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Poverty, vulnerability, and the middle class in Latin America

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Abstract Between 2000 and 2013, Latin America has considerably reduced poverty (from 46.3 to 29.7 % of the population). In this paper, we use synthetic panels to show that, despite progress, the region remains characterized by substantial vulnerability that also affects the rising middle class. More specifically, we find that 65 % of those with daily income between $4 and 10, and 14 % of those in the middle class experience poverty at least once over a 10-year period. Furthermore, chronic poverty remains widespread (representing 91 and 50 % of extreme and moderate poverty, respectively). Differences between rural and urban areas are substantial. Urban areas, which are now home to most moderate poor and vulnerable, are characterized by higher income mobility, particularly upward mobility. These findings have important implications for the design of effective social safety nets. These need to mix long-term interventions for the chronic poor, especially in rural areas, with flexible short-term support to a large group of transient poor and vulnerable, particularly in urban areas.

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1 Introduction

In recent years, Latin America has made remarkable progress in the reduction of poverty and inequality. Between 2000 and 2013, the percentage of the population living on less than $2.5 per capita per day decreased from 28.8 to 15.9 %, while the share of the population living on less than $4 dropped from 46.3 to 29.7 %. Over the same period, the region has also managed to reduce its unfortunately distinctive inequality: the Gini coefficient of the income distribution fell from 0.57 to 0.51.

These improvements were largely driven by sustained economic growth, which led to an expansion of the middle class.[1] However, despite these positive trends, the region is still home to 92 million extreme poor and 77 million moderate poor. In addition, most of those that exited poverty joined the vulnerable class and are still at substantial risk of falling into poverty (Fig. 1).

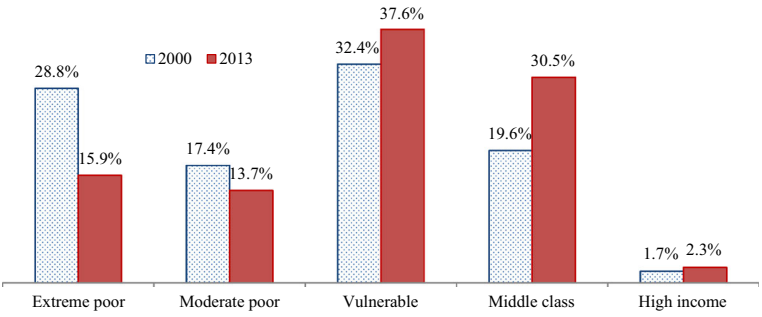
The trends in the incidence and depth of poverty, however, do not fully capture poverty dynamics, i.e., its duration and how often families enter and exit poverty. This information is very important for the design of effective social safety nets, particularly as far as targeting and recertification are concerned.[2] Frequent movements in and out of poverty imply the need for flexible safety net entry and exit rules.

The analysis of poverty dynamics and income mobility in developing countries has received relatively limited attention, largely due to the lack of adequate longitudinal data.[3] Recently, Ferreira et al. (2013) and Vakis et al. (2015) have analyzed intra-generational mobility in Latin America, with a focus, respectively, on the middle class and the chronic poor. Their analysis is based on the synthetic panel methodology developed by Dang et al. (2014), which is the same we employ in this paper. The two works construct two-period transition matrices [1995–2010 in Ferreira et al. (2013), 2004–2012 in Vakis et al. (2015)] and define the chronic poor as those that were poor in both years. The analysis only captures mobility from the first period to the last period, and not yearly mobility in between the two.

[1] For an analysis of the key drivers of poverty reduction in Peru, see Robles and Robles (2014).

[2] Targeting is the process of identification of poor and vulnerable beneficiaries, as opposed to universal entitlement to benefits. Recertification is the periodic verification of beneficiaries' living standards, to assess whether they still qualify for receiving the benefits.

[3] See Jalan and Ravallion (1998), Baulch and Hoddinott (2000), Davis and Stampini (2002), Hulme and Shepherd (2003), Dercon and Shapiro (2007), Fields et al. (2007), Stampini and Davis (2009), Ferreira et al. (2013), Vakis et al. (2015). What is missing in this literature is the analysis of poverty or income dynamics with long panels made of consecutive years. Robles and Saenz (2015) have started to fill this gap; using synthetic panels (similar to those employed in this paper) and a discrete-time hazard model, they identify the factors associated with long-term poverty and exit from poverty in a sample of Latin American countries.



Source: Authors' calculations based on household survey data from IDB's Harmonized Data Bank of Household Surveys from Latin America and the Caribbean (also known, and hereafter referred to, as IDB's *Sociometro*).
Notes: extreme poor are defined as having per-capita daily income under $2.5 after purchasing power adjustment; moderate poor between $2.5 and 4; vulnerable between $4 and 10; middle-class between $10 and 50 (as in López-Calva and Ortiz-Juárez (2011)); high-income above $50. Results based on 18 countries (Argentina (only urban), Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador, Uruguay (only urban), Venezuela).

Fig. 1 Income distribution in Latin America (2000–2013), region aggregate

Consequently, it depicts the vulnerable and the middle class as consolidated in their position (with a low probability of experiencing poverty).

In this paper, we generate 10-year synthetic panels for a large sample of Latin American countries, and use them to estimate yearly movements in and out of poverty from 2003 to 2013. We provide a novel classification of households based on poverty duration, which distinguishes chronic poor, transient poor, future poor, and never poor. The future poor include those that initially belonged to the vulnerable, middle, and high-income classes, and experienced poverty at any time over the following decade.

We find that 65 % of the vulnerable (i.e., those with daily income between $4 and 10), and 14 % of those in the middle class (with daily income between $10 and 50) of 2003, experienced poverty at least once during the period 2004–13. At the same time, chronic poverty remains widespread, accounting for 91 and 50 % of extreme and moderate poverty, respectively. Differences between rural and urban areas are substantial. Urban areas, which are now home to most moderate poor and vulnerable, are characterized by higher (particularly upward) income mobility.

The remainder of the paper is organized as follows. Section 2 defines poverty and vulnerability, and describes the data and the methodology employed for constructing synthetic panels and forecasting poverty dynamics. Section 3 presents the trends in poverty reduction and shows that the Latin American region is highly heterogeneous in the stage and speed of the socioeconomic transition towards the middle class. Section 4 analyzes poverty dynamics, including transition matrices and poverty duration, and discusses household characteristics of chronic and transient poor. Section 5 highlights the main differences between urban and rural poverty. Section 6 concludes summarizing key findings and policy implications. Along the paper, we discuss the policy implications of the findings for the design

and implementation of the social safety nets, with a particular focus on the targeting and recertification processes.[4]

Six annexes provide additional information on data, methods, sensitivity analyses, and country results. Annex 1 lists the data sources. Annex 2 summarizes the existing literature comparing results from genuine panel data with non-parametric, parametric, and point estimate synthetic-panel methods. Annex 3 shows the bounds of selected estimates, providing a visual representation of the quality of our results. Annex 4 presents sensitivity analyses of key chronic poverty results to the adoption of alternative poverty lines. Annex 5 shows that the variation in the share of urban population is limited between 2003 and 2013, which is necessary for the validity of the rural/urban breakdown of the dynamic analyses based on the pseudo panel methodology. Finally, Annex 6 presents country-specific poverty profiles.

2 Data and methodology[5]

We look at poverty through two lenses, one that focuses on depth and the other on duration. The former is static, and analyzes a picture of poverty through the value of daily per-capita income (expressed in 2005 dollars adjusted to reflect purchasing power parity). It divides the population in five groups: (i) the extreme poor, with income below $2.5; (ii) the moderate poor, between $2.5 and 4; (iii) the vulnerable, between $4 and 10; (iv) the middle class, between $10 and 50 [as in López-Calva and Ortiz-Juárez (2011)]; and (v) the high-income class, above $50.

The $2.5 line corresponds to the median of the official extreme poverty lines in Latin American countries (CEDLAS and World Bank 2012), and has already been used in regional studies (World Bank 2014). It is higher than the international extreme poverty line of $1.25 used by Ravallion et al. (2008), which corresponds to the mean of the official extreme poverty lines of the 15 poorest countries in the world. The use of a higher line reflects the relatively more advanced stage of socioeconomic development (and the higher price levels) of the Latin American region. Similar considerations hold for the $4 poverty line. The vulnerable class is defined by López-Calva and Ortiz-Juárez (2011), as having a per capita daily income between $4 and 10, which is empirically observed to imply a probability greater than 10 % of falling into poverty.

The second lens is dynamic and focuses on the duration of poverty. It divides the population in four groups: (i) the chronic poor, that are poor (either extreme or

[4] We refer to social safety nets as the systems of social protection for the poor and vulnerable. In the Inter-American Development Bank Strategic Framework Document on Social Protection and Poverty, this is defined as "(i) efficient redistributive programs that contribute to human capital development; and (ii) delivery of services for social inclusion, in particular those aimed at early childhood development and at-risk youth" (IDB 2014). The findings of this paper are particularly relevant for the design and implementation of redistributive programs, such as conditional cash transfers (CCTs), whose duration and level of benefits should depend on poverty duration and depth.

[5] Non-technical readers can skip this section with no prejudice to their ability to understand the rest of the paper.

moderate) in the first year of analysis, and in five or more years over the following decade;[6] (ii) the transient poor, that are poor in the first year, and again in four or less years over the following decade; (iii) the future poor, that are either vulnerable, middle class, or high income in the first year of analysis, but experience poverty in at least 1 year during the following 10 years; (iv) the never poor, who are always above the $4 poverty line.

Conditioning the definition of chronic and transient poverty on being poor in the first year guarantees that the sum of extreme and moderate poverty equals the sum of chronic and transient poverty. In other words, the incidence of poverty does not change, no matter if one looks at it through the lenses of depth or through those of duration.

The analysis focusing on the static definition of poverty is based on observed micro-data from 216 cross-sectional household surveys collected between 2000 and 2013 in 18 Latin American countries (see Annex 1).[7] These data are from IDB's Harmonized Data Bank of Household Surveys from Latin America and the Caribbean (also known as IDB's *Sociometro*). Regional estimates of the incidence of poverty are obtained by imputing missing values for years with no survey, then calculating population-weighted averages of country estimates.

The data are representative both at the national level and at the urban–rural level, with the exception of Argentina, Uruguay, and Venezuela. In Argentina, the household survey is only urban. In Uruguay, rural areas have been surveyed only since 2006; we restrict the analysis to urban areas to ensure comparability over the period 2000–2013. In Venezuela, since 2004, the survey does not contain a variable that allows separating rural and urban areas.

Given the unavailability of real-panel data sets, in which the same households are surveyed across time, the analysis of poverty duration is based on the construction of synthetic panels *a la* Dang et al. (2014).[8] This method was originally designed to analyze transitions in and out of poverty based on two (or more) rounds of cross-sectional data. In addition, the literature, so far, has focused on proving the reliability of the methodology (Cruces et al. 2011; Fields and Viollaz 2013; Haynes et al. 2013). Our objective is slightly different, as we aim to investigate poverty duration, or more specifically in how many years a family has been poor over a decade. For this purpose, we calculate yearly point estimates of per-capita income based on yearly cross-sectional data.[9]

The sample is made of families surveyed in the first year ($t = 0$). For each of the following 10 years ($s = 1{,}10$), we estimate per-capita income using time-invariant

[6] The 5-year threshold, like any alternative threshold, is somehow arbitrary. However, the results presented in this paper are generally robust to the adoption of alternative values.

[7] These are the 18 countries that regularly execute household surveys and share their databases with the IDB. We lament not being able to include Caribbean countries, for which such data is not available.

[8] Other synthetic or pseudo-panel approaches are those that track cohorts of individuals or households over repeated cross-sectional surveys (Deaton 1985), and those that recover the stochastic process from cross sectional data and generate individual income dynamics (Bourguignon et al. 2004).

[9] We follow Canavire and Robles (2013), who, using this kind of panels and non-parametric duration models, analyze the sequencing and duration of the episodes of poverty.

variables observed in $t = 0$, coefficients estimated in $t = \text{s}$, and empirical residuals.[10] The methodology assumes a linear structure of the income equation, and is based on the following two assumptions: (i) households do not change, which ensures that time-invariant variables observed in $t = 0$ can be used to estimate income in $t = \text{s}$, and (ii) the correlation of the error terms across time ($\varepsilon_{t=0}$ and $\varepsilon_{t=s}$) is not negative. This is a reasonable assumption given that income shocks show persistence over time, and factors leading to a negative correlation of income over time are unlikely to apply to all households at the same time. The methodology requires estimating the following equations:

$$y_{i,t} = \beta_t' x_{i,t} + \varepsilon_{i,t} \quad \text{for } t = 0, 10 \tag{1}$$

i.e., for the first period and for the following 10 years, where $y_{i,t}$ is the logarithm of household i's per-capita income at time t, and $x_{i,t}$ is a vector of variables measuring household i's characteristics at time t. Our specification of the model includes variables typically employed in the literature (Dang et al. 2014; Cruces et al. 2011), plus statistically significant variables at the regional level. The vector x contains the following variables:

(i) Household head characteristics: sex, age, age squared, years of schooling, years of schooling squared, and agricultural work;
(ii) Region (first-level administrative country subdivision) characteristics: average years of schooling of the household heads, and proportion of workers in agriculture;
(iii) Geographic controls: rural–urban residence;
(iv) Retrospective regressors at regional level in the initial year (2003): inequality (standard deviation of log income), extreme poverty headcount ($2.5 a day), average per capita income, average household size, and average years of schooling of the household heads.

