
# Income Instability During a Period of Improving Labor and Social Conditions: Latin America in the 2000s

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## Abstract

Latin America experienced a long period of sustained growth since 2003 derived, basically, from the implementation of adequate macroeconomic policies and favorable external conditions. This improved economic environment, together with a denser group of labor and social policies, positively impacted on social and labor conditions. The aim of this paper is to analyze the intensity of income fluctuations in Argentina, Brazil, Costa Rica, Ecuador, Mexico, Paraguay and Peru during the 2000s. It will decompose total mobility between that derived from upward or downward changes. Different sources of real household income movements will also be analyzed as they could originate in variations in earnings, in transitions experienced by its members between labor statuses and jobs, and in non-labor income alterations.

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## Introduction

Macroeconomic instability is a traditional feature of most Latin American countries and one of the main reasons leading to sizable and frequent household real income movements. They are, to a large extent, derived from changes in labor demand and high inflation rates. However, certain characteristics of the labor markets, particularly the considerable share of informal workers and of those working in the informal sector, amplify the effects of those variables and introduce new sources of mobility. The effect of those factors are not generally offset by public policies given the lack of extended mechanisms of income transfers, even for those workers covered by social security.

Consequently, income security that in principle affects individual and household welfare appears to be a pervasive feature in the region. Notwithstanding such potential impact, its analysis is less prominent in the discussion of welfare level and distribution in Latin America.

Since the beginning of the new century, the region has experienced a period of sustained improvement of its social and labor market conditions, including reductions in poverty and in its traditionally very unequal income distribution. These developments were driven by a rapid economic growth (that reached an unprecedented pace for such a long period) but different policies, both economic and social ones, had also important distributive effects.

Certain specific developments should have had clear effects on income instability. A more stable and sustained growth, as it was the case during the period, meant more stable employment and fewer involuntary movements between labor statuses and also between jobs. Hence, household income should have reduced its degree of fluctuation. An increase in the share of formal occupations, which occurred in many countries, should have also played a similar role at the individual level. Relative extensive cash transfers programs, and non-contributory pension schemes, implemented in some countries, usually reduce household real income movements. Low inflation rates as those prevailing in most economies drastically reduce the effect of a usual source of real income instability as it had been the case during previous decades in different countries. This conclusion is not contradictory to the possible occurrence of upward movements in household incomes. They would have resulted from rising real wages and also from increasing employment opportunities that raised voluntary upward movements in search of better paid jobs. The improved labor market conditions, together with some policies as the increase of the real value of minimum wage, could have also led to persistent earnings increases, leading to rising movements in household income.

The analysis of income mobility during the 2003-2015 period, of rapid economic growth and improved labor and social conditions, would therefore provide evidence on both an important feature of labor market functioning and a relevant dimension of welfare. Even if, as said, the characteristics of income movements could have changed during these years leading to less instability, a high proportion of informality and relatively reduced mechanisms of social protection still remain central features of Latin American labor markets.

This paper will focus on the measurement and analysis of the intensity and characteristics of real household income mobility in Argentina, Brazil, Costa Rica,

Ecuador, Mexico, Paraguay and Peru between 2003 and 2015. It will decompose total mobility between that derived from upward or downward changes. Different sources of real household income movements will also be analyzed as they could originate in variations in earnings, in transitions experienced by its members between statuses and jobs, and in non-labor incomes alterations. The selection of countries provides an exhaustive evaluation of the region as they exhibit labor structures and dynamics that greatly differ from one another. Hence, this study contributes to the still scarce literature about income fluctuations in developing countries.

The rest of the document is structured as follows. The first section discusses the measurement of income mobility and fluctuations and describes the indicator to be used. Section 2 details the data employed. Section 3 presents a brief overview about recent trends in economic and labor market situation in Latin America. The following section analyzes the intensity of household income mobility while section 5 evaluates the sources of this mobility. Finally, section 6 concludes.

## 1. Income fluctuations measurement and decomposition

When studying changes in individual and/or family income over time it is possible to focus on the analysis of income instability by evaluating its intensity, exploring how such intensity varies through time and also between groups of individuals. The relevance of this variable rests on the idea that income volatility negatively affects welfare, specifically, the utility of a given volume of economic resources. In particular, it increases risk and, even if changes could be anticipated, utility is nevertheless affected, especially in countries with poorly developed credit markets. If two households received the same average income at the end of the year, but one of them had no income for half of that year, whereas the other received 1/12 of its annual income every month, the welfare levels of the two recipients are likely to be very different. Income instability is also a main factor associated to income insecurity.[1]

However, a large volume of research analyzes the paths of personal or household incomes with a view to evaluating the direction and magnitude of the changes they experience; this topic is known in the specialized literature as "absolute mobility". When the effect of such movements on changes in the relative position in the distribution of income is studied, it is usually referred to as "mobility".

This paper stems from an interest in looking at household income instability, a dimension closely linked to absolute mobility. This was an important characteristic of the last half of the past century that, as indicated, negatively influenced the welfare of a large part of Latin American households. Moreover, this variable is related to another interesting body of research regarding the large transition movements that characterize labor markets in the region.

Studies on income instability usually employ data coming from longitudinal surveys allowing for tracking individual or household income during relative long periods of time. For Latin American countries, the lack of this sort of surveys leads to the use of

[1] Income insecurity is a broader concept that instability, for example, Hacker et. al. (2012) indicate that "The observed variability in income fails to account for two critical dimensions of insecurity: the risk of large, involuntary expenditures—such as medical out-of-pocket expenditures— and the capacity of individuals or households to use their wealth to reduce the effect of income changes on consumption…"

dynamic data coming from the rotating panel of the regular household surveys (see next section). The objective of this paper is to study income instability in various countries in order to identify differences in its intensity and in the importance of diverse sources. This comparative study faces, however, a difficulty as it will only be possible to compare two successive observations of each household. This limitation arises from disparities in the observation windows between the interviews made to the same household in the surveys of the selected countries, as it will be mentioned in detail below.

