A. Online Appendices—Not for Publication

A1. Decomposing Inequality Measures

In this section, we derive the decompositions of the general entropy indices used in the main text of this paper: the Mean Log Deviation (MLD) index and the Theil index.

The mean log deviation index for total inequality in country j is given by:

$$MLD_j = \ln y_j - \frac{1}{L_j} \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \ln y_{jmi}, \tag{A-1}$$

where y_{jmi} is the income of individual i in municipality m in country j, y_j is mean national income and L_j is total national population in country j.

Now adding and subtracting $\sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \ln y_{jm}$ to both sides (where y_{jm} is mean income in municipality m and L_{jm} is the number of individuals in municipality m), we obtain:

$$MLD_j = \left(\ln y_j - \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \ln y_{jm} \right) + \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} MLD_{jm},$$

where

$$MLD_{jm} = \ln y_{jm} - \frac{1}{L_{jm}} \sum_{i=1}^{L_{jm}} \ln y_{jmi}$$

is the MLD index for inequality in municipality m in country j. The first term is the MLD measure of cross-municipality inequality, and the second term is a weighted average of the MLDs within each municipality, where the weights are municipality population shares.

Now let us repeat the same exercise for decomposing the MLD index into inequality between versus within countries. The Western Hemisphere MLD index is then:

$$MLD = \ln y - \frac{1}{L} \sum_{j=1}^{J} \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \ln y_{jmi},$$

where y_{jmi} is the income of individual i in municipality m in country j, y is mean income in the Western Hemisphere, and L is total population in the Western Hemisphere.

Now add and subtract $\sum_{j=1}^{J} \frac{L_j}{L} \ln y_j$, where y_j is mean income in country j and L_j is the number of individuals in country j. Again, basic algebra yields:

$$MLD = \left(\ln y - \sum_{j=1}^{J} \frac{L_j}{L} \ln y_j \right) + \sum_{j=1}^{J} \frac{L_j}{L} MLD_j,$$

where

$$MLD_j = \ln y_j - \frac{1}{L_j} \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \ln y_{jmi}$$

is the MLD index for inequality in country j.

Plugging in from our decomposition of MLD_j above yields:

$$MLD = \left(\ln y - \sum_{j=1}^{J} \frac{L_j}{L} \ln y_j \right) + \sum_{j=1}^{J} \frac{L_j}{L} \times \left[\left(\ln y_j - \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \ln y_{jm} \right) + \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} MLD_{jm} \right],$$

where, from above, $MLD_{jm} = \ln y_{jm} - \frac{1}{L_{jm}} \sum_{i=1}^{L_{jm}} \ln y_{jmi}$ is the MLD index for inequality in municipality m in country j. The first term gives between country inequality, and the second and third terms are between municipality (within country) and within-municipality inequality, respectively, weighted by country j's population share.

A similar exercise can be used to decompose the Theil index for country j, given by:

$$T_j = \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \frac{y_{jmi}}{L_j y_j} \ln \left(\frac{y_{jmi}}{y_j} \right), \tag{A-2}$$

where y_{jmi}, y_j and L_j are defined as above. Again, adding and subtracting $\sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \frac{y_{jm}}{y_j} \ln y_{jm}$ both sides, we obtain

$$T_j = \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \frac{y_{jm}}{y_j} T_{jm} + \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \frac{y_{jm}}{y_j} \ln \left(\frac{y_{jm}}{y_j} \right),$$

where

$$T_{jm} = \sum_{i=1}^{L_{jm}} \frac{y_{jmi}}{L_{jm} y_{jm}} \ln \left(\frac{y_{jmi}}{y_{jm}} \right)$$

is the Theil index for inequality in municipality m in country j.

Now we decompose the Theil index for overall Western Hemisphere inequality, given by:

$$T = \sum_{j=1}^{J} \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \frac{y_{jmi}}{Ly} \ln \left(\frac{y_{jmi}}{y} \right), \tag{A-3}$$

where y_{jmi} is the income of individual i in municipality m in country j, y is mean income in the Western Hemisphere, and N is the total population in the Western Hemisphere. With the same steps as before, we can also write

$$T = \sum_{j=1}^{J} \frac{L_j}{L} \frac{y_j}{y} T_j + \sum_{j=1}^{J} \frac{L_j}{L} \frac{y_j}{y} \left(\frac{\ln y_j}{y} \right),$$

where

$$T_j = \sum_{m=1}^{M_j} \sum_{i=1}^{L_{jm}} \frac{y_{jmi}}{L_j y_j} \left(\frac{\ln y_{jmi}}{y_j} \right)$$

is the Theil index for inequality in country j. Note that this is equal to (A-2). Plugging in the decomposition from above yields:

