

*Regional Workshop on Poverty Measurement in Arab Countries  
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# Developing comparable measures of income poverty in Latin America

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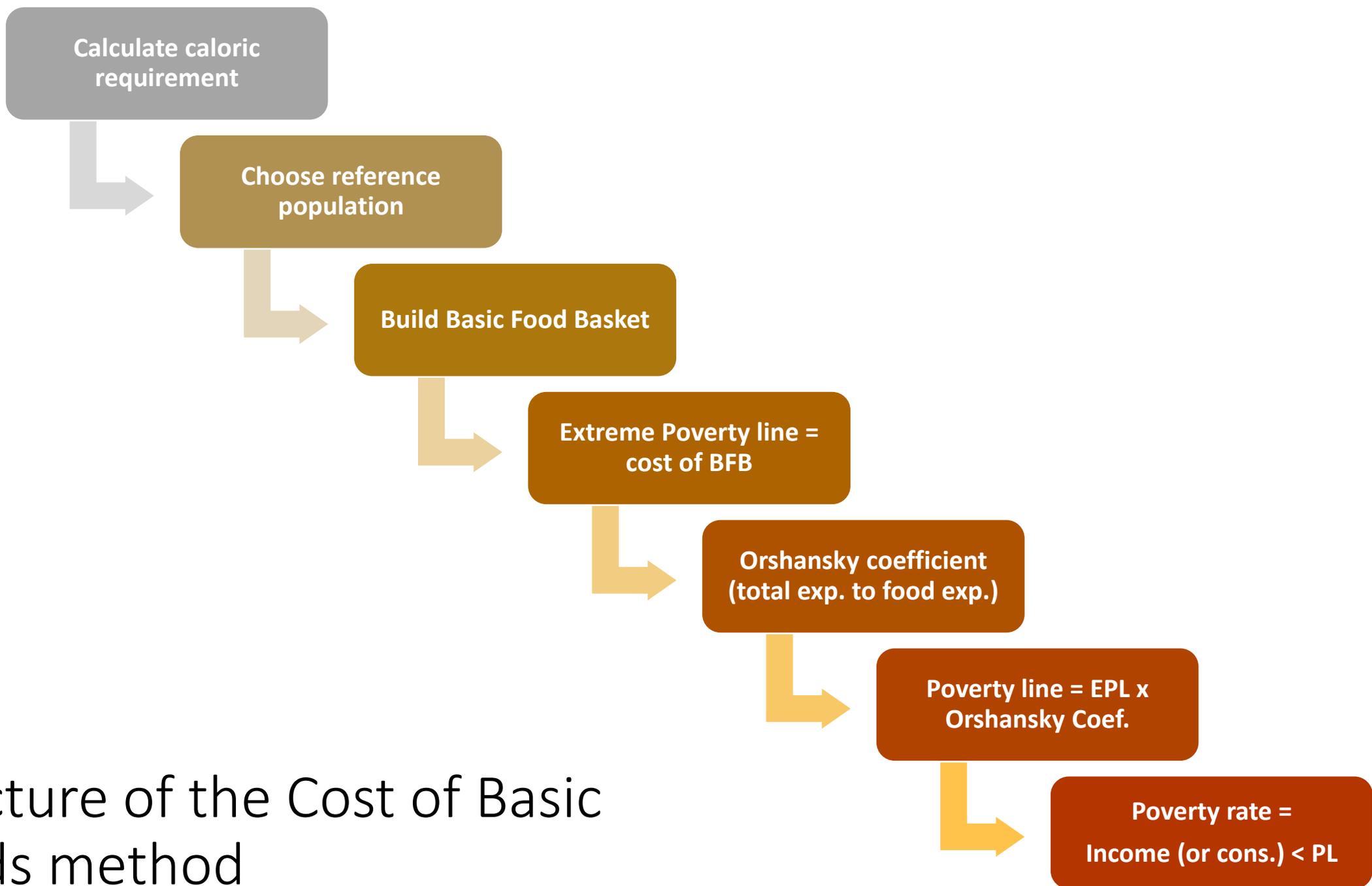
NACIONES UNIDAS  
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# Background

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- Methods for measuring poverty are well known
  - Group of Rio (2006). Compendium of good practices for the measurement of poverty.
  - UNECE (2017). Guide on Poverty Measurement.
- However, existing measurements tend to have limited comparability
  - Diversity of methods
  - Diversity of criteria within the same method
  - Differences in sources of information
- Countries in Latin America measure absolute poverty based on the “cost of basic needs method”.



