

# HHB Research in Latin America: Taking stock & looking ahead

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Workshop on Household-Level Datasets

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# Outline

- 1 Taking stock
  - 1 Household-level datasets
  - 2 Living standards
  - 3 Inequality
- 2 Avenues for research

# Taking stock - Household-level datasets

- 1 Existing urban/national household-level datasets:
  - Mostly a mid-20th century phenomenon
  - National accounts
  - Studies on income distribution
- 2 Construction of household-level datasets:
  - Range of progress
    - Household consumption budgets (1600s-1950s)
    - Income distribution (benchmarks pre-1800s, 1850s-1950s/1970s)
    - Household-based income distribution by occupational matching

# Urban/national household-level datasets (1950s-present): Income and/or expenditure

Country	Years
Argentina	1953 <sup>a</sup> , 1959 <sup>a</sup> , 1960-1 <sup>a</sup> , 1963, 1965-7, 1970-1, 1972-present
Bolivia	1967, 1969, 1977-present
Brazil	1960 <sup>b</sup> , 1961-3, 1965-9, 1970-3, 1976-present
Colombia	1953, 1958 <sup>c</sup> , 1961, 1965-7, 1970-4, 1975-present
Costa Rica	1949, 1958, 1961, 1966-71, 1976-present
Chile	1940-54 <sup>c,d</sup> , 1956-7, 1963-5, 1967-9, 1973-present
Cuba	1977-present
Dominican Rep.	1969, 1976-77, 1980-present
Ecuador	1950-7 <sup>e</sup> , 1965, 1968, 1975-9, 1980-present (irregular)
El Salvador	1946, 1952, 1954, 1959, 1965, 1968 <sup>d</sup> -9, 1975-77, 1990, 2005-06
Guatemala	1966, 1970, 1977-81, 1986-present
Honduras	1950, 1967-8, 1978-9, 1985-6, 2009-present
Mexico	1950 <sup>b</sup> , 1954-65 <sup>d</sup> , 1956, 1958, 1960, 1963-5, 1967-9, 1973-present
Nicaragua	1973-6, 1979, 1980-present
Panama	1952, 1955, 1956, 1958-70 <sup>d</sup> , 1962-3, 1963-84, 1985-present
Paraguay	1963-4, 1970-1, 1976-8, 1978-80, 2005-present
Peru	1957, 1961 <sup>b</sup> , 1961-5 <sup>a</sup> , 1964-65, 1966 <sup>b</sup> , 1967-72, 1974, 1977-8, 1982, 1985-6, 1995-present
Uruguay	1962, 1967-8, 1968-80, 1981-present
Venezuela	1957 <sup>c</sup> , 1959 <sup>c</sup> , 1964 <sup>c</sup> , 1960, 1962, 1965-8, 1967-present

(a) national accounts, (b) population census, (c) tax records, (d) social security records, (e) indirect estimation. Sources: CEPAL (various years), national statistics centers websites.

# Urban/national household-level datasets (1950s-present): Mexico 1950s-1970s

MEXICO: FUENTES DE ESTIMACION SOBRE LA DISTRIBUCION AGREGADA DEL INGRESO POR NIVELES

Investigación	Organismo ejecutor	Año	Cobertura geográfica	Período de recopilación	Período de referencia de la medición de los ingresos	Tamaño de la muestra (número de hogares)
Séptimo Censo General de Población	SE/DGE	1950	Nacional	6 junio 1950	Mayo 1950 y año 1949	...
Ingresos y egresos de la población de México (IEPM)	SE/DGE	1956	Nacional	Octubre 1956	Septiembre	5 000
Ingresos y egresos de la población de México (IEPM)	SIC/DW	1958	Nacional	Julio 1958	Junio	19 000 <sup>g/</sup>
Encuesta sobre ingresos y gastos familiares en México (EIGFM)	BM/CEPA	1963	Nacional	Octubre 1963 - marzo 1964	Julio 1962 - febrero 1964	4 650
Estudio de ingreso y gastos de las familias (EIGF)	BM/CEPA	1968	Nacional	Abril 1968	Abril 1967 - marzo 1968	5 939
IX Censo general de población	SIC/DGE	1970	Nacional	28 enero 1970	Enero 1970 - año 1969	...
Encuesta de ingresos y gastos familiares (EDIGF)	CENIET	1975	Nacional	11 septiembre a 18 noviembre	Septiembre 1974 agosto 1975	7 998
Encuesta nacional de ingresos y gastos de los hogares (ENIG)	SPP/DGE	1977	Nacional	1º agosto a 9 octubre	Enero a junio	11 561

<sup>g/</sup> valores aproximados.