The regressions produce 11 estimates of vectors β and ε ($\hat{\beta}_t$ and $\hat{\varepsilon}_t$, one for each time period). They also produce 11 estimates of the error term variance ($\hat{\sigma}_{\varepsilon_t}$). These parameters are used to produce the synthetic-panel estimates of yearly per-capita income.

Following Cruces et al. (2011), Fields and Viollaz (2013), and Haynes et al. (2013), we use the "non-parametric" version of the method, i.e., we make no assumptions on the structural form of the joint distribution of the errors terms. Two extreme assumptions on the non-parametric time correlation of the error terms lead to a lower and upper bound estimate of per-capita income mobility. At one extreme, one can assume zero correlation between $\varepsilon_{t=0}$ and $\varepsilon_{t=s}$, i.e., that the two error terms are independent from each other. The logarithm of per capita income of household i in $t = s$ ($\hat{y}^U_{i,t=s}$) is estimated as follows:

[10] Dang et al. (2014) and Cruces et al. (2011) show that the method performs well irrespective of the forecasting direction, i.e. that estimates of mobility are very similar if one predicts per-capita income in each year based on the sample of families that are surveyed in the last year.

$$\hat{y}^{U}_{i,t=s} = \hat{\beta}'_{t=s} x_{i,t=0} + \hat{\tilde{\varepsilon}}_{i,t=s} \tag{2}$$

where the apex U indicates uncorrelated error terms, and $\hat{\tilde{\varepsilon}}_{i,t=s}$ is the mean of 50 random draws (with replacement) from the vector of estimated residuals in $t = s$. At the other extreme, one can assume perfect correlation between $\varepsilon_{t=0}$ and $\varepsilon_{t=s}$. Under this assumption, the logarithm of per capita income of household i in $t = s$ ($\hat{y}^{C}_{i,t=s}$) is estimated as follows:

$$\hat{y}^{C}_{i,t=s} = \hat{\beta}'_{t=s} x_{i,t=0} + \gamma \hat{\varepsilon}_{i,t=0} \tag{3}$$

where the apex C indicates correlated error terms, $\hat{\varepsilon}_{i,t=0}$ is (the time-invariant) household i's empirical error term estimated in $t = 0$, and $\gamma = \hat{\sigma}_{\varepsilon_{t=0}} / \hat{\sigma}_{\varepsilon_{t=s}}$. is a scale factor.

Dang et al. (2014) and Cruces et al. (2011) show that: (i) Eq. (2) produces upper-bound estimates of income mobility, due to the high variation in the error term, and overestimates people's movements in and out of poverty; (ii) Eq. (3) produces lower-bound estimates of income mobility, due to the constant error term, and underestimates poverty transitions; and (iii) the average of (2) and (3) approximates well the observed income mobility, providing a satisfactory estimation of movements in and out of poverty. This last point is proved empirically by comparing synthetic-panel estimates of mobility with those observed in genuine panel data. We, therefore, calculate point estimates of per-capita income of the households in the synthetic-panel as follows:[11]Recently, Dang and Lanjouw (2013) have developed a point estimate synthetic panel approach, which generalizes the use of non-parametric and parametric methods to produce point estimates of poverty transitions. This could have been used, as alternative to Eq. (4), to produce the estimates of poverty duration presented in this paper. We preferred to rely on Eq. (4), because the two methods have been shown to be empirically equivalent in terms of accuracy, and because Dang and Lanjouw (2013) indicate that the point-estimate methodology is most accurate when short time periods are analyzed. The existing literature comparing results from genuine panel data with non-parametric, parametric, and point estimate synthetic-panel methods is summarized in Annex 2.

$$\hat{y}_{i,t=s} = \hat{\beta}'_{t=s} x_{i,t=0} + \frac{\left(\hat{\tilde{\varepsilon}}_{i,t=s} + \gamma \hat{\varepsilon}_{i,t=0}\right)}{2}. \tag{4}$$

As a result, our analysis of income mobility is based on income observed in 2003 along with income estimated for the years between 2004 and 2013. The quality of the predictions is essential to guarantee that results are credible. As is usual practice, we carefully ensured the quality of the fit (value of R-squared, significance of coefficients, over-fitting). In Annex 3, we show for selected countries that the upper and lower bounds of predicted incomes produce poverty rates that are very close to the rates

[11] Dang et al. (2014) suggest that standard errors for the bounds can be estimated by bootstrapping. This involves bootstrap resampling from the original cross-sections while accounting for survey weights (footnote 14). Similarly, we could obtain standard errors for our point estimates by complementing Dang et al.'s suggested procedure with the application of the delta method.

directly observed from household surveys. We also show the bounds for the estimates of chronic poverty, transient poverty, and future poverty in selected countries.

Our methodology can only be applied to 12 countries that have household survey data for each year between 2003 and 2013 (Argentina, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Panama, Paraguay, Peru, El Salvador, and Uruguay). Regional numbers were obtained pooling micro-data from the 12 countries and using survey weights.[12]

3 Static analysis: an heterogeneous and still vulnerable region

Latin America is a very heterogeneous region in terms of the stage of socioeconomic transition, defined as the process of transition out of poverty towards the middle class. Countries such as Argentina, Chile, and Uruguay, are at an advanced stage, being mainly made of middle and high-income class (with the incidence of poverty around 10 %). On the other hand, countries such as Guatemala and Honduras, are at the earliest stages: almost half of their population still lives in extreme poverty, and the incidence of overall poverty exceeds 65 % (Table 1).

One feature, however, is common to all countries: the large size of the vulnerable class. This represents in most cases 30–40 % of the population, suggesting that an important share of the population remains at substantial risk of falling into poverty. Countries with low poverty rates and large middle classes are no exception. In these countries, the vulnerable class is the back end of the socioeconomic transition; while in the poorest countries, the vulnerable class leads the way.

Country heterogeneity is also high in the speed of the socio-economic transition. For example, Colombia and Ecuador reduced the incidence of poverty by more than 25 percentage points (pp), and expanded their middle and upper classes by more than 15 pp (Table 1). In contrast, progress was sluggish in Mexico and Dominican Republic, despite the fact that these countries started from poverty headcounts around 40 %.

Table 2 summarizes the region's heterogeneity by classifying the Latin American countries based on the stage and speed of their socioeconomic transition. In the countries in the upper-left cell, for example, Nicaragua and El Salvador, the poor still represents the largest share of the population, and poverty reduction has been relatively slow (less than 25 % between 2000 and 2013). These are the countries with the highest need for reforming and/or expanding the social safety net, as poverty is widespread and resilient. These are also the countries with less financial resources for its implementation, so efficiency should be at the top of their policy agenda.

[12] Brazil does not have a household survey for 2010. In order to include it in the dynamic analysis, we considered mobility over the period 2002–2013. It is important to highlight the caveat that our dynamic analysis is based on twelve countries with available data. Among the excluded countries is Mexico, which accounts for an important share of the population of the region. The exclusion of Mexico is due to the fact that the *Encuesta Nacional sobre Ingresos y Gastos de los Hogares* is carried out every two years, while the *Encuesta Nacional de Ocupación y Empleo* is yearly but has been nationally representative only since 2005.

Table 1 Income distribution in Latin American countries (2000–2013). Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Incidence (%) in 2013 (a)					Variation (pp): 2013–2000 (b)				
	Extreme poor	Moderate poor	Vulnerable	Middle class	High income	Extreme poor	Moderate poor	Vulnerable	Middle class	High income
ARG	4.0	6.9	34.4	52.5	2.2	−10.9	−8.5	−2.1	21.3	0.2
BOL	19.7	12.8	38.5	28.4	0.6	−23.0	−5.1	12.7	15.8	−0.4
BRA	10.4	10.8	38.4	36.9	3.6	−16.8	−6.1	6.0	15.6	1.3
CHL	3.7	6.6	37.7	45.7	6.3	−6.5	−6.4	−0.9	12.2	1.7
COL	18.6	15.4	36.7	27.2	2.2	−21.5	−4.1	10.0	14.5	1.2
CRI	8.5	10.6	37.7	39.2	4.0	−6.7	−4.3	−2.8	11.0	2.8
DOM	22.7	20.7	38.7	17.2	0.8	−1.3	2.9	3.8	−4.8	−0.6
ECU	13.4	16.4	42.0	26.8	1.4	−27.3	−4.4	14.5	16.7	0.5
GTM	47.7	19.6	25.2	7.3	0.2	0.4	5.5	2.5	−7.0	−1.4
HND	49.5	17.0	24.9	8.5	0.2	2.1	1.5	−0.1	−3.2	−0.3
MEX	19.9	17.6	37.8	23.0	1.7	−3.0	−0.3	0.6	2.5	0.2
NIC	33.0	24.1	33.3	9.3	0.3	−14.3	6.9	9.6	−0.8	−1.3
PAN	15.6	11.1	36.1	34.7	2.6	−8.1	−3.7	2.1	9.4	0.4
PER	19.3	13.7	40.5	25.7	0.8	−15.5	−4.4	6.1	13.4	0.4
PRY	15.9	14.0	38.5	30.1	1.5	−14.7	−0.7	5.2	10.3	−0.2
SLV	21.6	21.2	41.4	15.4	0.3	−8.5	3.1	7.5	−1.9	−0.2
URY	3.9	6.4	32.3	54.5	2.9	−0.9	−2.7	−5.1	8.7	0.0
VEN	10.7	13.8	45.9	29.1	0.6	−20.7	−7.7	9.7	18.3	0.4
Region	15.9	13.7	37.6	30.5	2.3	−12.9	−3.7	5.2	10.9	0.6

(a) Last year is 2012 in Bolivia, Honduras and Nicaragua, and 2011 in Chile. (b) First year is 2001 in Brazil, Honduras, Nicaragua and Paraguay

ARG Argentina (only urban), *BOL* Bolivia, *BRA* Brazil, *CHL* Chile, *COL* Colombia, *CRI* Costa Rica, *DOM* Dominican Republic, *ECU* Ecuador, *GTM* Guatemala, *HND* Honduras, *MEX* Mexico, *NIC* Nicaragua, *PAN* Panama, *PER* Peru, *PRY* Paraguay, *SLV* El Salvador, *URY* Uruguay (only urban), *VEN* Venezuela

Table 2 Categorization of Latin American countries, by income distribution and poverty reduction (2000–2013). Source: authors' calculations based on household survey data from IDB's *Sociometro*

Between 2000 and 2013	Cut poverty by less than 25 %	Cut poverty by between 25 and 50 %	Cut poverty by more than half
In 2013			
Mostly poor	DOM, GTM, HND, NIC, SLV		
Mostly vulnerable	MEX	BOL, COL, PER, PRY	ECU, VEN
Mostly middle class or high income		CRI, PAN, URU	ARG, BRA, CHL

ARG Argentina (only urban), *BOL* Bolivia, *BRA* Brazil, *CHL* Chile, *COL* Colombia, *CRI* Costa Rica, *DOM* Dominican Republic, *ECU* Ecuador, *GTM* Guatemala, *HND* Honduras, *MEX* Mexico, *NIC* Nicaragua, *PAN* Panama, *PER* Peru, *PRY* Paraguay, *SLV* El Salvador, *URY* Uruguay (only urban), *VEN* Venezuela

4 Dynamic analysis: poverty is still largely chronic

Income mobility between 2003 and 2013 was considerable. Poverty reduction was the net effect of many exiting poverty, while fewer were falling back. Upward mobility was particularly high for those that started in moderate poverty.

Most of the moderate poor rose to the vulnerable class, and a few (6 %) made it to the middle class (Table 3).[13] In contrast, 73 % of those that were initially extreme poor were still poor after a decade, although many enjoyed less severe poverty and another quarter rose to the vulnerable class. As may be expected (as they started from higher initial living standards), also the vulnerable enjoyed less upper mobility. Only 28 % of them rose to the middle class, while 62 % remained in the initial income category and 10 % fell into poverty.

Chronic poverty was widespread among both the extreme and the moderate poor. Many of those that were initially moderate poor, despite enjoying a high likelihood of rising to the vulnerable class in 2013, were poor in at least 5 years over the period 2004–2013. This may be explained by an ascending trajectory that only rose above the poverty line in the last part of the period of analysis.

On average, 91 % of extreme poverty were chronic (Table 4), with very little country heterogeneity (Fig. 2). In almost all countries with available data, about 90 % or more of the extreme poor in 2003 remained poor in at least five of the following 10 years. The only exceptions were Argentina and Uruguay, for which data are urban only.

More surprisingly, also half of the moderate poor in 2003 was chronically poor.[14] This has important implications for the design and implementation of the social safety nets. In particular, it implies that long-term interventions are not only needed for the extreme poor, but also for an important share of those in moderate poverty.

[13] Table 3 presents the two-point transition matrix, similar to Table 4.1 of Ferreira et al. (2013) and Table 1 of Vakis et al. (2015), using a larger number of income groups and extending the time period to 2013.