$$T = \sum_{j=1}^{J} \frac{L_j}{L} \frac{y_j}{y} \left(\frac{\ln y_j}{y} \right) + \sum_{j=1}^{J} \frac{L_j}{L} \frac{y_j}{y} \times \left[\sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \frac{y_{jm}}{y_j} \ln \left(\frac{y_{jm}}{y_j} \right) + \sum_{m=1}^{M_j} \frac{L_{jm}}{L_j} \frac{y_{jm}}{y_j} T_{jm} \right],$$

where again $T_{jm} = \sum_{i=1}^{L_{jm}} \frac{y_{jmi}}{L_{jm} y_{jm}} \ln \left(\frac{y_{jmi}}{y_{jm}} \right)$ is the Theil index for inequality in municipality m in country j. The first component is cross-country inequality, the second component is between municipality inequality, and the third component is within-municipality inequality.

A2. Data Methodology

We discussed the construction of our nationally (but not regionally) deflated labor income data in the text, so here our main focus is on the methodology used to create our household expenditure aggregate (examined in Appendix Table A5). We construct our measure of household expenditure by aggregating expenditures on food and non-food items, durable goods, and housing. Marriages, births, and funerals, which are lumpy and relatively infrequent expenditures, are excluded. We include expenditures on health, but patterns of household expenditure are very similar when these are instead excluded. Gifts and transfers made by the household are not included, as these will be counted as they are spent by their recipients.

The method we use to calculate the flow expenditure on durable goods varies according to the data available in each household survey. Household surveys for Bolivia, Ecuador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, and Peru include the current value and age of durable goods held by each household. Following the recommendations of Deaton and Zaidi (2002), we calculate the average age for each durable good $\bar{t}$ using data on the purchase dates of the good recorded in the survey. Then, we estimate the average lifetime of each good as $2\bar{t}$, under the assumption that purchases are uniformly distributed through time. The remaining life of each good is then calculated as $2\bar{t} - t$, where t is the current age of the good. A rough estimate of the flow of services is derived by dividing the current value by the good's expected remaining life. The interest component in the flow of services is ignored.

In contrast, the household survey for Brazil includes a list of durable goods held by the household and their ages, but does not contain estimates of their current values. We estimate the purchase value of the good as the state median price for that good using data on purchase values from the expenditure section of the survey. Then we calculate the average life of the good as $2\bar{t}$. To complete the estimate, we calculate the average user cost of the good as the

median purchase value divided by the average lifetime of the good. Finally, some household surveys (Chile, Colombia, Costa Rica, El Salvador, Mexico, and Uruguay) do not include any information about the stock of durables held by households. In these cases, we calculate the durables sub-aggregate as expenditures by the household in the previous year on durable goods.

Some surveys ask multiple questions on the same expenditures with different reference periods—i.e., "the last two weeks" versus a "typical month". Following recommendations by Deaton and Zaidi, we use the latter. We calculate both per capita household expenditure and expenditure per equivalent adult (in local prices, national prices, and 2005 international $). Following Deaton (1997), we assume that children aged 0 to 4 are equal to 0.4 adults, and children aged 5 to 14 are equal to 0.5 adults.

Adjusting for differences in purchasing power is important for making regional and international comparisons of household welfare using expenditure data. Consider a Paasche price index comparing the price vector faced by the household, p_h, and the reference price vector, p_0:

$$P_p^h = \frac{p^h q^h}{p^0 q^h}, \tag{A-4}$$

where q^h is the consumption vector and $p^h \cdot q^h$ denotes the inner product of these two vectors.

Rearranging yields:

$$p^0 \cdot q^h = \frac{p^h \cdot q^h}{P_p^h} = \frac{x_h}{P_p^h} \tag{A-5}$$

where the value of the household's consumption defined at reference prices, $y_m^h = p^0 \cdot q^h$, is our object of interest and x_h is household expenditure. Note the convenient link with national income accounting practice, in which real national product is the lefthand side of (A-5) summed over all households.

To calculate y_m^h from our expenditure data, we rewrite (A-4) as:

$$P_p^h = \frac{1}{\sum_k w_k^h \frac{p_k^0}{p_k^h}} \tag{A-6}$$

where w_k^h is the share of household h's budget devoted to good k and p_k^h (and p_k^0) denotes the kth component of the corresponding vector. P_p^h involves not only the prices faced by household h in relation to the reference prices, but also household h's expenditure pattern. Using a Paasche price index with household specific weights allows us to account for differences in expenditure patterns—prevalent across regions—when adjusting prices. We calculate P_p^h from the information about food quantities and expenditures available in our household surveys. We take the reference vector p_0 to be the median of prices observed from individual households in the survey.To reduce the influence of outliers, we replace the individual p_k^h by their medians over households in the same municipality.