Source: CEPAL (1988)

## Construction of household-level datasets (colonial-1950s)

Some progress, especially in the last decades. See [GPIH website \(http://gpih.ucdavis.edu\)](http://gpih.ucdavis.edu) for downloadable files.

- Household consumption budgets (1600s-1950s)
- Income distribution (benchmarks pre-1800s, 1850s-1950s/1970s)
- Household-based income distribution by occupational matching

# Household consumption budgets

One of the most dynamic areas of research

- Geographic coverage: Argentina, Chile, Colombia, Mexico, Peru, Uruguay, Venezuela
- Time coverage: colonial, 19th century, 20th century
- Methodology: more recent research follows Allen (2001), Allen et al. (2011), and also use other consumption baskets.

**Main findings:** cost of living, variety of consumption goods, living standards

**Challenges:** spotty coverage, no long-term time series for most countries

# Household consumption budgets: Peru 1860s

MODELOS PARA RACIONES NORMALES.

cantidad en pesos.	SUSTANCIAS	1861	1862	precio
				a. c.
400	Harina de maiz.....	6'80	176'	
400	Frejoles.....	13'52	164'	
43'2	Manteca de cerdo.....		35'7	
		20'32	375'7	
300	Arroz.....	3'24	129'	
500	Frejoles.....	16'90	205'	
43'2	Manteca.....		35'7	
		20'14	369'7	
625	Frejol.....	21	257'5	
115'2	Tocino.....	1'34	110'3	
28'8	Chancaca.....		11'8	
		22'34	379'6	
500	Lentejas.....	18'75	200'	
300	Arroz.....	3'24	129'	
43'2	Manteca.....		35'7	
28'8	Chancaca.....		11'8	
		21'99	376'5	

Food consumption basket, Lima (1869)

Source: Consejo Provincial de Lima (1870)



# Household consumption budgets

Author(s)	Methods*					Coverage
	BBB	RB	OB	CL	LS	
Allen et al. (2012)	X			X	X	MEX, PER (1600s-1800)
Arroyo Abad et al. (2012)	X			X	X	ARG, BOL, COL, CHI, MEX, PER (1600s-1800s)
Arroyo Abad (2013a)	X		X	X	X	VEN (1830-1900)
Arroyo Abad (2013b)	X		X	X	X	PER (1830-1900)
Arrua (1925)			X	X	X	PER (1920s)
Brown (1990)			X	X		PER (1680, 1720, 1740, 1780, 1800, 1820)
Buchanan (1898)			X	X		ARG (1884-1894)
Challu and Gomez Galvarriato (2015)	X	X		X	X	MEX (1770-1930)
Cordoba and Urrutia (1837)			X			PER (1837)
Conti and Cuesta (2015)			X		X	ARG (1880s-1900s)
Department of Labor (1925)			X			MEX (1920s)
Gootenberg (1990)			X			PER (1830-1860, 1869)
Herzog (1922)			X			MEX (1922)
Lopez Uribe and Urrutia (2008)			X	X	X	COL (1850-1900, (1936))
Llorca-Jana and Navarrete-Montalvo (2014)	X			X	X	CHI (1788-1808)
Matus (2009)			X	X		CHI (1860-1930, (1936))
Pardo (1979)			X	X		COL (1636-1966)
Peloso (1985)			X			PER (1880s)
Torres (2014)			X			COL (1706-1819)

(\*): BBB: bare-bones basket; RB: respectable basket; OB: other basket; CL: cost of living; LS: living standards.