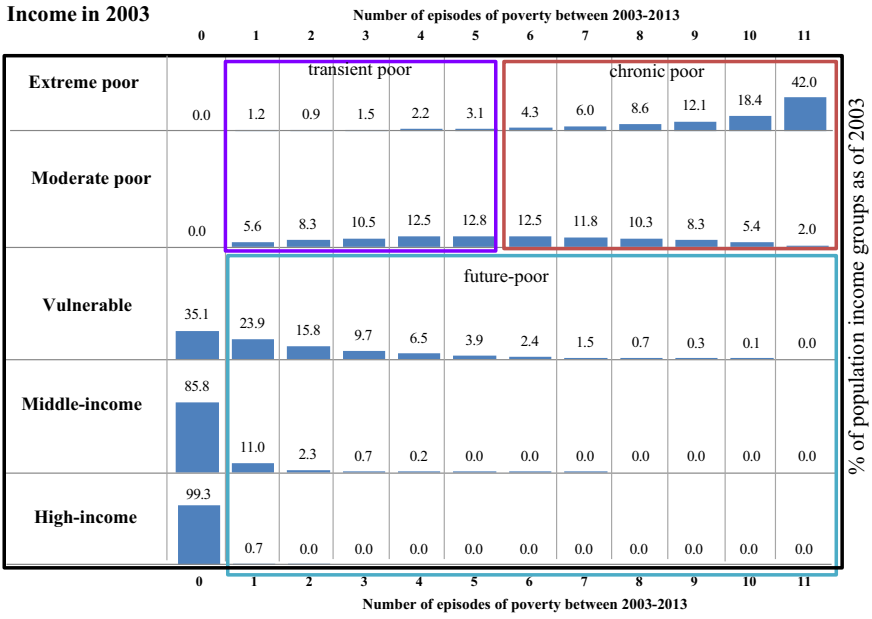
[14] In Annex 4, we perform sensitivity analysis and show that these key results are robust to the adoption of alternative poverty lines.

Table 3 Poverty transition matrix in Latin America (2003–2013), region aggregate. Source: authors' calculations based on synthetic panels built from household survey data from IDB's *Sociometro*

% of individuals	2013					
	Extreme poor	Moderate poor	Vulnerable	Middle class	High income	Total
2003						
Extreme poor	41.2	32.0	25.1	1.0	0.7	100.0
Moderate poor	8.0	23.5	61.6	6.4	0.4	100.0
Vulnerable	2.0	7.7	61.9	28.2	0.3	100.0
Middle class	0.2	0.9	21.1	75.5	2.3	100.0
High income	0.0	0.0	0.7	58.9	40.4	100.0

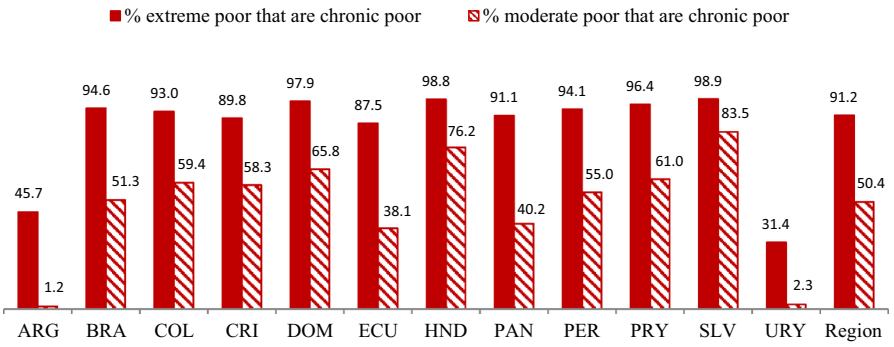
Results based on 12 countries (Argentina (only urban), Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Panama, Peru, Paraguay, El Salvador and Uruguay (only urban))

Table 4 Poverty duration in Latin America (2003–2013), region aggregate. Source: authors' calculations based on synthetic panels built from household survey data from IDB's *Sociometro*



Results based on 12 countries (Argentina (only urban), Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Panama, Peru, Paraguay, El Salvador, and Uruguay (only urban))

In this respect, however, country heterogeneity was substantial (Fig. 2). For example, while extreme poverty was equally chronic in Ecuador and Colombia, in the former moderate poverty was much more transient than in the latter.



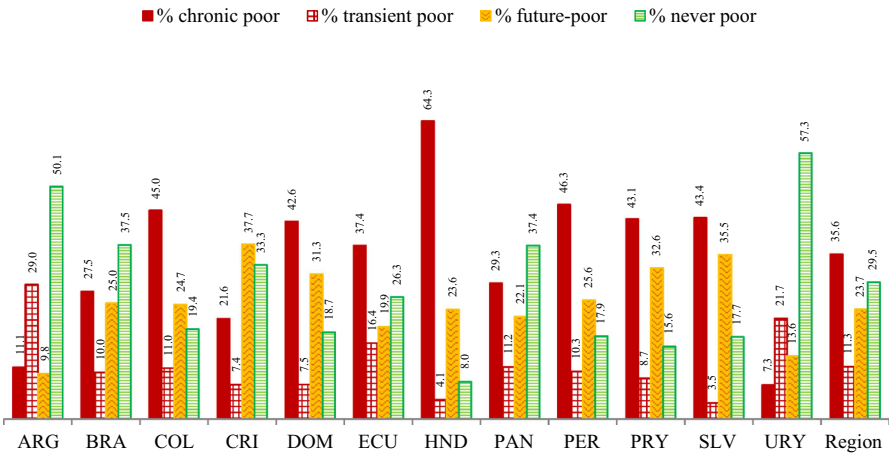
Source: Authors' calculations based on synthetic panels built from household survey data from IDB's *Sociometro*.
Notes: ARG = Argentina (only urban), *BRA* = Brazil, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *HND* = Honduras, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador, *URY* = Uruguay (only urban).

Fig. 2 Chronic poverty in Latin American countries (2003–2013)

An important share of the vulnerable and, more surprisingly, of the middle class experienced poverty over the period 2004–13. More precisely, 65 % of the vulnerable group and 14 % of the middle class of 2003 were poor at least once over the following decade. We call these families "future poor", a group whose share ranged from 10 % of the population in Argentina to 38 % in Costa Rica (Fig. 3). Finally, the share of the population that was never poor ranged from 8 % in Honduras to 57 % in Uruguay (Fig. 3).

The identification of the chronic and transient poor in the samples of 2003 allows investigating the household characteristics that are associated with different poverty durations. In other words, it allows studying who are the chronic poor, how they differ from the transient poor and, for comparison, from the non-poor. We address these questions by looking at Paraguay and Honduras, two countries at different stages of the socio-economic transition.

Household characteristics of the chronic poor broadly mimic those that, in the literature, are commonly associated with extreme poverty. They include larger household size, more children, lower levels of education, more engagement in self-employment, less wage employment, and residence in rural areas. Table 5 reports average household characteristics by dynamic poverty status in Paraguay and Honduras. Despite a few differences between the two countries, most patterns are common and the similarities are striking. In both countries, for example, chronically poor households had no member with complete tertiary education. In Honduras, they did not even have any member with complete secondary education; while in Paraguay, only one in six chronically poor households had one member with this level of schooling. Their likelihood to live in rural areas was ten times higher than among the non-poor. Self-employment decreased and wage employment grew as one moved from chronic poverty to non-poverty. The low level of human capital and the remote location suggest that, at least among the chronic poor, the graduation strategies with which many Latin American countries are attempting to complement the social safety nets have low probability of being successful.



Source: Authors' calculations based on synthetic panels built from household survey data from IDB's *Sociometro*.
Notes: ARG = Argentina (only urban), *BRA* = Brazil, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *HND* = Honduras, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador, *URY* = Uruguay (only urban).

Fig. 3 Poverty dynamics in Latin American countries (2003–2013)

Table 5 Household Characteristics in Paraguay and Honduras (2003), by Poverty Status. Source: authors' calculations based on synthetic panels built from household survey data from IDB's *Sociometro*

Characteristic in 2003	Paraguay			Honduras		
	Chronic poor	Transient poor	Not poor	Chronic poor	Transient poor	Not Poor
% of population	43.1	8.7	48.2	64.3	4.1	31.6
Household head (share)						
Male	0.51	0.51	0.48	0.80	0.72	0.72
Single	0.04	0.06	0.08	0.21	0.27	0.27
Adult members (number)						
Self-employed	1.03	0.72	0.45	0.76	0.52	0.30
Salaried	0.48	1.11	1.48	0.74	1.30	1.44
Unemployed	0.14	0.21	0.16	0.08	0.14	0.16
Inactive	0.89	0.82	0.84	1.13	0.91	0.98
Primary education or less	1.24	0.69	0.25	1.12	0.59	0.26
Incomplete secondary educ.	0.46	0.79	0.65	0.27	1.03	1.10
Complete secondary educ.	0.16	0.51	0.82	0.01	0.06	0.12
Incomplete tertiary educ.	0.05	0.27	0.66	0.01	0.18	0.60
Complete tertiary educ.	0.00	0.04	0.41	0.00	0.04	0.38
Children (aged 0–5)	1.17	0.72	0.48	1.16	0.74	0.49
Children (aged 6–14)	2.01	1.20	0.85	1.99	1.19	0.96
Elderly (65 and older)	0.20	0.24	0.30	0.24	0.20	0.25
Members (total)	6.55	5.34	4.66	6.50	5.14	4.59
Rural (share)	0.69	0.28	0.08	0.73	0.17	0.06

Table 6 Geographic profile of poverty in Latin America (2000–2013), region aggregate. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	2000			2013		
	Urban	Rural	Total	Urban	Rural	Total
Panel A—Incidence						
Extreme poor	19.1	55.4	28.8	9.8	34.8	15.9
Moderate poor	17.0	18.3	17.4	12.2	19.4	13.7
Vulnerable	37.1	20.0	32.4	39.6	32.5	37.6
Middle class	24.6	6.0	19.6	35.5	12.9	30.5
High income	2.2	0.4	1.7	2.9	0.4	2.3
Total	100	100	100	100	100	100
Panel B—geographic distribution						
Extreme poor	46.4	53.6	100	42.3	57.7	100
Moderate poor	70.0	30.0	100	62.0	38.0	100
Vulnerable	82.2	17.8	100	77.7	22.3	100
Middle class	91.0	9.0	100	89.7	10.3	100
High income	92.7	7.3	100	95.9	4.1	100
% of the population	71.6	28.4	100	73.7	26.3	100

Results based on 15 countries (Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador)

5 Differences between urban and rural areas

The region has undergone a process of urbanization, which has been slowing down in recent years. The urban share of the population has been growing from 49 % in 1960 to 80 % in 2013, and is expected to reach 83 % in 2025 (ECLAC 2013). In our sample of countries, this figure has increased from 72 % in 2000 to 74 % in 2013 (Table 6, panel B). In this context, it is extremely important to understand the different urban–rural trends in poverty reduction, as when it comes to poverty, cities and countryside remain two worlds apart.[15]

Extreme and overall poverty have decreased substantially in both urban and rural areas. Yet, in the latter, one-third of the population still lives in extreme poverty, and the incidence of total poverty exceeds 50 % (Table 6, panel A).

The growth of a middle class is an eminently urban phenomenon. In rural areas, poverty reduction has been accompanied by an expansion of the vulnerable class, and only 13 % of the population had per-capita income above $10 in 2013. In contrast, the size of the vulnerable class remained fairly constant in urban areas. This is where the middle class expanded more rapidly (by over 10 pp).

As a result, the rural nature of poverty has intensified, with a substantial increase of the share of poor living in rural areas. While in 2000 the rural areas were home to 54 % of the extreme poor and 30 % of the moderate poor, these figures increased to 58 and

[15] It is relevant to acknowledge that the term urban refers to very different sizes of human settlements (Satterthwaite 2010), that may range from as few as 2500 to as many as several million inhabitants. Despite this heterogeneity, in this paper we use the terms urban areas and cities as synonims.

38 %, respectively, in 2013. In addition, the rural share of vulnerable expanded, and only the high-income class became more urban during the period of analysis.

In 2013, the majority of the extreme poor lived in urban areas only in four countries (Brazil, Chile, Colombia and Dominican Republic). In contrast, with few exceptions, moderate poverty was fairly equally distributed between urban and rural areas (Fig. 4). This suggests that long-term social safety net programs are best suited for rural areas, while short-term interventions are equally needed in urban and rural areas.

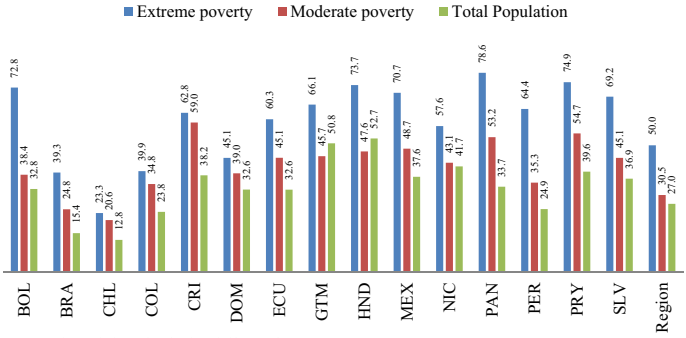
In the near future, in urban areas, poverty is expected to leave way to a rising middle class (Fig. 5). This forecast is obtained by combining economic growth and demographic projections with the estimated growth elasticity of poverty. While the size of the vulnerable class will remain fairly stable (at around 40 % of the urban population), by 2025 the incidence of urban poverty is expected to fall to 13 %. The middle class will rise to represent 42 % of the urban population.