# Structure of the Cost of Basic Needs method

# Some decisions within the CBN method

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## Choice of reference population

- Based on energy (calories) intake, iterative method or other?
- Different reference populations for food and non-food?
- One national population or independent populations for urban and rural?

## Food basket

- Number of products?
- How is out-of-household food expenditure valued?
- Includes adjustments for nutritional considerations?

## Non-food expenditure (Orshansky coefficient)

- Restricted or complete expenditure list?

## Price indices for updating the poverty lines

- General CPI, different indices for food and non-food, or other?

## Choice of welfare indicator

- Income or consumption?
- Per capita or adult equivalent?

# Are national measures comparable?

- Even though the general methodological framework is the same, its implementation is very diverse.
- Some examples (10 countries):

- 6 Based on calories, 4 based on iterative method
- 6 national ref.pop, 4 independent urban and rural

Reference population



- From 27 to 100 products
- Different combinations for selection of food items

Food basket



- 6 use strictly observed Orshansky Coefficient, 4 apply criteria for selection of items

Non-food expenditure



- 7 income, 3 consumption
- 7 per capita, 3 adult equivalent

Welfare indicator



# ECLAC poverty measurements

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- ECLAC has systematically measured income poverty in Latin America since the 1980s.
  - Based on poverty lines first calculated in Altimir (1979) and then in ECLAC (1991).
- The current context is different from that of 3 decades ago.
  - Most countries have national measurements, usually on an official basis.
- The ECLAC measures of poverty are aimed at regional comparability.
  - They provide a complementary view to that which comes from official national measurements.
- New estimation of poverty lines for 18 countries, based on a revised methodology and the most recent available data sources.
  - Methodology published in 2018.
  - Poverty figures published annually in *Social Panorama of Latin America*.

# Main data sources

- For poverty line
  - Most recent available surveys that collect information on household expenditures. →
  - Caloric requirements
    - Calculation based on common criteria for 18 countries (based on FAO-WHO, 2004)
  - Harmonized database of food nutrients.
  - CPI (food and non-food aggregates)
  
- For annual poverty measurement
  - Regular (mostly annual) household surveys that measure household income. →

Latin America (18 countries): Household surveys that collect expenditures

	2004-2006	2007-2009	2010-2012	2013-2015
Income and expenditure survey	El Salvador Uruguay Colombia Dominican Rep.	Panama Brazil Venezuela	Chile Mexico Argentina Costa Rica	
Living conditions survey	Honduras		Paraguay	Bolivia Ecuador Guatemala Nicaragua Peru

Latin America (18 countries): Periodic household surveys that measure income

	2000-2017
Every year or more frequent	13 countries
Every 2-3 years	3 countries
Undefined	2 countries

# Reference population - background

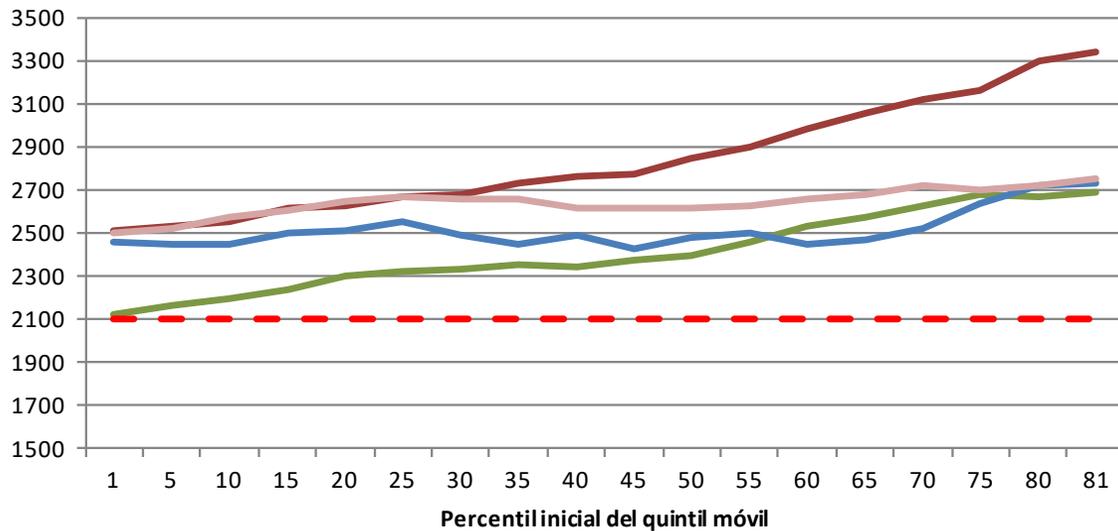
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- The reference population should be a group whose consumption habits are adequate to represent a standard of adequacy
  - An intermediate point is sought between a situation of deprivation and a situation of abundance
- How to identify a group with an adequate standard of living?
- Option 1: Use an exogenous sufficiency indicator
  - Selection for "apparent caloric intake"
- Option 2: Determine sufficiency endogenously
  - Iterative procedure so that the reference population converges with the poverty rate
- Nevertheless, both methods are directly affected by the ability of the household budget survey to measure "caloric intake"