We will use a typical mobility indicator to measure instability. It will provide sufficient information on the intensity of income changes, especially to assess changes in time, differences between types of households and to examine the sources of mobility.

This indicator was proposed by Fields and Ok (1999)

$$m_n^* = \frac{1}{n}\sum_{i=1}^{n} |\ln y_2 - \ln y_1|$$

Where n is the number of households, $y_t$ indicates the total family income in two successive observations and ln (y) is the logarithms of these incomes. Incomes are always measured in real terms (i.e. inflation adjusted).

However, this indicator could only contemplate those cases with positive incomes in both observations. This limitation is not very important to assess average mobility for the whole population and also for some groups of households. However, it will become more frequent to find cases with zero incomes when studying the mobility of individual sources. Therefore, the coefficient of variation (CV) of real incomes between the two observations was also computed.

In order to identify the importance of upward and downward movements we also calculate *m* and CV separately for $y_2 > y_1$ and for $y_2 < y_1$. The mobility indices will be complemented with figures on the proportion of cases that register a change in real income, distinguishing between upward and downward movements.

Household income mobility could derive from changes in either labor or non–labor incomes of their members, or in both of them. In turn, the former may reflect variations in labor status (from employment to non–employment, and viceversa) of the members and/or in the earnings of those that remain employed. It would be therefore convenient to explore the extent to which these different sources influence total household income mobility. Regarding non–labor income, changes could be associated with movements in pensions or in other components.

Unfortunately, the m index, CV, or any other usually employed in mobility assessment, cannot be additively disaggregated to reach direct measures of the contributions of those different sources. In order to obtain certain evidence on the relevance of them, mobility was measured for different simulated total household incomes. Each of them assumes that only one of the identified income sources changes while the others are kept constant. Therefore, in order to quantify the effect of non–labor income, mobility indices were calculated by comparing, for each household, observation 1 actual income

and a simulated total income for observation 2 defined as the sum of actual non–labor income plus actual labor income registered in observation 1. The variability associated to labor income mobility was computed with a similar criterion. The same approach was employed to evaluate the variability of each of the two identified components of non–labor income.

In order to assess the influence of the two labor market events above mentioned, only household income variations associated to each of them are simulated. Therefore, to evaluate mobility derived from movements in labor status it was necessary to keep wages constant; therefore, total simulated income of observation 2 for each household was estimated by considering observation 1 real value of the aggregate of non–labor income and of the remunerations of members employed in both observations. Consequently, the only source of variation is the fact that a member of the household has either entered or exited the labor market

To evaluate the effect of earnings variations on total household income mobility, simulated incomes were estimated for each observation. The corresponding to the first one resulted from adding all effective incomes plus a simulated one for those not employed in observation 1 (but employed in the other). This income was simulated assuming that the real variation between both observations was equal to the average real earnings change. Observation 2 income, in turn, resulted from aggregating: i) total non-labor income of observation 1; 2) actual remunerations of those who were also employed in both observations and, 3) a simulated income for those with no employment in observation 2 (but with employment in the other). The latter follows the same criterion above mentioned as it resulted from assuming the average variation of real earnings. It must be remembered that in all cases, real (inflation adjusted) values are compared.

We will refer to this first set of simulations as the first disaggregation approach.

It must be emphasized that indicators computed under this first approach measure average mobility of total household income derived from changes in either labor or non-labor incomes or in any of the two labor events. The measured influence of any source or event results from its own degree of instability and also from its share in total household income. Therefore, another issue that appears as relevant is to evaluate the degree of mobility of the source, or the event itself, and a second disaggregation approach will be employed in order to estimate it. Regarding the sources, this can be done by calculating mobility indices exclusively for total non-labor or total labor incomes. While in the first approach just described the indicators are computed by comparing total simulated household income (i.e. the total income of observation 2 is simulated by assuming that the amount of one of the sources is equal, in real terms, to that of observation 1), in this second exercise the indices are calculated over the total amount of only one source. Concerning the labor events, mobility indices will be computed only for labor income of those households that experienced each of them.

We will refer to this exercise as the second disaggregation approach.

In general, income mobility is calculated over all cases irrespective of the size of the distance between $y_1$ and $y_2$. However, small variations in income may not affect

household welfare. Therefore, it is also possible to estimate the mobility indices considering that variations lower than certain thresholds are null.

Two versions of these indices will be estimated: on the one hand, considering the actual income changes in all cases and, on the other, taking as zero the variation of income of those households where the difference –either positive or negative– between $y_1$and $y_2$ is lower than 10%. A threshold of 20% will also be considered to analyze the sensitivity of the results.

Finally, changes in total household income will be considered in all countries except for Brazil and Mexico, where the survey that provides dynamic information (see below) measures labor incomes only. Therefore, comparisons of mobility intensity and patterns for total income will be possible for five countries while mobility of labor incomes will be examined for all cases.

## 2. Data sources

The data used in this paper came from regular household surveys carried out by the national statistical institutes of the selected countries. The data focus on labor market variables, but they also include information on other social and demographic household characteristics.

