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Housing Policy Matters for the Poor

Housing Conditions in Latin America and the Caribbean, 1995-2006

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Abstract

This paper discusses the evolution of housing conditions in urban areas of Latin America and the Caribbean (LAC) from 1995 to 2006 based on data from household surveys done in 18 countries that comprise 95 percent of the urban population of the region. The results indicate that, on average, the proportion of urban households facing housing shortages is declining. This decline holds for households of all income levels, particularly those in the lower quintiles of the income distribution structure. Among the housing problems faced by the urban population of the region, the most pervasive is lack of infrastructure, followed by deficient building materials and overcrowding. The size of the problem is still large. The estimates made in this study indicate that in 2006 lack of infrastructure affected almost 19 million households. Further, about seven million households needed a new shelter and nine million needed significant improvements to their houses due to poor construction materials or overcrowding. Cross-country analysis shows that each country was facing a different combination of problems and was improving its housing conditions at a different pace, which indicates that it is highly unlikely that a "one-size-fits-all" solution exists. Future housing needs are estimated at three million units per year for the next two decades. Absent the capacity of the formal housing sector to supply these houses, households will be driven to informal solutions that contribute to the large qualitative shortages still afflicting the region.

JEL classifications: R21, R30
Keywords: Housing conditions, Latin America and the Caribbean, household growth

Introduction

Shelter, like food, is a basic need for human beings. Humans need a constant supply of the services provided by a house to survive. However, not everybody has access to adequate shelter, especially low-income households in developing countries. Different studies report on poor housing conditions in LAC (Angel, 2000; Arriagada, 2000; Fay, 2005; Ruprah, 2009; Szalachmann, 2000); however, no updated comparative data was available in 2010 for all of the countries that would allow an assessment of the recent evolution of urban housing in the region. The last available information for a large number of countries (Mac Donald and Simioni, 2000) is based on data from the population and housing censuses taken a decade ago, and data from a new set of censuses will only be available for analysis in a few years (roughly 2013–14).

This paper reviews the housing conditions of urban households in LAC and analyzes the evolution of housing problems from 1995 to 2006 based on data from household surveys for 18 countries that comprise 95 percent of the urban population of the region.[1] In consideration of the significant differences that exist between the housing problems faced by the rural and urban populations and the size of the urban population in the LAC region, the study focuses on housing issues affecting the urban population. This group comprises more than 75 percent of the population of the region—more than 400 million people—and is expected to rise to represent almost 85 percent in 2030, surpassing the 600 million mark (UN, 2007). The data set also allows an analysis of the housing conditions of households with different incomes and the recent evolution of their housing situation. The analysis also makes projections of housing needs originating from the formation of new households using the population projections from the World Population Prospects (UN, 2008).

Measuring Housing Conditions Across Latin America and the Caribbean

In analyzing the housing conditions in a given country or group of countries, the first step is to define the categories of analysis. There is little agreement on what constitutes adequate shelter and how to quantify housing shortages. Certain researchers prefer a predefined standard of livable space and argue that all persons living with less than these attributes would be living in inadequate conditions and thus would need either a new shelter or

[1] Other studies have used household surveys to analyze housing conditions in Latin America, notably Szalachmann (2000) and Ruprah (2009). The present study adds to the insight provided by these studies with an emphasis on the urban areas and an analysis of the housing problems by income level.

improvements to their current shelter. This study follows a more traditional approach that assesses the housing conditions by measuring the deprivation of housing services experienced by the households.[2] This paper is based on the premise that the interaction of supply and demand in formal and informal housing markets in a country results in a given level of availability of houses and a given quality of the housing stock, in other words, access to a given level of housing services to the population.[3] Households that lack one or more of these services are considered to be facing a shortage of housing.

The essential services considered in the analysis include protection from the environment, access to potable water and electricity, and the sanitary disposal of wastes. Shelters without these attributes are considered inadequate. The household and its members need to satisfy physiological needs for privacy, this being the reason to consider overcrowded shelters (more than three occupants per room) as inadequate.[4] Additionally, households need a continuous supply of these services, thus those with insecure tenure on their places of living are also considered to be facing a shortage. Households deprived of these essential services are considered to be facing a *qualitative shortage* of housing.

A second type of housing shortage is a *quantitative shortage*. Each household needs a separate house, so the additional household when two are sharing a shelter (more than two households living under the same roof and sharing food preparation facilities) is considered to be facing a quantitative shortage of housing. Also included in this type of shortage are households living in shelters that cannot be upgraded given the poor quality of building materials. Based on these premises, the study estimates four categories of shortages: quantitative shortage (A) and three different kinds of qualitative shortage (B1, B2, and B3) as shown in Table 1 on the following page. Households included in the quantitative shortage were taken out of the data set used to estimate qualitative shortages. The methodology used to estimate the shortages is described in detail in Appendix 2.

In contrast to other methodologies, the study kept the three categories of qualitative deficits separate. This approach acknowledges the fact that the solution to these problems requires different combinations of household expenditures and activities, and different government policies, programs, and expenditures. The solution to a quantitative shortage or a qualitative shortage of building materials or overcrowding rests mostly on the household's

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[2] For a discussion of the different ways to measure the housing problem, see Angel (2000) Chapter X.

[3] Formal housing markets include land developers and homebuilders that abide by the land subdivision and building controls of the government. Informal markets encompass the operations of land subdividers and homebuilders that do not comply with one or more of the regulations binding the actors of the formal market.

[4] This is a very conservative approach. There is evidence that more than two persons per room is highly inadequate. The use of the latter standard will yield a higher qualitative shortage from overcrowding.

capacity and ingenuity. The solution to the housing shortage of service infrastructure rests mostly on the capacity of the public sector to provide potable water, sanitary disposal of waste water, drainage, and electricity. Similarly, the solution to the housing tenure shortage rests mostly on regulatory measures, which is primarily the responsibility of the public sector.

Table 1. Housing Shortages: Definitions

Type of shortage	Origin of shortage	Category	Definition
A. Quantitative	Lack of shelter	A. Quantitative	– Households doubling or more up with other households (excluding the principal household) – Households living in non-upgradeable shelters
B. Qualitative (excluding households affected by quantitative shortage)	Shelter conditions	B1. Poor quality materials and overcrowding	– Roof made of non-permanent materials – Walls made of non-permanent materials – Dirt floors – Overcrowding: more than three persons per room
	Neighborhood conditions	B2. Lack of infrastructure	– Lack of piped potable water – Lack of sanitary disposal of waste waters – Lack of electricity
	Tenure status	B3. Tenure	– Insecure tenure on the house or the land

Source: Authors' elaboration.

The database used in assessing the housing situation for the 18 countries studied was constructed from household surveys for LAC countries taken in the period 1994 to 2008 (the complete list of surveys is included in Appendix 1). The data gathered for each country corresponds to different years in three different periods (circa 1995, circa 2000, and circa 2006), with the exception of Costa Rica and Guatemala (two periods) and the Dominican Republic (one period). The fact that each of the countries' statistics offices has different calendars to conduct household surveys led to an unavoidable loss in accuracy. Additionally, each survey has a different margin of error according to its sampling methodology. Despite the previous caveats, the estimations provide a reasonably realistic picture of the housing conditions in the region and their evolution.

General Housing Conditions

The estimates made from the data available, and using the definitions described in the previous section, show improvements in the housing conditions of urban households in LAC over the decade as the proportion of urban households facing quantitative and qualitative shortages decreased between 1995 and 2006. Quantitative shortages dropped from affecting 8 percent of households in 1995 to 6 percent in 2006. A similar trend is observable in the lack of access to adequate infrastructure, which decreased to affecting 17 percent of households from 24 percent, and in the incidence of low-quality materials and overcrowding, which declined from affecting 12 percent of households to affecting 8 percent. The only indicator that did not improve during the period analyzed was the lack of security of tenure.

Despite this progress, the urban housing problem in LAC is still significant. In 2006, approximately one-fourth of the urban dwellings (18.7 million households) lacked access to basic infrastructure, an estimated 8.8 million households were living in dwellings that were overcrowded or made of inadequate materials, and 11.5 million households lacked secure tenure. In the same year, approximately 7.1 million urban households were sharing dwellings with others or living in shelters that could not be improved and thus were in need of a new house.

Table 2. Housing Shortages in LAC (1995–2006)

	1995		2000		2006	
	%	Millions	%	Millions	%	Millions
A. Quantitative	8%	6.0	7%	6.6	6%	7.1
B1. Materials and overcrowding	12%	9.0	8%	7.9	8%	8.8
B2. Infrastructure	24%	18.4	20%	19.2	17%	18.7
B3. Tenure	10%	7.7	11%	10.3	10%	11.5

Source: Authors' estimations based on household surveys.