Calculating prices from our survey data requires converting all quantities (i.e., pieces,

bottles, bundles) to constant units (kilograms or liters) for each commodity, and then dividing total expenditure by quantity purchased. In some cases, national statistics offices performed these calculations before releasing the data. In other cases, the survey documentation contains the necessary conversion factors—by commodity—to convert to constant units. In a couple of cases (most notably, Bolivia), surveys report some quantities in "pieces" but do not provide conversion factors. In these instances, we use the conversion factors for similar goods provided by other surveys.

Constructing a meaningful consumption aggregate also required checking the survey data for obvious data entry errors and irregularities, most common in reporting food quantities. In some—but not all—surveys, national statistical offices did a thorough job of error checking. After carefully examining individual data points, we used the following procedure to correct data that were clearly recorded incorrectly. If the household's annual expenditure on a good was more than four standard deviations above the mean expenditure on that good in the household's municipality (or state if the municipality is not identified or had very few observations), the observation was replaced by the municipality median. Less than 1% of the sample meets this cutoff. The procedure is used for all surveys in our dataset. The distribution of aggregate consumption is robust to instead dropping these items, or requiring the value to be more than five standard deviations above the municipality mean. Results are also robust to using deviations in logs rather than levels. We apply a similar procedure in calculating prices for the Paasche index, dropping quantities that are more than four standard deviations from the municipality mean.

After deflating regional prices to national prices, we further adjust for differences in international purchasing power by normalizing the data so that household expenditure within each country aggregates to 2005 national per capita consumption in international dollars from the World Development Indicators.

Income data are drawn from either population censuses or household surveys. The census data give a single measure of labor income, whereas labor income from household surveys is constructed from responses to various questions about earned income (i.e. from primary occupation, secondary occupation, etc.) The methodology we use to construct the income aggregate is similar to that used to construct the consumption aggregate. We compare per capita income from the census or household survey with the value of PPP adjusted GDP per worker in 2003, taken from the Penn World Tables. This allows us to calculate a factor to adjust income so that it averages to GDP per worker in constant international dollars. To produce the decompositions in Appendix Table A2, we also deflate by the state median of the household specific Paasche index discussed above. When a Paasche index is unavailable, we use data on regional purchasing power provided by National Statistics Offices.

The climate and geography variables were constructed as follows. Municipal-level temperature and precipitation variables were calculated using 30 arc second resolution (1 kilometer)

mean temperature and precipitation over the 1950-2000 period, as compiled by climatologists at U.C. Berkeley (Hijmans, Robert et al., 2005). We also use 30 arc second resolution terrain data (NASA and NGIA, 2000), collected by the Shuttle Radar Topography Mission, to construct municipal-level mean elevation and slope. The GIS municipality boundaries were produced by the International Center for Tropical Agriculture (CIAT, 2008).

A3. Further Results

Table A1 lists the data sources used in this paper, and Table A2 provides summary statistics. Table A3 examines labor income inequality, where labor incomes are not deflated for regional purchasing power. The overall decompositions of inequality into cross-country, cross-municipality, and within-municipality inequality are thus identical to those presented in Table 1 of the main text, with Table A3 presenting the inequality measures, country-by-country, for the full set of countries for which we have data. Table A3 shows that the extent of inequality across countries depends on the measure being used, though Ecuador, Peru and Venezuela are among the most unequal countries with all three measures. Table A4 examines labor income inequality where incomes have been deflated by the state level median of the Paasche price index described above. The results are very similar to those shown in Tables 1 and A3.

Table A5 examines inequality in equivalent household expenditure, constructed according to the methodology described above. Not surprisingly, the extent of inequality in household expenditure is less than that in labor income. Nevertheless, the overall comparative patterns are similar. In particular, the within-country MLD and Theil indices are substantially greater than the between country ones.[1] The ranking of countries in terms of inequality in Table A5 is sometimes quite different than that in Table A3. For example, Peru appears to have relatively less within-municipality inequality. This likely reflects differences in the variability of monthly labor income relative to household expenditure and in the precise nature and quality of the various household questionnaires.[2]

Table A6 investigates the implications of controlling for population density (as a proxy for the density of economic activity). It uses the Theil index to decompose each of the components of income (overall, predicted, and residual) into inequality between countries, inequality between municipalities/regions (of countries), and inequality within municipalities, where income is predicted using information on individual education, predicted individual experience,

[1] Note that because of the small sample sizes of existing consumption datasets for the United States and Canada, these countries are not included in the consumption inequality decompositions. Hence, the overall inequality numbers in Table A5 should be compared to those without the United States and Canada in Table 1.