Given the lack of longitudinal surveys for most Latin American countries, dynamic data for those considered in this paper were constructed using the rotating sample scheme of their household surveys. This kind of scheme implies that the total sample is divided into a certain number of household groups, with each group remaining in the sample for a given number of observation periods or waves. Therefore, for each wave of the survey, one of these groups enters the sample while another one leaves. Consequently, it is possible to compare a given proportion of the sample between two or more waves. The only case with a longitudinal survey is Peru although, as will be indicated below, the panel covers a few years only.

The Argentinean data were taken from the Encuesta Permanente de Hogares (EPH), which is conducted by the Instituto Nacional de Estadística y Censos (INDEC). For Brazil, micro-data from the Pesquisa Mensal de Emprego (PME) which is conducted by the Instituto Brasileiro de Geografia e Estadistica (IBGE) will be employed. This survey, however, only gathers information on labor incomes. For Costa Rica, the Encuesta de Hogares de Propósitos Múltiples (EHPM) and the Encuesta Nacional de Hogares (that replaced the former in 2010), conducted by the Instituto Nacional de Estadística y Censos (INEC), were used. For Ecuador, we resort to the Encuesta Nacional de Empleo, Desempleo y Subempleo (ENEMDU), conducted by the Instituto Nacional de Estadística y Censos (INEC). The Encuesta Nacional de Ocupación y Empleo (ENOE) is the source of data for Mexico. In the case of Peru, data from longitudinal panels built from sub–samples of the Encuesta Nacional de Hogares (ENAHO), the regular household survey conducted by the Instituto Nacional de Estadistica e Informatica (INEI), were used. Finally, the Paraguayan Encuesta Continua de Empleo (ECE) is carried out by the Dirección General de Estadística, Encuestas y Censos.

As indicated above, in order to obtain comparable datasets among countries, one transition for each household, of a one-year interval between observations, had to be considered. The periods covered in each country are the following: 2003-2015 for Argentina and Brazil, 2006-2013 for Costa Rica, 2004-2015 for Ecuador, 2005-2015 for Mexico, 2010-2015 for Paraguay and 2002-2010 for Peru. Since not all the surveys are nationally representative and given that labor markets in rural areas and urban centers can behave differently, the analysis was restricted to urban areas.

A limitation of panel data is the fact that the proportion of households actually interviewed in two successive periods may be less than expected according to the sample rotation scheme due to attrition, which can introduce sample bias if it is not random. However, no information was available in the microdata bases in order to identify the loss of data due to sample attrition and differentiate it from the loss of observations associated with the survey rotation scheme. This inability prevented us from applying an attrition bias correction.

Another difficulty for assessing mobility with survey data is the errors when measuring income changes. This is an additional reason for considering that variations lower than the above mentioned thresholds are null.

In order to evaluate changes in real incomes, actual nominal values included in the panels were adjusted by changes in the official CPIs of each country.

## 3. Recent trends in economic and labor market performance in Latin America

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

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

The positive macroeconomic situation seems to have also facilitated the recovery of wages, a situation that in some countries was also favored by the implementation of active real minimum wage policies and the reactivation of collective bargaining, together with measures that promoted the formalization of employment. Precisely, the share of wage-earners covered by social security[2] rose from 67.6% in 2000 to 79.4% in 2015. Furthermore, these measures also had a positive impact on reducing inequality[3] at the same time that they extended the coverage of labor institutions to previously excluded groups.

[2] Data from ILO and refer to the share of those covered by social security in terms of pensions.
[3] Amarante and Arim (2015), Beccaria et al. (2015), Maurizio and Vázquez (2016).

Indeed, these years were characterized by a reduction of income inequality and income poverty in almost all countries (ECLAC, 2014). Regarding the latter, and according also to ECLAC data, the proportion of poor persons fell rapidly between 2002 and 2008 (from 43.9% to 33.5%), but less rapidly during the next five years (29.2% in 2015)

The seven countries under study exhibited a somewhat large economic growth during the 2003-2015 period as GDP per capita grew 2.7% instead of 2.2% for the whole of the region as above indicated. The difference can be appreciated both before and after the 2008/09 crisis. Argentina and Peru were those with the fastest growth among the selected countries. However, the former one and Brazil showed a much reduced growth since 2011.

Those improvements in labor market conditions mentioned for Latin America as a whole are also reflected in the evidence for these seven countries (Table 1), where employment rates grew at important paces and the fall of unemployment rate was also significant. Similarly, informal or non–registered wage-earners increased as a proportion of total employees. Costa Rica exhibited the less favorable performance, with unemployment even rising during the last part of the period. Real incomes also showed a positive evolution in all cases except in Mexico.

Therefore, the first years of the new century was characterized by sustained economic growth and improvements in the labor market performance. This should have led to many upward movements (transitions from non – employment to employment and to better jobs, real earnings growth). However, as at the same time some of the structural features of the labor markets remain, the important frequency of downward movements –deriving from the large occupational mobility usually associated to precarious jobs held by non–registered wage earners and self–employed workers–, should have persisted.

