified again, thus indicating that, given equal attributes, an informal worker (a non-registered wage earner) gets a lower wage than a similar formal worker (a registered wage earner).

Additionally, the 'endowments effect' also proves to be significant and negative. This effect, in most cases (with the exception of Argentina and Chile) is the factor explaining the larger proportion of the income gap. This reflects the fact that formal workers have a vector of characteristics that is more favourable than that of informal workers, as described in the previous section. Specifically, it has been shown that the *formal* have more human capital and a lower proportion of women, who are usually discriminated against in the labour market and thus receive lower wages than men with similar attributes. Thus total labour income gaps between the *formal* and the *informal* are explained not only because the former have a more favourable endowment vector, but also because the returns to their attributes are higher than those of the *informal*.

Table 3
Oaxaca-Blinder decomposition

	Argentina 2010	Bolivia 2009	Brazil 2009	Chile 2009	Costa Rica 2008	Ecuador 2009
Difference	-0.753***	-0.773***	-0.606***	-0.388***	-0.528***	-0.896***
	[0.0106]	[0.0300]	[0.00459]	[0.00623]	[0.0115]	[0.0106]
Endowments	-0.284***	-0.488***	-0.391***	-0.174***	-0.301***	-0.415***
	[0.0151]	[0.0324]	[0.00494]	[0.00568]	[0.0189]	[0.0165]
Coefficients	**-0.375***	**-0.218***	**-0.343***	**-0.247***	**-0.234***	**-0.382***
	[0.0122]	[0.0658]	[0.00455]	[0.00556]	[0.0126]	[0.0178]
Interaction	-0.0948***	-0.0669	0.128***	0.0332***	0.00665	-0.0993***
	[0.0163]	[0.0679]	[0.00491]	[0.00498]	[0.0197]	[0.0222]

	El Salvador 2008	Mexico 2008	Paraguay 2009	Peru 2009	Uruguay 2010
Difference	-0.670***	-0.583***	-0.761***	-0.818***	-0.712***
	[0.0104]	[0.00805]	[0.0247]	[0.0118]	[0.00982]
Endowments	-0.448***	-0.339***	-0.529***	-0.610***	-0.369***
	[0.0176]	[0.00774]	[0.0311]	[0.0148]	[0.0559]
Coefficients	**-0.282***	**-0.334***	**-0.454***	**-0.359***	**-0.321***
	[0.0184]	[0.0146]	[0.0961]	[0.0182]	[0.0100]
Interaction	0.0601**	0.0903***	0.221**	0.150***	-0.0218
	[0.0235]	[0.0145]	[0.0982]	[0.0203]	[0.0560]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on household surveys.

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Table 4
Matching Estimator Method

Argentina 2010	Bolivia 2009	Brazil 2009	Chile 2009	Costa Rica 2008	Ecuador 2009
-0.349***	-0.231**	-0.392***	-0.266***	-0.211***	-0.414***
[0.0479]	[0.0909]	[0.000888]	[0.00639]	[0.00361]	[0.0327]

El Salvador 2008	Mexico 2008	Paraguay 2009	Peru 2009	Uruguay 2010
-0.268***	-0.316***	-0.465***	-0.279***	-0.370***
[0.000785]	[0.00913]	[0.0400]	[0.0454]	[0.0196]

Standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' elaboration based on household surveys.

Finally, non-parametric estimates based on the matching estimator method (Table 4) are consistent with previous results and confirm again the existence of a 'penalty' for informality. In particular, the parameter of interest—the average treatment effect on the treated (ATT)—is significant and negative in all cases.

Therefore, the different estimates (parametric and non-parametric) point to the existence of significant income gaps in favour of formality that are not explained by differences in the observed attributes of workers. This leads to the conclusion that there is income segmentation associated with informality in all countries analysed.

The question arises as to which factors explain the differences in magnitude of the income gaps across countries. One hypothesis might relate these results to the role of labour institutions such as the minimum wage, collective bargaining or unions. Specifically, the difference between registered and non-registered wage earners could positively depend on how 'binding' these labour institutions are. As long as the minimum wage is relatively high in comparison with average wages or the bargaining power of unions is high, it could generate a wider wage gap between workers who are or are not subject to these labour institutions.

Additionally, these results might be affected by variables that are not observable and, thus, not included in the estimates. For example, there might be non-monetary advantages that compensate for the lower wages of informality, making these jobs more attractive to certain individuals. But given the close link between informality and poverty found in Latin American countries,[9] the arguments suggesting that informality is a voluntary choice is not likely to apply to all workers. On the contrary, the high levels of unemployment and labour precariousness experienced by these countries suggest that insertion in informality could be the only choice for a big group of people.

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9   See, for instance, Beccaria and Groisman (2008); Beccaria et al. (2011); Devicienti, Groisman and Poggi (2009); Maurizio (2011).

3 Assessing the contribution of the labour market and social protection to decreased inequality in Latin America

Previous sections showed the improvements in labour market indicators during the period of economic growth before the international crisis, along with the advances made in social protection policies in the countries of the region. In this section we present some evidence intended to quantify the contribution of each of these pillars in reducing inequality in Latin America during recent years.

To this end, we carry out decompositions of the changes in the Gini of per capita family income (PCFI)[10] by different sources of income, making a distinction between labour market sources, pensions, government transfers (cash transfers to households with children are the most important in this group) and other sources of monetary income. Furthermore, given the importance of the occupational category (namely, registered and non-registered wage earners and nonwage earners) for the structure of employment and labour incomes, the labour source was subdivided accordingly. The periods chosen for these exercises are associated to the fall in inequality in each case.

Table 5 reports the shares of each source in PCFI at the beginning and the end of each series. Labour incomes explain between 70 per cent and 80 per cent of households' total income, a fact that allows us to predict, at least partly, that this source will be responsible for a significant part of distributive changes in the region. In addition, the importance of incomes from registered jobs and their variation in time are closely associated with what happened with formality in these countries in recent years. The significant growth of this source of income stands out in Argentina, Brazil and also Paraguay.

Pension benefits are another relevant source in countries such as Argentina, Brazil and Uruguay. This result is associated with the high coverage of contributive and non-contributive pension systems in these nations. According to Rofman and Lucchetti (2006), coverage of the elderly is very low in most Latin American countries, with the exception of Argentina, Bolivia, Brazil, Chile, Costa Rica and Uruguay.[11]

Table 5
Household per capita income by source in Latin America
Selected countries and years

Income sources	ARGENTINA		BRAZIL		CHILE		MEXICO		PARAGUAY		URUGUAY	
	2010	2003	2009	2001	2009	2000	2008	2000	2009	2004	2010	2006
Labour income												
Registered wage earning jobs	52%	44%	42%	39%	44%	43%	36%	38%	25%	18%	46%	44%
Non- registered wage earning jobs	12%	14%	10%	11%	9%	5%	28%	24%	28%	28%	4%	4%
Non-wage earning jobs	17%	19%	24%	28%	30%	31%	20%	24%	29%	35%	20%	20%
Pensions	14%	13%	20%	19%	7%	8%	6%	5%	6%	5%	20%	22%
Public cash transfers	1%	2%	1%	0%	2%	1%	2%	1%	0%	0%	2%	1%
Other non-labour incomes	4%	7%	2%	3%	7%	12%	7%	8%	11%	14%	8%	8%
% Labour Income / Total family monetary income	81%	78%	76%	78%	83%	79%	85%	86%	83%	81%	70%	68%

Source: Authors' elaboration based on household surveys.

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[10] The decomposition by source at each moment follows the methodology of Lerman and Yitzhaki (1985). The dynamic decomposition, that is to say, the computation of the contribution of each source to the change in inequality in each period follows a methodology used by Helfand, Rocha and Vinhais (2009), Milanovic (1998) and Soares (2006).

[11] Other studies addressing this topic are, for example, Titelman, Vera and Pérez Caldentey (2009), Rofman, Fajnzylber and Herrera (2010), and Cetrángolo and Grushka (2008),

Table 6
Decompositions of the variations in Gini indexes by sources of income
Selected Latin American countries and years

Income sources	ARGENTINA 2003-2010	BRAZIL 2001-2009	CHILE 2000-2009	MEXICO 2000-2008	PARAGUAY 2004-2009	URUGUAY 2006-2010
Labour income	**73%**	**62%**	**44%**	**60%**	**55%**	**66%**
Registered wage earning jobs	43%	34%	33%	18%	-2%	63%
Non- registered wage earning jobs	13%	6%	12%	71%	22%	-2%
Non-wage earning jobs	17%	22%	-2%	-29%	35%	5%
Pensions	**24%**	**14%**	**26%**	**1%**	**3%**	**21%**
Public cash transfers	**-5%**	**20%**	**28%**	**26%**	**2%**	**10%**
Other non-labour incomes	**8%**	**4%**	**3%**	**13%**	**41%**	**2%**
Variation in Gini Index (in pp)	**-10.1**	**-5.1**	**-3.8**	**-1.9**	**-7.4**	**-3.7**

Source: Authors' elaboration based on household surveys.

On the other hand, incomes from government transfers explain, on average, a very small percentage of family incomes, despite the development of this sort of social protection scheme in the region.

Table 6 presents the results of the decompositions of the variation of Gini coefficients by the same income sources. Changes in labour income are in all cases the single most important factor in the fall of Gini coefficients, explaining from 44 per cent of the change in Chile and up to 73 per cent of the fall in Argentina.

On the other hand, government transfers explain between 20-30 per cent of the changes in Mexico, Brazil and Chile. This result comes from the extension of transfer programmes to households with children like *Oportunidades* in Mexico and *Bolsa Familia* in Brazil.[12] In Argentina, however, this source does not explain the fall in inequality. Note that the *Programa Jefas y Jefes de Hogares Desocupados* peaked in 2003, while *Asignación Universal por Hijo 2010* reaches a similar number of households.[13] This does not imply that these programmes are not focused on lower-income households (in fact, the correlation between this source and total family income is negative) but that they do not contribute significantly to the dynamics of inequality.

In turn, (contributive and non-contributive) pensions have significant explanatory power in Argentina, Uruguay and Chile. This is related, as mentioned, to the extension of pension coverage to the elderly carried out through contributive and non-contributive pillars in these countries.

At the same time, the contribution of formalization to reducing inequality in countries such as Uruguay, Argentina or Brazil has been very important, between three (Argentina) and six (Brazil) times the contribution from informal wages, or like in Uruguay where this source explains all the improvements from labour incomes. Of

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[12] For more details about this kind of cash transfers in Latin America see, for example, Bertranou and Maurizio (2012), Gasparini and Cruces (2010), ILO-IPEC (2007), ILO (2007), Maurizio (2009), Medeiros, Britto and Veras Soares (2008), Perez Ribas, Soares and Hirata (2008), World Bank (2009), and Villatoro (2008).