[2] For example, the Peruvian consumption data provides somewhat larger samples than most of the other consumption data sets and contains many carefully detailed questions on expenditure and home production. To the extent that it is one of the highest quality data sets, it may have little measurement error in the within-municipality inequality component, relative to the within components from the other expenditure and income data sets.

and municipal level population density. Table A7 presents the inequality decompositions for proximity to paved roads country-by-country. Note that when considering proximity to paved roads, we have municipal level data for all countries presented.[3]

Finally, Figures A1 through A3 provide maps showing mean (non-deflated) labor income by municipality (or region) for North America, Mexico and Central America, and South America, respectively.[4] Note the difference in scale between the North America map and the Latin America maps.

[3]Canada is omitted because its administrative division involves extremely large swathes of territory grouped into single administrative units. This absence of municipality level data make it difficult to compare the decompositions for Canada to those for the rest of the Americas.

[4]Particularly for the countries where data are drawn from household surveys, labor income is not available for every municipality. In order to provide an approximate overall picture of spatial patterns in income, we replace missing municipality values by the median labor income in the municipality's first administrative unit (i.e. state or department).

References

CIAT, *Sub National Boundaries of South and Central America*, Center for Tropical Agriculture, 2008.

Deaton, Angus, *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy*, Johns Hopkins University Press, 1997.

_ **and Salman Zaidi**, *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*, World Bank Publications, 2002.

Hijmans, Robert et al., "Very high resolution interpolated climate surfaces for global land area," *International Journal of Climatology*, 2005, *25*, 1965–1978.

NASA and NGIA, *Shuttle Radar Topography Mission 30 Arc Second Finished Data*, National Aeronautics and Space Administration and the National Geospatial-Intelligence Agency, 2000.

Table A1: Data Sources

	Income		Expenditure		Prices	
Country	Source	Year	Source	Year	Source	Year
Bolivia	Encuesta de Hogares	02	Encuesta de Hogares	02	Encuesta de Hogares	02
Brazil	Population Census 6% sample	00	Pesquisa de Orcamentos Familiares	02 - 03	Pesquisa de Orcamentos Familiares	02 - 03
Canada	Population Census 2.5% sample	01			The Inter-city Index of Price Differentials	01
Chile	VI Encuesta de Presupuestos Familiares	06-07	VI Encuesta de Presupuestos Familiares	06-07	Calcs performed by National Statistics Office	06-07
Colombia	Encuesta de Calidad de Vida	03	Encuesta de Calidad de Vida	03	DANE Regional Price Index	06-08
Costa Rica	Encuesta Nacional de Ingresos y Gastos de los Hogares	04	Encuesta Nacional de Ingresos y Gastos de los Hogares	04	Encuesta Nacional de Ingresos y Gastos de los Hogares	04
Ecuador	Encuesta de Condiciones de Vida	05 - 06	Encuesta de Condiciones de Vida	05/06	Encuesta de Condiciones de Vida	05 - 06
El Salvador	Encuesta de Propositos Multiples	06	Encuesta de Propositos Multiples	06	none available	
Guatemala	Encuesta Nacional de Condiciones de Vida	00	Encuesta Nacional de Condiciones de Vida	00	Encuesta Nacional de Condiciones de Vida	00
Honduras	Encuesta de Condiciones de Vida	04	Encuesta de Condiciones de Vida	04	Encuesta de Condiciones de Vida	04
Mexico	Population Census 10.6% sample	00	Encuesta Nacional de Ingresos y Gastos de los Hogares	05	Encuesta Nacional de Ingresos y Gastos de los Hogares	05
Nicaragua			Encuesta Nacional de Hogares sobre Medicion de Nivel de Vida	05	Encuesta Nacional de Hogares sobre Medicion de Nivel de Vida	05
Panama	Population Census 10% sample	00	Encuesta de Niveles de Vida	03	Encuesta de Niveles de Vida	03
Paraguay	Encuesta Integrada de Hogares	01	Encuesta Integrada de Hogares	01	Encuesta Integrada de Hogares	01
Peru	Encuesta Nacional de Hogares	01	Encuesta Nacional de Hogares	01	Encuesta Nacional de Hogares	01
U.S.	Population Census 5% sample	00			Munic. cost of living index (Council for Community and Economic Research)	00
Uruguay	Encuesta de gastos y ingresos de hogares	05-06	Encuesta de gastos y ingresos de hogares	05-06	Encuesta de gastos y ingresos de hogares	05-06
Venezuela	Population Census 10% sample	01			none available	