Table 1
Employment and income indicators. Latin American Countries, 2003-2013

| | | Argentina | Brazil | Costa Rica | Ecuador | Peru | Paraguay | México |
|---|---|---|---|---|---|---|---|---|
| Unemployment rate (%) | 2003 | 17.3 | 12.3 | 6.7 | 9.8 | 9.4 | 11.2 | 3.3 |
| | 2006 | 10.2 | 10.0 | 6.0 | 8.1 | 8.5 | 8.9 | 4.6 |
| | 2008 | 7.9 | 7.9 | 4.8 | 6.9 | 8.4 | 7.4 | 4.9 |
| | 2011 | 7.2 | 6.0 | 7.7 | 6.0 | 7.7 | 7.1 | 5.9 |
| | 2012 | 7.2 | 5.5 | 7.8 | 4.9 | 6.8 | 8.1 | 5.8 |
| | 2013 | 7.1 | 5.4 | 8.2 | 4.7 | 5.9 | 8.1 | 5.7 |
| | 2014 | 7.3 | 4.8 | | 5.1 | 6.0 | 8.0 | 5.8 |
| | 2015 | 6.3 | 6.9 | | 5.3 | 6.5 | 7.2 | 5.1 |
| Employment rate (%) 1/ | 2003 | 49.8 | 50.1 | 51.8 | 61.6 | 61.1 | 55.0 | 55.1 |
| | 2006 | 54.1 | 51.2 | 53.3 | 65.5 | 61.8 | 55.4 | 55.4 |
| | 2008 | 54.2 | 52.5 | 53.9 | 62.2 | 62.4 | 57.0 | 56.3 |
| | 2011 | 55.2 | 53.7 | 56.0 | 59.9 | 64.5 | 58.0 | 55.6 |
| | 2012 | 55.0 | 54.2 | 55.4 | 59.1 | 64.4 | 57.8 | 56.3 |
| | 2013 | 54.7 | 54.0 | 54.7 | 59.5 | 64.8 | 59.9 | 57.3 |
| | 2014 | 54.0 | 53.3 | 54.4 | 62.0 | 64.3 | 59.7 | 56.9 |
| | 2015 | 53.9 | 52.6 | 53.4 | 62.6 | 63.4 | | 57.0 |
| Registered employees as % of total employment | 2003 | 40.5 | 50.9 | | 24.4 | 17.3 | 16.4 | |
| | 2006 | 43.8 | 53.2 | 53.1 | 23.7 | 24.8 | 16.0 | 35.6 |
| | 2008 | 47.7 | 55.9 | 56.0 | 26.0 | 27.3 | 20.1 | 36.0 |
| | 2011 | 51.1 | 61.0 | 57.8 | 36.3 | 29.4 | 25.8 | 34.4 |
| | 2012 | 50.4 | 61.6 | | 38.2 | 32.7 | 25.6 | 35.8 |
| | 2013 | 51.0 | 63.4 | | 39.0 | | 27.6 | 35.7 |
| | 2014 | 50.4 | 62.9 | | 39.3 | | 27.1 | 36.3 |
| Arg II Trim | 2015 | 51.3 | | | | | | 36.0 |
| Average real earnings (index number 2003=100) | 2003 | 100 | 100 | | 100 | 100 | | |
| | 2006 | 128 | 105 | 100 | 112 | 96 | | 100 |
| | 2008 | 127 | 116 | 113 | 118 | 103 | | 94 |
| | 2011 | 142 | 125 | 102 | 121 | 107 | | 95 |
| | 2012 | 136 | 131 | | 128 | 118 | | 91 |
| | 2013 | 139 | 133 | | 138 | | | 93 |
| | 2014 | 132 | 132 | | 130 | | | 90 |
| Arg II Trim | 2015 | 133 | | | | | | 94 |
| Average per capita household incomes (index number 2003=100) | 2003 | 100 | | | 100 | 100 | 100 | |
| | 2006 | 138 | | 100 | 124 | 101 | 109 | |
| | 2008 | 139 | | 116 | 119 | 112 | 110 | |
| | 2011 | 156 | | 126 | 122 | 112 | 147 | |
| | 2012 | 152 | | | 130 | 124 | 169 | |
| | 2013 | 151 | | | 131 | | 166 | |
| | 2014 | 145 | | | 129 | | 188 | |
| Arg II Trim | 2015 | 144 | | | | | | |

1/ Rates correspond to working age population whose limits change among countries.

Source: Own elaboration from household surveys and ECLAC

## 4. The intensity of household income mobility

Table 2 indicates that household income mobility –measured by any of the two mobility indices (m and CV)– differs to some extent between the seven countries when considering the alternative thresholds and income coverage (total or exclusively labor incomes). Mexico shows the largest degree of instability in all cases, followed by Ecuador, Paraguay and Peru. The other countries register lower levels, being Brazil that with less mobility. These differences could have been expected, at least in part, as those with more intense changes have larger proportions of precarious jobs –those held by non – registered wage earners and self–employed workers (see Table 1). They also have lower pension coverage.

The intensity of income mobility in these Latin American countries, when the actual variations in income are considered (i.e. no threshold imposed), appears as relatively higher than in some developed economies when comparing figures obtained using the same Fields and Ok indicator. For example, Aristei and Perugini (2015) estimate *m* measures for household equivalent disposable household income below 0.3 for 19 out of 25 European countries. Cantó and Ruiz (2014) reached, on average, a value around 0.4 for USA and Spain between 2004 and 2006 when the indicator is computed for

household equivalent disposable income of individuals. In both cases, changes in a two-year period are considered, instead of one year as in the present paper. Data for Canada, USA, Britain and Germany for the nineties and early 2000s, in this case for individual income and considering five years periods (Chen, 2009), point into the same direction. Only Argentina and Brazil exhibit *m* indices similar to those of these developed countries.

As indicated at the end of the last section, it is arguable that mobility should be relatively high in a period of employment and real income recovery as the one witnessed by most of the seven Latin American countries during the years under analysis. This process should have been associated with movements, larger than in previous years, from unemployment and inactivity to employment, and from low quality to better jobs. Real wages were also improving. The consequence should have been the presence of many upwards movements, i.e. households that increased their income.