[13] It is possible, however, that the impact of AUH could be underestimated given the fact that the EPH does not ask about this source directly. Instead, it has to be identified indirectly from the household income. A similar strategy was implemented on PNAD to identify *Bolsa Escola* in 2001 and *Bolsa Familia* in 2009.

course, this is associated with the reduction of informality implemented recently in these countries. In Chile, too, formal incomes were important in this period. In fact, in all four cases (Argentina, Brazil, Chile and Uruguay) incomes from formal sources are the main determinant of the distributive improvement. In contrast, incomes from non-registered workers explain most of what happened to labour incomes in México, a fact related to the continued growth of informality.

These results are consistent with studies carried out by ECLAC (2010a, 2010b), which linked these improvements in income distribution mostly to the positive dynamics of the labour market and to a lesser extent to the cash transfers received by households and to demographic changes such as reduced dependency ratio. Also, the relative importance of the labour market in reducing inequality and poverty is explained, although with different intensity depending on the country, both by increases in labour income and growth in employment levels (Cecchini and Uthoff 2007).[14]

As described in detail in Annex III, these results are the net contribution of each income source to the variation of Gini coefficient associated with two effects: the 'share effect' (the proportion of a given income source in total family income) and the 'concentration effect'. In turn, the 'concentration coefficient' is the result of the 'Gini correlation index' (the correlation of an income source with total family income) multiplied by the 'relative Gini coefficient' (the Gini coefficient of an income source including even observation units that do not perceive this kind of income). As we can see in Annex Table A5, there is no common pattern regarding the relative contribution of these factors to the fall in Gini coefficients: while in Argentina, Brazil, Paraguay and Uruguay the inequality reduction is mostly explained by the 'concentration effect', the opposite is verified in Chile and Mexico. In fact, in Argentina, Paraguay and Uruguay, this effect over-explains these distributive changes since the 'share effect' negatively contributed to the improvements in income distribution.

Looking at the contribution of these effects in more detail, it is possible to observe a reduction in the concentration index in every income source in all countries included in the first group. In turn, it is a result of the drop of both the correlation index and the relative Gini index in most income sources. It is evident in Argentina, where the relative Gini index of the income coming from a registered wage earning position reduced in 10 pp as a consequence, at least partly, of the formalization process. A similar outlook arises in Brazil where a contraction in this indicator is also observed in the case of incomes coming from public cash transfers, linked to their coverage expansion.

Regarding the 'share effect' in these countries, it is interesting to note that in Argentina, Brazil and Paraguay, the formalization process would have implied, *ceteris paribus*, an increase in inequality since the concentration index of earning from a formal job is higher than the Gini coefficient. On the other hand, the reduction of informality—maintaining the same concentration index—would have also involved a raise in inequality in Argentina, Brazil and Uruguay, given that the concentration index of this

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14 Trujillo and Villafañe (2011) corroborate the importance of labour incomes in changes of household income distribution in Argentina. Soares (2006) finds that three-quarters of the reduction in family income inequality between 1995 and 2004 in Brazil is explained by the decline in the concentration of labour income, while transfer programmes explain the remaining quarter. Beccaria et al. (2011) conclude that events exclusively related to the labour market are the most important factor explaining the poverty reduction in the five Latin American countries evaluated.

income source is lower than the global Gini coefficient. It is due, as expected, to the very low correlation between this source and the total family income.

As mentioned before, in Chile and Mexico the 'share effect' is more important than the 'concentration effect'. In Chile incomes from a formal and informal salaried job and from cash transfers increased their share in total family incomes. Since they have a concentration level that is lower than the global Gini coefficient, they positively contributed to inequality reduction. On the other hand, the fall in the relative importance of other non-labour incomes has the same impact due to the fact that its concentration level is higher than global inequality.

Finally, in Mexico the concentration effect of each income source, with the only exception of incomes from independent work, contributed to the inequality fall. Regarding the 'share effect' it is interesting to note that the two main forces leading to a reduction in inequality are the increase in the income share of informal jobs and public cash transfers because their concentration levels are lower than the Gini coefficient.

Therefore, it is important to recognize the dissimilar income structure and the heterogeneous stories about inequality dynamics in Latin America in recent years, important aspects to be taken into account when suggesting public policies aiming at reducing inequality and overcoming poverty.

4   Labour institutions and labour market policies

By institutions we mean '… the system of laws, programmes, and conventions that can impinge on labour market behaviour and cause the labour market to function differently from a spot market' (Blau and Kahn 1999). Once we depart from the perfectly competitive textbook model of the labour market, free market equilibria are no longer Pareto efficient and labour institutions have a potentially important role to play not only to achieve distributive goals but also to restore efficiency. Manning (2001) shows that in a monopsonistic labour market model based on firm wage-posting with matching and search, labour market institutions and policy interventions might improve efficiency.

4.1 Changes in institutions and policies

Minimum wages

Real minimum wages increased in 14 out of 18 Latin American countries in the 2000s, although at very different rates (Figure 6). The rise was especially strong in Argentina, Brazil, Honduras (in 2009), Nicaragua and Uruguay. However, they stagnated in El Salvador, Mexico and Paraguay and fell in the Dominican Republic. The behaviour of real minimum wages had been more mixed in the 1990s. They had recovered strongly in Argentina, Bolivia, Brazil, Nicaragua and Peru, from the lows of hyperinflation, and also in Chile with the restoration of civilian rule. However, they had fallen significantly in El Salvador, Guatemala, Mexico, Uruguay and Venezuela.

Figure 6
Real minimum wages, Latin America countries, 1990-2010 (Index 2000=100)
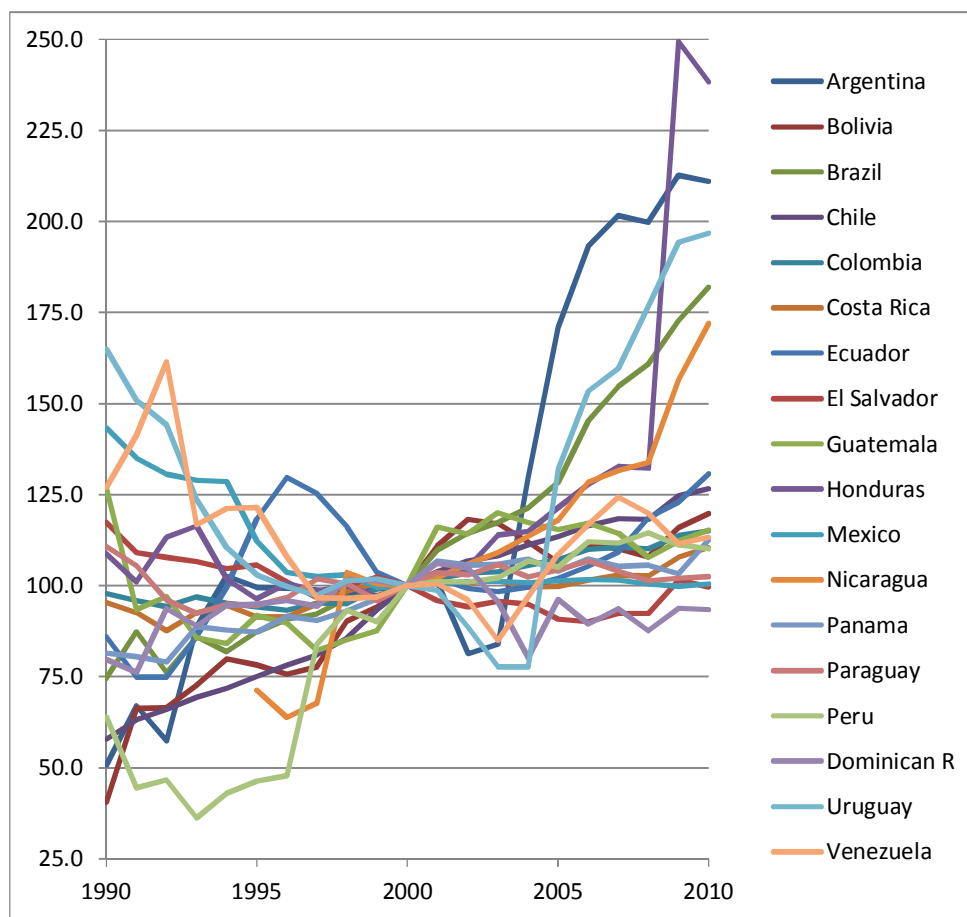
Note   Base Única de Salarios Mínimos de América Latina y el Caribe. From 2007 onwards, minimum wages in Argentina are deflated by the 7-Province Consumer Price Index.

Source: Authors' elaboration based on ILO data.

A comparative picture of the absolute and relative levels of minimum wages across Latin America in 2010 is shown in Figure 7. Measured in PPP-adjusted US dollars,[15] minimum wages range from 182 in Mexico up to 571 in Panama. The variation of the ratio of the minimum wage to per capita GDP is even larger, as this ratio is almost ten times as large in Honduras as in Mexico. This disparity suggests a great variety as to the enforcement, impact and relevance of minimum wages across the region. Paraguay has both very high levels of the (relative) minimum wage and informal employment (76 per cent). These facts are consistent with conventional wisdom: too high a minimum wage causes either unemployment or informality. The contrary proposition, however, is not necessarily true, since Mexico has a level of informal employment (63 per cent) quite greater than countries with significantly higher relative minimum wages such as Argentina, Brazil, Chile, Costa Rica and Uruguay (Annex Table A2). We study the impact of minimum wages in Section 4.2.

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[15] The PPP survey year is 2005.

Figure 7
Minimum wages in PPP-adjusted US$ and as a fraction of per capita GDP
2010
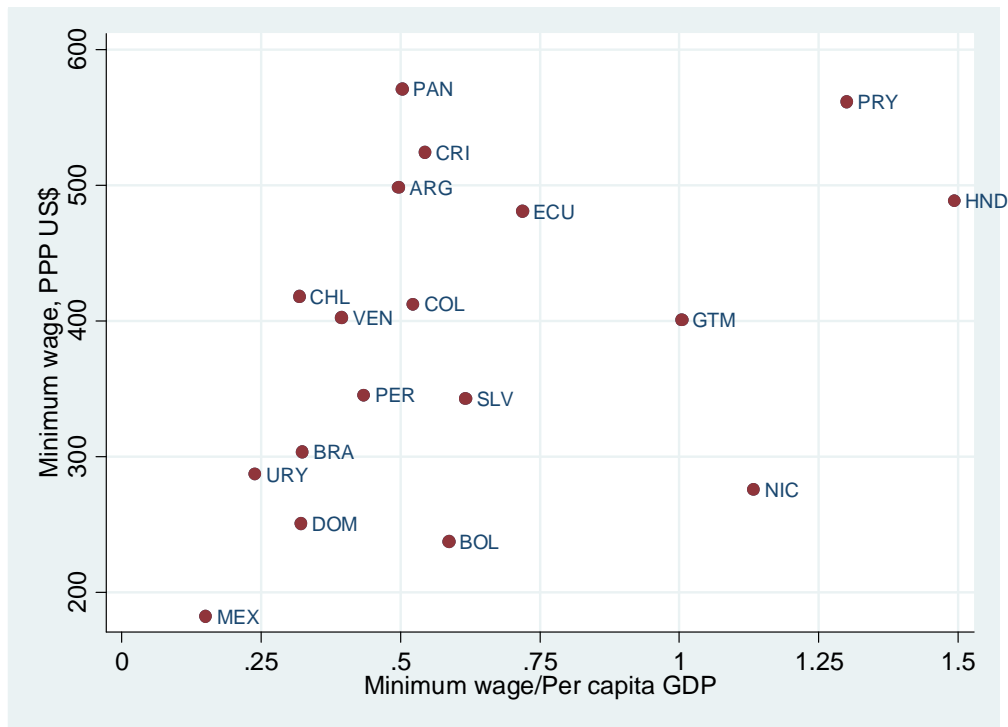
Note: The year for Argentina's data is 2006.
Source: Authors' elaboration based on ILO and World Bank data.