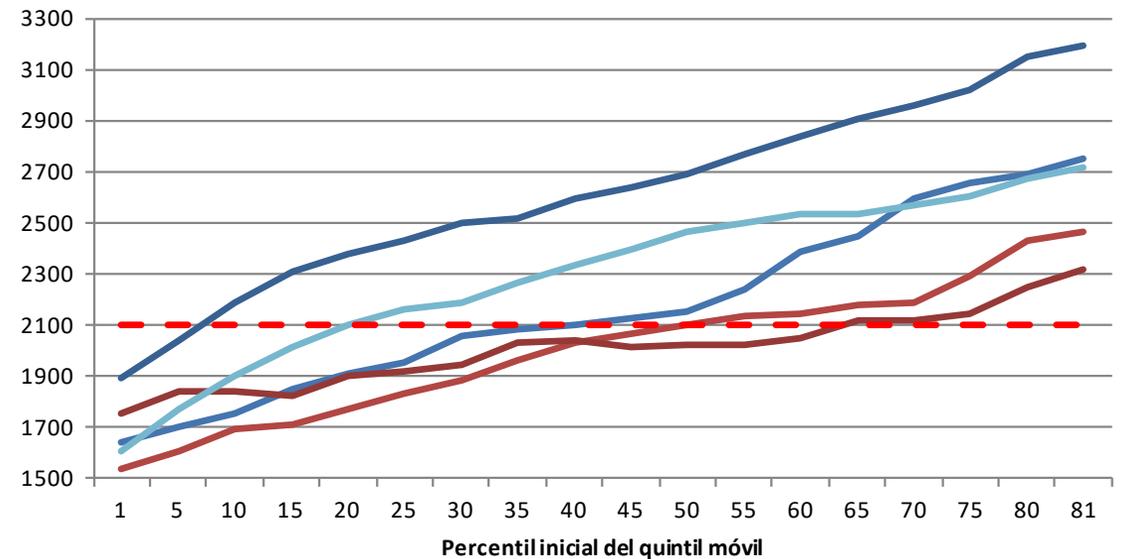
# Some evidence on the measurement of calories with household surveys

- Average caloric intake increases with household income.
- But the average caloric intake among countries does not follow the expected pattern.
  - High caloric intake in low-income countries and viceversa
  - Average shows correlation with questionnaire type

Average caloric intake by "mobile quintile", in countries with GDP per capita less than 2,500 USD (constant, 2012)  
(daily per capita Kcal)



Average caloric intake by "mobile quintile", in countries with GDP per capita greater than 6,000 USD (constant, 2012)  
(daily per capita Kcal)



— BOL\_2013      — HND\_2004      — GTM\_2014  
— PRY\_2011      - - - Umbral de referencia

— ARG\_2012      — CHL\_2012      — MEX\_2012  
— URY\_2006      — VEN\_2008      - - - Umbral de referencia

# Reference population – Methodology

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- Method combines exogenous and endogenous criteria.
- Sufficiency by exogenous criterion – Satisfaction of several basic needs:
  - Food
  - Education
  - Basic services
  - Housing
- Sufficiency by endogenous criterion – Average expenditure not lower than the poverty line obtained (iterative process).
- Procedure
  - Households sorted by per capita income and grouped in “mobile quintiles”
  - Reference population is the “mobile quintile” with 90% or more of households without simultaneous deprivations (2 or more) and with an average expenditure equal to or greater than the poverty line.