Precisely Table 2 shows that the proportion of households registering increases of their real income is larger than the corresponding to those facing a reduction. However, between 45 and 50% of all households register a fall of their total real income when all actual changes are considered. These figures remain high when a threshold of 10% is imposed (between 35 and 40%) and reach values around 30% if a stricter limit is used (threshold of 20%). Therefore, a result worth stressing is that even in a period generally characterized by an improvement of average income, a large portion of households did experience a fall in their current resources. This must be viewed as evidence of the persistence of high levels of income insecurity.

The importance of downward movements is reflected when disaggregating the overall *m* index between the two groups of households classified according to whether they registered an increase or a reduction in their income.[4] It resulted that those episodes of household income reduction (for the 10% threshold) account for about 45 to more than 50% of total mobility (Table 2).

When considering exclusively labor incomes, the proportion of households facing a fall in their real income is virtually the same as the above mentioned for total family incomes, although in Mexico it is higher (47% when the 10% threshold is considered).

It can be expected that differences in the degree of mobility between socio – economic groups is ambiguous in the region during the period under analysis. Persons of reduced skills have larger probabilities of working in precarious jobs and, therefore, of facing larger mobility. On the other hand, upward movements associated to the evolution of the labor market appears to have favored different groups of household as suggested by improvements in the share of registered workers, increases in pension coverage and in income distribution.[5]

Using heads' schooling as a proxy, Table 3 indicates that total income mobility indices are larger for household with higher socio–economic level, except in Ecuador. This is also the case when labor income is considered. In the latter case, the expected negative relationship between mobility and schooling is less clear for Paraguay; it also appears in Ecuador when CV is considered, but the contrary occur with Mexico.

[4] As *m* for all movements is the weighted average of *m* for upward and downward changes.
[5] See, for example, Cornia (2012).

An unanticipated result, however, is that the share of upward and downward movements is similar for the three educational groups (Table 3).

## 5. Sources of mobility

Table 4 includes the results of the simulations made in order to assess the relevance of the different sources of household income mobility. These estimations will be made exclusively for indices computed considering the 10% threshold. Only the CV results will be analyzed as many of the counterfactual incomes (at least in some of the simulations) are zero.

It appears that, considering the first approach described in section 1, non-labor components have a lower effect on total household income mobility than labor ones in all countries considered (Panel A). This first approach measures average mobility of total household income derived from changes in either labor or non-labor incomes, and the influence of each of them results from its own degree of instability and also from its share in total household income. It is therefore convenient to resort to the figures estimated according to the second disaggregation approach in order to obtain evidence of these two variables.

Panel B of Table 4 presents figures that indicate each source's own mobility; it can be seen that mobility of non-labor incomes is somewhat larger than that of labor incomes in most countries. This indicates that the larger contribution of the latter source to total mobility (observed in Panel A) is a consequence of their higher share in total income. It also appears that incomes from pensions is less volatile than "Other non-labor income", suggesting that the latter includes flows that are received sporadically.

Turning now to assessing the influence of the two labor events considered, data computed according to the first disaggregation approach showed that the contribution of the variations in wages and labor status are similar as sources of changes in total household income (Table 4, Panel A).

In this first disaggregation approach, mobility indices are estimated considering all households, regardless of receiving labor income or not and regardless of having experienced the labor event or not. Instead, when resorting to the second disaggregation approach (Table 4, Panel B) —where mobility indices are computed only for labor income of those households that experienced each of these events– it clearly appears that higher mobility is associated to changes in labor status. Therefore, the similar weight that changes in earnings and in labor status have in explaining total labor mobility (Table 4, Panel A) is influenced by the higher share of households with members experiencing the former, a group with lower average mobility than that of households with at least one of their members with a zero income in any of the two points of comparisons.

Consequently, the intense mobility encountered in the analyzed countries (as compared to developed nations) is to a great extent influenced by one of the main characteristics of their labor markets' behavior: an intense occupational instability. This feature is associated to the large proportion of informal workers –both, non-wage-earners and non-registered employees–. Furthermore, in some of the countries, the share of short-

term contracts among formal wage-earners is also a relevant feature (Maurizio, 2016). In these types of occupations, the probability of leaving a job is larger and, consequently, so is the chance of remaining non-employed in one observation. The high frequency of occupational transitions may also partly explain changes in earnings of those that remain employed in both observations.

A mentioned, mobility was, in most countries here studied, higher for those households headed by persons of low educational attainment. Table 4, that also shows this behavior, provides evidence of the main causes of the divergence.[6] It appears that the more intense mobility of low schooling households is due to the large presence among them of those with members changing labor status which, precisely, register a higher degree of mobility.[7]

The larger share of households experiencing a change in labor status among the low schooling households indicates that less skilled workers (clearly overrepresented in households with low schooling heads) mainly works in informal jobs that, as indicated, have the larger exit rates.

## 6. Summary and conclusions

The main purpose of this paper is to provide a comparative view of income mobility in seven Latin America countries during the 2000s. Even if comparisons with figures coming from studies for other countries face limitations (mainly associated to the data sources employed), it appears that, as expected, the degree of mobility is larger in the region than in certain developed countries.

These probably high levels of household income mobility, measured by the two indices employed (the Field and Ok mobility indicator and the Coefficient of Variation), do not necessarily reflect a period of deep income insecurity in Latin America. The countries of the region (most of the seven here considered) improved their economic and social situation during this period and, as a consequence, many households should have increased their income. Precisely, the presence of a large number of income rises in all seven cases was one of the finding of the analysis.