Trade unions and collective bargaining

Collective bargaining remains underdeveloped in much of Latin America and there is a general emphasis on enterprise-level bargaining, particularly in Mexico, Central America and the Andean region. With the exception of Argentina, Brazil and Uruguay, the proportion of workers covered by collective agreements is low, ranging from 4 per cent of wage and salaried workers in El Salvador to 16 per cent in Costa Rica. The large informal economy, the predominance of small firms and enterprise-level bargaining are obstacles to collective bargaining, particularly in countries (such as Colombia, Ecuador Honduras, El Salvador and Panama) that set the threshold for joining a trade union anywhere from 20 to 40 workers per firm. However, collective bargaining occurs largely at the municipal/territorial level in Brazil. Argentina and Uruguay have recently promoted collective bargaining at the sectoral level, and have thus reversed the enterprise-based emphasis typical in the 1990s. Besides, Uruguay brought under collective bargaining sectors previously excluded such as rural workers, domestic workers and groups of public sector employees.

The impact of collective bargaining in Argentina, Brazil and Uruguay is much greater than suggested by their levels of trade union density (which range from 22 per cent in Uruguay to 38 per cent of wage and salaried workers in Argentina); since collective agreements cover all the workers of the sector or area involved, whether they are union members or not, the coverage rate reaches 60 per cent in Argentina and Brazil, and 100

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per cent in Uruguay of wage and salaried workers. In fact, collective agreements coverage expanded in Uruguay and Argentina. The number of sectoral collective agreements jumped from an annual average of six in 2000-04 to more than 200 during 2007-08 in Uruguay. In Argentina, collective agreements went from an annual average below 200 in 1991-2002 to more than 1,000 in the late 2000s, and the number of private sector workers covered by them increased by 45 per cent between 1998 and 2008; finally, as the ratio of collective agreement wages to actual wages also rose in the meantime, from 55 per cent in 2001 to 81 per cent in 2009, collective bargaining has become more relevant (Cardoso and Gindin 2009; Hayter 2010; Hayter and Stoevska 2010; Mazzuchi 2009; Ministerio de Trabajo 2011).

Formalization

Some of the new governments have reversed the previous light approach towards the enforcement of labour law and compliance with social security contributions, and have reinforced labour inspections and begun to fight social security evasion, fostering labour formalization. Law enforcement through labour inspection became a central element of the actions of labour ministries in Argentina and Brazil, but in both countries a series of tripartite mechanisms also favoured compliance. However, this has not been a general trend in the region. In Mexico, compliance with the law has been very low, meaning that while the system is formally rigid, it is flexible in practice (Cardoso and Gindin 2009).

In 2004, the Labour Ministry of Argentina launched the *Plan Nacional de Regularización del Trabajo* (national programme for labour regularization). The number of labour inspectors increased from 20 in 2003 up to 400 in 2010. Under this programme, more than 800,000 establishments that employed 2.6 million workers, were inspected. To foster formalizations, labour inspections were complemented with a simplified registration programme, one-year subsidies (social security employer contribution exemptions) for hiring new employees in small and medium firms, a tax incentive to formalize domestic workers and the development of a corporate social responsibility network to work with suppliers on the registration of their staff. As a result, the number of registered workers increased 43 per cent between 1998 (the 1990s peak year) and 2010, and the percentage of non-registered workers fell from 50 per cent (of wage and salaried workers) in 2003 to 35 per cent in 2010 (*Ministerio de Trabajo* 2011).

Brazil too has implemented a number of micro-level policy interventions that have altered the behaviour of firms and employers, resulting in greater formalization. These include the introduction of the SIMPLES law in 1996, which simplified and lowered taxes for small- and medium-sized enterprises, improved labour inspection as well as greater legal awareness among workers, for instance, among domestic work. Between 1996 and 2004-08, the annual number of workers registered as a result of inspection increased from 268,000 to 700,000, and the percentage of formal employment rose from a low of 44 per cent of total employment up to 50 per cent in 2008 (Berg 2010).

In Uruguay, the percentage of formal workers has grown from 80 per cent (of full-time wage and salaried workers) in 2004 to 87 per cent 2010, as measured by household survey (*Encuesta Continua de Hogares*) data and by the number of workers registered with the social security administration (*Banco de Previsión Social* or BPS). This shift reflects the effects of the reinstatement of wage councils and greater control applied by

the BPS. In 2003-08, the number of private sector employees contributing to BPS rose by 56 per cent (Mazzuchi 2009).

Unemployment protection and active labour market policies

As previously mentioned, two characteristic features of the region's labour markets are high unemployment and precariousness which, in turn, imply a low capacity to generate sufficient labour income for some groups of workers. However, contributory-based unemployment insurance has not been fully developed in Latin America. Only Argentina, Brazil, Chile, Ecuador, Uruguay and Venezuela have unemployment insurance although in all of them coverage and benefits are very low.[16] This is mainly due to the high levels of informality (since these programmes have been designed to protect wage-earners who hold a formal job, generally under a permanent contract) and, to a lesser extent, to the occupational instability of workers in the formal market.[17]

Over the last years, some countries have extended unemployment protection to other groups of workers, such as rural, in the construction sector and those with temporary contracts. For example, in Argentina and Brazil, coverage has been extended to temporary agricultural workers. Uruguay has advanced towards the inclusion of domestic workers while Chile has a special system for those with fixed-term contracts. On the other hand, in Argentina, Brazil and Chile, the system does not cover public sector workers who usually have special employment stability and severance payment schemes.

In addition, some countries in the region have implemented non-contributory cash transfer programmes not only for the unemployed but also for low-income households. An example is the *Seguro de Capacitación y Empleo* (training and employment insurance) in Argentina, which is focused to those unemployed who are excluded from the social security system. Another experience of this kind is the *Programa de Formación y Capacitación* belonging to the *Chile Solidario* system, which is aimed at the unemployed between 18 and 40 years old who receive skills training to increase qualifications in forest activities. The *Programa de Apoyo al empleo* (employment support programme) in Mexico gives economic support for job searching as well as training grants to unemployed people.

Beyond these experiences, unemployment protection in Latin America is still a pending task. Very few countries have unemployment insurance, and coverage and benefits are generally very limited. Neither do non-contributive schemes cover all unemployed people while the amount of the transfer is usually very low. Therefore, the region's unemployment situation constitutes an important source of lack of protection, especially due to the high occupational rotation that characterizes informal jobs. At the same time, the lack of unemployment insurance coverage forces workers to quickly accept precarious jobs so as to obtain an income that allows them to survive. Consequently, unemployment and precariousness are two sides of the same coin.

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[16] Overall this insurance has never covered more than 20 per cent of the unemployed (Velásquez Pinto 2010).

[17] During the crisis some countries reformulated these benefits, relaxing certain access requirements, extending their duration and combining them with training programmes.

So the main challenge is to design unemployment protection systems with a high level of coverage, that limit the potential moral hazard, and that are integrated to active policies so as to accelerate the beneficiaries' reinsertion in the labour market. Impact evaluations of this kind of programmes, however, continue to be very scarce in the region.

Active labour market policies have undergone changes in Latin America in the last few years with a view to increasing their efficiency, efficacy and equality. In the case of training programmes, it is worth mentioning a greater diversification of training suppliers; certifications of competence; a greater focus on training to meet demand-side requirements; the design of different programmes according to the problems of the target groups and new instruments for funding such programmes.[18]

Nonetheless, despite these reforms, training systems still have significant deficits: their coverage is usually limited; training offers are not always transparent; outcome assessments are few; the attempts to guide training taking into account the requirements of the productive apparatus come across the difficulties of accurately predicting demand specificities in the future, especially in those countries of the region characterized by strong economic instability. Within this context, the region should gradually shift from a traditional transfer of knowledge approach for a given job to competency-based training. Training systems should also adjust to the different needs of the many segments of the productive sectors and labour force through a greater diversification of the programmes offered. However, to advance in the development of these programmes it is necessary to meet at least two previous conditions: a development path that generates continuous demand for greater human capital and to have achieved a high level of coverage and quality in formal education. At present the region's countries do not satisfactorily meet either of these two conditions.

Direct employment generation programmes have arisen in the region in contexts of strong demand contraction, even though after the crisis the programmes generally have to continue since most of beneficiaries are unable to get a job.[19] These programmes offer temporary work for a remuneration that is similar to the minimum wage and they are generally oriented to members of poor households (sometimes only heads of households).[20] The low remunerations are usually used as self-selection mechanisms. The types of tasks that are carried out as part of these programmes are generally labour-intensive activities such as cleaning, construction and maintenance. These programmes, however, usually provide insufficient knowledge or skills recognized in the labour market.

Another way for strengthening the labour demand has been indirect employment creation policies, especially during recession phases, through an economic incentive for

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[18] Some examples of this kind of programme are the *Programa de Habilitación para el Trabajo (Hábil)* in El Salvador; *Aprendizaje* in Costa Rica, *Procajoven* in Panamá, *ProJoven* in Uruguay and *Programa Jóvenes con Más y Mejor Trabajo* in Argentina.

[19] Examples are the *Plan Jefas y Jefes de Hogar Desocupado* in Argentina implemented during the 2002 crisis, the *Programa Nacional de Empleo* in Costa Rica and the programme *Uruguay Trabaja*.

[20] This is why sometimes they are also considered as anti-poverty programmes since they are mostly targeted to low-income households.

private companies when hiring labour.[21] In this regard, a lesson learnt by the region is that high levels of unemployment together with low social protection significantly deteriorate the remaining labour indicators and have long-term impacts that are difficult to reverse.