Table 3. Cross-Country Evolution of Housing Shortages, 1995–2006 by Income Level

		A. Quantitative		B1. Materials & overcrowding		B2. Lack of infrastructure		B3. Tenure	
	Country	1995	2006	1995	2006	1995	2006	1995	2006
High-income	Mexico	2%	2%	24%	11%	18%	9%	11%	15%
	Chile	7%	4%	4%	1%	8%	3%	17%	14%
	Argentina	NA	5%	10%	10%	18%	12%	13%	16%
	Venezuela	8%	8%	4%	13%	13%	5%	4%	6%
	Uruguay	3%	2%	2%	2%	3%	2%	11%	17%
Upper middle-income	Panama	15%	8%	10%	6%	20%	21%	11%	15%
	Costa Rica	2%	2%	8%	5%	4%	1%	7%	6%
	Brazil	8%	6%	4%	2%	32%	22%	9%	7%
Lower middle-income	Colombia	16%	8%	8%	7%	6%	9%	6%	10%
	Ecuador	11%	10%	20%	14%	30%	19%	12%	13%
	Peru	25%	14%	45%	34%	38%	29%	18%	21%
	El Salvador	10%	8%	31%	21%	39%	30%	13%	17%
Low-income	Guatemala	12%	11%	39%	32%	36%	32%	12%	10%
	Paraguay	8%	3%	20%	13%	43%	25%	11%	10%
	Bolivia	35%	30%	26%	27%	42%	32%	7%	11%
	Honduras	8%	2%	26%	18%	37%	26%	13%	12%
	Nicaragua	10%	12%	49%	33%	63%	52%	8%	10%

Notes: There was not enough data available to estimate evolution for the Dominican Republic. There is no available data for 1995 for Costa Rica and Guatemala so the study used data for 2000. The countries are arranged in descending GDP per capita purchasing power parity (PPP) of 2006.

Source: Authors' calculation based on household surveys.

A cross-country analysis of the housing shortages shows that there is a strong negative relationship between per capita income and the percentage of households living in shortage. This relationship holds for all types of shortages except for lack of secure tenure. The higher the per capita income of a country, the better the general housing conditions of their populations. The relationship is particularly strong for shortages related to lack of infrastructure and poor quality of materials. Given this relationship, increases in per capita income can be expected to result in improvements in housing conditions. Using the same rationale, the housing situation of a particular country should correspond to its per capita income levels.

The results of the cross-country analysis show that housing conditions do not always correspond strictly to the per capita income of the countries. Figure 1 shows that there are countries with relatively high income per capita that have qualitative or quantitative housing shortages larger than countries with lower per capita incomes. It can be argued that the housing sector of countries with housing conditions above the prediction line are doing worse than what their income level would suggest and those below are doing better. For instance, the housing conditions related to the materiality of the houses and access to infrastructure in Costa Rica, Colombia, Honduras, Paraguay, and Uruguay are better than what could be expected given the per capita income. It is also remarkable that Brazil, Argentina, Panama, and Mexico—with relatively high per capita incomes—have a greater percentage of dwellings lacking infrastructure than what their income suggests.

Figure 1. Housing Shortage and Income Relationship (circa 2006)

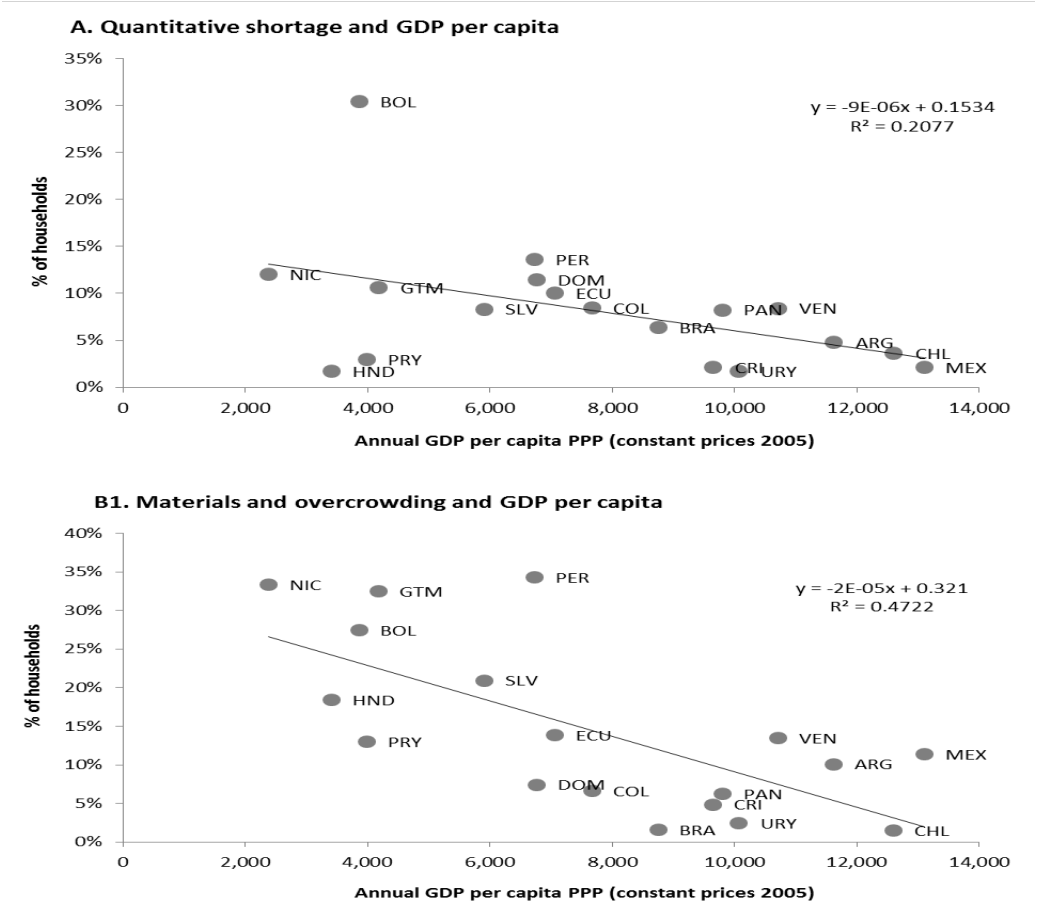
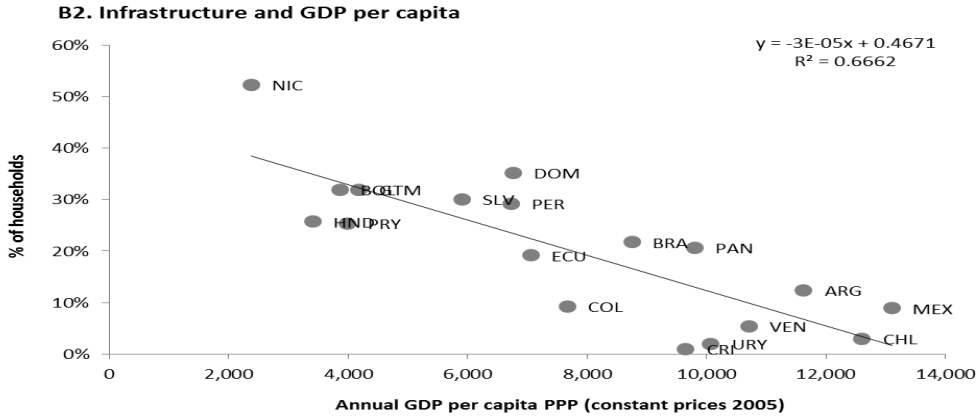
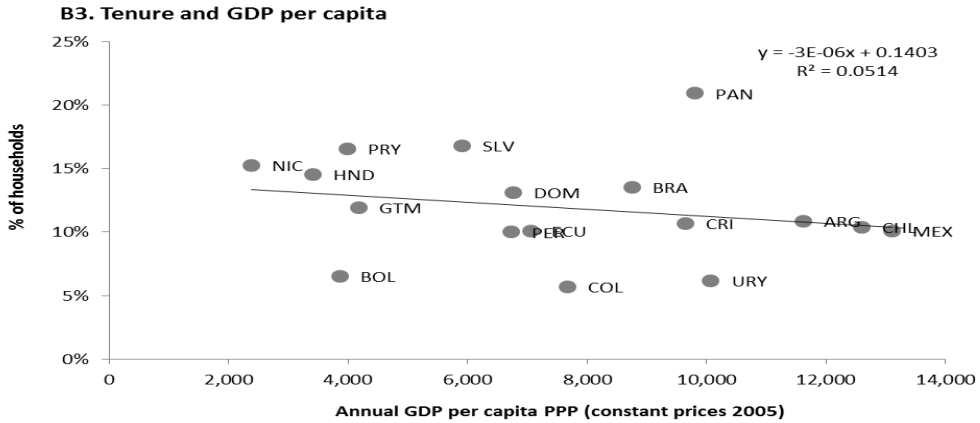


Figure 1. Housing Shortage and Income Relationship (circa 2006) (cont'd)





	GDP per capita (US$000)
A. Quantitative	-0.910*
B1. Materials & overcrowding	-2.293***
B2. Infrastructure	-3.291***
B3. Tenure	0.146

*Significance level: * 90%,*
*** 95%,*
****99%.*

Source: Authors' calculations.