In contrast, the growth of the middle class will be slow in rural areas. Poverty will be mostly replaced by vulnerability. The vulnerable class is expected to become the single largest group in 2021, and grow to 47 % of the rural population in 2025.

Failing to account for substantial rural to urban migration may bias the results of the poverty dynamic analysis based on the pseudo-panel methodology (which assumes that household characteristics, including residence in rural or urban areas, are constant over time). For example, one may overestimate the number of poverty episodes in rural areas, if some rural families have migrated to urban areas and have managed, through migration, to transition to the vulnerable class. The direction of the bias will depend on who migrates (usually not the poorest) and how migration affects their income.

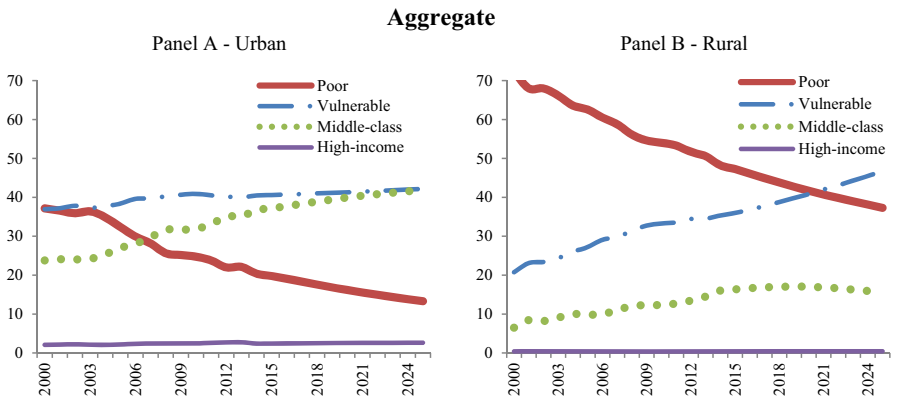
In Annex 5, we analyze the variation in the proportion of urban population over the period 2003–2013. We show that its magnitude is small, and does not threaten the validity of our findings. This result is consistent with the slowdown in the process of urbanization documented in CELADE—Population Division of ECLAC (2015).

The urban and rural poverty dynamics analyses confirm that most of the mobility out of poverty took place in urban areas. In the cities, 35 % of the extreme poor and



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: BOL = Bolivia, *BRA* = Brazil, *CHL* = Chile, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *GTM* = Guatemala, *HND* = Honduras, *MEX* = Mexico, *NIC* = Nicaragua, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador.

Fig. 4 Rural percentage of poverty and population in Latin American countries (2013)



Source: Authors' calculations based on household survey data from IDB's *Sociometro* and population growth estimates from the Population Division of the United Nation Economic Commission for Latin America and the Caribbean (CELADE, ECLAC).
Notes: projections for 2014-2025 were obtained using linear models on log of the Gini coefficient, log of Gross Domestic Product (GDP) per capita (current and one-year lagged), log of general government expenditure as percentage of GDP (current and one-year lagged), and country dummy variables. Data on GDP per capita and general government expenditure until 2019 are from the International Monetary Fund World Economic Outlook (October 2014) and for 2020-2025 are projections based on the growth rate 2000-2019. Data on population until 2025 are from ECLAC (2013). Projections for the region are population-weighted averages. Results based on 15 countries (Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Peru, Paraguay, El Salvador).

Fig. 5 Poverty, vulnerability, and middle class in Latin America (2000–2025), region aggregate

73 % of the moderate poor in 2003 had exited poverty after 10 years, against only 15 and 53 % in rural areas (Table 7). A similar pattern can be observed for upward mobility from the vulnerable class. Symmetrically, the risk of falling from the middle class to the vulnerable class or into poverty was more than double in rural than in urban areas (44 versus 21 %). This may also be due to the differential urban–rural impacts of the world recession in the second part of the period of analysis.

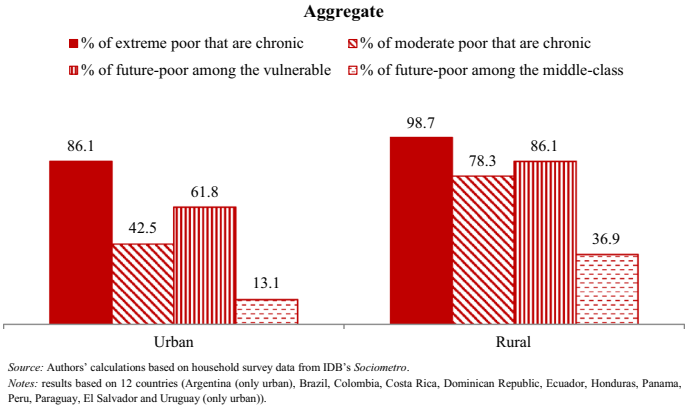
Rural areas are characterized by high incidence of chronic poverty and future poverty. 99 % of the extreme poor and 78 % of those that were moderate poor in 2003 experienced chronic poverty between 2004 and 2013. Furthermore, 86 % of the vulnerable and 37 % of the middle class were poor at least once during the period of analysis. The picture is relatively rosier in urban areas, where "only" 86 % of extreme poverty and 42 % of moderate poverty were chronic, and where "only" 62 % of the vulnerable experienced at least one episode of poverty (Fig. 6).

Cross-country analysis shows that Ecuador and Panama present the widest gap between rural and urban areas, a result that is driven by the highly transient nature of urban moderate poverty. Variability is limited in the percentage of extreme poor that are chronic poor, both in rural and urban areas. More differences emerge when looking at the percentage of moderate poor that experience chronic poverty. This is, particularly, the case in urban areas. While in El Salvador 71 % of urban moderate poor experience chronic poverty over the following decade, the same happens to only one every five urban moderate poor in Ecuador and Panama. This indicates that in these countries, urban moderate poverty is particularly transient (Fig. 7). Complete data by country is presented in Annex 6, for the 12 countries for which we can construct synthetic panels.

Table 7 Urban and rural poverty transition matrices in Latin America (2003–2013), region aggregate. Source: authors' calculations based on household survey data from IDB's *Sociometro*

% of individuals	2013					
	Extreme poor	Moderate poor	Vulnerable	Middle class	High income	Total
Panel A—Urban						
2003						
Extreme poor	29.9	34.9	32.8	1.5	0.9	100
Moderate poor	6.1	20.9	65.0	7.6	0.5	100
Vulnerable	1.5	6.6	61.4	30.2	0.3	100
Middle class	0.2	0.7	20.2	76.5	2.4	100
High income	0.0	0.0	0.6	59.9	39.5	100
Panel B—Rural						
2003						
Extreme poor	57.7	27.6	14.1	0.3	0.3	100
Moderate poor	14.5	32.9	50.0	2.4	0.3	100
Vulnerable	5.3	15.0	65.8	13.8	0.1	100
Middle class	1.0	3.3	39.5	55.9	0.3	100
High income	0.0	0.0	2.7	35.6	61.7	100

Results based on 12 countries (Argentina (only urban), Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Panama, Peru, Paraguay, El Salvador, and Uruguay (only urban))

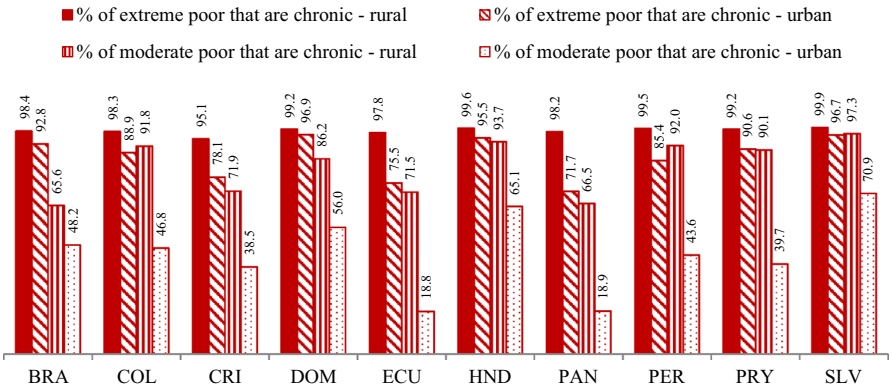


Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: results based on 12 countries (Argentina (only urban), Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, Honduras, Panama, Peru, Paraguay, El Salvador and Uruguay (only urban)).

Fig. 6 Urban and rural poverty dynamics in Latin America (2003–2013), region aggregate

6 Conclusions and implication for the design and implementation of social safety nets

In the absence of information on poverty dynamics, development practitioners frequently assume that extreme poverty is chronic and rural, while moderate poverty is transient and urban. Similarly, they tend to expect that the vulnerable are at risk of falling into poverty, while the middle class has reached a safe place and no longer needs a social safety net.



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: BRA = Brazil, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *HND* = Honduras, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador

Fig. 7 Urban and rural chronic poverty in Latin American countries (2003–2013)

In this paper, we construct synthetic panels and analyze poverty dynamics for a large sample of Latin American countries, with the aim to provide policy makers and development practitioners (engaged in project design) with estimates of the duration of poverty. While the availability of real long panel data would allow refining and deepening the analysis, we believe that our results constitute a useful proxy and hope they will stimulate further data collection and research. Our analysis contributes to debunking a few common assumptions.

First, we show that chronic poverty is widespread also among the moderate poor. This type of poverty, characterized by long duration, accounts for 91 % of extreme poverty and, surprisingly, 50 % of moderate poverty. As expected, chronic poverty is more frequent in rural areas, where 99 % of the extreme poor and as many as 78 % of the moderate poor are chronic poor.

Second, we show that also the middle class is still exposed to a substantial risk of falling back into poverty. More specifically, we find that 14 % of those that belonged to the middle class in 2003 experienced at least one poverty episode during the following decade.

Our results differ from those of Ferreira et al. (2013) and Vakis et al. (2015), although they are based on the application of a similar synthetic panel methodology. These authors analyze mobility between two periods only, and find that the vulnerable and the middle class are more consolidated in their status. For example, Ferreira et al. (2013, Table 4.1) estimate that only 2.7 % of the vulnerable and 0.5 % of the middle class fall back into poverty.

Our findings have important implications for the design and implementation of social safety nets. First, they suggest that interventions that target the rural poor and the urban extreme poor need to adopt a long-term perspective. The frequent recertification of the beneficiaries might not be needed and, probably, represents a loss of administrative and financial resources.

Second, our findings suggest that interventions that target the urban moderate poor need to adopt flexible entry and exit rules in response to this group's high income

mobility. Targeting mechanisms based on proxy means tests are unlikely to perform satisfactorily. The Brazilian model based on declared income may represent a better alternative, if it can be coupled with frequent recertification and electronic audits of eligibility based on crossing information from the roster of beneficiaries with other sources of administrative data (e.g., social security contributions, ownership of assets).

Third, we show that the chronic poor have extremely low levels of human capital and live in rural areas with limited opportunity of wage employment. These are key factors for escaping poverty. Consequently, our findings suggest that, at least for this group, graduation strategies aimed at increasing income-generation capacity have low probabilities of success.[16]

Finally, the finding that both the vulnerable and the middle class are likely to experience poverty in the future implies that the social safety nets remain relevant for many that are currently out of poverty.[17]

A caveat is worth mentioning. Our dynamic analysis is based on 12 countries for which data are available. Further work is needed to incorporate results for more countries and increase the representativeness of our findings.

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Annex 1: Data sources

IDB's Harmonized Data Bank of Household Surveys from Latin America and the Caribbean (also known as IDB's *Sociometro*) contains harmonized household data sets for Latin American and Caribbean countries starting from the late 1980s. Variable names, definitions, and contents are kept constant across countries and time. Table 8 shows the number of data sets used for the preparation of this paper.

Although it is well known that per-capita consumption is a better proxy for well-being, we use per-capita income, because few countries in the region routinely conduct surveys with a consumption module, while all of them include questions on income. We calculate per-capita income by dividing total household income by the number of household members, without using any adult equivalence scale.

Income components are reported after-tax whenever possible. Extraordinary income sources are not considered. Similarly, we do not include the implicit rent from owned or occupied housing, because not all countries capture the information

[16] For a review of the experience with recertification and graduation in Latin American conditional cash transfer programs, see Medellín et al. (2015).

[17] For an estimate of the demand for social safety nets in Latin American countries, see Ibarraran et al. (2016).