Table A2: Summary Statistics

	Income per Worker					
	No. Obs. (1)	Males 18-50 (2)	No. Mun./Reg. (3)	Mean Mun./ Reg. Pop. (4)	Ref. to Munic. (5)	Country Pop. (6)
Bolivia	8,166	4,227	106	108,897	yes	8,152,620
Brazil	3,481,697	1,920,149	1,519	94,823	yes	175,552,771
Canada	441,740	196,208	11	2,695,307	no	30,689,040
Chile	14,879	6,952	2	7,551,517	no	15,153,797
Colombia	18,479	8,276	9	4,665,758	no	39,685,655
Costa Rica	5,699		6		no	3,710,558
Ecuador	22,275	10,581	20	628,822	no	12,920,092
El Salvador	22,937	10,796	64	64906.51	yes	6,122,515
Guatemala	11,440	5,707	226	41,901	yes	12,820,296
Honduras	13,160	5,978	98	44,973	yes	6,200,898
Mexico	2,660,016	1,562,092	2,442	41,390	yes	100,087,900
Panama	94,645	55053	30	40,776	yes	2,836,298
Paraguay	6,867	3,441	175	26,820	yes	5,585,828
Peru	22,207	11,333	610	30,619	yes	27,012,899
United States	7,401,156	3,272,003	2,071	126,211	yes	284,153,700
Uruguay	8,082	3,707	19	141,812	no	3,334,074
Venezuela	677,524	380,797	219	110,118	yes	23,542,649
Total	14,910,969	7,457,300	7,627			799,871,887

See Appendix Table A1 for variable sources.

Table A3: Labor Income Inequality (All Individuals)

			Mean Log Deviation Index				*Theil Index*			
	Mean Income	90/10 Ratio	Between Country	Within Country	Between Munic/Reg	Within Munic/Reg	Between Country	Within Country	Between Munic/Reg	Within Munic/Reg
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ref. to Munic.										
Bolivia	6,029	29.6		0.693	0.116	0.577		0.590	0.096	0.494
Brazil	14,062	12.0		0.676	0.129	0.548		0.858	0.120	0.738
ElSalvador	10,696	33.3		0.780	0.060	0.721		0.540	0.061	0.479
Guatemala	11,386	19.0		0.690	0.219	0.471		0.696	0.226	0.470
Honduras	6,902	25.7		0.762	0.139	0.622		0.843	0.120	0.723
Mexico	16,860	8.6		0.515	0.106	0.409		0.794	0.114	0.680
Panama	18,024	14.6		0.550	0.081	0.469		0.541	0.075	0.466
Paraguay	11,179	9.3		0.401	0.096	0.304		0.387	0.089	0.298
Peru	14,039	44.0		0.872	0.231	0.641		0.726	0.224	0.503
UnitedStates	66,885	16.3		0.546	0.038	0.508		0.468	0.041	0.427
Venezuela	15,004	15.0		0.812	0.027	0.785		0.988	0.025	0.963
Actual pop. weights		34.2	0.292	0.607	0.087	0.520	0.250	0.544	0.058	0.486
Equal pop. weights		28.6	0.231	0.663	0.113	0.550	0.285	0.622	0.088	0.534
No U.S. (equal)		20.2	0.054	0.675	0.120	0.555	0.048	0.706	0.114	0.592
Ref. to Region										
Canada	50,099	21.0		0.537	0.005	0.532		0.360	0.004	0.355
Chile	27,228	10.3		0.510	0.004	0.506		0.546	0.004	0.543
Colombia	12,079	19.0		0.686	0.038	0.648		0.687	0.040	0.648
CostaRica	21,325	16.0		0.559	0.015	0.543		0.512	0.015	0.498
Ecuador	10,501	34.7		0.967	0.067	0.900		1.680	0.064	1.616
Uruguay	20,842	23.4		0.803	0.096	0.706		0.844	0.089	0.755
Ref. to Region										
Actual pop. weights		36.7	0.206	0.651	0.028	0.623	0.203	0.529	0.016	0.513
Equal pop. weights		32.7	0.138	0.677	0.037	0.639	0.139	0.615	0.026	0.589
Full Sample										
Actual pop. weights		35.0	0.289	0.613	0.079	0.534	0.253	0.542	0.054	0.488
Equal pop. weights		32.1	0.210	0.668	0.086	0.582	0.235	0.619	0.061	0.558
No US/CA (equal)		21.6	0.075	0.685	0.095	0.590	0.071	0.726	0.081	0.645
GDP pwkr/pc - actual pop.			0.263/0.326				0.237/0.287			
GDP pwkr/pc - equal pop.			0.178/0.247				0.183/0.257			

See Appendix Table A1 for sources. Column (2) gives the ratio of the 90th percentile of the labor income distribution to the 10th percentile, and columns (3) through (10) decompose inequality. "Actual" refers to weighting by actual population, whereas "equal" normalizes each country's population to be of equal size.