Finally, given the structural deficit in the salaried employment generation, many countries in the region have implemented programmes that foster independent employment, through own-account activities or micro businesses.[22] One of the problems for developing these enterprises is the existence of credit rationing and restrictions to new technologies and markets, especially external, that are important barriers for the sustainability over time of this kind of enterprises (Chacaltana 2009),

4.2 Evaluation of the distributive impact of labour institutions

In this section we will examine the impact of the minimum wage and collective bargaining on the fall of wage inequality in six countries during the 2000s. Minimum wages affect the low end of the wage distribution. While employment effects of the minimum wage are controversial, especially, after Card and Krueger (1995), the impact of the minimum wage on the wage distribution is more straightforward. The distributive impact of collective bargaining is *a priori* less clear. Trade unions tend to affect the middle of the wage distribution and cause wage compression and higher wages for those covered by collective agreements. The former has an equalizing effect as it reduces within-group variation of the wages of those covered, but the latter increases between-group wage variation among the covered and the non-covered. In a pioneering paper, Freeman (1980) introduces the within/between-group distinction and finds that the wage compression impact of unions was much stronger than its disequalizing effect in the United States during the 1970s. Notice that both, the minimum wage and union-caused wage compression, might imply lower skill premiums (and, likely, lower variances within-same skill groups). In turn, skill premiums might vary as a result of skills supply and demand shifts. Therefore, proper identification of institutional vis-à-vis market factors poses a challenge.

Figure 8 shows the growth incidence curves of the log of real hourly wages in the six countries selected during the 2000s. First, Argentina, Brazil, Chile and Uruguay show equalizing patterns, with an inverse relationship between real wage growth and percentile rank, while Mexico and Paraguay do not. Second, the inverse relationship between real wage growth and hourly income rank holds for all percentiles in Argentina, all percentiles but the first 10 in Brazil and Uruguay, and the first half of the distribution in Chile. In turn, real growth by percentile shows an inverted U-pattern in Mexico and a flat pattern in Paraguay. These contrasting patterns are, *a priori*, compatible with the changes in labour institutions or lack thereof, described previously.

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[21] One example is the programme *Apoyo a la Inserción Laboral* in Panama, which subsidizes wages for three months and amounts to 50 per cent of the legal minimum wage.

[22] For instance, the microfinance programme *Usura Cero* in Nicaragua, *'Programa Nacional de Emprendedores'* in El Salvador, *Programa de Emprendimientos Productivos* in Uruguay, *Manos a la Obra* in Argentina, among others.

Figure 8
Growth incidence curves of real hourly wages in the 2000s

Source: Authors' elaboration based on household surveys.

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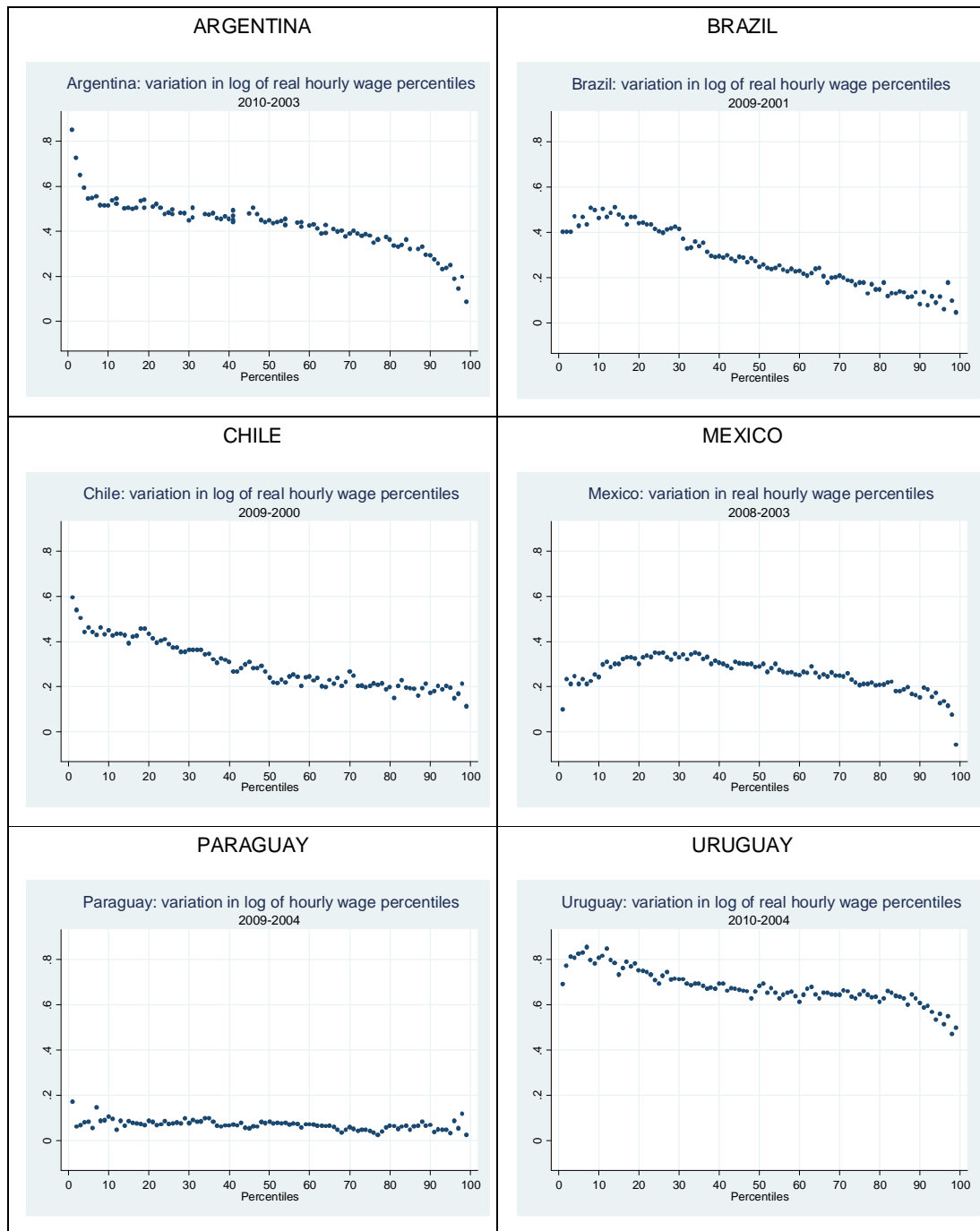
The minimum wage

To examine the impact of the minimum, wage we present cumulative distribution graphs (Figure 9) of full-time workers' wages[23] for both formal and informal workers[24] in two different years for the six countries, following Kristensen and Cunningham (2006) and Maloney and Nuñez Mendez (2004).[25] They find 'cliffs' in the cumulative distributions at the levels of minimum wages in most Latin American countries. These cliffs are inconsistent with a continuous distribution of human capital among workers and the hypothesis of competitive equilibrium wages. More remarkably, they find these cliffs even for informal workers and thus confirmed the so-called 'lighthouse effect' (or *efeito farol* in Portuguese) that had been reported for Brazil long ago.[26]

We find no cliffs for formal workers' wages when real minimum wages are low (Argentina in 2003, Mexico both years and Uruguay in 2004) but always find lighthouse effects (stronger or weaker) in all countries. Therefore, the minimum wage is a reference for informal workers even when it is too low for formal workers. Cliffs for formal and informal workers are always high for Brazil and for Chile in 2000. On the other hand, we find a positive association between the percentage of subminimum formal and informal workers and the level of the minimum wage. This appears in cross-country comparisons (Mexico versus Paraguay) but also in within-country comparisons for large changes of the real minimum wage (Argentina, Brazil and Uruguay). The only exception is formal employment in Brazil which records no subminimum wages.

Argentina has had the largest increases in the lower percentiles consistently with the largest increase in the real minimum wage, 200 per cent between 2003 and 2010 (starting from a very low level). However, this policy seems to have reached a limit as actual wages have risen by much less than the minimum wage (see Figure 8) and the fractions of subminimum workers approached Paraguay's levels. Real minimum wages increased 57 per cent and 153 per cent in Brazil (2001-09) and Uruguay (2004-10), respectively. The changes in minimum wages are similar to the raises in wage percentiles closer to the level of the minimum (around the 10th percentile). However, subminimum informal workers seem to have made somewhat less as shown by the first percentiles.

In Chile, real wages at the lower half of the distribution grew faster than real minimum and median wages, which increased by a moderate 25 per cent between 2000 and 2009. This fact and the limited impact of unions suggest that the recent decrease in wage inequality in Chile has been mainly market driven. In Argentina and Uruguay, the middle of the distribution has grown relatively faster than in Brazil and Chile. Despite the large raise in the real minimum wage, Argentinean wages show short cliffs in 2010. These phenomena might be explained by the impact of collective bargaining (see next subsection). The non-equalizing patterns of real wage growth in Mexico and Paraguay,

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[23] Following the convention of the literature, full-time workers are defined as those who worked 30-50 hours in the reference week.

[24] Formal/informal worker means registered/nonregistered worker.

[25] However, unlike these authors we decided not to present kernel densities because their spikes are too sensitive to the number of points and the bandwidth chosen to draw them.

[26] The original reference is Souza and Baltar (1979).

and the fall in the fractions of subminimum workers are consistent with stagnant real minimum wages with moderate overall real wage raises during the 2000s.

In order to quantify the impact of minimum wages on wage inequality, we pursue two different methods. The first method, proposed by Fortin and Lemieux (1997), is a simplified version of the approach introduced by DiNardo, Fortin and Lemieux (1996). The main underlying assumption is that minimum wages only affect the bottom part of wage distributions, that is to say, the mean and variance of (log) wages below or equal to the minimum wage. Therefore, a simple way to evaluate the impact of minimum wage changes is to compute a counterfactual variance for the period with the lower real minimum wage, by replacing the mean and variance of the fraction below the higher real minimum wage with the mean (adjusted by inflation) and variance of the bottom part of the distribution in the period with the higher real minimum wage. The difference between the counterfactual and actual variances for the period with a lower real minimum wage is interpreted as the fraction of the change in actual variances, explained by changes in the minimum wage.

Figure 9
Cumulative distribution of fulltime workers' wages and minimum wages (MW)

Figure 9 continues

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Figure 9 (con't)

CHILE

Chile: cumulative distribution of full-time workers' wages
2001

Chile: cumulative distribution of full-time workers' wages
2009

MEXICO

Mexico: cumulative distribution of full-time workers' wages
2000

Mexico: cumulative distribution of full-time workers' wages
2008

PARAGUAY

Paraguay: cumulative distribution of full-time workers' wages
2004

Paraguay: cumulative distribution of full-time workers' wages
2009

URUGUAY

Uruguay: cumulative distribution of full-time workers' wages
2004

Uruguay: cumulative distribution of full-time workers' wages
2010

Source: Authors' elaboration based on household surveys.