Lack of infrastructure for basic public services is the most important housing shortage for each LAC country. However, the level of the shortage varies widely, from Nicaragua, where more than half (52 percent) of the dwellings lack access to services, to Uruguay, where the coverage is almost universal (98 percent).

In the period under analysis, the countries studied show significant variations in the evolution of their housing problems. In general, all of the countries improved their housing conditions in all of the shortage categories except secure tenure, but there were exceptions. It is interesting to note that Colombia and Peru, which in the mid-1990s faced significant

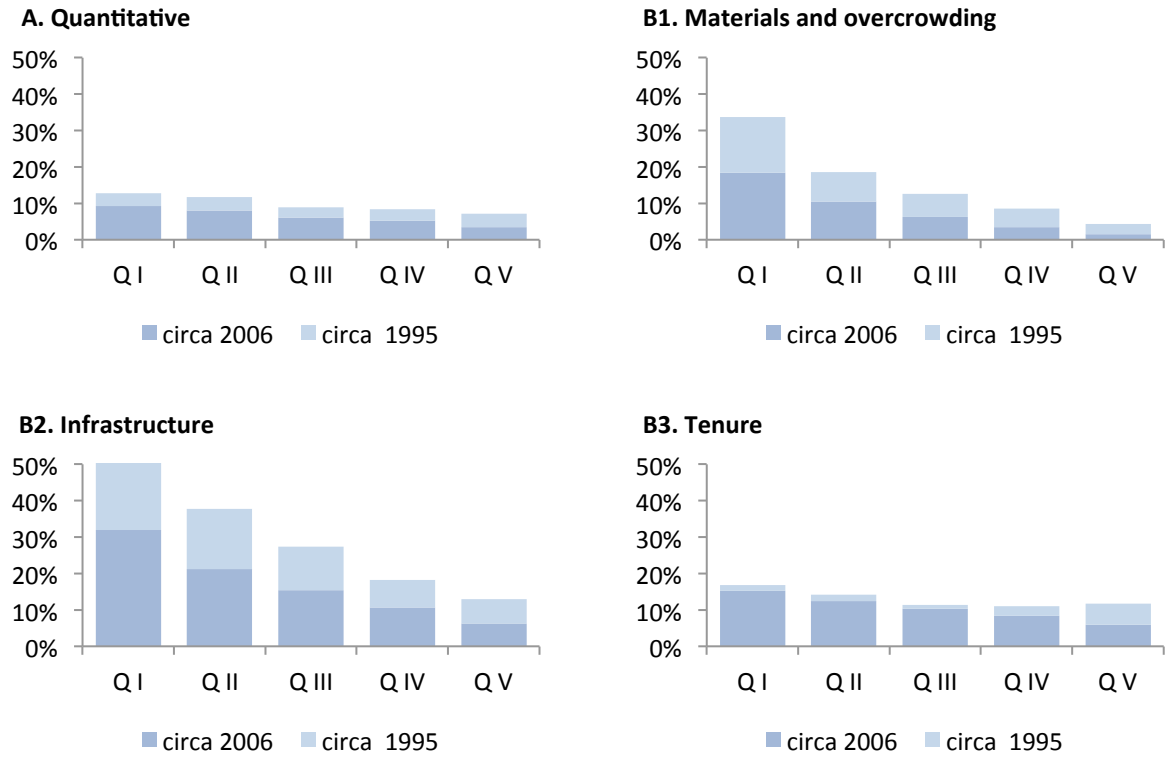
quantitative housing shortages, managed to reduce this type of shortage significantly by 2006. Also notable is the case of Nicaragua, where quantitative shortages increased as a percentage of the households affected, and those of Costa Rica, Mexico, and Venezuela, where the percent of households facing a quantitative housing shortage did not change in the decade under analysis. Since during this period per capita incomes increased in all of these countries, it is likely that these differences can be explained by other factors affecting the performance of the housing markets, such as government interventions and investments.

The fact that there are significant differences among countries in the evolution and structure of their housing shortages—some having to solve significant quantitative shortages in parallel with reducing the qualitative shortages and others facing mostly housing quality problems, commonly related to lack of access to infrastructure—suggests that different countries need different solutions to their housing problems. There is no "one-size-fits-all" solution to the urban housing problems of the region, and countries should base their interventions on detailed and well-documented diagnoses of their specific housing situations, avoiding the unfounded imitation of interventions that have worked in other countries.

Housing Conditions and Household Income

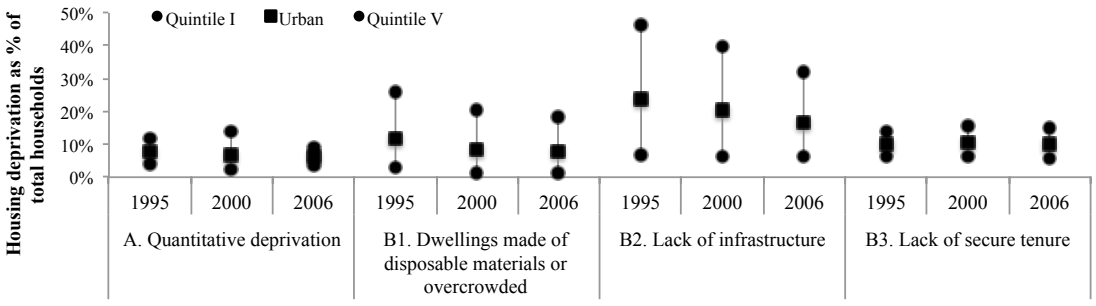
In the 1995–2006 period, housing conditions improved for all income levels, particularly for the lowest income quintiles (Figure 2). However, there are significant differences in the quality of the dwellings inhabited by households with different incomes. The incidence of the different types of housing shortages varies across income quintiles and consistently worsens as the income of the households decrease. This pattern is especially evident for shortages related to the lack of infrastructure and to dwellings made of inadequate materials or that are overcrowded (type B1 and B2 shortages described in Table 1). In 2006, while the incidence of the shortage related to quality of materials was very low for households in the high-income quintile (only 2 percent), the percentage of poor households facing this problem was 18 percent. Similarly five times more poor households lack access to infrastructure than high-income households. The gap between the housing conditions for the poorest and the richest households, although still wide, narrowed during the period. In 1995, the difference in the percentage of households facing shortages of basic infrastructure in the two extremes of the income distribution structure was 39 percentage points, while in 2006 it was 26 percentage points (Figure 3). A similar trend is observable for quantitative shortages and housing shortages related to construction materials and overcrowding.

Figure 2. Housing Conditions in LAC Across Household Per Capita Income Quintiles



Source: Authors' estimations based on household surveys.

Figure 3. Gap in Housing Shortages



Source: Authors' estimations based on household surveys.

Secure tenure did not improve in LAC during the period under study. In fact, it remained the same or worsened for the great majority of countries. Chile, Guatemala, and Brazil are the few exceptions, having observed a mild improvement. It is important to note that not all of the households with insecure tenure were squatters. The data indicates only that the households in this condition were occupying dwellings under agreements that were not ownership or renting, which are what the surveys classified as a secure form of tenure.