Table A4: Labor Income Inequality (Regionally Deflated)

			Mean Log Deviation Index				*Theil Index*			
	Mean Income	90/10 Ratio	Between Country	Within Country	Between Munic/Reg	Within Munic/Reg	Between Country	Within Country	Between Munic/Reg	Within Munic/Reg
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Ref. to Munic.										
Bolivia	7,256	31.2		0.720	0.126	0.594		0.626	0.100	0.526
Brazil	15,462	12.1		0.648	0.098	0.550		0.829	0.090	0.739
El Salvador	10,955	17.7		0.720	0.049	0.671		0.526	0.049	0.477
Guatemala	10,190	18.2		0.678	0.212	0.466		0.681	0.223	0.458
Honduras	6,121	24.9		0.760	0.133	0.627		0.842	0.114	0.728
Mexico	18,628	7.9		0.503	0.097	0.406		0.779	0.104	0.675
Panama	19,499	9.8		0.416	0.126	0.290		0.397	0.112	0.285
Paraguay	12,237	42.2		0.874	0.205	0.669		0.731	0.203	0.528
Peru	11,082	14.7		0.530	0.093	0.436		0.501	0.084	0.417
United States	67,865	16.4		0.541	0.034	0.506		0.462	0.037	0.425
Venezuela	14,848	15.7		0.815	0.029	0.786		0.991	0.027	0.964
Mun (actual)		30.5	0.282	0.583	0.070	0.513	0.237	0.535	0.050	0.485
Mun (equal)		29.2	0.237	0.655	0.109	0.546	0.290	0.610	0.081	0.529
No US (equal)		20.5	0.061	0.666	0.117	0.550	0.057	0.690	0.105	0.585
Ref. to Region										
Canada	51,796	19.7		0.534	0.002	0.532		0.357	0.002	0.355
Chile	28,929	10.0		0.511	0.003	0.507		0.545	0.004	0.541
Colombia	13,759	19.3		0.689	0.041	0.648		0.691	0.042	0.649
Costa Rica	20,949	16.0		0.558	0.015	0.543		0.512	0.014	0.498
Ecuador	10,704	34.2		0.955	0.056	0.900		1.637	0.054	1.583
Uruguay	19,491	22.2		0.787	0.067	0.720		0.833	0.061	0.772
Reg (actual)		35.1	0.181	0.650	0.026	0.623	0.177	0.532	0.015	0.518
Reg (equal)		31.4	0.130	0.672	0.031	0.642	0.132	0.609	0.020	0.589
All (actual)		32.5	0.276	0.593	0.063	0.530	0.240	0.535	0.046	0.489
All (equal)		32.0	0.214	0.661	0.082	0.580	0.238	0.610	0.055	0.555
No US/CA (equal)		22.1	0.079	0.678	0.090	0.588	0.076	0.713	0.072	0.640

See Appendix Table A1 for sources. All incomes are deflated by the state median of a household-specific Paasche index. Column (2) gives the ratio of the 90th percentile of the income distribution to the 10th percentile, and columns (3) through (10) decompose inequality. "Actual" refers to weighting by actual population, whereas "equal" normalizes each country's population to be of equal size.

Table A5: Household Equivalent Expenditure Inequality

					Mean Log Deviation Index				*Theil Index*			
	Mean Expend.	90/10 Ratio	90/50 Ratio	$V(\log(c))$	Between Cntry	Within Cntry	Between Mun/Reg	Within Munic/Reg	Between Cntry	Within Cntry	Between Mun/Reg	Within Mun/Reg
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ref. to Munic.												
Bolivia	2,953	5.2	2.2	0.414		0.200	0.076	0.123		0.196	0.067	0.129
El Salvador	5,890	5.6	2.4	0.447		0.222	0.037	0.185		0.220	0.037	0.183
Guatemala	5,241	9.9	3.9	0.782		0.458	0.273	0.185		0.574	0.312	0.262
Honduras	3,075	8.0	2.5	0.629		0.298	0.096	0.201		0.284	0.085	0.199
Mexico	8,674	6.9	2.7	0.590		0.308	0.082	0.227		0.328	0.077	0.251
Nicaragua	2,802	5.1	2.3	0.400		0.210	0.045	0.166		0.223	0.042	0.181
Panama	5,850	9.2	2.9	0.768		0.379	0.162	0.218		0.377	0.145	0.232
Paraguay	3,278	7.3	2.6	0.598		0.291	0.118	0.173		0.284	0.108	0.177
Peru	4,442	5.7	2.3	0.458		0.226	0.104	0.122		0.226	0.096	0.129
Mun. (actual)		8.7	2.9	0.720	0.077	0.295	0.095	0.199	0.070	0.323	0.088	0.235
Mun. (equal)		8.2	2.9	0.684	0.070	0.288	0.110	0.178	0.070	0.317	0.112	0.205
Ref. to Reg.												
Brazil	5,649	11.5	3.6	0.903		0.466	0.037	0.429		0.474	0.035	0.439
Chile	7,813	9.4	3.5	0.747		0.397	0.006	0.392		0.414	0.006	0.408
Colombia	4,084	7.8	2.9	0.659		0.336	0.065	0.270		0.344	0.075	0.269
Costa Rica	6,469	9.3	3.1	0.804		0.402	0.021	0.382		0.411	0.022	0.389
Ecuador	5,098	5.9	2.6	0.504		0.267	0.019	0.249		0.285	0.019	0.266
Uruguay	7,192	7.5	2.8	0.595		0.298	0.046	0.253		0.295	0.043	0.253
Reg. (actual)		10.3	3.4	0.838	0.014	0.422	0.039	0.383	0.013	0.436	0.037	0.399
Reg. (equal)		8.9	3.1	0.747	0.023	0.361	0.032	0.329	0.022	0.373	0.030	0.343
All (actual)		9.9	3.3	0.809	0.048	0.368	0.063	0.306	0.049	0.382	0.062	0.320
All (equal)		8.7	3.0	0.721	0.059	0.317	0.079	0.238	0.056	0.343	0.074	0.269