# Reference population – Methodology: Deprivation indicators

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- **Housing**
  - Precariousness of housing materials
    - Dwellings with dirt floor and / or with roofs or walls with precarious materials
  - Overcrowding
    - Households with more than three people per room
- **Basic services**
  - Lack of improved water sources
    - Households that obtain public network water off-site (in urban areas); unprotected wells; river, stream, rain and others
  - Lack of improved sanitation
    - Households in any of the following situations: with evacuation not connected to a sewer or septic system (in urban areas); that do not have toilet service; with evacuation without treatment or to the surface, river or sea
- **Education**
  - School attendance
    - Households with at least one child of primary or secondary school age (7 to 15 years of age) who does not attend an educational establishment
- **Food**
  - Caloric intake
    - Households with caloric intake per capita lower than the average requirement
  - Participation of food expenditure in total expenditure
    - Households that allocate more than 75% of their budget to the purchase of food
- Indicators for each dimension chosen based on correlation with income

# Basic Food Basket

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- The BFB provides a monetary reference on the cost of acquiring food that meets the needs of food.
- Procedure:
  - Select a representative set of food items:
    - At least x% of households purchase them
    - At least 2 products per food group
  - Around 60 products
  - Nutritional adjustments only for macronutrients (proteins, carbohydrates and fats)
  - Rescale quantities to reach the caloric requirement
- The BFBs are valued at median prices
- BFBs are built separately for urban and rural areas

# Non-food component

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- The non-food component of the poverty line is obtained from the ratio of total expenditure to food expenditure (“Orshansky Coefficient”), for the same reference population as the BFB.
- The main expenses in each item are selected in a similar way to the BFB:
  - Purchased by at least 10% of households
  - At least 2 products per category
  - In some categories all items are included [\*]
- Includes the following items:
  - Housing (rent [\*] and basic services [\*])
  - Health
  - Clothing
  - Transportation (public [\*] and private)
  - Housing equipment
  - Education (primary & secondary [\*] and other education expenses)
  - Personal expenses and others
- Orshansky Coefficient is calculated for urban and rural areas separately

# Household income

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- Income aggregate
  - Revision of income components according to international recommendations (Canberra Group)
  - Concept of income: total income (disposable income not attainable)
- Imputed rent
  - Imputed rent is considered as part of household income. Included to make the well-being of owner and non-owner households comparable.
  - However, it leads to an underestimation of poverty when it is greater than the cost of the rent implicit in the poverty line.
  - To reduce this bias: apply upper limit to the imputed rent of each household.
    - The imputed rent can not exceed the value of the other income received by the household.
    - It reduces the possibility that a household with low monetary income and having a high imputed rent will be classified as not poorly erroneously.
- Imputation for income non-response
  - A non-response correction procedure is applied to:
    - Paid employees who do not report the income from their main occupation.
    - Retirees or pensioners who do not declare the amount of their retirement or pension.
  - Application usually combines non-response and zero values.
  - Hotdeck method
  - Applied only when countries do not correct for non-response.