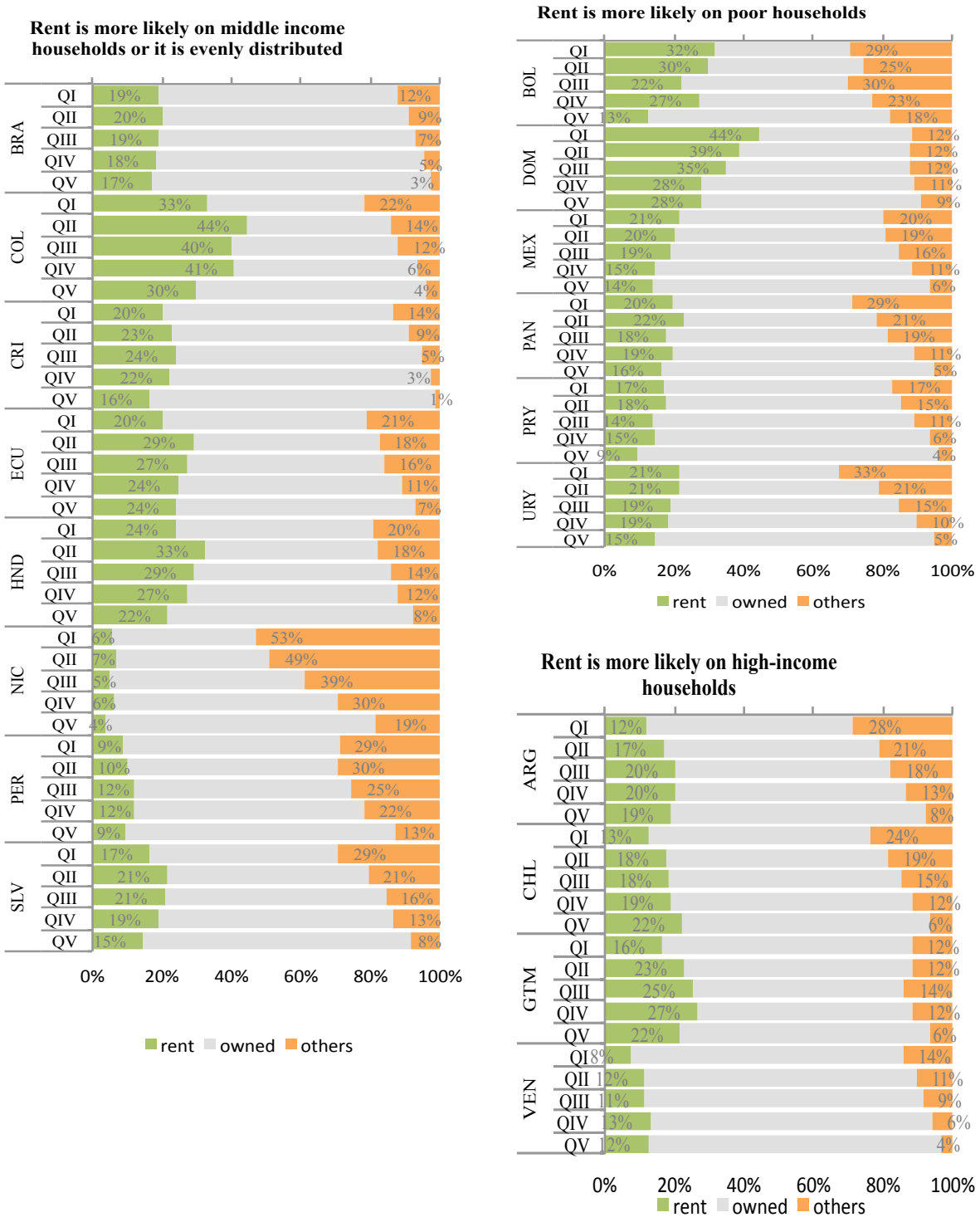
Considering biases in the estimates and taking out the outliers, LAC is essentially a region of homeowners, a situation in sharp contrast with other regions of the world and with some developed countries, where renting is more common.[5] The majority of Latin American households (69 percent) own their houses and only 20 percent rent. The proportion of renters reaches just over 38 percent in Colombia and gets as low as just 6 percent in Nicaragua.[6] Other forms of tenure—which commonly includes houses used rent-free or illegally occupied—are sometimes even more significant than rent in some countries. The incidence of other forms of tenure is particularly common for low-income households in low per capita income countries, as seen in Figure 4. This is an indication of a growing incidence of informal house tenure as household income decrease.

Not all LAC households are improving their housing situation. The evolution of the different housing shortages by income quintiles shows more heterogeneity than the aggregate picture of the countries. There are significant variations among countries in the changes in the quantitative and qualitative shortages affecting households in the different quintiles of the income distribution structure.

[5] A report by the United Nations (UN, 2003: 9) indicates that in the late 1990s the percentage of households that rented houses was much higher in OECD member countries than in LAC countries: 60 percent of households in Germany, 50 percent in Austria, 47 percent in The Netherlands, 39 percent in Sweden, and 34 percent in the United States.

[6] These percentages change slowly and possibly as a result of long-term social and economic trends and the long-term effects of housing policies. Data for 2000 yield very similar results in most countries analyzed. The high percentage of owner-occupied dwellings has been attributed to the predominance of housing policies that promote home ownership, mostly through government sponsored programs, and discourage the development of rental markets by protecting tenants and imposing rent controls (Gilbert, 2003).

Figure 4. House Tenure in Urban Latin America by Income Quintiles (circa 2006)



Notes:
ARG: Argentina; BOL: Bolivia; BRA: Brazil; CHL: Chile; CRI: Costa Rica; COL: Colombia; ECU: Ecuador; DOM: Dominican Republic; GTM: Guatemala; HND: Honduras; MEX: Mexico; NIC: Nicaragua; PAN: Panama; PER: Peru; PRY: Paraguay; SLV: El Salvador; URY: Uruguay.

Source: Authors' estimations based on household surveys.

The progressive pattern, where conditions for low-income households improve more than for high-income households, is most common in the case of the shortages related to lack of basic infrastructure and low-quality materials. In contrast, stagnation is the most common pattern for quantitative shortage and insecure tenure. As a result, not all of the countries in the region are closing the housing quality gap between the rich and the poor for all of the shortage categories.

To facilitate this analysis, Table 4 presents a scorecard that classifies the evolution of the housing conditions as:

- **progressive** if low income households improved their housing conditions more than the better off;
- **regressive** if the richest improved more than the poor;
- **stagnant** if the change was less than 5 percentage points for all the income quintiles;
- **general increase or decrease** if all of the quintiles increased or decreased the shortage category by a similar amount.

This analysis is based on the evolution pattern by country, pictured in Appendix 4.

In line with the argument that housing conditions are better in countries with higher per capita income, this analysis considers four income groups: high-income countries (with per capita incomes higher than US$10,000 PPP in 2006), upper middle-income countries (per capita incomes between US$9,999 and US$8,000), lower middle-income countries (per capita incomes between US$7,999 and US$5,000 PPP) and low-income countries (below US$5,000 PPP).

Table 4. Housing Shortages; Evolution Patterns

	Progressive	Regressive	Stagnant	General increase	General decrease
A. Quantitative	CHL PAN ECU PER COL GTM		MEX SLV VEN HND URY CRI BRA	NIC	PRY BOL
B1. Materials & overcrowding	CHL PER** MEX SLV BRA PRY PAN HND COL NIC ECU	VEN* GTM	ARG URY BOL		CRI
B2. Infrastructure	CHL ECU MEX PER** VEN SLV CRI PRY BRA HND PAN NIC	GTM BOL	URY	COL	ARG
B3. Tenure		CHL ARG* URY* PAN* COL	VEN PRY CRI HND BRA NIC ECU GTM	MEX PER SLV BOL	

Notes:
ARG: Argentina; BOL: Bolivia; BRA: Brazil; CHL: Chile; CRI: Costa Rica; COL: Colombia; ECU: Ecuador; GTM: Guatemala; HND: Honduras; MEX: Mexico; NIC: Nicaragua; PAN: Panama; PER: Peru; PRY: Paraguay; SLV: El Salvador; URY: Uruguay (there is not enough available data to estimate evolution for the Dominican Republic).
Progressive: conditions improve more for lower income quintiles in comparison to higher income quintiles; **regressive:** conditions improve more for higher income quintiles in comparison to lower income quintiles; s**tagnant:** all of the quintiles improve less than 5 percentage points; g**eneral increase or decrease:** all of the quintiles change by a similar amount.
* The conditions diminish the most for lower income quintiles and less for higher income quintiles.
** Progressive with difficulties reaching the second quintile.
Source: Authors' elaboration.

Three high-income countries, Mexico, Uruguay, and Venezuela (with per capita incomes over US$10,000 PPP), did not reduce the quantitative shortage of housing in the 1995–2006 period. All high-income countries made progress in reducing the qualitative housing shortage linked to infrastructure, although progress in Argentina did not reach the first quintile equally. It is noticeable that the qualitative shortages linked to quality of materials and overcrowding increased for most households in Argentina and for all in

Venezuela. On the contrary, Chile made progress in reducing qualitative and quantitative shortages with greater progress benefiting low-income households.

Two out of the three upper middle-income countries (per capita incomes between US$9,999 and US$8,000 PPP) show small or moderate progress. Brazil and Costa Rica show no significant reduction in quantitative housing shortages. Progress in housing in these two countries occurred mostly in reductions in the qualitative shortage in infrastructure and, less markedly, in Costa Rica and Brazil in a reduction of the households facing shortages due to the materials used in the house and in overcrowding. On the contrary, Panama has made significant progress in reducing quantitative and qualitative shortages. Similarly, in the lower middle-income countries (US$7,999 to US$5,000 PPP), there are countries that made significant progress in reducing quantitative housing shortages, notably Peru and Colombia, but El Salvador did not make much progress. Ecuador is a different case, making progress in reducing the quantitative housing shortage affecting the lowest income households but not the shortages affecting the rest of the income quintiles. All countries except Colombia made progress in reducing the qualitative shortage, mostly improving access to infrastructure. Colombia is the only country that did not improve infrastructure for any income group. The incidence of this type of shortage increased in more points for the lowest income quintile than for the rest of the quintiles, which shows that the gap in infrastructure from the lowest to the highest income quintile increased.

In the group of low-income countries (per capita income below US$5,000 PPP) there are countries progressing in solving the quantitative shortage of households in all brackets of the income distribution structure (Bolivia and Paraguay) and countries that not only did not make progress but got worse (Honduras and Guatemala). All countries made progress in reducing the qualitative housing shortages caused by lack of infrastructure and all, aside from Bolivia, reduced the shortage related to poor quality materials and overcrowding.