See Appendix Table A1 for sources. Column (2) presents the ratio of the 90th percentile of the household equivalent expenditure distribution to the 10th percentile, Column (3) gives the ratio of the 90th percentile to the median, and column (4) presents the variance of log household equivalent expenditure. Columns (5) through (12) decompose inequality, using the Mean Log Deviation index and the Theil index, respectively. "Actual" refers to weighting by actual population, whereas "equal" normalizes each country's population to be of equal size.

Table A6: Inequality Decomposition, Theil Index (Controlling for Density)

	Labor Income				*Predicted Labor Income*				*Residual Labor Income*			
	Betw. Cntry	With. Cntry	Betw. Mun/Reg	With. Mun/Reg	Betw. Cntry	With. Cntry	Betw. Mun/Reg	With. Mun/Reg	Betw. Cntry	With. Cntry	Betw. Mun/Reg	With. Mun/Reg
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Ref. to Mun.												
Brazil		0.812	0.105	0.707		0.268	0.058	0.210		0.455	0.030	0.425
Mexico		0.747	0.116	0.631		0.123	0.022	0.101		0.646	0.082	0.564
Panama		0.438	0.053	0.385		0.179	0.042	0.137		0.282	0.017	0.266
United States		0.424	0.056	0.368		0.120	0.007	0.112		0.321	0.020	0.302
Venezuela		0.947	0.032	0.915		0.028	0.007	0.021		0.902	0.024	0.878
Mun. (equal)	0.295	0.567	0.101	0.467	0.109	0.212	0.074	0.138	0.085	0.440	0.047	0.393
No US (equal)	0.041	0.647	0.126	0.522	0.032	0.240	0.095	0.145	0.082	0.460	0.051	0.409
Ref. to Region												
Canada		0.300	0.005	0.295		0.112	0.001	0.111		0.248	0.004	0.245
All (equal)	0.257	0.589	0.073	0.516	0.107	0.191	0.051	0.140	0.081	0.445	0.036	0.409
No US/CA (equal)	0.064	0.725	0.097	0.627	0.057	0.222	0.068	0.154	0.078	0.481	0.042	0.440

See Appendix Table A1 for sources. Columns (1) through (4) decompose the Theil index for labor income inequality, and columns (5) through (12) do the same for predicted labor income inequality and residual labor income inequality, respectively. We normalize each country's population to be of equal size.

Table A7: Proximity to Paved Roads

	Mean Dist. to Road	SD Dist. to Road	90/50 Ratio	*MLD Index* Between Country	*MLD Index* Within Country	*Theil Index* Between Country	*Theil Index* Within Country
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Argentina	8.5	9.7	3.2		0.436		0.413
Bolivia	73.5	83.0	6.3		0.609		0.513
Brazil	29.3	64.1	7.9		0.956		1.049
Chile	25.1	21.1	4.1		0.353		0.306
Colombia	19.3	31.7	3.7		0.692		0.681
Costa Rica	5.7	6.0	4.0		0.622		0.470
Ecuador	23.8	35.7	9.8		0.641		0.703
El Salvador	4.3	2.4	1.9		0.147		0.139
Guatemala	13.3	24.3	6.8		0.824		0.860
Honduras	11.6	18.0	3.7		0.418		0.535
Mexico	9.5	9.9	3.2		0.382		0.379
Nicaragua	21.8	38.3	8.6		0.915		0.886
Panama	12.4	23.2	3.0		0.643		0.756
Paraguay	34.7	49.6	6.0		1.001		0.752
Peru	19.5	33.9	9.1		1.180		0.889
United States	1.5	3.3	3.4		0.914		0.795
Uruguay	10.7	10.6	4.5		0.478		0.416
Venezuela	11.1	26.2	2.7		0.508		0.747
All (actual)	13.2	36.5	6.4	0.621	0.774	0.439	0.815
All (equal)	18.6	37.8	5.8	0.311	0.649	0.286	0.656
No U.S. (equal)	19.7	38.6	5.6	0.240	0.634	0.249	0.655