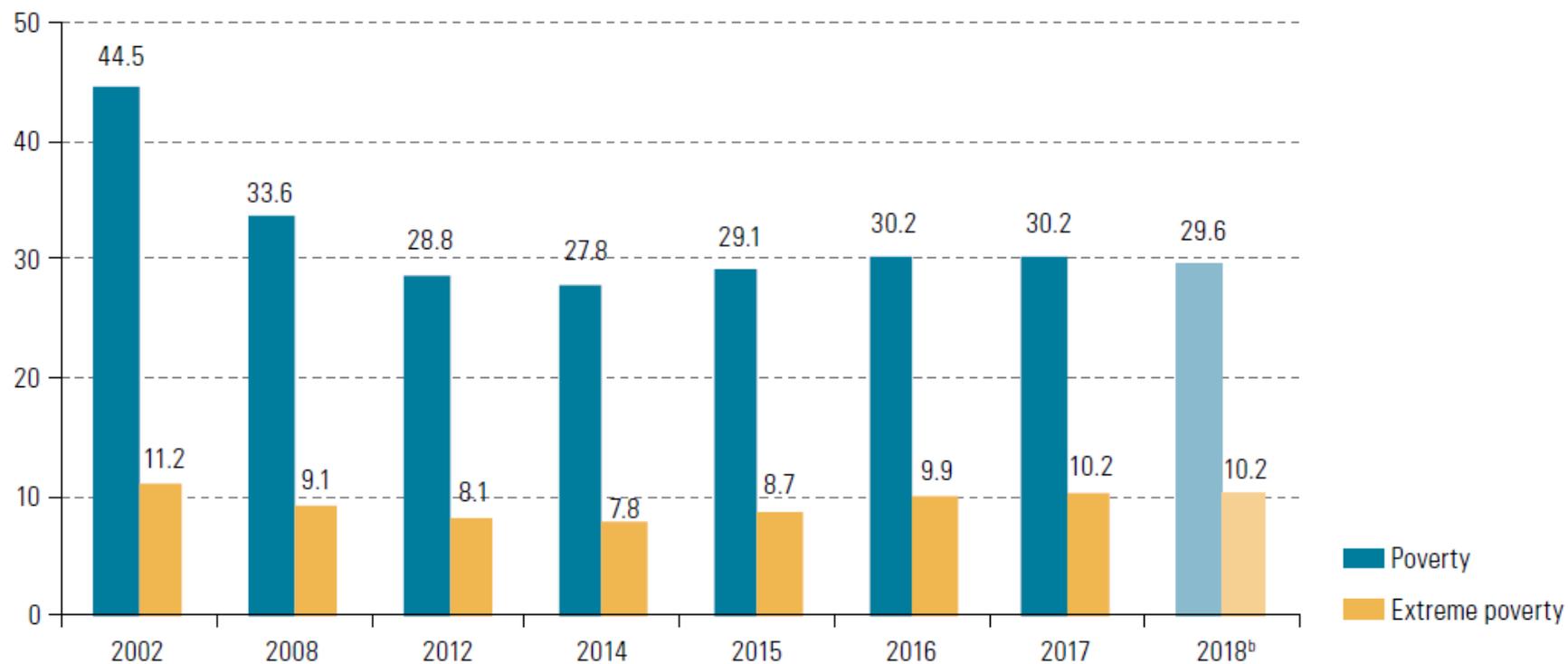
# Aggregate results

Figure II.1

Latin America (18 countries): poverty and extreme poverty rates and persons living in poverty and extreme poverty, 2002–2018<sup>a</sup>

(Percentages and millions of persons)