Since housing sectors perform differently in countries with similar levels of development, as measured by per capita income, other factors must explain the housing shortages. The data set used in this study does not allow the authors to analyze factors such as the affordability of good housing. Affordability, in addition to being a function of the income level of the population, which determines the household's capacity to pay for a house, is also affected by the development of housing financing, which affects the capacity of households to access long-term financing for a house.

The housing policy environment also affects outcomes because it determines public expenditures for housing and urban development, and the types of housing policies and programs pursued by the governments. These topics need to be researched further for a better explanation of the housing sector outcomes documented in this paper.

Future Housing Needs

New households require housing and they obtain them in the formal housing market, if possible, or in the informal market, either building incrementally on illegally occupied land or moving in with others. The annual rate of new household formation depends not only on demographic factors, but also on social, cultural, and economic factors (UN, 1973). To estimate the growth in the number of urban households, this study used the headship ratio method based on data provided by the household surveys (circa 2006), the World Population Prospects (2008 revision)[7] and the urban population projections by cohort from the Population Division of ECLAC (2009).[8] According to estimations, in 2010 there were around 130 million urban households in LAC and approximately three million new households will be added each year until 2030. The 2005–50 projections indicate that the number of households will continue to increase; however, the rate of increase is declining, which will be reflected in a reduction in the annual household formation by 2025. That means that by 2050 the formation of new households per year will be approximately 1.5 million. The challenge for LAC countries is significant. The estimates indicate that the total number of urban households will increase from 130 million in 2010 to 190 million in 2030 and 230 million in 2050. This growth in households translates into a need for approximately 3 million new houses in LAC each year for the next 20 years.

Not all countries face challenges of the same magnitude because they are in different phases of demographic transition, have different population growth rates, and have different rates of growth of their urban populations. Table 5 presents the estimation of annual household formation from 2010 to 2050 in brackets of five years each. Notably, in Brazil, which represents one-third of the region's household formation, household formation is already declining, a process that is expected to begin in Mexico, Argentina, and Chile by 2015, and in 2030 for 10 other countries. However, in Nicaragua, Paraguay, Bolivia, Honduras, and Guatemala, countries that are less urbanized and poorer, the household flow will be rising even after 2035.

[7] Source: http://www.un.org/esa/population/

[8] The headship ratio method is based on the calculation of the percentage of heads of households per cohort. In this exercise it is assumed that the headship ratio remains constant at the circa 2006 level.

Table 5. Household Projections by Country

(Average Annual Household Formation, in thousands, except LAC in millions)

	2010	2010–15	2015–20	2020–25	2025–30	2030–35	2035–40	2040–45	2045–50
LAC	132.5	3.0	3.1	3.1	3.0	2.7	2.4	1.9	1.5
BRA	54.3	1,070	1,070	1,066	960	811	620	385	226
MEX	24.8	615	615	606	599	550	455	350	234
ARG	12.1	216	214	221	222	208	196	166	142
COL	10.2	281	279	279	266	246	220	188	141
VEN	7.0	185	187	184	180	174	164	148	131
PER	4.7	127	130	139	142	139	132	121	105
CHL	4.2	94	93	86	75	59	43	29	21
ECU	2.6	65	71	76	77	75	70	63	56
GTM	2.0	109	119	128	135	142	145	147	144
DOM	2.0	57	55	54	52	50	46	40	34
BOL	1.7	50	56	60	63	64	62	60	54
HND	1.0	40	47	53	57	59	61	61	60
CRI	0.9	29	34	31	29	25	21	16	13
NIC	0.7	23	25	27	28	29	29	28	26
PAN	0.7	21	21	21	21	20	18	16	13
URY	1.0	9	10	11	11	10	9	8	6
PRY	1.0	34	37	39	41	41	40	38	35
SLV	1.0	20	26	30	25	23	24	24	23

***Note*:** ARG: Argentina; BOL: Bolivia; BRA: Brazil; CHL: Chile; CRI: Costa Rica; COL: Colombia; DOM: Dominican Republic; ECU: Ecuador; GTM: Guatemala; HND: Honduras; LAC: Latin American and the Caribbean; MEX: Mexico; NIC: Nicaragua; PAN: Panama; PER: Peru; PRY: Paraguay; SLV: El Salvador; URY: Uruguay.

Source: Authors' calculations.

Final Remarks

According to the estimates made in this study, housing conditions for the urban population in Latin America and the Caribbean improved in the 1995–2006 period. The quantitative housing shortage decreased in most countries and the quality of housing improved as more houses had access to infrastructure in 2006 than in 1995. Moreover, the homes were built with better materials and were less overcrowded. However, the region still faces a challenge in terms of secure tenure, which did not improve during the period. The study also shows that the housing conditions of the poor improved over the period. This may be the result of higher income since this was a period during which the per capita income of all but one country increased. It may also be partly the result of public interventions in the housing sector that benefited the poor. More in-depth country-specific analyses are required to understand these relationships.

The data shows that urban Latin America is a continent of homeowners since the majority of the housing stock is owner-occupied. The percentage of rented houses is lower than in most developed countries, and there is a growing incidence of other forms of tenure for households with lower incomes. This could be the result of a cultural preference for ownership in a continent besieged by macroeconomic instability, where houses are commonly used for value retention or, as it has been suggested, the result of housing policies that favor home ownership and discourage rental housing. This issue merits further investigation since well-functioning housing markets need an ample supply of houses for rent.

The detailed analysis of the evolution of housing conditions by income level in the 18 countries studied shows that some countries are doing better than others in improving housing conditions in general and for the poor in particular. As per capita income increased—albeit differently—in all countries but one, this difference in the outcomes of the housing sector must also be attributable to other factors. As mentioned, the affordability of houses, which is highly dependent on the price of serviced residential land and the development of financing for housing, is one of these factors. Public housing policies and programs may be another factor determining the observed housing sector outcomes. All of the countries studied have housing policies and programs under implementation. Depending on their orientation and scope, these policies and programs may have different effects in housing sector outcomes, as proven in studies about the Chilean housing policy (Rojas, 2001; UN, 2009). However, the data discussed here indicates that there is no “one-size-fits-all” solution and thus different countries will need different policies and programs. In certain

countries, the emphasis would need to be on the construction of new houses to cope with the backlog of households doubling or more with others. In other countries, the emphasis would need to be on improving the quality of the houses. All countries would benefit from settlement upgrading programs that address the more common housing shortage in the region, that of infrastructure. These topics need further study but require in-depth country-by-country analysis of the evolution of their housing sectors, a pursuit beyond the scope of this paper.

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Appendix 1. List of Surveys

Country	Year	Name of the survey	Coverage	Period of reference
Argentina	1998	Encuesta Permanente de Hogares - EPH	28 urban regions	Oct.
	2002	Encuesta Permanente de Hogares - EPH	30 urban regions	Oct.
	2006	Encuesta Permanente de Hogares - EPH	31 urban regions	2º sem.
Bolivia	1997	Encuesta Nacional de Empleo - ENE	National	Nov.
	2000	Encuesta Continua de Hogares	National	Nov.
	2006	Encuesta de Hogares	National	Nov.-Dec.
Brazil	1995	Pesquisa por Amostra de Domicilios - PNAD	National	Sept.
	2001	Pesquisa por Amostra de Domicilios - PNAD	National	Sept.
	2007	Pesquisa por Amostra de Domicilios - PNAD	National	Sept.
Chile	1996	Encuesta de Caracterización Socioeconómica Nacional - CASEN	National	Nov.
	2000	Encuesta de Caracterización Socioeconómica Nacional - CASEN	National	Nov.
	2006	Encuesta de Caracterización Socioeconómica Nacional - CASEN	National	Nov.-Dec.
Colombia	1997	Encuesta Nacional de Calidad de Vida-ECV	National	Sept.
	2003	Encuesta Nacional de Calidad de Vida-ECV	National	Sept.
	2008	Encuesta Nacional de Calidad de Vida-ECV	National	Aug.-Oct.
Costa Rica	2001	Encuesta de Hogares de Propósitos Múltiples	National	Jul.
	2007	Encuesta de Hogares de Propósitos Múltiples	National	Jul.
Dominican Republic	2004	Encuesta de Fuerza de Trabajo - EFT	National	Oct.
Ecuador	1994	Encuesta de Empleo y Desempleo en el Área Urbana	Urban	Nov.
	1998	Encuesta de Condiciones de Vida	National	Aug.-Nov.
	2005	Encuesta de Empleo, Subempleo y Desempleo en el Area Urbana y Rural	National	Dec.
Guatemala	2000	Encuesta Nacional sobre Condiciones de Vida – ENCOVI	National	Jul.-Nov.
	2006	Encuesta Nacional de Condiciones de Vida - ENCOVI	National	Mar.-Sept.
Honduras	1995	Encuesta Permanente de Hogares de Propósitos Múltiples	National	Sept.
	2002	Encuesta Permanente de Hogares de Propósitos Múltiples	National	Sept.
	2007	Encuesta Permanente de Hogares de Propósitos Múltiples	National	Sept.
Mexico	1996	Encuesta Nacional de Ingresos y Gastos de los Hogares - ENIGH	National	3er trim.
	2002	Encuesta Nacional de Ingresos y Gastos de los Hogares - ENIGH	National	3er trim.
	2006	Encuesta Nacional de Ingresos y Gastos de los Hogares - ENIGH	National	3er trim.
Nicaragua	1998	Encuesta Nacional de Hogares sobre Medición de Niveles de Vida	National	Apr.-Aug.