However, at the same time, a large proportion of households suffered a reduction in their income, even in a period characterized by sustained economic growth. If we assume that a situation of income change occurs when it varies more than 10%, between a 35 and 40% of household experienced a negative movement. Moreover, between 25 and 35% of households witnessed a 20% or larger reduction of their income. Consequently, many households still face an important degree of income instability, a main source of income insecurity, even in a good macroeconomic environment and an employment growth period.

The persistence of income insecurity is linked to the large proportion of households with at least one of its members changing labor status. The high prevalence of informal employment is probably the main reason behind the high occupational instability that still characterizes Latin American labor markets, even during a period of particularly

[6] Table 4 only includes figures for the groups of those with low and high schooling levels, the third one – comprising those with intermediate levels– were set aside to simplify the presentation.
[7] Beccaria and Maurizio (2003) found a higher labor turnover for low skilled workers in Argentina.

good employment performance. This feature of the employment structure also explains part of the mobility associated to changes in earnings as some of them derive from movements between jobs.

Mobility is larger among households headed by persons of low schooling, whose employed members are largely unskilled. The high income instability of this group is mainly associated to the important presence of households whose members have experienced changes in labor status, episodes that trigger sizable earnings movements. Even if there appear not to be large differences in the share of downward movements between households with different levels of schooling (used here as a proxy of socio–economic categories), the negative effects of high instability and, especially, a drop of incomes, are particularly damaging for those of low levels of education.

This is reinforced by the lack of adequate social protection systems that cushion the effect of labor market events that lead to downward changes in household incomes. The employed in informal occupations, those more affected by high employment instability, do not benefit from any program that compensates for an eventual exit from that job. But the situation is not much better for those losing a formal job; the scope and coverage of unemployment insurance in Latin America has been historically limited. Even in those few countries that do have policies of this kind (such as Argentina, Brazil and Ecuador), replacement rates are very low and coverage rates, even among unemployed coming from formal jobs, are low.

Income instability, and in general, income insecurity, should be addressed by different and complementary policies. On the one hand, reinforcing the formalization process in order to reduce the share of –the highly unstable- informal and precarious employment. On the other hand, extending the coverage of cash transfer programs in order to mitigate the effects of income reduction events, particularly for vulnerable households.

## References


Amarante, V. and R. Arim, eds (2015) **Desigualdad e Informalidad. Un análisis de cinco experiencias latinoamericanas**, CEPAL-Ministry of Foreign Affairs, Norway.

Aristei, D and C. Perugini (2015) "The drivers of income mobility in Europe" in *Economic Systems*, 39: 197–224

Beccaria, L. and R. Maurizio (2003) **Movilidad Ocupacional en Argentina,** Colección Investigación. Serie Informes de Investigación. UNGS. Argentina.

Beccaria, L. and F. Groisman (2008) "Income mobility in Argentina", *Research on Economic Inequality* 16: 285-321.

Beccaria, L., R. Maurizio and G. Vázquez (2015) "Recent decline in wage inequality and formalization of the labor market in Argentina", *International Review of Applied Economics*, vol. 29, issue 5, pp. 677-700.

Cantó, O. and D. Ruiz (2014) "The contribution of income mobility to economic insecurity in the US and Spain during the Great Recession", ECINEQ Working Paper 2014 – 345

Chen, W. (2009) "Cross-national differences in income mobility: evidence from Canada, the United States, Great Britain and Germany", *Review of Income and Wealth*, 55: 75-100.

Cornia, A. (2012) "Inequality Trends and their Determinants: Latin America over 1990-2011." WIDER Working Paper 9

ECLAC (2014) Social Panorama, Santiago de Chile: ECLAC.

Fields, G. and E. Ok (1999) "Measuring Movement of Incomes", *Economica* 66: 455-471.

Hacker, J., G. Huber, A. Nichols et. al. (2012) "The economic security index: A new measure for research and policy analysis", Discussion Paper Series, Forschungsinstitut zur Zukunft der Arbeit, No. 6946, Bonn.

Maurizio, R. and G. Vázquez (2016) "Distribution effects of the minimum wage in four Latin American countries: Argentina, Brazil, Chile and Uruguay", *International Labour Review*, vol. 155, issue 1, pp. 97-131.

Maurizio, R. (2016) "Non-standard forms of employment in Latin America: Prevalence, characteristics and impacts on wages", *Conditions of Work and Employment Series*, ILO, vol. 75, pp. 1-62.