Table 8 Data sets used in this paper, by Country, 2000–2013

Country	Geographic coverage	Survey year		# of surveys	Average observations per survey
		Initial	Final		
ARG	Urban	2000	2013	14	112,282
BOL	National	2000	2012	11	23,280
BRA	National	2001	2013	12	384,241
CHL	National	2000	2011	5	245,192
COL	National	2000	2013	14	172,354
CRI	National	2000	2013	14	43,100
DOM	National	2000	2013	14	28,051
ECU	National	2000	2013	13	75,818
GTM	National	2000	2013	9	29,275
HND	National	2001	2013	13	63,955
MEX	National	2000	2012	8	80,655
NIC	National	2001	2012	6	31,306
PAN	National	2000	2013	14	49,091
PER	National	2000	2013	14	85,462
PRY	National	2000	2013	13	25,986
SLV	National	2000	2013	14	74,010
URY	Urban until 2005, national since 2006	2000	2013	14	108,960
VEN	National	2000	2013	14	159,906
Total				216	

that allows estimating it.[18] As is common practice in academic and official studies, we do not make any imputation for missing, null or outlying values in addition to those already contained in the data sets provided by the national statistical offices. Finally, we do not make adjustments for differences in urban–rural prices.

Annex 2: Synthetic-panel methodology

Table 9 summarizes the existing literature comparing results from genuine panel data with non-parametric, parametric, and point estimate synthetic-panel methods. All results reported are based on the use of household time-invariant characteristics, sub-national controls, and region fixed effects, consistently with the definition of our own model. They show that the estimates based on the average of the bounds (Eq. (4)) approximate well the estimates based on genuine panel data, irrespective of the length of the period analyzed (2 years in Peru, versus 10 in Chile), the width of the bounds, the type of poverty transition, and the number of replications used to obtain the upper bound (50, 100, 500). These estimates are found to be as accurate

[18] Given our definition of the income variables, our poverty estimates may differ from the official ones and from those calculated by other institutions that use the same household surveys.

Table 9 Summary of the literature comparing estimates from synthetic and genuine panel data

References	Country, years, type of transition	Non-parametric approach			Genuine panel	Parametric approach			Point estimate approach	Genuine panel
		Lower	Upper	Average		Lower	Upper	Average		
Cruces et al. (2011)	Peru 2008–2009									
	Poor, poor	30.81	17.21	24.01	23.57					
	Poor, non-poor	4.29	17.62	10.96	9.96					
	Non-poor, poor	2.77	16.37	9.57	10.00					
	Non-poor, non-poor	62.13	48.80	55.47	56.46					
	Nicaragua 2001–05									
	Poor, poor	39.44	30.97	35.21	35.68					
	Poor, non-poor	0.00	9.89	4.95	3.35					
	Non-poor, poor	22.36	30.83	26.60	26.12					
	Non-poor, non-poor	38.20	28.31	33.26	34.85					
	Chile 1996–06									
	Poor, poor	6.68	2.66	4.67	4.64					
	Poor, non-poor	10.35	20.66	15.51	19.59					
	Non-poor, poor	0.92	4.94	2.93	2.96					
	Non-poor, non-poor	82.06	71.75	76.91	72.82					
Haynes et al. (2013)	Philippines 2003–09									
	Poor, poor	40.62	25.66	33.14	33.53					
	Poor, non-poor	16.39	7.33	11.86	10.37					
	Non-poor, poor	17.01	2.06	9.54	9.14					
	Non-poor, non-poor	50.00	40.93	45.47	46.95					

Table 9 continued

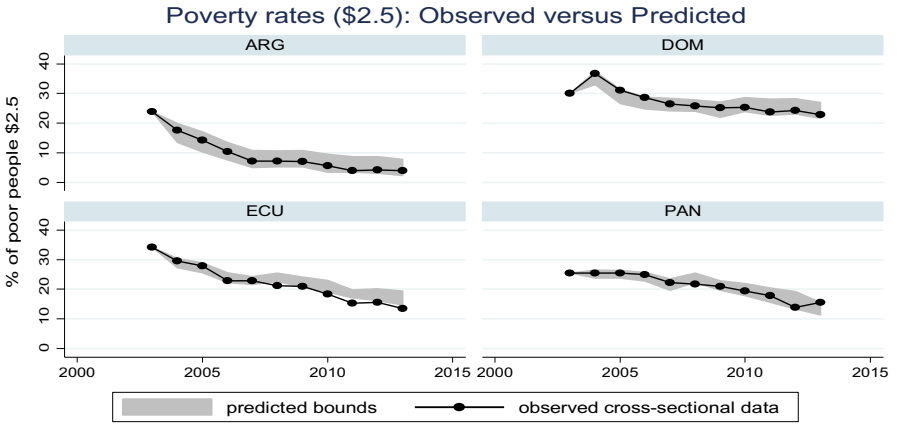
References	Country, years, type of transition	Non-parametric approach			Genuine panel	Parametric approach			Point estimate approach	Genuine panel
		Lower	Upper	Average		Lower	Upper	Average		
Dang et al. (2014)	Indonesia 1997–00									
	Poor, poor	13.80	3.50	8.65	7.30	10.10	6.30	9.38		
	Poor, non-poor	1.90	11.10	6.50	10.10	8.10	11.90	7.30		
	Non-poor, poor	2.60	13.00	7.80	8.30	6.90	10.70	7.35		
	Non-poor, non-poor	81.70	72.40	77.05	74.30	74.80	71.10	75.93		
	Vietnam 2006–08									
	Poor, poor	12.50	8.10	10.30	9.90	9.10	6.30	9.70		
	Poor, non-poor	2.50	7.90	5.20	5.90	5.50	8.80	5.35		
	Non-poor, poor	4.00	8.50	6.25	4.90	5.60	8.40	5.93		
	Non-poor, non-poor	80.90	75.50	78.20	79.30	79.90	72.10	79.05		
Dang and Lanjouw (2013)	Bosnia-Herzegovina 2001–04									
	Poor, poor								10.80	8.20
	Poor, non-poor								13.10	12.60
	Non-poor, poor								10.90	12.10
	Non-poor, non-poor								69.20	67.20

Upper bound estimations are based on 50 replications in Cruces et al., 100 replications in Haynes et al., and 500 replication Dang et al

as those obtained with either the parametric approach (for Indonesia and Vietnam) or the point estimate approach (Bosnia-Herzegovina).

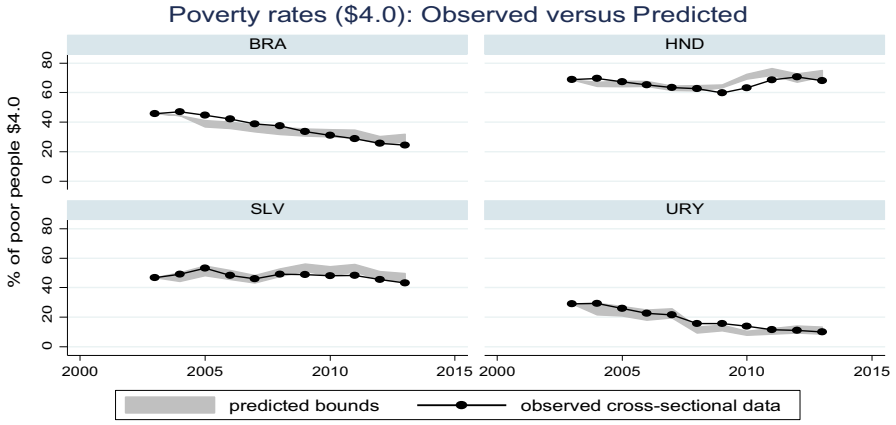
Annex 3: Estimate bounds

See Figs. 8, 9, 10.



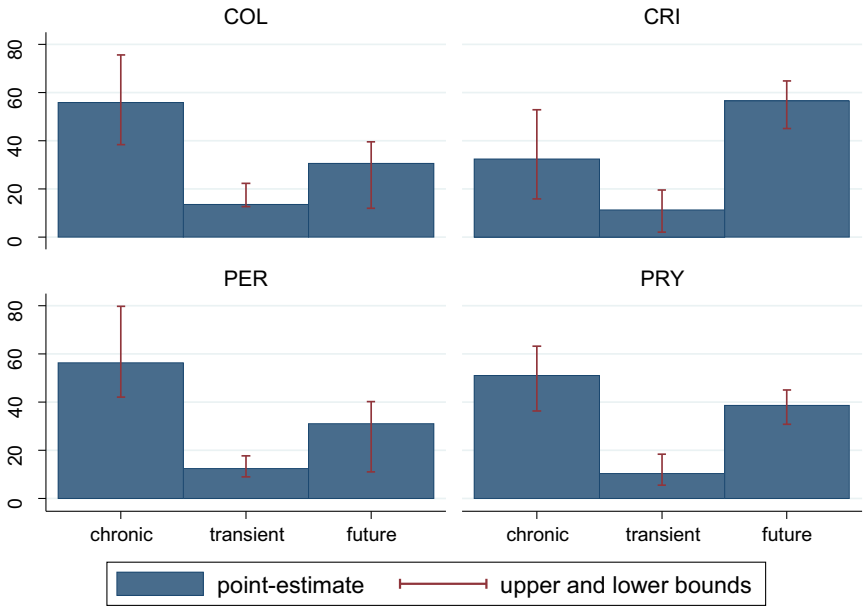
Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: ARG = Argentina (only urban); *DOM* = Dominican Republic; *ECU* = Ecuador; *PAN* = Panama.

Fig. 8 Observed versus predicted extreme poverty headcounts in selected countries



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: BRA = Brazil; *HND* = Honduras; *SLV* = El Salvador; *URY* = Uruguay (only urban).

Fig. 9 Observed versus predicted poverty headcounts in selected countries



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: COL = Colombia; *CRI* = Costa Rica; *PER* = Peru; *PRY* = Paraguay.

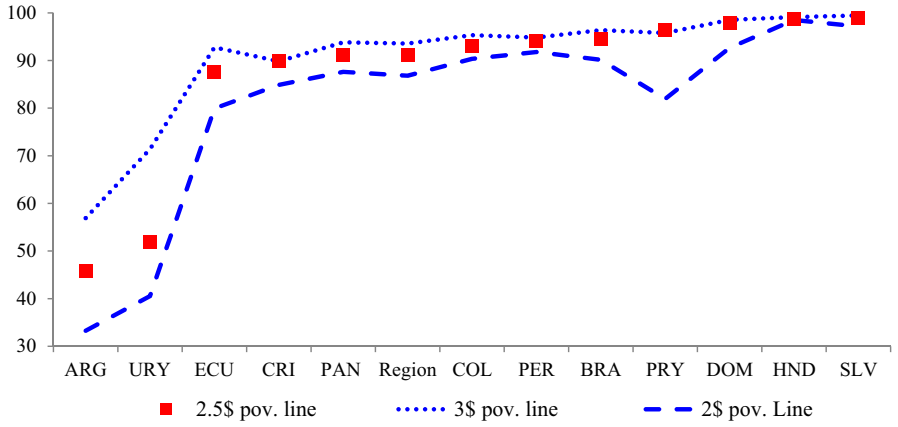
Fig. 10 Bounds for the estimates of transient poverty, chronic poverty and future poverty in selected LAC countries

Annex 4: Sensitivity analysis of the percentage of chronic poverty to the adoption of alternative poverty lines

Poverty lines are defined with a degree of arbitrariness. To show that our findings are robust to the adoption of alternative poverty lines, we perform sensitivity analysis of our key chronic poverty results. In Sect. 4, we showed that chronic poverty accounted for 91 % of extreme poverty and 50 % of moderate poverty. This occurs when using a 2.5$ extreme poverty line and a 4$ moderate poverty line. In Figs. 11 and 12, we verify how these findings change when considering poverty lines that are 20 % lower or higher.

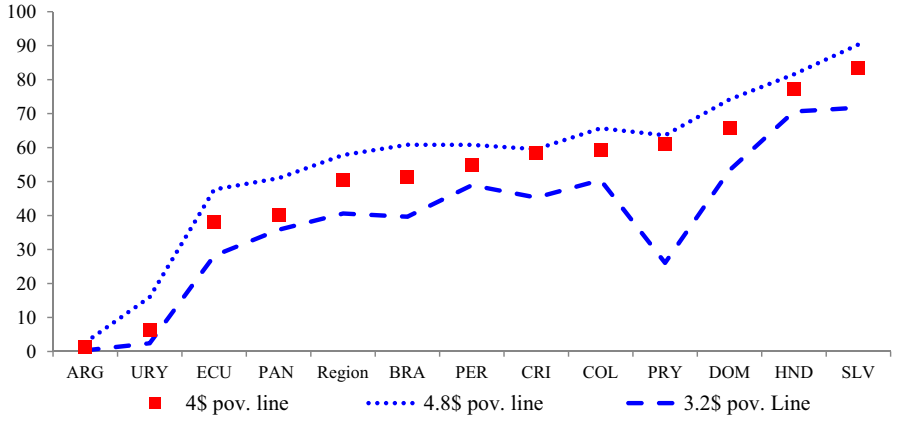
With lower poverty lines, i.e., using a 2$ extreme poverty line and a 3.2$ moderate poverty line, we find that chronic poverty accounted for 87 % of extreme poverty and 41 % of moderate poverty. With higher poverty lines, i.e., using a 3$ extreme poverty line and a 4.8$ moderate poverty line, chronic poverty accounted for 94 % of extreme poverty and 58 % of moderate poverty.

Overall, the higher the poverty lines, the higher are the percentages of both extreme and moderate poverty that are found to be chronic. The result is less sensitive for extreme than for moderate poverty. Finally, different poverty lines do not alter the order of magnitude of our key results, nor country rankings.