Country	Year	Name of the survey	Coverage	Period of reference
	2001	Encuesta Nacional de Hogares sobre Medición de Niveles de Vida	National	Apr.-Jul.
	2005	Encuesta Nacional de Hogares sobre Medición de Niveles de Vida	National	Jul.-Oct.
Panama	1997	Encuesta de Niveles de Vida	National	Aug.
	2003	Encuesta de Niveles de Vida	National	Aug.
	2008	Encuesta de Niveles de Vida	National	Aug.
Peru	1995	Encuesta Nacional de Hogares sobre Niveles de Vida y Pobrega- ENAHO	National	Jun.-Aug.
	2000	Encuesta Nacional de Hogares Sobre Niveles de Vida y Pobreza- ENAHO	National	Oct.- Dec.
	2005	Encuesta Nacional de Hogares Sobre Niveles de Vida y Pobreza- ENAHO	National	Annualized data
Paraguay	1995	Encuesta de Hogares	National	Jul.-Nov.
	2002	Encuesta Permanente de Hogares	National	Nov.-Dec.
	2007	Encuesta Permanente de Hogares	National	Oct.- Dec.
El Salvador	1995	Encuesta de Hogares de Propósitos Múltiples	National	Year
	2000	Encuesta de Hogares de Propósitos Múltiples	National	Year
	2007	Encuesta de Hogares de Propósitos Múltiples	National	Year
Uruguay	1995	Encuesta Continua de Hogares	Urban	Year
	2000	Encuesta Continua de Hogares	Urban	Year
	2005	Encuesta Continua de Hogares	Urban	Year
Venezuela	1995	Encuesta de Hogares por Muestreo	National	Year
	2000	Encuesta de Hogares por Muestreo	National	2º sem.
	2006	Encuesta de Hogares por Muestreo	National	2º sem.

Appendix 2. Estimation of Housing Conditions in Latin America and the Caribbean

The principal objective of this appendix is to briefly explain the methodology used to calculate housing shortages in the countries studied and the limitations of the data set concerning the issues studied. Despite the fact that all of the surveys used to generate data for this study included very similar modules of information, some variables are not common to all of them. In addition, even if the surveys used the same variables, sometimes the codification varied, affecting the comparability of the data generated by the different surveys. For instance, for Argentina, it is impossible to identify how many households shared a dwelling in 1995 and 2000, while in Uruguay there were no variables related to the quality of the materials of the dwellings.

As explained in the text and in Table 1, the study considered a household to be facing a quantitative shortage if it needed a new dwelling and as facing a qualitative shortage if improvements in infrastructure, building materials, or the size of the dwelling would solve the shortages.

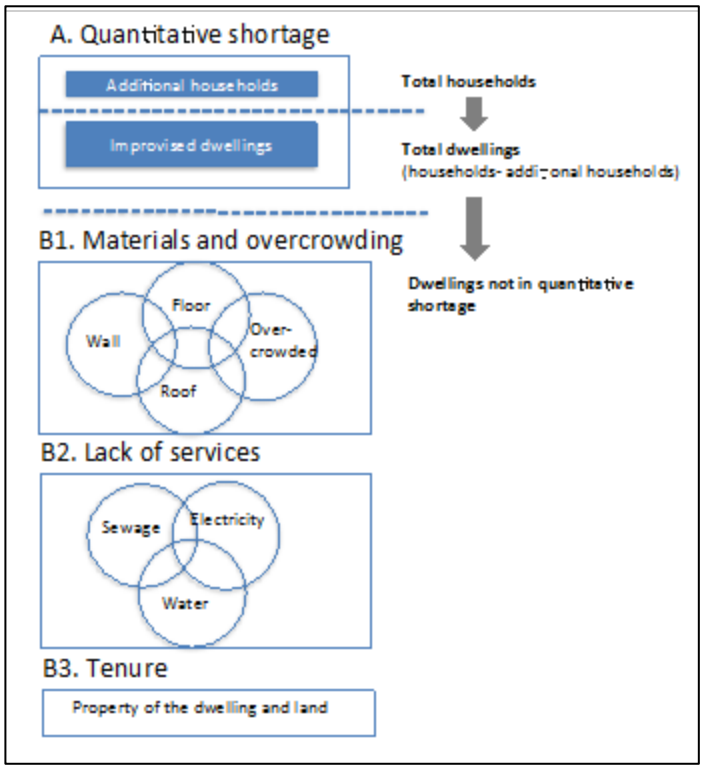
Figure 5 explains the steps followed in this study to calculate housing shortages. From the total number of households in the surveys, the study first identified the number of households sharing a dwelling. Not all of the surveys recorded that more than one household was using one dwelling, but when they did so they also identified which was the principal household and which were the additional households. For this study, only the latter were added to the quantitative shortage and they were taken out of the sample used to calculate other shortage categories. As a result, the number of households in the qualitative sample became equal to the number of occupied dwellings. This approach led to an estimated number of households that required either a new house or improvements to their house or neighborhood to improve household living conditions.

The second component of the quantitative shortage was the number of dwellings that could not be rehabilitated, such as shacks, rooms in dwellings, and other areas not appropriate for housing.[9] Ideally the dwellings located in risk zones (e.g., cliffs, rivers, or at risk in a natural disaster) should have been added to the quantitative shortage, but this information was not captured by the household surveys. The sum of the households doubling or more up with another household and the dwellings that could not be improved—which are mutually exclusive—equals the number of households affected by a quantitative

[9] Since there are some countries with a large number of indigenous dwellings, especially in rural areas, that might be made of disposable materials but with adequate construction methods, these were not considered improvised dwellings.

shortage of housing. After this step, the number of dwellings that could not be improved was removed from the sample to calculate the qualitative shortage.

Figure 5. Estimation of Housing Shortages in the LAC Region



Source: Authors elaboration.

To estimate the qualitative shortage, three different categories were used according to the origin of the deficit: materials and overcrowding related to characteristics of the dwelling, lack of infrastructure related to characteristics of the neighborhood, and lack of secure tenure. Since each of these housing shortages would be solved by particular interventions, they are not added together. But it must be noted these groups are not exclusive.

A. Quantitative Shortage

The quantitative shortage is the sum of the households doubling or tripling up (or even more) with other households, excluding the principal household. However, if the dwelling in which multiple households are living cannot be improved, all of the households are included in the shortage. To improve their situation, these households need to be able to access adequate accommodations, either by renting or owning. The number of households in quantitative shortage indicates the number of households that were not able to access a proper dwelling in a given period of time.

B. Qualitative Shortage

B1. Materials and Overcrowding: This shortage is about the condition of dwellings, such as disposable materials used in the walls or roof, a dirt floor, or overcrowding (more than three people per room). If any of these characteristics occurred in a dwelling, it was considered in shortage. The standard used in the household surveys for declaring the materials unsuitable is very low—essentially disposable materials such as mud, carton, plastic, trash, and palm. Of note, there were a significant number of dwellings made of non-disposable materials, including bricks, that required improvements. Ideally, data to estimate this shortage should include some variables such as state of conservation and quality of construction. However, few surveys collected that kind of variable. So this shortage is just a measure of the households below the minimum conditions and should not be interpreted as full demand for house improvements.

B2. Lack of Infrastructure: This shortage is related to the availability of basic public services inside the dwelling—piped water, sewage or septic tank, and access to electricity. If any of these services was not available in the dwelling, it was considered in shortage. These services are provided collectively to the neighborhood; therefore, the individual households have limited influence on improvement of these conditions. It is important to note that a more modern approach to measure housing conditions should consider access to public transportation and availability or urban equipment, such as schools, hospitals, and other important amenities. Nevertheless, such variables were not always available in the household surveys.

B3. Lack of Secure Tenure: This shortage includes households that do not have secure tenure of the land and their dwelling. In the LAC region, where informal production of housing is important, some people assume they are owners if they possess the dwelling even if they do not possess the land. Therefore, the most precise way to measure the variable is to question if they have title to the land. Unfortunately the answer to this question is not available for all the countries. There is a wide range of definitions used to classify tenure, but in general all of them identify squatters and de facto users. To standardize this variable, households that were owners, either outright or still paying a mortgage, and renters were classified as having secure tenure and all other forms of tenure were classified as insecure. Whenever the information gathered by the survey allowed, the households that did not own the land where their dwellings were located were removed from the owner category and added to the "other" form of tenure. Finally, some renters could be using informal leasing contracts; however, this question was not often considered in the surveys.