# ANNEX

**TABLE 2. MOBILITY INDICATORS WITH ALTERNATIVE THRESHOLDS FOR THE WHOLE PERIOD**

| | Argentina (2003-13) | | | Brazil (2003-12) | | | C. Rica (2006-11) | | | Ecuador (2004-12) | | | México (2005-15) | | | Paraguay (2010-14) | | | Peru (2002-10) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Zero | 10% | 20% | Zero | 10% | 20% | Zero | 10% | 20% | Zero | 10% | 20% | **Zero** | **10%** | **20%** | Zero | 10% | 20% | Zero | 10% | 20% |
| **TOTAL HOUSEHOLD INCOMES** | | | | | | | | | | | | | | | | | | | | | |
| m | 0.40 | 0.39 | 0.36 | | | | 0.45 | 0.44 | 0.42 | 0.51 | 0.5 | 0.48 | | | | 0.50 | 0.49 | 0.46 | 0.51 | 0.50 | 0.48 |
| CV | 0.29 | 0.29 | 0.27 | | | | 0.31 | 0.31 | 0.29 | 0.35 | 0.34 | 0.34 | | | | 0.35 | 0.34 | 0.32 | 0.34 | 0.33 | 0.32 |
| ***Proportion of cases (%)*** | | | | | | | | | | | | | | | | | | | | | |
| upward | 53 | 43 | 35 | | | | 52 | 43 | 35 | 54 | 47 | 40 | | | | 49 | 42 | 34 | 51 | 44 | 37 |
| stayer | | 21 | 39 | | | | | 21 | 37 | | 16 | 30 | | | | | 17 | 33 | | 17 | 31 |
| downward | 47 | 36 | 27 | | | | 48 | 37 | 28 | 48 | 37 | 30 | | | | 51 | 41 | 33 | 49 | 39 | 31 |
| ***Contribution (%)*** | | | | | | | | | | | | | | | | | | | | | |
| upward | 53 | 53 | 54 | | | | 54 | 54 | 54 | 55 | 55 | 56 | | | | 48 | 48 | 49 | 50 | 50 | 51 |
| downward | 47 | 47 | 46 | | | | 46 | 46 | 46 | 45 | 45 | 44 | | | | 52 | 52 | 51 | 50 | 50 | 49 |
| **LABOR HOUSEHOLD INCOMES** | | | | | | | | | | | | | | | | | | | | | |
| m | 0.43 | 0.42 | 0.39 | 0.34 | 0.32 | 0.3 | 0.47 | 0.47 | 0.44 | 0.52 | 0.52 | 0.49 | 0.77 | 0.76 | 0.74 | 0.50 | 0.49 | 0.47 | 0.57 | 0.56 | 0.54 |
| CV | 0.40 | 0.4 | 0.38 | 0.38 | 0.37 | 0.36 | 0.42 | 0.41 | 0.4 | 0.43 | 0.43 | 0.41 | 0.69 | 0.68 | 0.67 | 0.44 | 0.44 | 0.42 | 0.42 | 0.42 | 0.41 |
| ***Proportion of cases (%)*** | | | | | | | | | | | | | | | | | | | | | |
| upward | 52 | 44 | 36 | 48 | 38 | 31 | 53 | 44 | 38 | 53 | 46 | 40 | 47 | 43 | 40 | 50 | 43 | 37 | 52 | 45 | 39 |
| stayer | | 18 | 33 | | 31 | 43 | | 17 | 32 | | 15 | 28 | | 10 | 18 | | 16 | 29 | | 15 | 28 |
| downward | 48 | 38 | 30 | 52 | 31 | 25 | 47 | 38 | 31 | 47 | 39 | 32 | 53 | 47 | 42 | 50 | 41 | 34 | 48 | 40 | 33 |
| ***Contribution (%)*** | | | | | | | | | | | | | | | | | | | | | |
| upward | 53 | 53 | 53 | 53 | 51 | 52 | 53 | 53 | 54 | 54 | 54 | 55 | 47 | 46 | 47 | 51 | 51 | 51 | 51 | 51 | 51 |
| downward | 47 | 47 | 47 | 47 | 49 | 48 | 47 | 47 | 46 | 46 | 46 | 45 | 53 | 54 | 53 | 49 | 49 | 49 | 49 | 49 | 49 |

**Table 3. MOBILITY INDICATORS ACCORDING TO SCHOOLING OF THE HEAD OF HOUSEHOLD**

| | Total Household income | | | | | Labor household income | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Argentina | Costa Rica | Ecuador | Paraguay | Peru | Argentina | Brazil | Costa Rica | Ecuador | Mexico | Paraguay | Peru |
| **THE WHOLE PERIOD** | | | | | | | | | | | | |
| **m index according to schooling** | | | | | | | | | | | | |
| *Average* | *0.39* | *0.44* | *0.50* | *0.49* | *0.51* | *0.42* | *0.32* | *0.47* | *0.52* | *0.76* | *0.49* | *0.57* |
| Low | 0.42 | 0.47 | 0.52 | 0.54 | 0.55 | 0.46 | 0.34 | 0.50 | 0.54 | 0.78 | 0.53 | 0.61 |
| Medium | 0.37 | 0.45 | 0.48 | 0.39 | 0.51 | 0.38 | 0.32 | 0.46 | 0.49 | 0.75 | 0.41 | 0.57 |
| High | 0.34 | 0.38 | 0.49 | 0.42 | 0.44 | 0.35 | 0.30 | 0.38 | 0.5 | 0.73 | 0.5 | 0.47 |
| **CV index according to schooling** | | | | | | | | | | | | |
| *Average* | *0.29* | *0.31* | *0.34* | *0.34* | *0.34* | *0.40* | *0.37* | *0.341* | *0.43* | *0.68* | *0.44* | *0.42* |
| Low | 0.30 | 0.33 | 0.35 | 0.38 | 0.36 | 0.45 | 0.42 | 0.46 | 0.45 | 0.70 | 0.48 | 0.46 |
| Medium | 0.27 | 0.29 | 0.33 | 0.28 | 0.34 | 0.36 | 0.35 | 0.37 | 0.40 | 0.66 | 0.37 | 0.43 |
| High | 0.25 | 0.26 | 0.33 | 0.3 | 0.29 | 0.30 | 0.30 | 0.35 | 0.38 | 0.70 | 0.44 | 0.35 |
| **Proportion of downward movements according to schooling (%)** | | | | | | | | | | | | |
| *Low* | *36* | *37* | *37* | *45* | *39* | *38* | *31* | *38* | *39* | *47* | *45* | *40* |
| Medium | 36 | 36 | 37 | 34 | 41 | 39 | 31 | 39 | 39 | 47 | 32 | 41 |
| High | 37 | 38 | 38 | 38 | 40 | 37 | 31 | 38 | 39 | 46 | 42 | 40 |