## Inequality and poverty

Area of research with more dynamism lately but limited comparable output

- Geographic coverage: Argentina, Chile, Colombia, Mexico, Peru, Uruguay, Venezuela
- Time coverage: 19th and 20th centuries with gaps
- Methodology: varied, many using social tables a la Milanovic et al. (2008), a few using probates (Gelman et al. for Argentina; Llorca-Jana et al. for Chile)

**Main findings:** heterogeneity in inequality evolution, no colonial legacy

**Challenges:** comparability across time and space

## Income inequality

Author(s)	Methods*					1%	Coverage
	RR	G/ST	HS	PG	WR		
Alvaredo						X	ARG (1930s-2000)
Arroyo Abad (2013)	X						AR, MEX, URU, VEN (1820s-1900s)
Arroyo Abad and Astorga (2016)	X	X	X				ARG, BRA, CHI, COL, MEX, URU, VEN (1850s-2010)
Astorga (2016)		X	X			X	ARG, CHI, MEX, URU, VEN (1900s-2010)
Bertola (2005)	X	X	X				URU (1880-2000)
Bertola et al. (2010)		X					ARG, BRA, CHI, URU (1870, 1920)
Frankema (2012) <sup>+</sup>							ARG, BRA, MEX (1900-1940)
Milanovic et al. (2008)		X					BRA, CHI, MEX, PER 1790, 1844, 1870, 1876
Prados de la Escosura (2007)			X		X		ARG, BRA, CHI, COL, MEX, URU (1850s-1960)
Rodriguez Weber (2014)	X	X	X				CH (1850s-2000s)
Williamson (1999)	X				X		ARG, BRA, COL, CUB, MEX, URU (1870-1939)
Zegarra (2011)							PER Poverty line (1913-1925)

(<sup>+</sup>) Industrial wages only

(\*) Notes: RR: Return ratios; G/ST: Ginis/Social tables; HS: Household surveys; PG: Pseudo-Ginis; WR: Williamson ratio; 1%: top percentile share.

## Income inequality: Buenos Aires in 1895

Joint project with Blanca Sanchez Alonso on inequality in Buenos Aires in 1895 using individual- and household-based census data.

- Sample: Somoza and Lattes (1967) and Arroyo Abad and Sanchez-Alonso (2015): over 12,000 observations
- Income: match-up occupation description to wages from an array of secondary sources
- Use of Buchanan (1898)'s budget to estimate expenditure (prices and budget composition)
- Estimation of share of households under poverty line (total, foreigners vs Argentines, etc.)

## Avenues for future research

Latin America's historical research lags behind other regions in the world.

- Limited coverage (countries?)
- New estimation techniques for cost of living and inequality (e.g. dynamic programming, distribution)
- Digitalization needed
- Matching: match occupation with wage data for income distribution and poverty

## Household Consumption Budget, Colonial Latin America

Bare-bones baskets in Europe and Hispanic Latin America.

	Good	Unit	Calories	Protein	Europe	Mexico	Argentina
						Peru	Chile
						Bolivia	
						Colombia	
Food	Wheat/oats	kg	3.370	88	155		132
	Maize	kg	3.370	70		165	
	Beans	kg	1.455	71		45	
	Meat (beef/pork)	kg	2.500	200	5	35	105
	Butter	kg	7.286	7	3		
Other	Soap	kg			1.3	1.3	1.3
	Linen/cotton	m			3	3	3
	Candles	kg			1.3	1.3	1.3
	Lamp oil	kg			1.3	1.3	1.3
	Fuel	M BTU			3	3	3
	Total calories (daily)				<b>1.936</b>	<b>1.943</b>	<b>1.938</b>
Total protein (daily)				<b>60</b>	<b>60</b>	<b>89</b>	

Sources: For Latin America, see appendix; Europe: Allen, 2001 and Allen et al., 2011.