Despite all of the previous observations, the database provides fairly comparable information. Table 4 shows that shortage C is the one with least differences across surveys in the database. Accepting these conditions, some conclusions are reserved for countries with difficulties in data comparability. For example, the study did not quantify the qualitative shortage from materials for Argentina and Uruguay (shortage B) because their surveys lacked comparable information. It is important to note that not including floor characteristics can bias the results for the dwellings conditions in Brazil, leading to results that look very optimistic.

Appendix 3. Survey Descriptions

		A. Quantitative shortage		B. Materials and overcrowding				C. Lack of services			D. Secure tenure
	Year	Shared	Impro-vised	Wall	Floor	Roof	Over-crowding	Water	Sanitation	Electri city	Tenure
ARG	1998	NA	x	x	NA	NA	x	x	x	x	land
	2002	NA	x	x	NA	NA	x	x	x	x	land
	2006	x	x	NA	x	x	x	x	x	NA	land
BOL	1997	NA	x	x	x	x	x	x	x	x	x
	2000	NA	x	x	x	x	x	x	x	x	x
	2006	NA	x	x	x	x	x	x	x	x	x
BRA	1995	x	x	x	NA	x	x	x	x	x	x
	2001	x	x	x	NA	x	x	x	x	x	x
	2007	x	x	x	NA	x	x	x	x	x	x
CHL	1996	x	x	x	x	x	x	x	x	x	land
	2000	x	x	x	x	x	x	x	x	x	land
	2006	x	x	x	x	x	x	x	x	x	land
COL	1997	x	x	x	x	NA	x	x	x	x	x
	2003	x	x	x	x	NA	x	x	x	x	x
	2008	x	x	x	x	NA	x	x	x	x	x
CRI	2001	x	x	x	x	x	x	x	x	x	x
	2007	x	x	x	x	x	x	x	x	x	x
DOM	2004	NA	x	x	x	x	x	x	x	x	x
ECU	1994	x	x	x	x	NA	x	x	x	x	x
	1998	x	x	x	x	x	x	x	x	x	land
	2005	x	x	x	x	x	x	x	x	x	land
GTM	2000	x	x	x	x	x	x	x	x	x	x
	2006	x	x	x	x	x	x	x	x	x	x
HND	1995	x	x	x	x	NA	x	x	x	x	x
	2002	x	x	x	x	x	x	x	x	x	x
	2007	x	x	x	x	x	x	x	x	x	x
NIC	1998	x	x	x	x	x	x	x	x	x	land
	2001	x	x	x	x	x	x	x	x	x	land
	2005	x	x	x	x	x	x	x	x	x	land
MEX	1996	x	x	x	x	x	x	x	x	x	land
	2002	x	x	x	x	x	x	x	x	x	land
	2006	x	NA	x	x	x	x	x	x	x	x
PAN	1997	x	x	x	x	x	x	x	x	x	land
	2003	x	x	x	x	x	x	x	x	x	land
	2008	x	x	x	x	x	x	x	x	x	land
PRY	1995	x	x	x	x	x	x	x	x	x	x
	2002	x	x	x	x	x	x	x	x	x	x
	2007	x	x	x	x	x	x	x	x	x	x
PER	1995	x	x	x	x	x	x	x	x	x	land
	2000	x	x	x	x	NA	x	x	x	x	x

		A. Quantitative shortage		B. Materials and overcrowding				C. Lack of services			D. Secure tenure
	Year	Shared	Impro-vised	Wall	Floor	Roof	Over-crowding	Water	Sanitation	Electri city	Tenure
	2005	x	x	x	x	x	x	x	x	x	x
	1995	x	x	x	x	x	x	x	x	x	x
SLV	2000	x	x	x	x	x	x	x	x	x	x
	2007	x	x	x	x	x	x	x	x	x	x
	1995	NA	x	NA	NA	NA	x	x	x	x	x
URY	2000	NA	x	NA	NA	NA	x	x	x	x	x
	2007	NA	x	NA	NA	NA	x	x	x	x	x
	1995	x	x	x	x	x	x	x	x	x	x
VEN	2000	NA	x	x	x	x	x	x	x	x	x
	2006	x	x	x	x	x	x	x	x	x	x

Notes: In the tenure, variable "land" identifies those cases where it was possible to identify owners that do not possess the land where their dwellings are located; therefore these households are classified as insecure tenants.

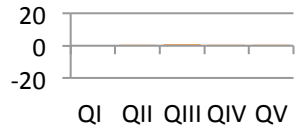
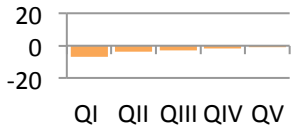
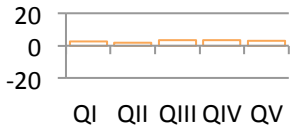
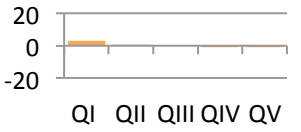
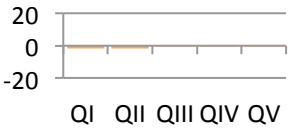
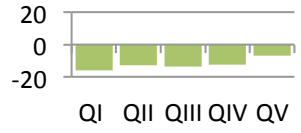
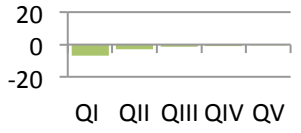
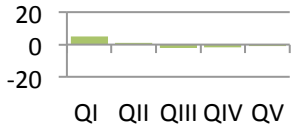
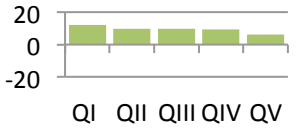
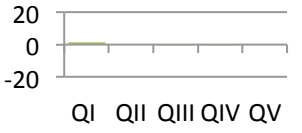
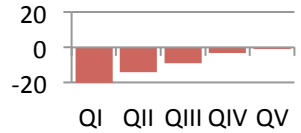
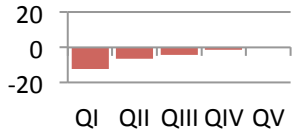
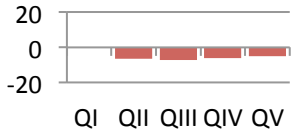
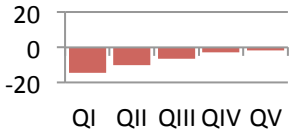
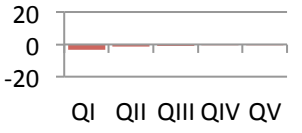
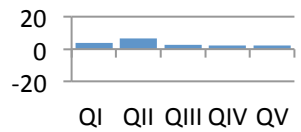
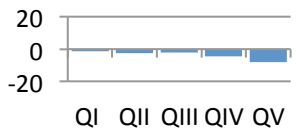
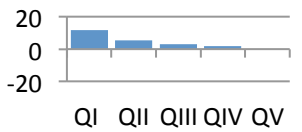
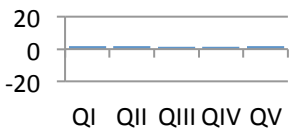
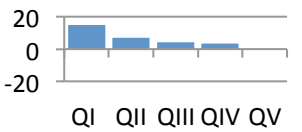
ARG: Argentina; BOL: Bolivia; BRA: Brazil; CHL: Chile; CRI: Costa Rica; COL: Colombia; DOM: Dominican Republic; ECU: Ecuador; GTM: Guatemala; HND: Honduras; MEX: Mexico; NIC: Nicaragua; PAN: Panama; PER: Peru; PRY: Paraguay; SLV: El Salvador; URY: Uruguay.

Source: Authors' elaboration.