**TABLE 4. MOBILITY INDECES BY INCOME SOURCES AND LABOUR EVENTS. Coefficient of Variation**

| | TOTAL | | | | | | | LOW LEVEL OF EDUCATION | | | | | | | hIGHER LEVEL OF EDUCATION | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Argentina | Brasil | Costa Rica | Ecuador | Mexico | Paraguay | Perú | Argentina | Brasil | Costa Rica | Ecuador | Mexico | Paraguay | Perú | Argentina | Brasil | Costa Rica | Ecuador | Mexico | Paaraguay | Perú |
| ***Panel A*** | | | | | | | | | | | | | | | | | | | | | |
| Non labor incomes | 0.11 | | 0.11 | 0.12 | | 0.18 | 0.10 | 0.13 | | 0.12 | 0.14 | | 0.19 | 0.12 | 0.08 | | 0.09 | 0.09 | | 0.11 | 0.09 |
| Pensions | 0.06 | | 0.04 | 0.03 | | 0.04 | 0.02 | 0.08 | | 0.04 | 0.03 | | 0.04 | 0.02 | 0.04 | | 0.04 | 0.03 | | 0.04 | 0.02 |
| Other non labor incomes | 0.07 | | 0.08 | 0.10 | | 0.15 | 0.09 | 0.07 | | 0.10 | 0.12 | | 0.16 | 0.11 | 0.04 | | 0.06 | 0.07 | | 0.06 | 0.08 |
| Labor incomes | 0.24 | 0.37 | 0.26 | 0.31 | 0.76 | 0.39 | 0.31 | 0.25 | 0.42 | 0.28 | 0.32 | 0.78 | 0.42 | 0.32 | 0.22 | 0.30 | 0.22 | 0.31 | 0.73 | 0.36 | 0.26 |
| Change en wages | 0.20 | 0.12 | 0.22 | 0.25 | 0.33 | 0.29 | 0.22 | 0.20 | 0.11 | 0.22 | 0.26 | 0.32 | 0.29 | 0.23 | 0.20 | 0.14 | 0.21 | 0.25 | 0.33 | 0.30 | 0.20 |
| Change in labor status | 0.20 | 0.27 | 0.20 | 0.31 | 0.37 | 0.50 | 0.22 | 0.23 | 0.33 | 0.22 | 0.23 | 0.41 | 0.56 | 0.25 | 0.13 | 0.18 | 0.15 | 0.18 | 0.32 | 0.34 | 0.18 |
| Total household income | 0.29 | | 0.31 | 0.34 | | 0.49 | 0.33 | 0.30 | | 0.33 | 0.35 | | 0.54 | 0.36 | 0.25 | | 0.26 | 0.33 | | 0.42 | 0.28 |
| ***Panel B*** | | | | | | | | | | | | | | | | | | | | | |
| Non labor incomes | 0.45 | | 0.40 | 0.63 | | 0.49 | 0.45 | 0.43 | | 0.41 | 0.59 | | 0.52 | 0.47 | 0.50 | | 0.37 | 0.69 | | 0.31 | 0.44 |
| Pensions | 0.34 | | 0.30 | 0.57 | | 0.20 | 0.30 | 0.33 | | 0.31 | 0.55 | | 0.18 | 0.33 | 0.34 | | 0.28 | 0.55 | | 0.17 | 0.30 |
| Other non labor incomes | 0.73 | | 0.45 | 0.70 | | 0.55 | 0.46 | 0.74 | | 0.47 | 0.65 | | 0.58 | 0.48 | 0.75 | | 0.39 | 0.81 | | 0.32 | 0.47 |
| Labor incomes | 0.39 | 0.37 | 0.40 | 0.42 | 0.68 | 0.48 | 0.41 | 0.44 | 0.42 | 0.45 | 0.45 | 0.78 | 0.52 | 0.44 | 0.29 | 0.30 | 0.33 | 0.38 | 0.73 | 0.45 | 0.33 |
| Change en wages mobility | 0.21 | 0.15 | 0.24 | 0.28 | 0.36 | 0.30 | 0.27 | 0.22 | 0.15 | 0.25 | 0.29 | 0.62 | 0.33 | 0.28 | 0.20 | 0.16 | 0.22 | 0.26 | 0.58 | 0.30 | 0.24 |
| % of changes experiencing event | 60.4 | 63.2 | 58.8 | 58.1 | 39.1 | 41.5 | 44.0 | 53.5 | 58.3 | 53.5 | 55.0 | 46.7 | 36.5 | 40.3 | 74.5 | 73.3 | 66.5 | 64.1 | 58.8 | 48.7 | 50.7 |
| Change in labor status mobility | 0.61 | 0.73 | 0.56 | 0.54 | 0.84 | 0.67 | 0.45 | 0.63 | 0.78 | 0.60 | 0.56 | 0.76 | 0.69 | 0.48 | 0.52 | 0.67 | 0.48 | 0.48 | 0.77 | 0.43 | 0.36 |
| % of changes experiencing event | 39.6 | 36.8 | 41.1 | 41.9 | 60.9 | 58.5 | 56.0 | 46.5 | 41.7 | 46.5 | 45.0 | 53.3 | 63.5 | 59.7 | 24.5 | 26.3 | 33.5 | 35.9 | 41.2 | 51.3 | 49.3 |
| Total household income | 0.29 | | 0.31 | 0.34 | | 0.49 | 0.33 | 0.30 | | 0.33 | 0.35 | | 0.54 | 0.36 | 0.25 | | 0.26 | 0.33 | | 0.42 | 0.28 |