Source: Arroyo Abad et al. (2012)

# Household Consumption Baskets, Peru (19th century)

**TABLE B1**  
SELECTED CONSUMPTION BASKETS

	Basket composition per year						
	Unit	Subsistence	Gootenberg <sup>1</sup>	Prisoner 1	Slave	Prisoner 2	Army officer
Foodstuff							
Meats	kg	98.2	167.9	124.4		167.9	126.1
Bread	kg	49.1	104.8	41.5	167.9	147.2	87.6
Rice	kg	58.9	62.8	83.0		52.6	61.3
Dried beans	kg	49.1	42.0	62.2	167.9	63.1	61.3
Lard	kg		20.8				
Butter	kg	11.8		5.2			10.5
Potatoes	kg			2.1			92.0
Other							
Cotton	M	3		3	3	3	3
Fuel	M BTU	3	167.9*	3	3	3	3
Candles	kg	1.3		1.3	1.3	1.3	1.3
Soap	kg	1.3		1.3	1.3	1.3	1.3

Notes: M: meter; M BTU: million BTU.

\*Kilograms.

<sup>1</sup>Gootenberg's basket includes other items such as sugar, milk, tea, vinegar, and salt. See Gootenberg (1990), p. 14 for details.

Sources: Subsistence, see text; Gootenberg: Gootenberg (1990), Prisoner (1): Consejo Provincial de Lima (1889); Slave: Prisoner (2), and Army officer: Datos e informes (1870).

Source: Arroyo Abad (2013a)

## Household Budgets, Buenos Aires (1890s)

### Unskilled laborer household

Alquiler.....	\$ 300.00
Comestibles, (carne y verduras \$ 1.41 por día)...	" 514.65
Fuego y alumbrado.....	" 70.00
Vestidos.....	" 120.00
Calzado.....	" 25.00
Asistencia médica.....	" 30.00
Menaje de casa en general.....	" 60.00
<b>Total.....</b>	<b>\$ 1119.65</b>

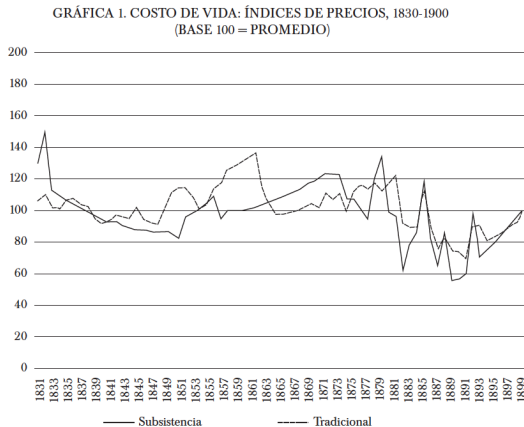
### Skilled laborer household

Alquiler de casa.....	\$ 840.00
Comestibles (carne y verduras \$ 2.50 diarios)...	" 952.00
Fuego y luz.....	" 150.00
Vestido.....	" 250.00
Calzado.....	" 60.00
Muebles, etc.....	" 80.00
Lavado.....	" 120.00
Asistencia médica.....	" 60.00
Escuela.....	" 80.00
Distracciones, tranvía, etc.....	" 150.00
Sirviente.....	" 448.00
<b>Total.....</b>	<b>\$ 3190.00</b>

Source: Buchanan (1898)



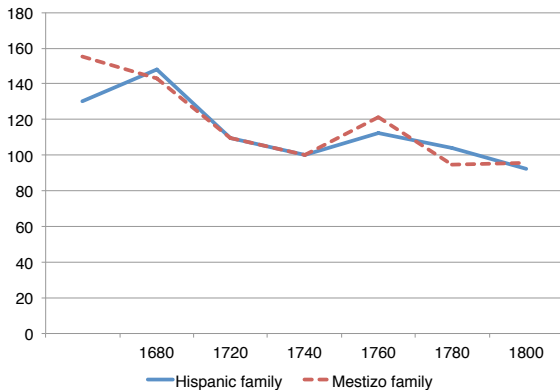
## ► Price indices, Venezuela (19th century)



Source: Arroyo Abad (2013b)

## ▶ Cost of living in Arequipa, Peru

1760=100



Source: GPIH based on Brown (1990)

# Household Consumption Baskets, Mexico (1770-1930)

TABLE 1  
CONSUMER BASKETS (Rent excluded)