## A. Percentages



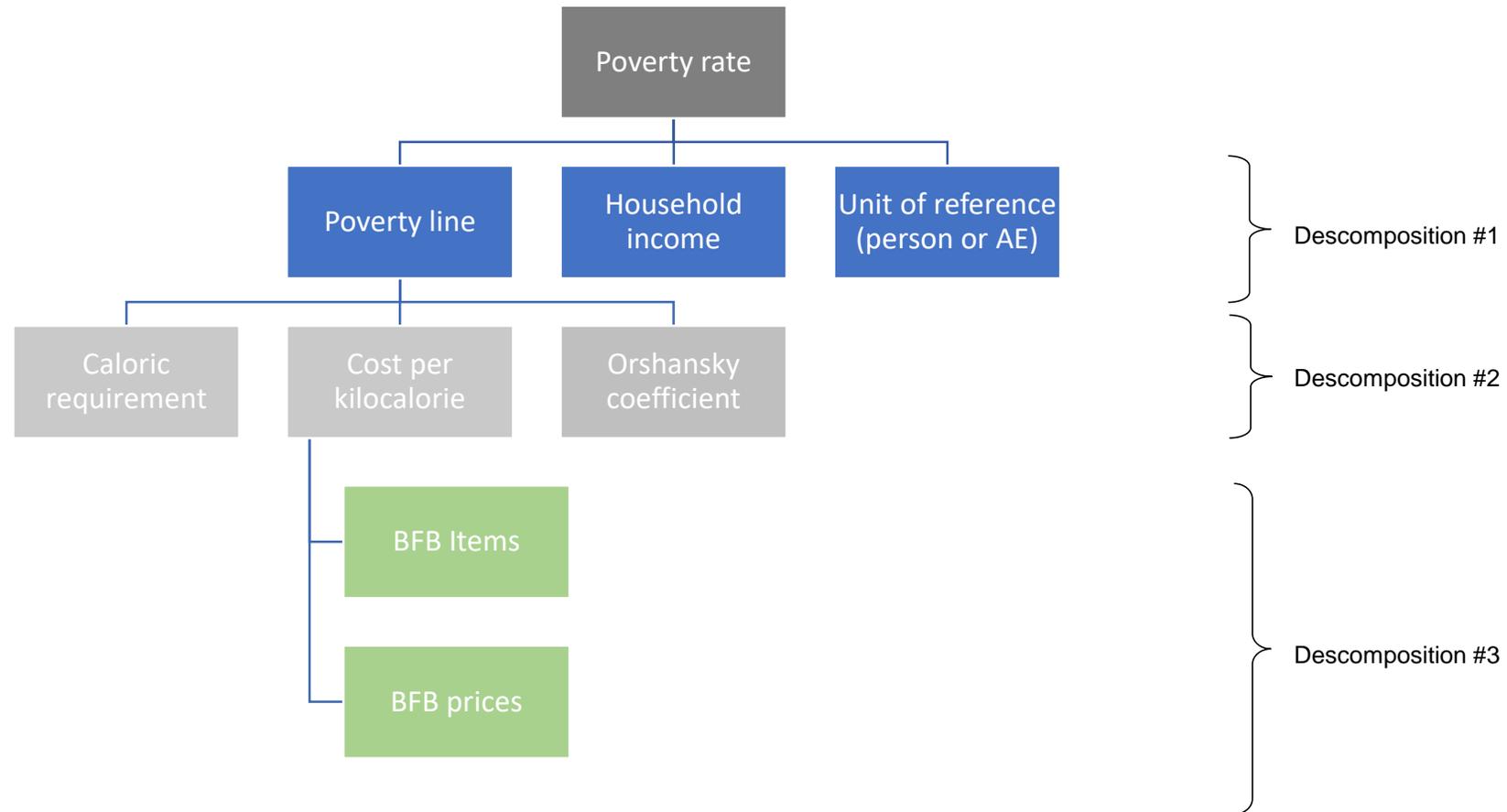
# Comparison to national measures

- ECLAC figures may be lower or higher than national estimates

		Countries where ECLAC extreme poverty figures are ... than national official figures	
		Lower	Higher
Countries where ECLAC poverty figures are ... than national official figures	Lower	Argentina, 2016	Paraguay, 2016
		Bolivia, 2015	Perú, 2016
		Costa Rica, 2016	Dominican Rep., 2016
		Guatemala, 2014	
		Honduras, 2016	
		México, 2016	
		Panamá, 2016	
		Uruguay, 2016	
		Venezuela, 2012	
	Higher	Brasil, 2014	Colombia, 2016
		Chile, 2015	Nicaragua, 2014
		Ecuador, 2016	El Salvador, 2016