Annex Table A6 reports the results of these exercises for Argentina in 2003-10.[27] We computed the counterfactual variances of hourly wages for all wage earners and of full-time workers[28] total wages for 2003. According to this method, the raise in the minimum wage 'explains' 79 per cent of the fall in the variance of the log of hourly wages and 38 per cent of the drop in the variance of the log of total wages of full time workers between 2003 and 2010.[29] Other institutions have also changed since 2003 and might have affected the levels of inequality in the lower tail of the distribution, namely, the rise of registered work and the comeback of collective bargaining which set wage floors they might have reinforced the impact of the minimum wage.

The second method is proposed by Lee (1999). Binding minimum wages truncate observed wage distributions. Regional differences in wage levels are usually significant in a country. If wage levels are uncorrelated with latent wage dispersion (the identifying assumption), a simple way to test for the impact of minimum wages is to check whether the 10th-50th percentile differential of the log of wages is higher (lower in absolute value) in poorer areas where the minimum wage-median log differential is higher (lower in absolute value). If the identifying assumption is right, the regression coefficient of the former on the latter should be positive. However, measurement errors in the 50th percentile cause a downward bias in the estimated coefficient of the minimum wage-median differential.

For Uruguay, we find a 0.14 coefficient with a 100 per cent confidence level estimated by a pooled regression. For Chile, we find in 2000 a 0.25 coefficient with a 95 per cent confidence level; however, this coefficient becomes statistically no different from zero in 2009, when the minimum wage loses bite (see Figure 9).[30]

The estimated coefficients for Argentina, Brazil and Paraguay were not positive: either latent wage distributions differ across regions or measurement errors matter. But for Brazil, a dynamic version of Lee's approach, which takes care of differing latent inequality across regions by using changes in the differentials in 2001-09, yielded a 0.71 coefficient with a 100 per cent confidence level, which implies strong distributive effects of the minimum wage. This approach did not work for Argentina.[31]

The implementation of Lee's method for Mexico is not worth given that minimum wages became almost irrelevant in the 2000s (Figures 7 and 9). But minimum wages were relevant in the 1980s. Afterwards, they fall by 50 per cent relative to median earnings in the 1990s. Bosch and Manacorda (2010) implement a sophisticated version of Lee's method to urban Mexico between 1989 and 2001, controlling for differences in latent inequality, trade policy changes (among other shocks) and applying instrumental variables to correct for measurement errors with social security microdata. They find

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[27] As the estimation of variances is too sensitive to outliers, we were not able to apply it to other countries.

[28] A full-time worker is defined here as somebody who normally works between 35 and 48 hours per week.

[29] For the years 2007-10 we use the seven-province consumer inflation index.

[30] A pooled regression was not feasible due to the change in the number and redefinition of regions.

[31] Given a stagnant real minimum wage, dynamic Lee made no sense for Paraguay.

that the fall in real minimum wages accounts for most of the rise in inequality in the bottom end of the distribution.

Collective bargaining

Few household surveys inquire respondents about union membership in Latin America and when they do it is hard to distinguish between covered and non-covered workers because non-union members can be covered by collective agreements in several countries. Trajtemberg (2009) measures the degree of wage compression caused by collective bargaining by analysing data from an Argentinean enterprise survey run in 2005, which provides information on workers' wages, hours, personal characteristics, firm information and whether the workers are covered by collective agreements; following DiNardo and Lemieux (1997), he computes actual and counterfactual variances of the log of hourly wages and finds that the coverage by collective agreements caused a 26 per cent fall in that inequality measure (from 0.545 to 0.403).

Mazzuchi (2009) offers a very detailed analysis of the characteristics of recent collective agreements in Uruguay. Although she does not offer econometric evidence on their impact, she does provide abundant information on decreasing wage dispersion in successive agreements (Table 11, op. cit.). Besides, minimum wages for the lowest categories in collective agreements are set above the minimum wage (Table 8, op. cit.). The impact of the former trends should be large given that coverage of collective agreements has reached 100 per cent. These developments are consistent with Figures 8 and 9.

5   Final remarks

Labour market incomes have been a major contributor to the important fall in inequality in Latin America during the 2000s. Indeed, it was the main contributor in the countries where inequality fell more dramatically. A proper understanding of the workings of the labour market is necessary to comprehend why inequality fell, what lies ahead of us and what we can do to achieve more equitable societies in Latin America.

The international economic environment and the continuity of the demographic transition have had significant effects on labour market outcomes but are mainly beyond the control of Latin American governments. Social progress was real in the last decade but we should not overlook the structural deficits that still remain in Latin American labour markets.

The 800-pound gorilla of informal employment, to use Richard Freeman's (2009) graphic expression, looms large in the region. The evidence gathered in this paper proves that: (i) informality is not a choice, and (ii) there is segmentation in the labour market. In other words, the formal-informal wage differential cannot be fully explained by worker attributes. The productive approach to informality (PREALC) with its focus on self-employment and micro-enterprises emphasizes the need to transform the productive structure in order to address this issue. The legal approach now emphasized by ILO focuses on the institutional dimension of non-registered work. As shown here, a large number of non-registered workers are employed in the formal sector, a fact consistent with the legal approach. We also showed that policy and political will can

raise formality significantly, as Berg (2010) argues, and that this can be accompanied by dramatic falls in inequality.

Real minimum wages increased in many countries, and rose significantly in some of the countries that managed to reduce inequality more strongly. We find some evidence that these developments are no coincidence. Besides, collective bargaining, though still largely undeveloped, might also help reduce wage inequality. Active labour policies, especially training and employment services, have expanded in the last decade, and hold the promise of addressing some of the challenges emphasized by the productive approach. Unemployment protection has also extended its scope but it is still insufficient, especially because it is mainly contributory-based.

Besides, the evidence suggests that despite the significant progress evidenced in Latin American labour markets, they continue to show a limited capacity to become an effective means to move an important group of households out from poverty. This is mostly linked to structural characteristics in the region, such as persistent high income inequality, very low systemic competitiveness and productivity, high productive heterogeneity and scarce social protection for workers and their families. In turn, inequality of labour income partly reflects the productive heterogeneity where highly efficient and competitive sectors and companies coexist with activities and firms that operate under a survival rationale. This is ultimately associated with an insufficient job creation capacity of the formal sector.

This, however, does not mean to ignore the importance of the labour market as a social integration axis and the impacts of the macroeconomic stability on income distribution. Therefore, advances in the region employment formalization and the strengthening of labour institutions are processes that must be positively assessed. In this regard, it is important to point out that the purposes that brought about the development of labour regulation and institutions become even more relevant in the current context of economic globalization (Berg and Kucera 2008).

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ANNEXES

Annex I: Sources of information

Microdata used in this paper come from the regular household surveys of each country considered.

Argentina: *Encuesta Permanente de Hogares* (EPH)

Bolivia: *Encuesta de Hogares*

Brazil: *Pesquisa Nacional por Amostra de Domicilios* (PNAD)

Chile: *Encuesta de Caracterización Socioeconómica Nacional* (CASEN)

Costa Rica: *Encuesta de Hogares de Propósitos Múltiples*

Ecuador: *Encuesta Nacional de Empleo, Desempleo y Subempleo* (ENEMDU)

El Salvador: *Encuesta de Hogares de Propósitos Múltiples*

Mexico: *Encuesta de Ingresos y Gastos de los Hogares*

Paraguay: *Encuesta Permanente de Hogares*

Peru: *Encuesta Nacional de Hogares sobre Condiciones de Vida y Pobreza* (ENAHO)

Uruguay: *Encuesta Continua de Hogares*

Annex II: Measurement of informality

The ILO's 15th and 17th International Conference of Labour Statistics (ICLS) have established the classification criteria for formal and informal workers. According to the 'productive approach', the employment in the informal sector (EIS) is defined as the group of workers employed in small productive units that are not legally registered as firms, use 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 informal sector (IS): (i) family units comprised of own-account workers and family workers; and (ii) microenterprises made up of employers and wage-earners in establishments of less than five employees. In the case of independent workers, only those with no professional skills are considered as part of the IS, as an operational way to leave only independent workers with low productivity in this sector. Finally, the public sector is excluded from the IS.

On the other hand, the informal employment (IE) is defined as the occupational group for which labour regulations are not fulfilled: non-registered wage earners, and own-account workers and employers that do not fulfil their tax obligations.

However, given the lack of enough information from household surveys, in the case of independent workers, their formal/informal character is directly determined by the characteristics of their enterprises: informal own-account and employers are those working in enterprises of the IS. Therefore, the classification of workers according to whether they belong to the IS or the formal sector (FS) being, simultaneously, part of the EIS or the employment in the formal sector (EFS) is more interesting in the case of wage earners given that for non-wage earners both classifications coincide. Finally, unpaid family workers are considered simultaneously as a part of IE and of the EIS.

Additionally, the empirical identification of the wage earners' registration condition in each of these countries was based on the availability of information derived from these databases. In Argentina, a wage earner is considered as registered in the social security system if his/her employer pays social security contributions. In Chile and Brazil, a wage earner is considered as registered if he/she has signed a labour contract. In Bolivia, Costa Rica, El Salvador, Mexico, Paraguay, Peru and Uruguay registered workers are those who are affiliated to a pension system. Finally, in Ecuador registered a wage earner is considered as registered if she/he receives social insurance (*Seguro Social*).

Annex III: Methodology

A3.1   Income gap, informality and segmentation

1. First, average wage gaps between the IE (EIS) and the FE (EFS) are estimated by using Mincer Equations by OLS regression. This is the most common approach when analysing the effect of one independent variable on labour income, while controlling for the rest of the covariates. In the case that matters in this study, the coefficient of the variable that identifies informality quantifies its independent impact on wage determination. The estimates are corrected for the sample selection bias using Heckman two step estimator.

2. OLS estimates the effects of the covariates only at the central part of the conditional distribution. However, it is relevant to identify the impact of the covariates along the entire conditional distribution of income. To do that, quantile regression model (QR) [32] is applied from which it is possible to evaluate whether wage gaps remain constant, grow or decrease along the conditional distribution. These estimates are also corrected by the sample selection bias.[33]

3. From the estimates of wage equations, the Oaxaca-Blinder decomposition method allows the decomposition of average income gaps between formal and informal workers into three effects: the 'endowments effects', which is the part of the differential derived from the differences in the vector of characteristics of each group; the 'coefficient effects', which corresponds to the differences in the returns to those attributes; and the 'interaction effect'. The segmentation hypothesis is verified if the second effect is statistically significant and positive, thus indicating that, given equal attributes, a formal worker gets a higher wage than an informal worker. These estimates are also corrected by the sample selection bias.

4. Finally, the matching estimator method is used as a non-parametric way to estimate the impact of informality on labour income. The parameter of interest is the average treatment effect on the treated (ATT), which is defined as:

$$\theta_{ATT} = E(\tau \,|\, D = 1) = E[Y(1) \,|\, D = 1] - E[Y(0) \,|\, D = 1] \quad [1]$$

where $E[Y(1) \,|\, D = 1]$ is the expected value for the treated group given that it was under treatment, and $E[Y(0) \,|\, D = 1]$ is the expected value for the treated group had it not been treated.