Item	«Barebones»	«Respectable» Mexico	«Respectable» London
Beef (kg)	5.0	31.5	33.8
Pork/other animal (kg)		7.7	
Lard/butter (kg)	3.0	4.1	5.2
Bread (kg)		31.0	182.0
Maize (kg)	165.0	45.2	
Tortillas (kg)		47.2	
Beans (kg)	20.0	40.1	52.0
Pulque/beer (l)		76.6	182.0
Sugar (kg)		6.1	
Fuel (mBTU)	2.0	4.2	5.0
Candles and lamp oil (kg)	2.6	3.4	5.2
Cloth (m)	3.0	5.0	5.0
Soap (kg)	1.3	2.6	2.6
Rent (%)	5.0	5.0	5.0
Energy/day (kcal)	1,936	1,941	1,941
Cost <i>circa</i> 1750 (silver g)	234.0	548.1	558.6

Sources: Allen (2001); Allen *et al.* (2012). See text for construction of Mexican baskets.

Notes: The «barebone» basket is entirely based on Allen *et al.* (2012). For the «respectable» basket, see text and online Appendix B.

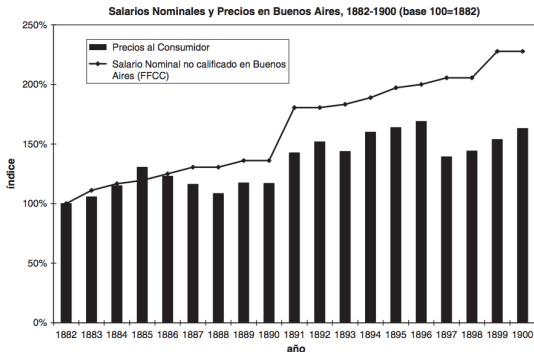
Source: Challu and Gomez Galvarriato (2015)



# Price Index and Nominal Wages in Buenos Aires (1882-1900)

1882=100

ÍNDICES DE PRECIOS Y SALARIO NOMINAL DEL OBRERO NO CUALIFICADO DEL FERROCARRIL EN BUENOS AIRES 1882-1900 (BASE 100 = 1882)



Source: Cuesta (2015)

## ► Inequality in Latin America, 19th century (RR)

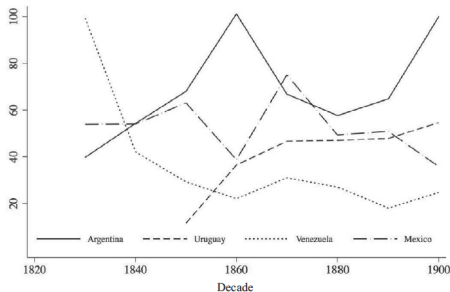


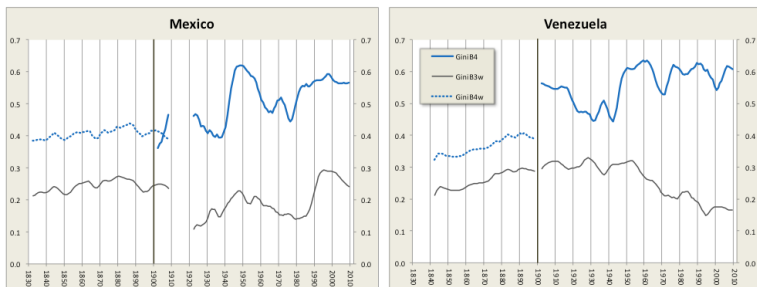
FIGURE 1  
INEQUALITY IN FOUR LATIN AMERICAN COUNTRIES,  
1820S–1900S  
(Argentina 1900 = 100)

*Note:* All figures are 10-year averages.

*Source:* See the Appendix.