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: ARG = Argentina (only urban), *BRA* = Brazil, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *HND* = Honduras, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador, *URY* = Uruguay (only urban).

Fig. 11 Percentage of extreme poor that are chronic poor, sensitivity analysis to the adoption of alternative poverty lines



Source: Authors' calculations based on household survey data from IDB's *Sociometro*.
Notes: ARG = Argentina (only urban), *BRA* = Brazil, *COL* = Colombia, *CRI* = Costa Rica, *DOM* = Dominican Republic, *ECU* = Ecuador, *HND* = Honduras, *PAN* = Panama, *PER* = Peru, *PRY* = Paraguay, *SLV* = El Salvador, *URY* = Uruguay (only urban).

Fig. 12 Percentage of moderate poor that are chronic poor, sensitivity analysis to the adoption of alternative poverty lines

Annex 5: Variation in the percentage of urban population

As a proxy for rural to urban migration, we test whether the percentage of urban population has changed significantly over the period 2003–2013, which is the timeframe of our poverty dynamics analysis. Given the large size of our samples,

Table 10 Effect size analysis of the variation in the percentage of urban population. Source: authors' calculations based on household survey data from IDB's *Sociometro*

Country	2003				2013				Pooled SD	*d*
	Obs.	Mean	SD	Var.	Obs.	Mean	SD	Var.		
BRA	168000000	0.84	0.37	0.13	194000000	0.85	0.36	0.13	0.36	−0.016
COL	40700000	0.74	0.44	0.19	45800000	0.77	0.42	0.18	0.43	−0.054
CRI	3512837	0.58	0.49	0.24	4696885	0.62	0.49	0.24	0.49	−0.087
DOM	8617583	0.71	0.45	0.21	10200000	0.67	0.47	0.22	0.46	0.074
ECU	12800000	0.66	0.47	0.22	15800000	0.68	0.47	0.22	0.47	−0.034
HND	6800938	0.46	0.50	0.25	8535692	0.47	0.50	0.25	0.50	−0.023
PAN	3030994	0.63	0.48	0.23	3728782	0.66	0.47	0.22	0.48	−0.078
PER	27500000	0.70	0.46	0.21	31600000	0.75	0.43	0.19	0.45	−0.128
PRY	5670238	0.56	0.50	0.25	6709530	0.60	0.49	0.24	0.49	−0.074
SLV	6237766	0.60	0.49	0.24	6164886	0.63	0.48	0.23	0.49	−0.056

Obs. number of observations, *SD* standard deviation, *Var.* variance, *d* Cohen's *d* effect size indicator

the standard error of each sample mean tends to be very close to zero. As a consequence, the *t* test is likely to reject the null hypothesis of means equality even when the difference is trivial (producing type I–false positive–errors).

We, therefore, adopt an alternative hypothesis testing framework by conducting an effect size type analysis, in which the measure of statistical difference is the standard deviation (which is not shrunk by definition by the size of the sample). Specifically, we use the Cohen's *d* indicator (Cohen 1988), which is equal to the difference between the two sample means, divided by the standard deviation of the pooled samples. Cohen explains that absolute values of d around 0.2 reflect a small effect size, while 0.5 is a medium effect size and 0.8 indicates a large effect size. The last column of Table 10 shows that the absolute values of Cohen's *d* are all smaller than 0.2 in our sample of countries, suggesting that rural-to-urban migration is not likely to threaten the validity of our poverty dynamic results.

Annex 6: Country profiles

Country profiles—Argentina. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	–	–	–	–	–	–
Urban	14.9	15.4	36.5	31.3	2.0	100.0
Rural	–	–	–	–	–	–
Incidence in 2013—total	–	–	–	–	–	–
Urban	4.0	6.9	34.4	52.5	2.2	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Rural	–	–	–	–	–	–
Share rural in 2000	–	–	–	–	–	–
Share rural in 2013	–	–	–	–	–	–
Transition probabilities—total						
Extreme poverty	–	–	–	–	–	–
Moderate poverty	–	–	–	–	–	–
Vulnerable class	–	–	–	–	–	–
Middle class	–	–	–	–	–	–
High income	–	–	–	–	–	–
Transition probabilities—urban						
Extreme poverty	5.9	20.5	63.7	7.3	2.7	100.0
Moderate poverty	0.5	2.0	65.2	31.2	1.2	100.0
Vulnerable class	0.1	0.6	27.2	71.1	1.0	100.0
Middle class	0.0	0.1	2.6	90.7	6.7	100.0
High income	0.0	0.0	0.0	33.3	66.7	100.0
Transition probabilities—rural						
Extreme poverty	–	–	–	–	–	–
Moderate poverty	–	–	–	–	–	–
Vulnerable class	–	–	–	–	–	–
Middle class	–	–	–	–	–	–
High income	–	–	–	–	–	–
% of chronic poverty—total	–	–				–
Urban	45.7	1.2				27.7
Rural	–	–				–
% future poor—total			–	–	–	–
Urban			25.6	2.5	0.0	16.3
Rural			–	–	–	–

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	11.1	29.0	9.8	50.1	100.0
Male household head	0.476	0.483	0.507	0.476	0.481
Household size	6.222	5.294	4.389	3.577	4.448
Number of children (aged 0–5)	1.096	0.709	0.524	0.284	0.521
Adult members					
Self-employed	0.348	0.342	0.349	0.309	0.327
Salaried	1.060	1.147	1.372	1.233	1.202
Unemployed	0.538	0.388	0.205	0.178	0.282
Inactive	0.851	0.980	0.854	0.825	0.876
Primary education or less	0.527	0.355	0.321	0.144	0.265
Incomplete secondary educ.	0.759	0.725	0.632	0.386	0.550

continued

	Chronic poor	Transient poor	Future poor	Never poor	Total
Complete secondary educ.	0.298	0.495	0.537	0.582	0.521
Incomplete tertiary educ.	0.136	0.250	0.263	0.514	0.371
Complete tertiary educ.	0.025	0.122	0.113	0.512	0.306
Rural (share)	–	–	–	–	–

– Not available

Country Profiles—Brazil. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2001—total	27.1	16.8	32.5	21.3	2.3	100.0
Urban	21.9	16.6	34.5	24.4	2.7	100.0
Rural	54.3	18.3	21.9	5.3	0.3	100.0
Incidence in 2013—total	10.4	10.8	38.5	36.7	3.6	100.0
Urban	7.5	9.6	38.6	40.2	4.1	100.0
Rural	26.5	17.5	37.6	17.8	0.6	100.0
Share rural in 2001	32.4	17.6	10.9	4.0	2.1	16.2
Share rural in 2013	39.3	24.9	15.1	7.5	2.4	15.4
Transition probabilities—total						
Extreme poverty	36.2	37.0	26.0	0.7	0.0	100.0
Moderate poverty	5.9	23.7	65.9	4.5	0.0	100.0
Vulnerable class	1.3	6.6	67.7	24.4	0.0	100.0
Middle class	0.1	0.8	22.1	75.6	1.4	100.0
High income	0.0	0.0	0.7	64.9	34.4	100.0
Transition probabilities—urban						
Extreme poverty	31.8	38.1	29.2	0.8	0.0	100.0
Moderate poverty	5.7	23.1	66.5	4.6	0.0	100.0
Vulnerable class	1.2	6.4	67.3	25.1	0.0	100.0
Middle class	0.1	0.7	21.6	76.2	1.4	100.0
High income	0.0	0.0	0.7	64.7	34.6	100.0
Transition probabilities—rural						
Extreme poverty	45.4	34.7	19.4	0.5	0.0	100.0
Moderate poverty	6.6	26.3	63.4	3.7	0.0	100.0
Vulnerable class	1.7	8.6	71.7	18.0	0.0	100.0
Middle class	0.4	1.9	35.2	62.3	0.1	100.0
High income	0.0	0.0	0.0	79.9	20.1	100.0
% of chronic poverty—total	94.6	51.3				77.8
Urban	92.8	48.2				73.4
Rural	98.4	65.6				89.8

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
% future poor—total			65.2	11.5	0.3	42.1
Urban			63.5	11.0	0.3	40.0
Rural			79.1	23.0	0.0	67.5

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	27.5	10.0	25.0	37.5	100.0
Male household head	0.495	0.496	0.487	0.487	0.490
Household size	4.872	4.289	3.661	3.471	3.986
Number of children (aged 0–5)	0.784	0.426	0.315	0.211	0.416
Adult members					
Self-employed	0.423	0.354	0.401	0.349	0.383
Salaried	0.786	0.945	1.189	1.197	1.057
Unemployed	0.171	0.215	0.121	0.107	0.139
Inactive	0.652	0.912	0.633	0.735	0.704
Primary education or less	1.323	1.196	1.156	0.694	1.033
Incomplete secondary educ.	0.107	0.179	0.191	0.159	0.155
Complete secondary educ.	0.134	0.397	0.477	0.753	0.478
Incomplete tertiary educ.	0.007	0.057	0.082	0.570	0.242
Complete tertiary educ.	0.000	0.001	0.002	0.052	0.020
Rural (share)	0.310	0.123	0.125	0.044	0.145

Country Profiles—Colombia. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	40.1	19.5	26.7	12.7	1.0	100.0
Urban	30.3	20.2	31.8	16.5	1.3	100.0
Rural	66.2	17.8	13.3	2.5	0.1	100.0
Incidence in 2013—total	18.6	15.4	36.7	27.2	2.2	100.0
Urban	11.4	13.2	39.2	33.4	2.8	100.0
Rural	42.3	22.7	28.4	6.6	0.1	100.0
Share rural in 2000	45.2	25.0	13.7	5.4	3.5	27.4
Share rural in 2013	53.2	34.5	18.1	5.7	1.0	23.4
Transition probabilities—total						
Extreme poverty	49.7	29.4	19.2	0.6	1.0	100.0
Moderate poverty	12.6	29.9	53.4	3.3	0.8	100.0
Vulnerable class	3.5	12.6	59.1	23.7	1.0	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Middle class	0.3	0.9	24.1	70.8	3.9	100.0
High income	0.0	0.0	0.0	25.8	74.2	100.0
Transition probabilities—urban						
Extreme poverty	35.9	35.4	27.0	1.0	0.7	100.0
Moderate poverty	9.4	24.2	61.1	4.6	0.8	100.0
Vulnerable class	2.6	10.4	59.5	26.4	1.1	100.0
Middle class	0.2	0.8	23.0	72.0	4.1	100.0
High income	0.0	0.0	0.0	29.7	70.3	100.0
Transition probabilities—rural						
Extreme poverty	67.6	21.6	9.2	0.1	1.5	100.0
Moderate poverty	20.7	44.8	33.6	0.0	0.9	100.0
Vulnerable class	9.6	27.1	56.6	6.4	0.2	100.0
Middle class	3.8	3.4	51.5	41.3	0.0	100.0
High income	0.0	0.0	0.0	3.9	96.1	100.0
% of chronic poverty—total	93.0	59.4				80.4
Urban	88.9	46.8				70.7
Rural	98.3	91.8				96.5
% future poor—total			74.5	23.5	0.6	56.0
Urban			71.7	22.7	0.7	53.0
Rural			92.2	44.4	0.0	81.2

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	45.0	11.0	24.7	19.4	100.0
Male household head	0.743	0.810	0.712	0.791	0.752
Household size	5.814	5.194	4.603	3.928	5.082
Number of children (aged 0–5)	0.986	0.773	0.458	0.384	0.716
Adult members					
Self-employed	0.944	0.774	0.770	0.476	0.792
Salaried	0.466	0.811	1.056	1.198	0.791
Unemployed	0.326	0.447	0.290	0.245	0.315
Inactive	0.947	0.813	0.875	0.753	0.877
Primary education or less	0.887	0.372	0.466	0.122	0.578
Incomplete secondary educ.	0.559	0.755	0.663	0.376	0.571
Complete secondary educ.	0.381	0.925	0.823	0.780	0.627
Incomplete tertiary educ.	0.040	0.157	0.253	0.513	0.197
Complete tertiary educ.	0.017	0.084	0.150	0.737	0.196
Rural (share)	0.453	0.068	0.153	0.045	0.258

Country Profiles—Costa Rica. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	15.2	14.9	40.6	28.1	1.3	100.0
Urban	8.7	11.6	40.0	37.9	1.9	100.0
Rural	24.5	19.5	41.4	14.3	0.4	100.0
Incidence in 2013—total	8.5	10.6	37.7	39.2	4.0	100.0
Urban	5.1	7.1	34.0	48.1	5.8	100.0
Rural	14.0	16.4	43.8	24.7	1.1	100.0
Share rural in 2000	66.5	54.0	42.1	21.0	11.8	41.3
Share rural in 2013	62.8	59.0	44.3	24.1	10.9	38.2
Transition probabilities—total						
Extreme poverty	42.7	20.2	33.9	2.1	1.1	100.0
Moderate poverty	26.8	19.2	40.9	11.9	1.3	100.0
Vulnerable class	10.0	13.8	42.2	33.1	0.8	100.0
Middle class	1.2	3.4	22.1	66.6	6.6	100.0
High income	0.0	0.4	0.7	49.2	49.7	100.0
Transition probabilities—urban						
Extreme poverty	30.1	21.4	43.5	3.3	1.7	100.0
Moderate poverty	14.1	16.9	50.3	17.3	1.3	100.0
Vulnerable class	4.8	8.6	42.2	43.8	0.6	100.0
Middle class	0.8	1.9	17.7	71.5	8.1	100.0
High income	0.0	0.5	0.5	44.5	54.5	100.0
Transition probabilities—rural						
Extreme poverty	48.3	19.7	29.6	1.6	0.8	100.0
Moderate poverty	35.5	20.7	34.4	8.2	1.3	100.0
Vulnerable class	17.0	20.8	42.2	18.9	1.0	100.0
Middle class	2.7	8.4	37.4	49.7	1.8	100.0
High income	0.0	0.0	1.5	73.3	25.2	100.0
% of chronic poverty—total	89.8	58.3				74.4
Urban	78.1	38.5				56.0
Rural	95.1	71.9				84.6
% future poor—total			73.4	30.0	3.4	53.1
Urban			63.3	23.9	3.1	41.8
Rural			86.9	50.9	4.5	75.6