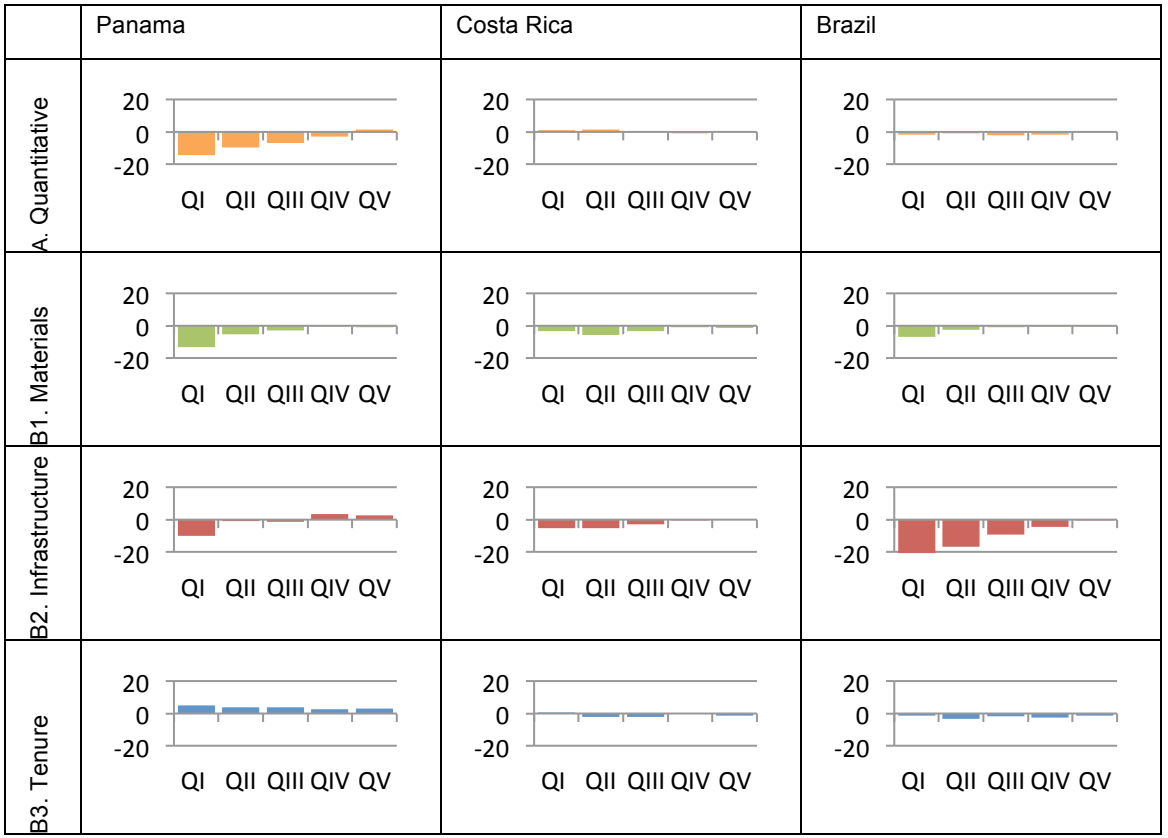
Appendix 4. Housing Shortage Evolution by Income Level

Below, four groups are presented: high-income countries (with per capita incomes higher than US$10,000 PPP in 2006), middle-income countries (per capita incomes between US$9,999 and US$8,000), lower middle-income countries (per capita incomes between US$7,999 and US$5,000 PPP) and low-income countries (below US$5,000 PPP). The graphs show the changes in shortages measured in percent points, a negative bar implies a decreasing housing shortage while a positive bar denotes an increase housing shortage. Countries closing the housing gap as housing shortages are decreasing in the lower-quintiles more than in the higher incomes can be easily identified if a positive slope line can be traced when connecting the end of the bars. On the contrary a negative slope show countries where the gap is widening and higher income households are improving their housing situation more than those in lower income brackets. In addition, there are some cases where the line is horizontal, indicating countries where this situation is stagnant.

High-Income Countries (More than US$10,000 PPP in 2006)

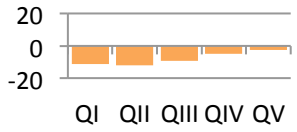
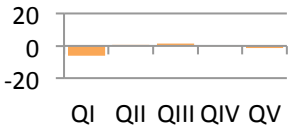
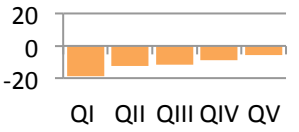
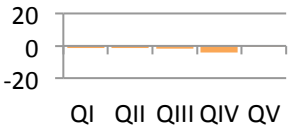
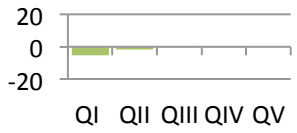
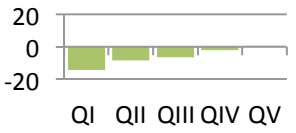
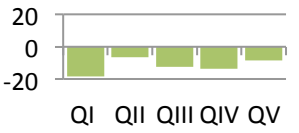
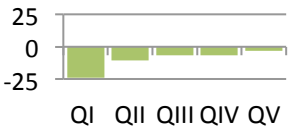
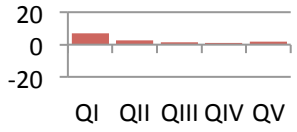
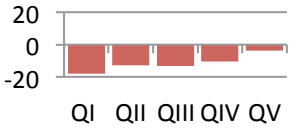
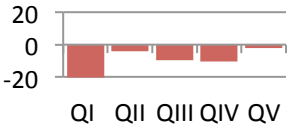
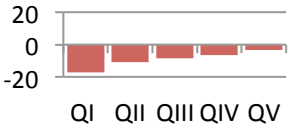
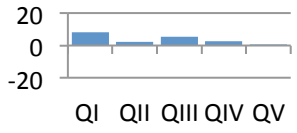
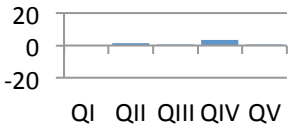
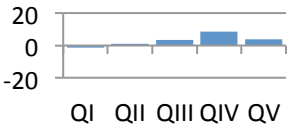
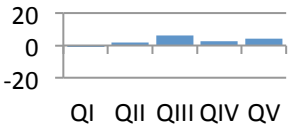
	Mexico	Chile	Argentina	Venezuela	Uruguay
A. Quantitative					
B1. Materials					
B2. Infrastructure					
B3. Tenure					

Upper Middle-Income Countries (US$9,999–US$8,000 PPP in 2006)



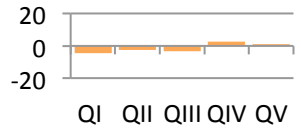
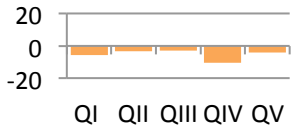
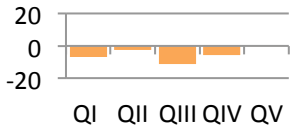
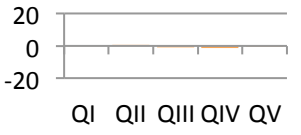
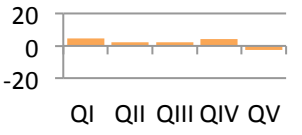
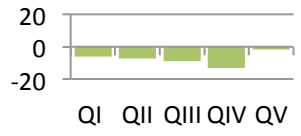
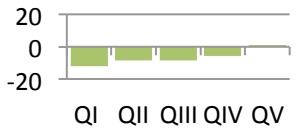
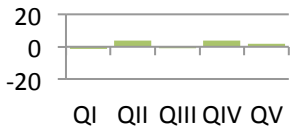
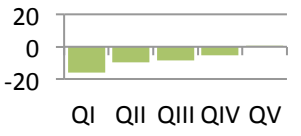
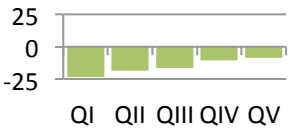
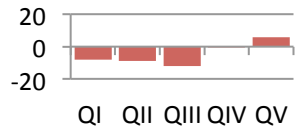
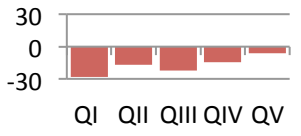
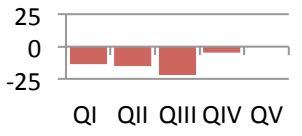
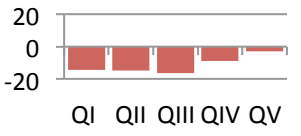
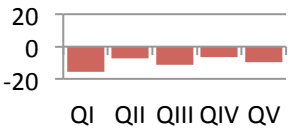
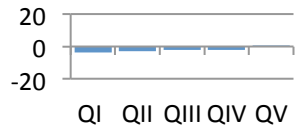
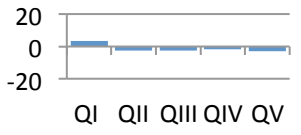
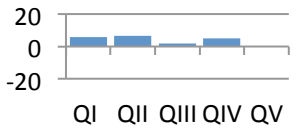
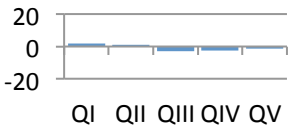
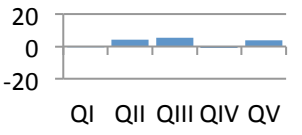
Source: Authors' calculations based on household surveys.

Lower Middle-Income Countries (US$7,999–US$5,000 PPP in 2006)

	Colombia	Ecuador	Peru	El Salvador
A. Quantitative				
B1. Materials				
B2. Infrastructure				
B3. Tenure				

Source: Authors' calculations based on household surveys.

Lower-Income Countries (Less than US$5,000 PPP in 2006)

	Guatemala	Paraguay	Bolivia	Honduras	Nicaragua
A. Quantitative					
B1. Materials					
B2. Infrastructure					
B3. Tenure					

Source: Authors' calculations based on household surveys.