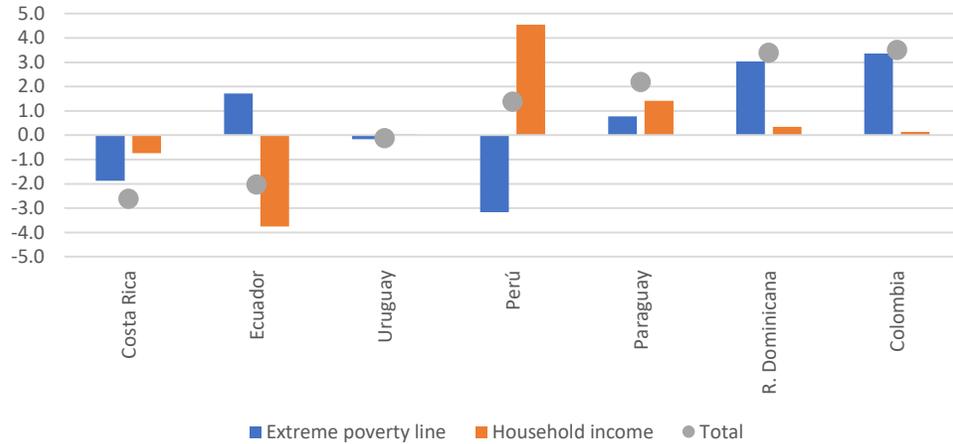
# Comparison to national measures

- Differences between results can be decomposed into several factors

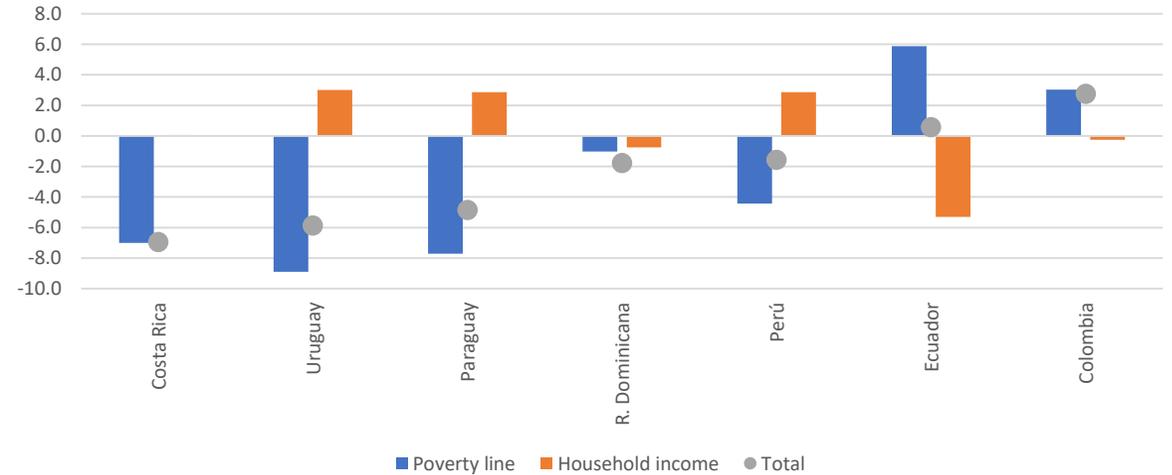


# Comparison to national measures

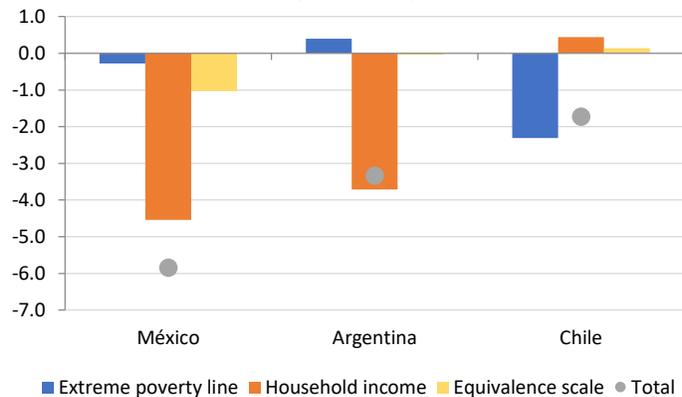
Latin America (18 countries): Decomposition of differences in extreme poverty rates (2 factors)



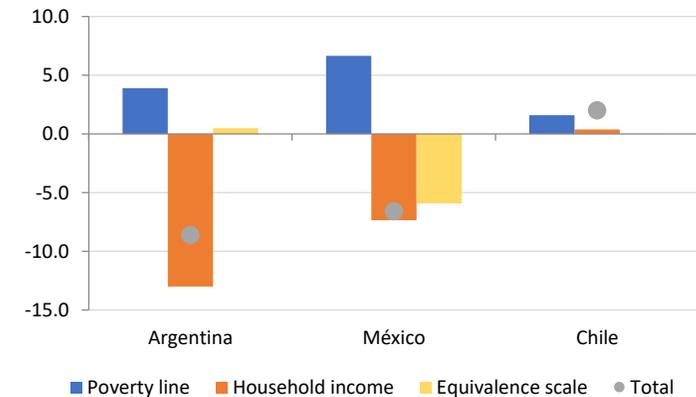
Latin America (18 countries): Decomposition of differences in poverty rates (2 factors)



Latin America (18 countries): Decomposition of differences in extreme poverty rates (3 factors)



Latin America (18 countries): Decomposition of differences in poverty rates (3 factors)