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	21.6	7.4	37.7	33.3	100.0
Male household head	0.740	0.745	0.786	0.798	0.777
Household size	5.426	5.216	4.542	4.183	4.664

continued

	Chronic poor	Transient poor	Future poor	Never poor	Total
Number of children (aged 0–5)	0.825	0.735	0.473	0.379	0.537
Adult members					
Self-employed	0.331	0.329	0.322	0.283	0.311
Salaried	0.668	0.778	1.295	1.411	1.160
Unemployed	0.190	0.178	0.111	0.080	0.123
Inactive	1.203	1.102	0.972	0.910	1.011
Primary education or less	0.803	0.484	0.480	0.137	0.436
Incomplete secondary educ.	0.416	0.826	0.900	1.029	0.833
Complete secondary educ.	0.008	0.031	0.046	0.073	0.045
Incomplete tertiary educ.	0.034	0.119	0.215	0.677	0.322
Complete tertiary educ.	0.002	0.023	0.060	0.325	0.133
Rural (share)	0.732	0.387	0.477	0.175	0.425

Country Profiles—Dominican Republic. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	24.0	17.7	34.9	21.9	1.4	100.0
Urban	17.6	15.1	38.1	27.3	1.9	100.0
Rural	35.5	22.5	29.3	12.3	0.5	100.0
Incidence in 2013—total	22.7	20.7	38.7	17.2	0.8	100.0
Urban	18.5	18.7	40.3	21.5	1.1	100.0
Rural	31.3	24.7	35.6	8.4	0.0	100.0
Share rural in 2000	53.1	45.5	30.1	20.2	11.5	35.9
Share rural in 2013	45.1	39.0	29.9	15.8	1.4	32.6
Transition probabilities—total						
Extreme poverty	50.5	34.7	14.7	0.1	0.0	100.0
Moderate poverty	13.9	36.4	48.1	1.5	0.0	100.0
Vulnerable class	2.8	16.5	69.4	11.1	0.1	100.0
Middle class	0.1	2.2	42.4	53.8	1.6	100.0
High income	0.0	0.0	3.7	83.2	13.0	100.0
Transition probabilities—urban						
Extreme poverty	45.2	36.8	17.8	0.1	0.0	100.0
Moderate poverty	10.3	34.4	53.3	2.0	0.0	100.0
Vulnerable class	2.3	14.4	70.1	13.1	0.1	100.0
Middle class	0.1	2.2	39.9	55.9	1.9	100.0
High income	0.0	0.0	1.6	84.8	13.6	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Transition probabilities—rural						
Extreme poverty	57.6	31.9	10.4	0.1		100.0
Moderate poverty	21.5	40.7	37.2	0.6		100.0
Vulnerable class	4.3	22.5	67.6	5.6		100.0
Middle class	0.0	2.0	55.2	42.7		100.0
High income	0.0	0.0	56.3	43.7		100.0
% of chronic poverty—total	97.9	65.8				85.1
Urban	96.9	56.0				78.9
Rural	99.2	86.2				94.8
% future poor—total			82.0	21.9	0.2	62.6
Urban			78.3	17.9	0.2	56.9
Rural			92.7	42.7	0.0	81.8

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	42.6	7.5	31.3	18.7	100.0
Male household head	0.492	0.464	0.507	0.489	0.494
Household size	5.100	5.110	4.345	4.086	4.675
Number of children (aged 0–5)	0.820	0.654	0.517	0.405	0.635
Adult members					
Self-employed	0.579	0.556	0.712	0.477	0.600
Salaried	0.542	0.851	0.967	1.208	0.822
Unemployed	0.132	0.184	0.114	0.101	0.125
Inactive	1.251	1.170	0.879	0.781	1.041
Primary education or less	1.189	0.949	0.984	0.398	0.959
Incomplete secondary educ.	0.353	0.486	0.461	0.325	0.391
Complete secondary educ.	0.218	0.425	0.397	0.517	0.345
Incomplete tertiary educ.	0.079	0.245	0.233	0.485	0.216
Complete tertiary educ.	0.025	0.187	0.129	0.764	0.208
Rural (share)	0.411	0.150	0.269	0.127	0.294

Country Profiles—Ecuador. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	40.8	20.8	27.5	10.1	0.9	100.0
Urban	30.5	21.0	33.4	13.8	1.3	100.0
Rural	59.0	20.3	17.0	3.4	0.3	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2013—total	13.4	16.4	42.0	26.8	1.4	100.0
Urban	7.9	13.3	43.0	33.9	1.9	100.0
Rural	24.8	22.7	40.1	12.0	0.4	100.0
Share rural in 2000	52.0	35.1	22.2	12.0	11.2	35.9
Share rural in 2013	60.3	45.1	31.0	14.6	8.2	32.6
Transition probabilities—total						
Extreme poverty	34.4	36.6	28.5	0.4	0.1	100.0
Moderate poverty	4.5	22.3	67.1	6.1	0.0	100.0
Vulnerable class	1.0	5.7	63.7	29.5	0.0	100.0
Middle class	0.1	0.5	18.2	78.8	2.4	100.0
High income	0.0	0.0	0.2	71.9	27.9	100.0
Transition probabilities—urban						
Extreme poverty	24.1	36.7	38.4	0.7	0.2	100.0
Moderate poverty	3.0	16.7	71.9	8.4	0.0	100.0
Vulnerable class	0.5	3.6	61.2	34.8	0.0	100.0
Middle class	0.1	0.4	16.2	80.7	2.7	100.0
High income	0.0	0.0	0.2	71.2	28.6	100.0
Transition probabilities—rural						
Extreme poverty	43.2	36.5	20.0	0.2	0.0	100.0
Moderate poverty	7.1	32.1	58.7	2.1	0.0	100.0
Vulnerable class	2.7	12.7	71.9	12.7	0.0	100.0
Middle class	0.1	1.5	39.3	59.1	0.0	100.0
High income	0.0	0.0	0.0	81.8	18.2	100.0
% of chronic poverty—total	87.5	38.1				69.6
Urban	75.5	18.8				50.6
Rural	97.8	71.5				90.4
% future poor—total			59.1	11.7	0.0	43.0
Urban			49.9	9.5	0.0	34.5
Rural			88.7	34.4	0.0	80.0

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	37.4	16.4	19.9	26.3	100.0
Male household head	0.491	0.467	0.484	0.499	0.488
Household size	6.077	5.738	5.027	4.437	5.380
Number of children (aged 0–5)	1.061	0.856	0.573	0.444	0.768
Adult members					
Self-employed	0.635	0.585	0.640	0.526	0.599
Salaried	0.759	1.103	1.361	1.358	1.093
Unemployed	0.114	0.181	0.084	0.108	0.117

continued

	Chronic poor	Transient poor	Future poor	Never poor	Total
Inactive	0.994	1.090	0.872	0.825	0.941
Primary education or less	0.705	0.391	0.462	0.146	0.458
Incomplete secondary educ.	0.402	0.708	0.550	0.427	0.488
Complete secondary educ.	0.209	0.605	0.550	0.760	0.487
Incomplete tertiary educ.	0.065	0.275	0.277	0.683	0.304
Complete tertiary educ.	0.014	0.100	0.101	0.522	0.179
Rural (share)	0.619	0.150	0.349	0.066	0.343

Country Profiles—Honduras. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2001—total	47.4	15.5	25.0	11.6	0.5	100.0
Urban	21.7	18.2	38.0	21.1	1.1	100.0
Rural	69.3	13.2	13.9	3.5	0.1	100.0
Incidence in 2013—total	49.5	17.0	24.9	8.5	0.2	100.0
Urban	27.5	18.8	37.9	15.3	0.5	100.0
Rural	69.2	15.3	13.3	2.3	0.0	100.0
Share rural in 2001	78.9	45.8	30.0	16.4	8.6	53.9
Share rural in 2013	73.7	47.6	28.1	14.1	0.0	52.7
Transition probabilities—total						
Extreme poverty	89.0	8.0	2.6	0.0	0.4	100.0
Moderate poverty	46.6	29.3	22.6	0.8	0.7	100.0
Vulnerable class	21.1	25.7	48.2	4.6	0.4	100.0
Middle class	3.2	8.6	46.0	41.1	1.1	100.0
High income	0.0	0.0	6.3	40.6	53.1	100.0
Transition probabilities—urban						
Extreme poverty	68.4	22.1	9.1	0.0	0.5	100.0
Moderate poverty	33.3	34.6	29.5	1.3	1.3	100.0
Vulnerable class	13.8	24.4	55.2	6.2	0.4	100.0
Middle class	2.4	6.8	45.3	44.2	1.3	100.0
High income	0.0	0.0	6.3	52.4	41.3	100.0
Transition probabilities—rural						
Extreme poverty	94.8	4.1	0.7	0.0	0.4	100.0
Moderate poverty	64.6	22.2	13.1	0.0	0.0	100.0
Vulnerable class	40.5	29.3	29.3	0.5	0.3	100.0
Middle class	9.5	23.4	52.6	14.5	0.0	100.0
High income	0.0	0.1	6.4	3.2	90.3	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
% of chronic poverty—total	98.7	77.3				94.0
Urban	95.5	65.1				82.6
Rural	99.6	93.7				98.8
% future poor—total			89.4	42.9	3.6	74.6
Urban			86.2	38.3	2.7	69.1
Rural			98.2	82.1	6.5	93.4

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	64.3	4.1	23.6	8.0	100.0
Male household head	0.774	0.759	0.748	0.787	0.769
Household size	6.489	5.753	4.781	4.310	5.881
Number of children (aged 0–5)	1.280	0.925	0.598	0.419	1.035
Adult members					
Self-employed	0.890	0.487	0.512	0.335	0.739
Salaried	0.462	0.870	1.204	1.452	0.734
Unemployed	0.192	0.374	0.224	0.223	0.209
Inactive	1.177	1.153	1.014	0.931	1.117
Primary education or less	0.706	0.280	0.353	0.107	0.557
Incomplete secondary educ.	0.549	1.095	0.834	0.694	0.651
Complete secondary educ.	0.191	0.580	0.590	0.793	0.350
Incomplete tertiary educ.	0.038	0.170	0.232	0.572	0.132
Complete tertiary educ.	0.009	0.038	0.090	0.491	0.068
Rural (share)	0.779	0.231	0.381	0.100	0.608

Country Profiles—Panama. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	23.7	14.8	34.0	25.2	2.2	100.0
Urban	11.0	13.1	37.7	34.9	3.3	100.0
Rural	45.4	17.6	27.7	8.9	0.4	100.0
Incidence in 2013—total	15.6	11.1	36.1	34.7	2.6	100.0
Urban	5.0	7.8	38.2	45.3	3.7	100.0
Rural	36.4	17.5	31.9	13.8	0.5	100.0
Share rural in 2000	70.9	44.1	30.2	13.1	6.2	37.0
Share rural in 2013	78.6	53.2	29.8	13.4	6.2	33.7
Transition probabilities—total						

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Extreme poverty	35.6	31.5	31.4	1.5	0.0	100.0
Moderate poverty	3.1	17.1	69.9	9.8	0.0	100.0
Vulnerable class	0.8	4.0	56.1	39.0	0.1	100.0
Middle class	0.1	0.3	12.9	84.0	2.7	100.0
High income	0.0	0.0	0.1	59.6	40.3	100.0
Transition probabilities—urban						
Extreme poverty	14.8	31.9	49.8	3.5	0.0	100.0
Moderate poverty	2.2	13.3	72.6	11.9	0.0	100.0
Vulnerable class	0.6	2.8	53.8	42.8	0.0	100.0
Middle class	0.0	0.1	11.6	85.3	3.0	100.0
High income	0.0	0.0	0.1	58.9	41.0	100.0
Transition probabilities—rural						
Extreme poverty	43.2	31.3	24.7	0.8	0.0	100.0
Moderate poverty	4.4	21.8	66.5	7.3	0.0	100.0
Vulnerable class	1.5	7.1	62.1	29.2	0.1	100.0
Middle class	0.1	1.3	22.5	74.9	1.2	100.0
High income	0.0	0.0	0.0	74.1	25.9	100.0
% of chronic poverty—total	91.1	40.2				72.3
Urban	71.7	18.9				42.8
Rural	98.2	66.5				89.8
% future poor—total			59.1	10.8	0.1	37.2
Urban			50.0	8.1	0.1	28.9
Rural			83.1	30.0	0.0	69.3