Given that this counterfactual situation is not observed, it is necessary to resort to an alternative method in order to estimate the ATT. The most accurate way to identify what would have happened to the group under treatment had it not been treated, is by considering the situation of the non-treated individuals with equal (or similar) characteristics (control group). One of the methods used to build the control group is the

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32 Koenker and Bassett (1978).

33 Tannuri-Pianto and Pianto (2002) apply a similar procedure for Brazil.

propensity score matching estimator,[34] in which the propensity score of participation for the whole sample is estimated and the individuals of the treated group and the control group with similar scores are matched. In the case we are analysing, informal worker is considered as being the treated group, whereas formal worker is the control group.

There are different ways to determine which individuals in the control group will be the counterpart of the group under treatment. One of them, which is used here, is the kernel estimator in which the outcome of the treated individual is associated with a matched outcome given by a kernel-weighted average of the outcome of all non-treated individuals. The ATT is estimated as follows:

$$ATT = \frac{1}{N_n} \sum_{i \in n} \left(w_i - \sum_{j \in f} \kappa_{ij} w_j \right) \quad [2]$$

where w_i and w_j indicate the wage of each formal and informal worker, respectively, κ_{ij} is the kernel and N_n is the quantity of informal workers.

A3.2 Gini decomposition by income sources and by share and concentration effects

The Gini index or coefficient of a variable y with N individual observations can be expressed as:

$$G = \frac{2\,cov(y,r)}{N\bar{y}}$$

where r_i is the ranking of y_i, that is to say, of observation i's income sorted in increasing order. In turn, if each $y_i = \Sigma_k\, y_{ik}$, where k indexes income source, the Gini coefficient can be decomposed by source according to:

$$G = \frac{2}{N\bar{y}} \sum_k cov(y^k,r) = \sum_k \frac{\bar{y}^k}{\bar{y}} R_k G_k$$

where G_k is the Gini coefficient of income source k and R_k is the correlation ratio of income source k expressed as:

$$R_k = \frac{cov(y^k,r)}{cov(y^k,r^k)}$$

Let C_k be equal to $R_k G_k$, the concentration index of income source k, and S_k be equal to $\bar{y}_k/\bar{y}$, the share of income source k in total income. Then, we can express the Gini coefficient as an average of income sources concentration indices weighted by their shares:

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[34] Developed by Rosenbaum and Rubin (1983).

$$G = \sum_k S_k C_k$$

The overall Gini coefficient can vary because of changes in income source *shares* or changes in income source *concentration* indices. Given income source concentration indices, the Gini coefficient will decrease if the shares of income sources with concentration indices lower than the overall Gini coefficient go up: the *share effect.* Given income source shares, the Gini coefficient will decrease if concentration indices decrease: *the concentration effect.*

Decomposition of Gini changes between two moments in time by the share and concentration effects of income source k (weighted by the two-moment averages) can be expressed as:

$$(S_k' - S_k)\left[\frac{(C_k' + C_k)}{2} - \frac{(G' + G)}{2}\right] + (C_k' - C_k)\left[\frac{(S_k' + S_k)}{2}\right]$$

where the first term measures the contribution of the change in income source k share to the change in the overall Gini coefficient while the second term gauges the contribution of the change in income source k concentration index to the change in overall inequality. Summation over k of both effects equals the change in the overall Gini coefficient.

Annex IV: Tables and Figures

Annex Table A1
Latin America: Annual rates of growth of GDP, the economically active population,
per capita GDP, 1990-2010 (in percentage)

	GDP growth		Economically active population (EAP) growth				GDP growth minus EAP growth		Per capita GDP growth	
	2000 1990	2008 2000	1995 1990	2000 1995	2000 2005	2005 2010	2000 1990	2008 2000	2000 1990	2008 2000
Argentina	4.1	4.2	2.1	2.0	2.2	1.8	2.0	2.2	2.8	3.2
Bolivia (Plurinational State of)	3.8	3.9	3.1	3.4	2.9	2.9	0.5	0.9	1.5	1.9
Brazil	2.5	3.6	2.9	2.8	2.1	1.7	-0.3	1.6	1.0	2.3
Chile	6.4	4.2	2.7	2.4	2.3	2.2	3.8	1.9	4.7	3.1
Colombia	2.7	4.6	4.2	3.5	2.4	2.2	-1.1	2.2	0.9	2.9
Costa Rica	5.2	4.9	3.1	3.5	3.4	2.9	1.8	1.8	2.7	3.1
Cuba	-1.4	6.1	0.9	0.1	1.1	1.0	-1.9	5.0	-1.9	5.9
Ecuador	1.8	5.0	4.5	3.5	2.5	2.5	-2.1	2.5	0.0	3.8
El Salvador	4.6	2.8	3.7	3.4	3.0	2.7	1.0	0.0	3.5	2.4
Guatemala	4.1	3.8	3.8	4.0	3.4	3.6	0.2	0.3	1.7	1.3
Haiti	0.0	0.5	1.6	1.9	2.7	2.9	-1.7	-2.2	-1.9	-1.1
Honduras	3.3	5.0	3.2	3.0	3.5	3.6	0.2	1.4	0.8	2.9
Mexico	3.5	2.3	4.1	3.8	2.2	2.4	-0.4	0.1	1.8	1.2
Nicaragua	3.4	3.3	4.1	3.8	2.8	2.8	-0.5	0.4	1.2	1.9
Panama	5.1	6.3	3.3	3.0	2.7	2.3	1.8	3.7	3.0	4.7
Paraguay	1.8	3.7	2.8	2.9	3.2	3.0	-1.0	0.6	-0.5	1.7
Peru	4.0	5.9	4.1	3.6	2.3	2.2	0.2	3.6	2.2	4.5
Dominican Republic	6.1	5.2	3.0	2.8	2.5	2.3	3.1	2.8	4.2	3.7
Uruguay	3.0	3.5	1.5	1.4	0.3	0.7	1.5	2.9	2.3	3.3
Venezuela (Bolivarian Republic of)	2.1	4.5	2.6	2.5	3.1	2.8	-0.4	1.5	-0.1	2.6
Latin America	3.2	3.6	3.2	3.0	2.3	2.1	0.1	1.4	1.5	2.3

Source: Authors' elaboration based on ECLAC and CELADE data.

Annex Table A2
Share of informality in the urban labour market

Argentina. IV quarter 2010

Categories	Total	Men	Women
Formal non-wage earners	5%	4%	5%
Informal non-wage earners	18%	22%	13%
Formal wage earners in FS	45%	45%	44%
Informal wage earners in FS	9%	11%	8%
Formal wage earners in IS	5%	5%	5%
Informal wage earners in IS	10%	12%	7%
Formal domestic service	1%	0%	3%
Informal domestic service	6%	0%	14%
Unpaid familiar workers	1%	0%	1%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	41%	40%	43%
Employment in the Informal Sector (excludes domestic services)	**34%**	**39%**	**26%**
Informal Employment (includes informal domestic services)	44%	45%	43%
% Informal wage-earners in the total wage earners	33%	31%	36%

Brazil. 2009

Categories	Total	Men	Women
Formal non-wage earners	2%	2%	2%
Informal non-wage earners	23%	26%	18%
Formal wage earners in FS	43%	45%	40%
Informal wage earners in FS	9%	9%	9%
Formal wage earners in IS	5%	6%	5%
Informal wage earners in IS	8%	10%	5%
Formal domestic service	2%	0%	5%
Informal domestic service	6%	1%	14%
Unpaid familiar workers	2%	2%	3%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	46%	44%	50%
Employment in the Informal Sector (excludes domestic services)	**38%**	**43%**	**31%**
Informal Employment (includes informal domestic services)	47%	47%	48%
% Informal wage-earners in the total wage earners	31%	27%	35%

Bolivia. 2009

Categories	Total	Men	Women
Formal non-wage earners	3%	4%	2%
Informal non-wage earners	36%	33%	38%
Formal wage earners in FS	15%	17%	14%
Informal wage earners in FS	16%	19%	14%
Formal wage earners in IS	0%	0%	0%
Informal wage earners in IS	16%	20%	10%
Formal domestic service	0%	0%	0%
Informal domestic service	3%	1%	7%
Unpaid familiar workers	10%	6%	15%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	65%	61%	71%
Employment in the Informal Sector (excludes domestic services)	**62%**	**60%**	**64%**
Informal Employment (includes informal domestic services)	81%	79%	84%
% Informal wage-earners in the total wage earners	69%	70%	69%

Chile. 2009

Categories	Total	Men	Women
Formal non-wage earners	5%	5%	4%
Informal non-wage earners	21%	22%	19%
Formal wage earners in FS	51%	55%	46%
Informal wage earners in FS	9%	10%	9%
Formal wage earners in IS	4%	4%	4%
Informal wage earners in IS	4%	4%	4%
Formal domestic service	2%	0%	5%
Informal domestic service	3%	0%	8%
Unpaid familiar workers	0%	0%	1%
Total Employment	**100%**	**100%**	**100%**
Employment in the Informal Sector (includes domestic services)	34%	30%	40%
Employment in the Informal Sector (excludes domestic services)	**29%**	**30%**	**27%**
Informal Employment (includes informal domestic services)	38%	36%	40%
% Informal wage-earners in the total wage earners	22%	19%	27%

Costa Rica. 2008

Categories	Total	Men	Women
Formal non-wage earners	4%	4%	3%
Informal non-wage earners	21%	23%	19%
Formal wage earners in FS	51%	52%	49%
Informal wage earners in FS	7%	8%	6%
Formal wage earners in IS	5%	4%	5%
Informal wage earners in IS	7%	8%	6%
Formal domestic service	1%	0%	2%
Informal domestic service	4%	0%	8%
Unpaid familiar workers	1%	0%	2%
Total Employment	**100%**	**100%**	**100%**
Employment in the Informal Sector (includes domestic services)	39%	36%	43%
Employment in the Informal Sector (excludes domestic services)	**34%**	**36%**	**32%**
Informal Employment (includes informal domestic services)	40%	39%	41%
% Informal wage-earners in the total wage earners	24%	22%	27%

Ecuador. December 2009

Categories	Total	Men	Women
Formal non-wage earners	3%	4%	2%
Informal non-wage earners	30%	29%	32%
Formal wage earners in FS	26%	27%	25%
Informal wage earners in FS	14%	17%	9%
Formal wage earners in IS	2%	2%	2%
Informal wage earners in IS	14%	18%	9%
Formal domestic service	1%	0%	1%
Informal domestic service	3%	0%	8%
Unpaid familiar workers	6%	3%	11%
Total Employment	**100%**	**100%**	**100%**
Employment in the Informal Sector (includes domestic services)	57%	52%	63%
Employment in the Informal Sector (excludes domestic services)	**53%**	**52%**	**53%**
Informal Employment (includes informal domestic services)	68%	67%	69%
% Informal wage-earners in the total wage earners	52%	55%	48%