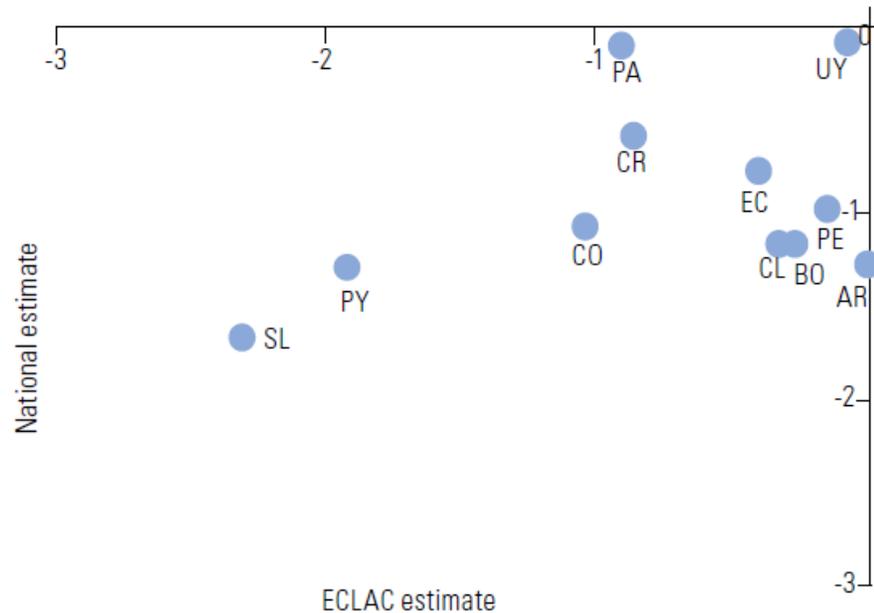


# Comparison to national measures: variation in poverty rates

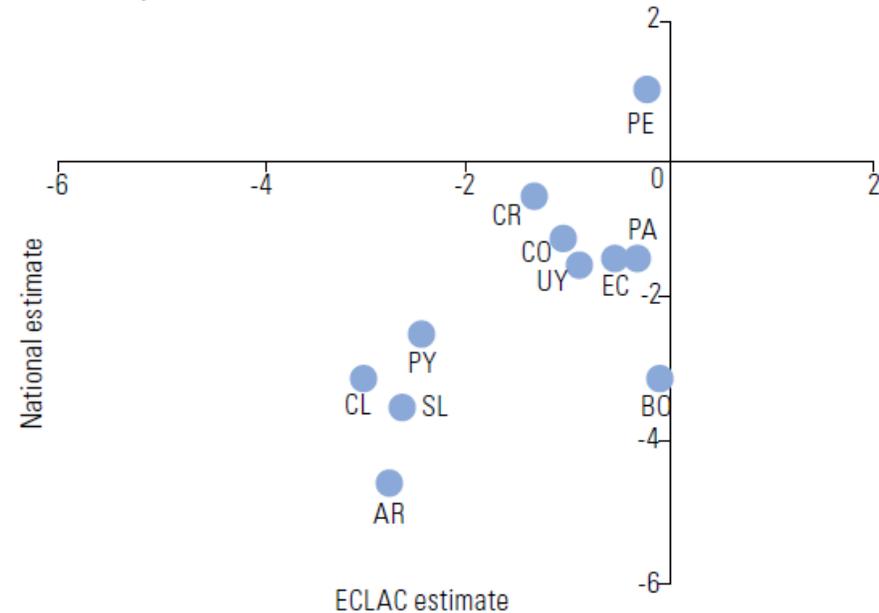
**Figure II.3**

Latin America (11 countries): variation in the poverty and extreme poverty rates according to ECLAC figures and official national figures, 2016–2017<sup>a</sup>  
(Percentage points)

**A. Extreme poverty**



**B. Poverty**



**Source:** Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Household Survey Data Bank (BADEHOG) and official figures on poverty and extreme poverty.

# Final remarks

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- Absolute comparability is not feasible, but it is possible to find a balance between a harmonized methodology and flexibility to account for specific needs of each context.
- Some methodological aspects are more relevant for comparability of results.
- The implementation of a common methodology shows some insights about the possibilities and constraints of data.
  - One important issue is the extent to which expenditure surveys adequately measure average food consumption. Average caloric intake can be significantly under- or overestimated.
- Some issues that need to be further considered:
  - Pertinence of including imputed rent.
  - Ability to account for in-kind income (or consumption), specially government transfer programs.
  - Absolute poverty lines tend to capture different degrees of “relativity” in each country. When absolute poverty is low, building a new poverty line might lead to increasing purchasing power in real terms.