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	29.3	11.2	22.1	37.4	100.0
Male household head	0.487	0.465	0.505	0.485	0.487
Household size	5.931	5.976	5.114	4.644	5.274
Number of children (aged 0–5)	0.885	0.685	0.505	0.392	0.594
Adult members					
Self-employed	0.973	0.805	0.780	0.591	0.768
Salaried	0.461	0.848	1.268	1.499	1.071
Unemployed	0.080	0.165	0.150	0.118	0.119
Inactive	0.716	1.403	0.974	1.078	0.985
Primary education or less	0.803	0.262	0.401	0.115	0.396
Incomplete secondary educ.	0.428	0.512	0.470	0.237	0.376
Complete secondary educ.	0.458	1.174	1.104	0.957	0.868
Incomplete tertiary educ.	0.096	0.310	0.368	0.543	0.347
Complete tertiary educ.	0.080	0.375	0.540	1.248	0.652
Rural (share)	0.598	0.043	0.102	0.012	0.207

Country Profiles—Peru. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	34.8	18.2	34.3	12.4	0.4	100.0
Urban	14.6	20.2	46.7	18.0	0.5	100.0
Rural	72.4	14.4	11.3	1.9	0.0	100.0
Incidence in 2013—total	19.3	13.7	40.5	25.7	0.8	100.0
Urban	9.2	11.8	45.6	32.4	1.0	100.0
Rural	49.9	19.5	25.0	5.6	0.1	100.0
Share rural in 2000	72.7	27.7	11.6	5.3	0.0	35.0
Share rural in 2013	64.4	35.3	15.4	5.4	4.0	24.9
Transition probabilities—total						
Extreme poverty	52.4	26.2	18.2	0.5	2.7	100.0
Moderate poverty	6.3	21.9	62.8	6.8	2.2	100.0
Vulnerable class	1.4	6.6	62.9	28.2	1.0	100.0
Middle class	0.4	0.6	21.7	74.9	2.3	100.0
High income	0.0	0.0	0.1	69.5	30.5	100.0
Transition probabilities—urban						
Extreme poverty	28.1	31.5	32.7	0.9	6.8	100.0
Moderate poverty	4.2	16.3	68.3	8.5	2.7	100.0
Vulnerable class	1.1	5.7	62.3	29.8	1.1	100.0
Middle class	0.5	0.6	21.2	75.5	2.3	100.0
High income	0.0	0.0	0.0	69.5	30.5	100.0
Transition probabilities—rural						
Extreme poverty	67.4	22.9	9.3	0.2	0.2	100.0
Moderate poverty	13.0	40.3	44.9	1.2	0.5	100.0
Vulnerable class	3.7	16.5	69.6	10.3	0.0	100.0
Middle class	0.0	4.3	50.6	45.1	0.0	100.0
High income	0.0	0.0	20.1	70.5	9.4	100.0
% of chronic poverty—total	94.1	55.0				81.8
Urban	85.4	43.6				65.4
Rural	99.5	92.0				98.4
% future poor—total			73.6	27.2	1.0	58.9
Urban			71.6	26.4	1.0	56.6
Rural			94.7	66.8	0.0	92.3

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	46.3	10.3	25.6	17.9	100.0
Male household head	0.506	0.516	0.513	0.483	0.505
Household size	6.663	6.461	5.023	4.662	5.865
Number of children (aged 0–5)	1.219	1.060	0.619	0.483	0.917

continued

	Chronic poor	Transient poor	Future poor	Never poor	Total
Adult members					
Self-employed	1.019	0.683	0.785	0.448	0.823
Salaried	0.454	0.991	1.103	1.484	0.859
Unemployed	0.149	0.342	0.156	0.158	0.172
Inactive	0.908	0.985	0.760	0.838	0.865
Primary education or less	1.243	0.551	0.781	0.248	0.876
Incomplete secondary educ.	0.464	0.969	0.706	0.649	0.611
Complete secondary educ.	0.151	0.582	0.457	0.822	0.393
Incomplete tertiary educ.	0.043	0.152	0.280	0.659	0.225
Complete tertiary educ.	0.000	0.021	0.046	0.414	0.088
Rural (share)	0.676	0.112	0.391	0.077	0.438

Country Profiles—Paraguay. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	30.6	14.7	33.3	19.8	1.6	100.0
Urban	11.2	12.5	42.6	31.0	2.7	100.0
Rural	54.2	17.4	22.0	6.2	0.3	100.0
Incidence in 2013—total	15.9	14.0	38.5	30.1	1.5	100.0
Urban	6.6	10.5	40.5	40.3	2.0	100.0
Rural	30.1	19.4	35.4	14.5	0.6	100.0
Share rural in 2000	79.8	53.3	29.7	14.0	7.2	45.0
Share rural in 2013	74.9	54.7	36.4	19.1	17.5	39.6
Transition probabilities—total						
Extreme poverty	31.9	34.3	32.1	1.5	0.2	100.0
Moderate poverty	4.5	15.2	67.8	12.3	0.2	100.0
Vulnerable class	1.1	4.1	62.0	32.6	0.3	100.0
Middle class	0.0	0.6	14.5	83.2	1.7	100.0
High income	0.0	0.0	2.1	47.9	50.0	100.0
Transition probabilities—urban						
Extreme poverty	15.5	30.2	51.1	3.0	0.2	100.0
Moderate poverty	1.7	7.9	72.2	18.1	0.1	100.0
Vulnerable class	0.9	2.1	56.7	39.8	0.4	100.0
Middle class	0.0	0.2	10.2	87.5	2.0	100.0
High income	0.0	0.0	0.0	48.9	51.1	100.0
Transition probabilities—rural						
Extreme poverty	39.8	36.2	22.9	0.8	0.2	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Moderate poverty	8.4	25.2	61.8	4.3	0.3	100.0
Vulnerable class	1.3	8.1	72.7	17.7	0.1	100.0
Middle class	0.0	1.9	30.4	67.3	0.4	100.0
High income	0.0	0.0	8.7	44.9	46.4	100.0
% of chronic poverty—total	96.4	61.0				83.2
Urban	90.6	39.7				64.4
Rural	99.2	90.1				96.7
% future poor—total			84.3	40.6	13.8	67.6
Urban			77.8	29.8	9.9	58.1
Rural			97.8	80.1	26.0	91.3

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	43.1	8.7	32.6	15.6	100.0
Male household head	0.482	0.384	0.468	0.466	0.466
Household size	6.021	5.289	4.898	4.206	5.308
Number of children (aged 0–5)	1.014	0.826	0.613	0.496	0.786
Adult members					
Self-employed	0.522	0.426	0.544	0.400	0.502
Salaried	0.832	1.021	1.199	1.292	1.040
Unemployed	0.091	0.078	0.068	0.054	0.076
Inactive	1.245	1.109	0.949	0.816	1.069
Primary education or less	0.987	0.503	0.678	0.293	0.736
Incomplete secondary educ.	0.506	0.744	0.703	0.532	0.595
Complete secondary educ.	0.184	0.594	0.496	0.680	0.399
Incomplete tertiary educ.	0.049	0.193	0.218	0.543	0.194
Complete tertiary educ.	0.010	0.077	0.066	0.367	0.090
Rural (share)	0.633	0.076	0.303	0.065	0.388

Country Profiles—El Salvador. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	30.1	18.2	33.9	17.3	0.6	100.0
Urban	14.1	16.2	42.0	26.8	0.9	100.0
Rural	53.9	21.1	21.8	3.1	0.0	100.0
Incidence in 2013—total	21.6	21.2	41.4	15.4	0.3	100.0
Urban	10.6	18.5	48.4	22.1	0.5	100.0

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Rural	40.5	25.9	29.5	4.0	0.1	100.0
Share rural in 2000	72.0	46.8	25.9	7.3	2.6	40.3
Share rural in 2013	69.2	45.1	26.3	9.6	6.8	36.9
Transition probabilities—total						
Extreme poverty	61.8	30.0	8.0	0.1	0.1	100.0
Moderate poverty	19.9	42.3	37.1	0.6	0.0	100.0
Vulnerable class	4.4	19.6	69.2	6.9	0.0	100.0
Middle class	0.6	3.1	47.3	48.7	0.3	100.0
High income	0.0	0.9	3.3	90.7	5.0	100.0
Transition probabilities—urban						
Extreme poverty	40.2	44.1	15.6	0.1	0.0	100.0
Moderate poverty	12.7	39.8	46.4	1.0	0.0	100.0
Vulnerable class	2.9	14.4	73.7	9.0	0.0	100.0
Middle class	0.5	2.5	45.1	51.6	0.4	100.0
High income	0.0	1.0	1.0	92.4	5.6	100.0
Transition probabilities—rural						
Extreme poverty	72.4	23.1	4.3	0.1	0.1	100.0
Moderate poverty	27.8	45.1	26.9	0.3	0.0	100.0
Vulnerable class	8.2	33.5	57.0	1.3	0.0	100.0
Middle class	1.7	7.7	62.6	27.9	0.1	100.0
High income	0.0	0.0	23.7	76.3	0.0	100.0
% of chronic poverty—total	98.9	83.5				92.6
Urban	96.7	70.9				83.3
Rural	99.9	97.3				99.1
% future poor—total			84.7	29.5	6.5	66.7
Urban			79.9	25.5	5.1	59.9
Rural			97.6	57.4	18.6	90.3

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	43.4	3.5	35.5	17.7	100.0
Male household head	0.797	0.730	0.725	0.718	0.755
Household size	6.570	5.940	5.095	4.594	5.676
Number of children (aged 0–5)	1.200	1.024	0.680	0.494	0.884
Adult members					
Self-employed	0.775	0.589	0.536	0.305	0.600
Salaried	0.720	1.152	1.274	1.444	1.059
Unemployed	0.079	0.214	0.103	0.157	0.106
Inactive	1.139	1.063	0.900	0.979	1.023
Primary education or less	1.128	0.603	0.666	0.262	0.793
Incomplete secondary educ.	0.239	0.934	0.967	1.098	0.673

continued

	Chronic poor	Transient poor	Future poor	Never poor	Total
Complete secondary educ.	0.005	0.032	0.059	0.120	0.046
Incomplete tertiary educ.	0.010	0.099	0.167	0.602	0.173
Complete tertiary educ.	0.003	0.016	0.036	0.383	0.083
Rural (share)	0.737	0.138	0.283	0.058	0.435

Country Profiles—Uruguay. Source: authors' calculations based on household survey data from IDB's *Sociometro*

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
Incidence in 2000—total	–	–	–	–	–	–
Urban	4.8	9.1	37.4	45.8	2.9	100.0
Rural	–	–	–	–	–	–
Incidence in 2013—total	–	–	–	–	–	–
Urban	3.9	6.0	30.2	56.6	3.3	100.0
Rural	–	–	–	–	–	–
Share rural in 2000	–	–	–	–	–	–
Share rural in 2013	–	–	–	–	–	–
Transition probabilities—total						
Extreme poverty	–	–	–	–	–	–
Moderate poverty	–	–	–	–	–	–
Vulnerable class	–	–	–	–	–	–
Middle class	–	–	–	–	–	–
High income	–	–	–	–	–	–
Transition probabilities—urban						
Extreme poverty	5.9	26.9	65.3	1.8	0.1	100.0
Moderate poverty	1.0	7.1	79.6	12.3	0.0	100.0
Vulnerable class	0.0	1.2	49.6	49.1	0.1	100.0
Middle class	0.0	0.0	7.6	89.5	2.9	100.0
High income	0.0	0.0	0.0	44.7	55.3	100.0
Transition probabilities—rural						
Extreme poverty	–	–	–	–	–	–
Moderate poverty	–	–	–	–	–	–
Vulnerable class	–	–	–	–	–	–
Middle class	–	–	–	–	–	–
High income	–	–	–	–	–	–
% of chronic poverty—total						–
Urban	51.9	6.4				25.2
Rural	–	–				–

continued

	Extreme poverty	Moderate poverty	Vulnerable class	Middle class	High income	Total
% future poor—total			–	–	–	–
Urban			31.4	2.3	–	19.2
Rural			–	–	–	–

	Chronic poor	Transient poor	Future poor	Never poor	Total
% of population	7.3	21.7	13.6	57.3	100.0
Male household head	0.718	0.782	0.727	0.735	0.743
Household size	5.527	5.216	3.985	3.344	3.998
Number of children (aged 0–5)	1.045	0.776	0.339	0.211	0.412
Adult members					
Self-employed	0.535	0.436	0.385	0.291	0.353
Salaried	0.685	0.971	1.099	1.057	1.017
Unemployed	0.492	0.487	0.334	0.208	0.307
Inactive	0.756	0.897	0.816	0.910	0.883
Primary education or less	0.535	0.361	0.380	0.209	0.289
Incomplete secondary educ.	0.701	1.093	0.985	0.786	0.873
Complete secondary educ.	0.045	0.143	0.188	0.373	0.274
Incomplete tertiary educ.	0.015	0.058	0.066	0.250	0.166
Complete tertiary educ.	0.004	0.017	0.037	0.308	0.186
Rural (share)	–	–	–	–	–

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