El Salvador. 2008

Categories	Total	Men	Women
Formal non-wage earners	2%	2%	1%
Informal non-wage earners	29%	23%	36%
Formal wage earners in FS	34%	37%	32%
Informal wage earners in FS	8%	11%	5%
Formal wage earners in IS	2%	2%	2%
Informal wage earners in IS	13%	18%	7%
Formal domestic service	0%	0%	0%
Informal domestic service	4%	1%	8%
Unpaid familiar workers	7%	6%	9%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	56%	50%	62%
Employment in the Informal Sector (excludes domestic services)	**51%**	**49%**	**54%**
Informal Employment (includes informal domestic services)	62%	59%	65%
% Informal wage-earners in the total wage earners	41%	44%	38%

Mexico. 2008

Categories	Total	Men	Women
Formal non-wage earners	4%	4%	3%
Informal non-wage earners	16%	16%	17%
Formal wage earners in FS	30%	30%	30%
Informal wage earners in FS	20%	23%	16%
Formal wage earners in IS	3%	3%	3%
Informal wage earners in IS	19%	22%	15%
Formal domestic service	0%	0%	0%
Informal domestic service	5%	1%	11%
Unpaid familiar workers	4%	2%	6%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	46%	43%	51%
Employment in the Informal Sector (excludes domestic services)	**41%**	**43%**	**40%**
Informal Employment (includes informal domestic services)	63%	63%	64%
% Informal wage-earners in the total wage earners	57%	58%	56%

Paraguay. 2009

Categories	Total	Men	Women
Formal non-wage earners	3%	4%	2%
Informal non-wage earners	31%	29%	32%
Formal wage earners in FS	19%	20%	18%
Informal wage earners in FS	15%	18%	11%
Formal wage earners in IS	2%	3%	1%
Informal wage earners in IS	16%	21%	11%
Formal domestic service	0%	0%	0%
Informal domestic service	9%	2%	19%
Unpaid familiar workers	5%	4%	6%
Total Employment	**100%**	**100%**	**100%**

	Total	Men	Women
Employment in the Informal Sector (includes domestic services)	63%	58%	69%
Employment in the Informal Sector (excludes domestic services)	**54%**	**56%**	**50%**
Informal Employment (includes informal domestic services)	76%	73%	79%
% Informal wage-earners in the total wage earners	65%	64%	68%

Peru. 2009

Categories	Total	Men	Women
Formal non-wage earners	6%	6%	6%
Informal non-wage earners	31%	30%	34%
Formal wage earners in FS	27%	32%	21%
Informal wage earners in FS	12%	13%	11%
Formal wage earners in IS	2%	3%	1%
Informal wage earners in IS	10%	12%	9%
Formal domestic service	0%	0%	1%
Informal domestic service	4%	0%	9%
Unpaid familiar workers	6%	4%	8%
Total Employment	**100%**	**100%**	**100%**
Employment in the Informal Sector (includes domestic services)	55%	49%	62%
Employment in the Informal Sector (excludes domestic services)	**50%**	**48%**	**52%**
Informal Employment (includes informal domestic services)	64%	59%	71%
% Informal wage-earners in the total wage earners	48%	42%	55%

Uruguay. 2010

Categories	Total	Men	Women
Formal non-wage earners	4%	4%	4%
Informal non-wage earners	21%	24%	17%
Formal wage earners in FS	52%	53%	50%
Informal wage earners in FS	4%	5%	3%
Formal wage earners in IS	4%	5%	4%
Informal wage earners in IS	5%	6%	3%
Formal domestic service	4%	1%	7%
Informal domestic service	5%	0%	11%
Unpaid familiar workers	1%	1%	2%
Total Employment	**100%**	**100%**	**100%**
Employment in the Informal Sector (includes domestic services)	40%	37%	43%
Employment in the Informal Sector (excludes domestic services)	**31%**	**36%**	**26%**
Informal Employment (includes informal domestic services)	36%	37%	36%
% Informal wage-earners in the total wage earners	19%	16%	22%

Source: Authors' elaboration based on household surveys.

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Annex Table A3
Employment in the informal sector and non-registered wage earners

Argentina

	Registered	Non-registered	Total
Formal Sector	82.6	17.4	100
	88.0	**37.6**	71.3
Informal Sector	28.0	72.0	100
	12.0	62.4	28.7
Total	100	100	100

Brazil

	Registered	Non-registered	Total
Formal Sector	83.2	16.8	100
	84.6	**38.4**	70.3
Informal Sector	35.9	64.1	100
	15.4	61.6	29.7
Total	100	100	100

Bolivia

	Registered	Non-registered	Total
Formal Sector	48.2	51.8	100
	96.9	**46.2**	61.8
Informal Sector	2.5	97.5	100
	3.1	53.8	38.2
Total	100	100	100

Chile

	Registered	Non-registered	Total
Formal Sector	84.3	15.7	100
	89.1	**57.7**	82.1
Informal Sector	47.3	52.7	100
	10.9	42.3	17.9
Total	100	100	100

Costa Rica

	Registered	Non-registered	Total
Formal Sector	87.8	12.2	100
	90.1	**39.1**	77.7
Informal Sector	33.6	66.4	100
	9.9	60.9	22.3
Total	100	100	100

Ecuador

	Registered	Non-registered	Total
Formal Sector	66.0	34.0	100
	91.9	**43.4**	66.6
Informal Sector	11.7	88.3	100
	8.1	56.6	33.4
Total	100	100	100

El Salvador

	Registered	Non-registered	Total
Formal Sector	80.7	19.3	100
	94.9	**32.2**	69.0
Informal Sector	9.6	90.4	100
	5.1	67.8	31.0
Total	100	100	100

Mexico

	Registered	Non-registered	Total
Formal Sector	60.3	39.7	100
	91.7	**45.7**	65.5
Informal Sector	10.3	89.7	100
	8.3	54.3	34.5
Total	100	100	100

Paraguay

	Registered	Non-registered	Total
Formal Sector	56.2	43.8	100
	90.7	**37.3**	55.7
Informal Sector	7.3	92.7	100
	9.3	62.7	44.3
Total	100	100	100

Peru

	Registered	Non-registered	Total
Formal Sector	69.0	31.0	100
	91.5	**45.4**	69.6
Informal Sector	14.7	85.3	100
	8.5	54.6	30.4
Total	100	100	100

Uruguay

	Registered	Non-registered	Total
Formal Sector	92.8	7.2	100
	86.5	**29.0**	75.6
Informal Sector	45.0	55.0	100
	13.5	71.0	24.4
Total	100	100	100

Source: Authors' elaboration based on household surveys.

Annex Table A4
Characteristics of formal and informal employment

Características	Argentina			Brazil		
	Formal	Informal	Total	Formal	Informal	Total
Men	58%	60%	59%	57%	56%	56%
Education						
Average years of education	13.9	11.1	12.6	11.2	8.4	9.9
Less than complete secondary	26.6	56.7	39.8	35.8	64.6	49.4
Complete secondary-Incomplete Terciary	40.1	36.8	38.6	44.1	29.9	37.4
Complete terciary	33.3	6.6	21.5	20.2	5.5	13.2
Age						
Average	39.7	39.7	39.7	36.2	38.0	37.0
Younger than 25 years old	9.3	19.2	13.6	17.6	21.5	19.4
25-45 years old	56.4	43.8	50.8	57.2	45.2	51.5
45 years old or more	34.3	37.0	35.5	25.2	33.3	29.0

Características	Bolivia			Chile		
	Formal	Informal	Total	Formal	Informal	Total
Men	61%	54%	55%	61%	56%	59%
Education						
Average years of education	14.3	9.1	10.1	13.4	11.0	12.6
Less than complete secondary	15.3	58.3	50.2	24.5	50.4	33.7
Complete secondary-Incomplete Terciary	41.8	37.5	38.3	46.2	42.8	45.0
Complete terciary	43.0	4.2	11.5	29.4	6.8	21.3
Age						
Average	39.9	35.8	36.5	39.7	43.0	40.9
Younger than 25 years old	6.5	25.4	21.8	11.9	13.1	12.3
25-45 years old	58.3	48.3	50.2	52.2	39.5	47.7
45 years old or more	35.2	26.3	28.0	36.0	47.4	40.0

Características	Costa Rica			Ecuador		
	Formal	Informal	Total	Formal	Informal	Total
Men	59%	57%	58%	60%	58%	58%
Education						
Average years of education	11.2	8.2	10.0	13.5	9.0	10.4
Less than complete secondary	38.1	70.4	51.1	20.8	63.6	49.9
Complete secondary-Incomplete Terciary	27.1	21.5	24.9	38.8	31.3	33.7
Complete terciary	34.7	8.1	24.0	40.3	5.1	16.4
Age						
Average	36.3	39.7	37.7	40.0	39.7	39.8
Younger than 25 years old	19.8	19.4	19.6	12.3	20.8	18.1
25-45 years old	53.0	41.4	48.3	51.1	41.9	44.9
45 years old or more	27.2	39.2	32.1	36.6	37.3	37.1

Características	El Salvador			Mexico		
	Formal	Informal	Total	Formal	Informal	Total
Men	58%	51%	54%	60%	60%	60%
Education						
Average years of education	11.8	6.5	8.5	11.8	8.2	9.5
Less than complete secondary	63.1	93.2	81.8	13.1	43.2	32.1
Complete secondary-Incomplete Terciary	11.5	4.1	6.9	42.3	44.1	43.4
Complete terciary	25.4	2.6	11.2	44.6	12.7	24.5
Age						
Average	36.1	38.3	37.5	37.3	37.4	37.4
Younger than 25 years old	15.5	22.9	20.1	14.6	24.7	21.0
25-45 years old	61.3	43.5	50.2	57.9	44.3	49.3
45 years old or more	23.3	33.6	29.7	27.5	31.0	29.7

Características	Paraguay			Peru		
	Formal	Informal	Total	Formal	Informal	Total
Men	64%	56%	58%	63%	50%	55%
Education						
Average years of education	13.1	8.9	9.9	15.1	10.6	12.2
Less than complete secondary	20.0	64.8	53.5	9.6	42.6	30.8
Complete secondary-Incomplete Terciary	63.5	33.6	41.1	32.9	47.8	42.5
Complete terciary	16.5	1.6	5.4	57.5	9.6	26.8
Age						
Average	37.0	36.3	36.5	39.8	37.5	38.3
Younger than 25 years old	15.0	30.1	26.3	9.9	25.6	20.0
25-45 years old	58.7	39.3	44.2	55.5	42.1	46.9
45 years old or more	26.3	30.6	29.5	34.5	32.3	33.1

Características	Uruguay		
	Formal	Informal	Total
Men	54%	54%	54%
Education			
Average years of education	12.0	9.3	11.0
Less than complete secondary	44.0	67.5	52.5
Complete secondary-Incomplete Terciary	37.8	30.5	35.1
Complete terciary	18.2	1.9	12.3
Age			
Average	39.9	42.7	40.9
Younger than 25 years old	12.5	16.7	14.0
25-45 years old	50.1	36.6	45.2
45 years old or more	37.4	46.7	40.8

Source: Authors' elaboration based on household surveys.