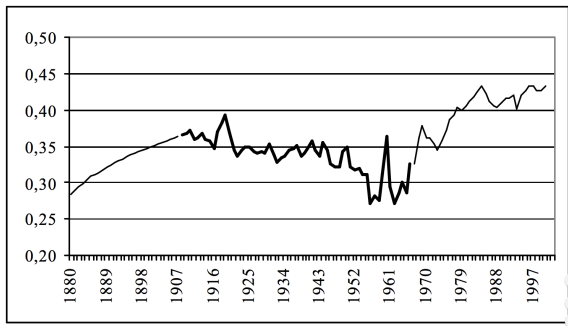
Source: Arroyo Abad (2013)

## ▶ Inequality in Mexico and Venezuela, 1830s-2010 (G/ST)



Source: Arroyo Abad and Astorga (2016)

## ► Inequality in Uruguay, 1880-2000 (RR, GST)



Source: Bertola (2005)

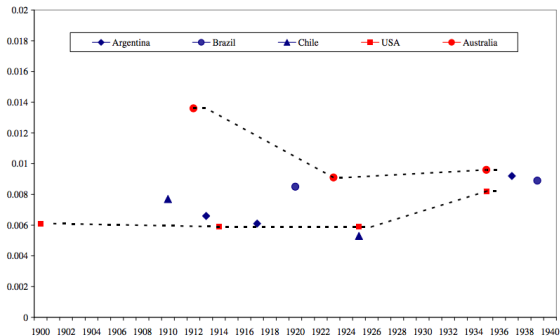


## ► Inequality in Argentina, Brazil, Chile, and Uruguay, 1870, 1920 (GST)

	Country indices		
	GE (0)	GE (1)	Gini
<b>1870</b>			
<b>Argentina</b>	0.513	0.477	0.522
<b>Brazil</b>	0.581	0.534	0.548
<b>Chile</b>	0.715	0.643	0.594
<b>Uruguay</b>	0.421	0.397	0.481
<b>1920</b>			
<b>Argentina</b>	0.654	0.595	0.574
<b>Brazil</b>	0.725	0.651	0.597
<b>Chile</b>	0.886	0.776	0.641
<b>Uruguay</b>	0.618	0.565	0.562

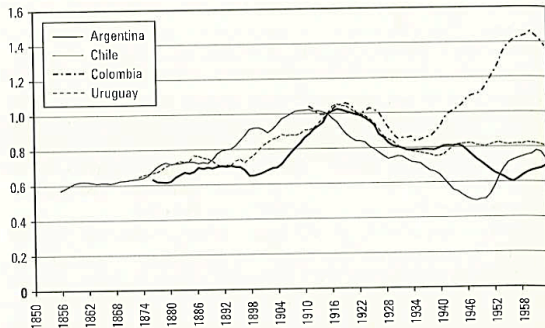
Source: Bertola et al. (2010)

## ▶ Inequality in Argentina, Brazil, and Chile, 1900-1940 (Theil)



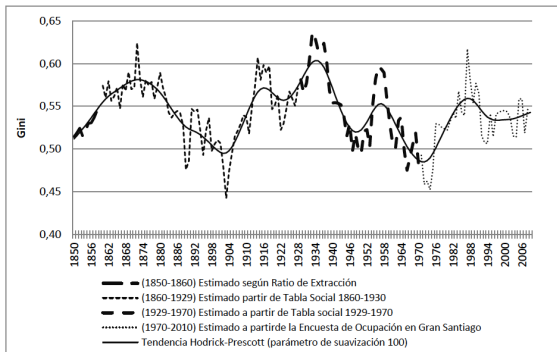
Source: Frankema (2012)

## Inequality in various Latin American countries, 1850s-1960



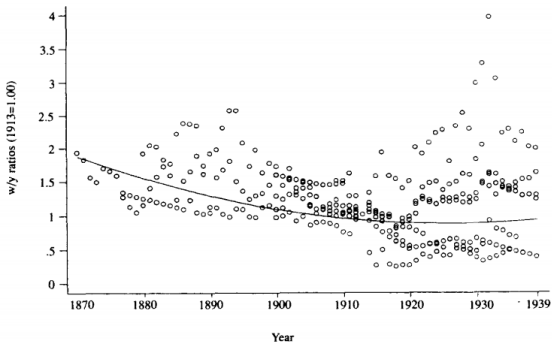
Source: Prados de la Escosura (2007)

## ► Inequality in Chile, 1850s-2000s (G/ST, HS)



Source: Rodríguez Weber (2014)

## ► Inequality in Argentina, Brazil, and Chile, 1870-1939 (WRI)



Source: Williamson (1999)