Annex Table A5
Decompositions of Gini index changes by sources of income and
by share and concentration effects

ARGENTINA

	2010			2003			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total labour income									
Registered wage earners	0.5244	0.6716	0.7579	0.4447	0.7790	0.7833	-12%	112%	100%
Non-registered wage earners	0.1152	0.8267	0.2237	0.1356	0.8434	0.3908	-12%	112%	100%
Non-wage earners	0.1683	0.8707	0.5671	0.1949	0.8900	0.6518	-36%	136%	100%
Other non-labour incomes	0.0403	0.9638	0.5917	0.0665	0.9508	0.6897	7%	93%	100%
Pensions	0.1373	0.8533	0.4443	0.1347	0.8983	0.6158	41%	59%	100%
Public transfers	0.0146	0.8865	-0.3988	0.0237	0.8841	-0.2489	0%	100%	100%
TOTAL		**0.4412**			**0.5419**		**-13%**	**113%**	**100%**

BRAZIL

	2009			2001			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total labour income									
Registered wage earners	0.4223	0.7438	0.7579	0.3875	0.7855	0.7753	2%	98%	100%
Non-registered wage earners	0.1013	0.8478	0.3605	0.1111	0.8482	0.4192	-2%	102%	100%
Non-wage earners	0.2396	0.8779	0.7283	0.2825	0.8778	0.7636	-82%	182%	100%
Other non-labour incomes	0.0195	0.9816	0.7537	0.0282	0.9809	0.7841	30%	70%	100%
Pensions	0.2037	0.8510	0.6641	0.1891	0.8710	0.6925	69%	31%	100%
Public transfers	0.0136	0.8779	-0.3116	0.0017	0.9703	-0.2152	-2%	102%	100%
TOTAL		**0.5481**			**0.6002**		**23%**	**77%**	**100%**

CHILE

	2009			2000			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total Labour income									
Registered wage earners	0.4407	0.6909	0.7239	0.4294	0.7149	0.7391	64%	36%	100%
Non-registered wage earners	0.0891	0.8761	0.3469	0.0546	0.8985	0.2594	3%	97%	100%
Non-wage earners	0.3033	0.8986	0.8127	0.3062	0.8977	0.8090	209%	-109%	100%
Other non-labour incomes	0.0721	0.8664	0.7229	0.1160	0.8281	0.7327	-73%	173%	100%
Pensions	0.0702	0.8782	0.3949	0.0795	0.9064	0.5455	291%	-191%	100%
Public transfers	0.0246	0.7615	-0.2836	0.0142	0.8330	-0.0408	-12%	112%	100%
TOTAL		**0.5332**			**0.5713**		**51%**	**49%**	**100%**

MEXICO

	2008			2000			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total labour income									
Registered wage earners	0.3635	0.7970	0.7679	0.3782	0.8025	0.7704	117%	-17%	100%
Non-registered wage earners	0.2821	0.6907	0.4476	0.2384	0.7609	0.4302	36%	64%	100%
Non-wage earners	0.2023	0.9109	0.6997	0.2395	0.8813	0.6766	66%	34%	100%
Other non-labour incomes	0.0696	0.9242	0.5673	0.0824	0.9434	0.5884	-58%	158%	100%
Pensions	0.0610	0.9554	0.6935	0.0504	0.9690	0.7159	6%	94%	100%
Public transfers	0.0216	0.9274	0.1088	0.0110	0.9731	0.1626	-1126%	1226%	100%
TOTAL		**0.5177**			**0.5372**		**85%**	**15%**	**100%**

PARAGUAY

	2009			2004			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total labour income									
Registered wage earners	0.2537	0.8588	0.7726	0.1750	0.9046	0.7674	-19%	119%	100%
Non-registered wage earners	0.2811	0.7425	0.5631	0.2844	0.7544	0.6315	540%	-440%	100%
Non-wage earners	0.2905	0.8217	0.6746	0.3476	0.8345	0.7579	-3%	103%	100%
Other non-labour incomes	0.1145	0.8676	0.5088	0.1435	0.9305	0.7293	4%	96%	100%
Pensions	0.0581	0.9669	0.7523	0.0495	0.9801	0.8078	-2%	102%	100%
Public transfers	0.0020	0.9849	-0.2901	0.0000	0.0000	0.0000	-85%	185%	100%
TOTAL		**0.5392**			**0.6134**		**-11%**	**111%**	**100%**

URUGUAY

	2010			2006			Effects		
	Sk	Gk	Rk	Sk	Gk	Rk	Share	Concentration	TOTAL
Total labour income									
Registered wage earners	0.4625	0.6790	0.6885	0.4421	0.7162	0.7090	-13%	113%	100%
Non-registered wage earners	0.0376	0.9058	0.0367	0.0438	0.8976	0.0950	0%	100%	100%
Non-wage earners	0.1959	0.8771	0.6296	0.1986	0.8792	0.6356	506%	-406%	100%
Other non-labour incomes	0.0836	0.8877	0.5721	0.0794	0.8982	0.5734	13%	87%	100%
Pensions	0.2047	0.8408	0.5841	0.2232	0.8378	0.6187	-24%	124%	100%
Public transfers	0.0157	0.9332	0.0638	0.0129	0.9563	0.2124	6%	94%	100%
TOTAL		**0.4695**			**0.4984**		**-4%**	**104%**	**100%**

Source: Authors' elaboration based on household surveys.

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Annex Table A6
Argentina 2003-10
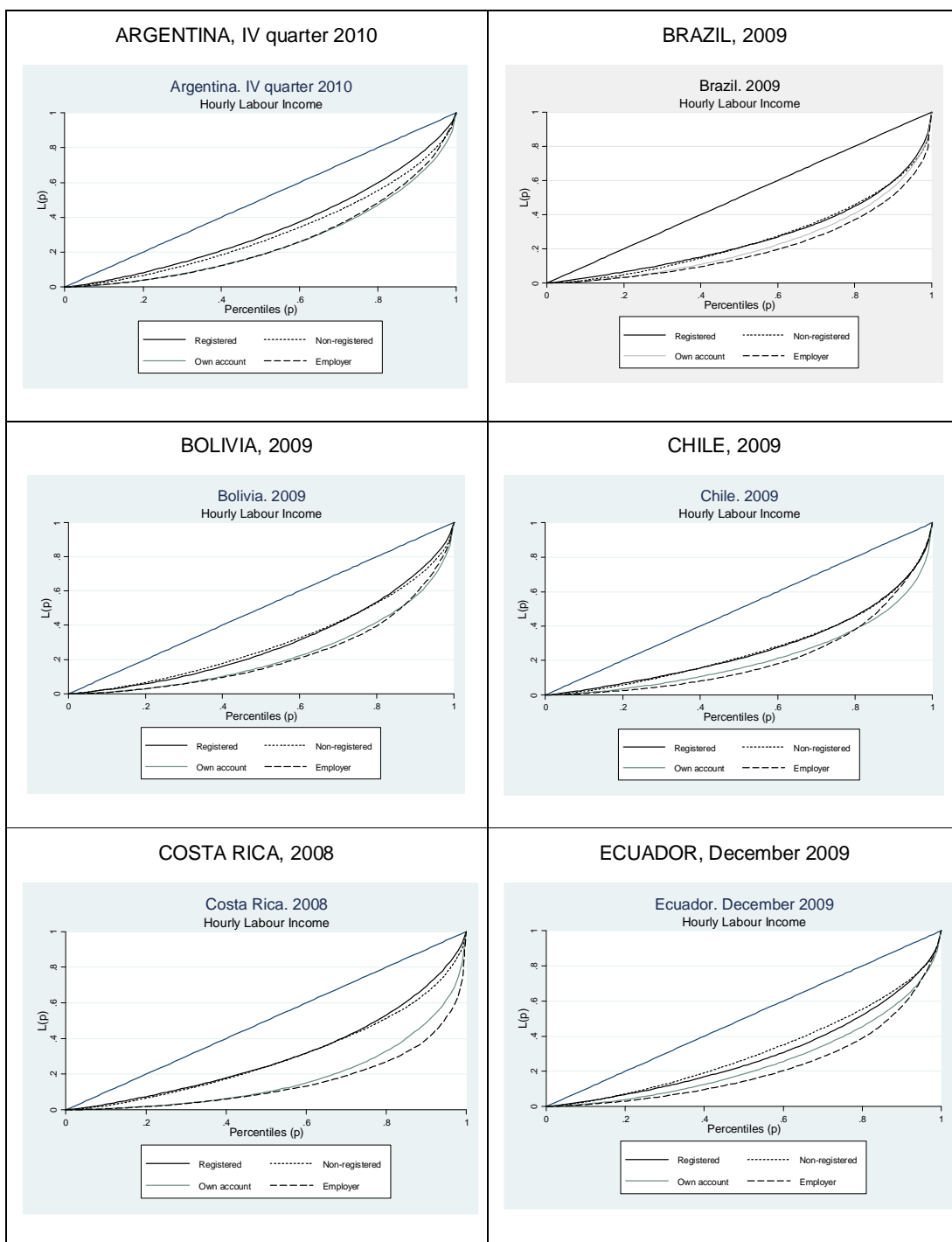Impact of minimum wages on the variances of log wages

	Actual	Counterfactual*	Change and fraction explain
	Hourly wages, all wage earners		
2003	(a) 0.6162	(b) 0.4738	(c) = (b) - (a) -0.1424
2010	(d) 0.4358		
Change and fraction explained	(e) = (d) – (a) -0.1804		(c) / (e) 0.79
	Wages, full time wage earners**		
2003	(a) 0.5404	(b) 0.4719	(c) -0.0685
2010	(d) 0.3624		
Change and fraction explained	(e) = (d) – (a) -0.1780		(c) / (e) 0.38

Note: *See main text.

         **35 to 48-hour workweeks

Source: Authors' elaboration based on household surveys.

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ARGENTINA, IV quarter 2010

BRAZIL, 2009

BOLIVIA, 2009

CHILE, 2009

COSTA RICA, 2008

ECUADOR, December 2009

Annex Figure A1 (continued)
Lorenz curves of hourly labour income

EL SALVADOR, 2008

El Salvador. 2008
Hourly Labour Income

MEXICO, 2008

Mexico. 2008
Hourly Labour Income

PARAGUAY, 2009

Paraguay.2009
Hourly Labour Income

PERU, 2009

Peru. 2009
Hourly Labour Income

URUGUAY, 2010

Uruguay. 2010
Hourly Labour Income

Source: Authors' elaboration based on household surveys.