See Appendix Table A1 and the text for sources. Column (3) presents the ratio of the 90th percentile of the proximity to paved roads distribution to the 50th percentile. Columns (4) through (7) decompose inequality, using the Mean Log Deviation index and the Theil index, respectively. "Actual" refers to weighting by actual population, whereas "equal" normalizes each country's population to be of equal size. The final row omits the United States from the sample.

Figure A1: Labor incomes in North America

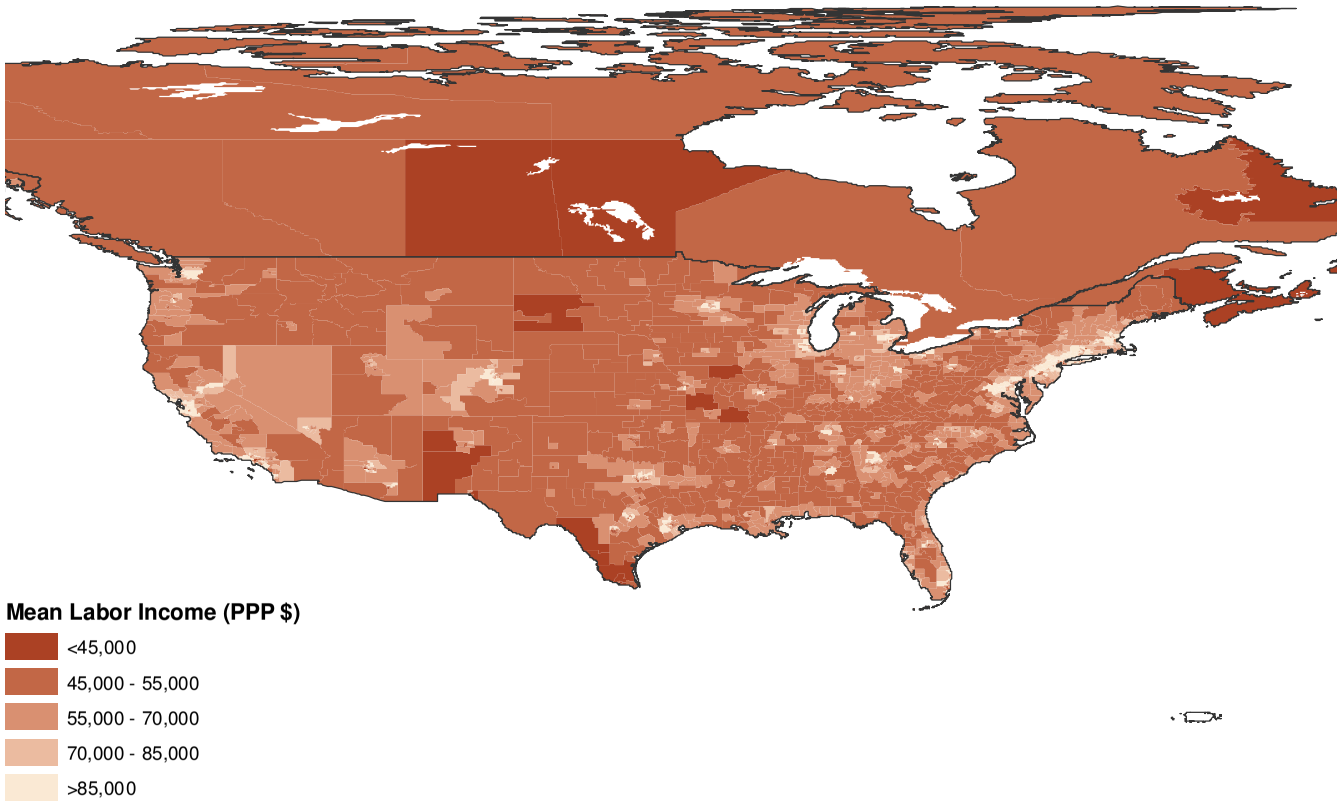

Figure A2: Labor incomes in Mexico and Central America

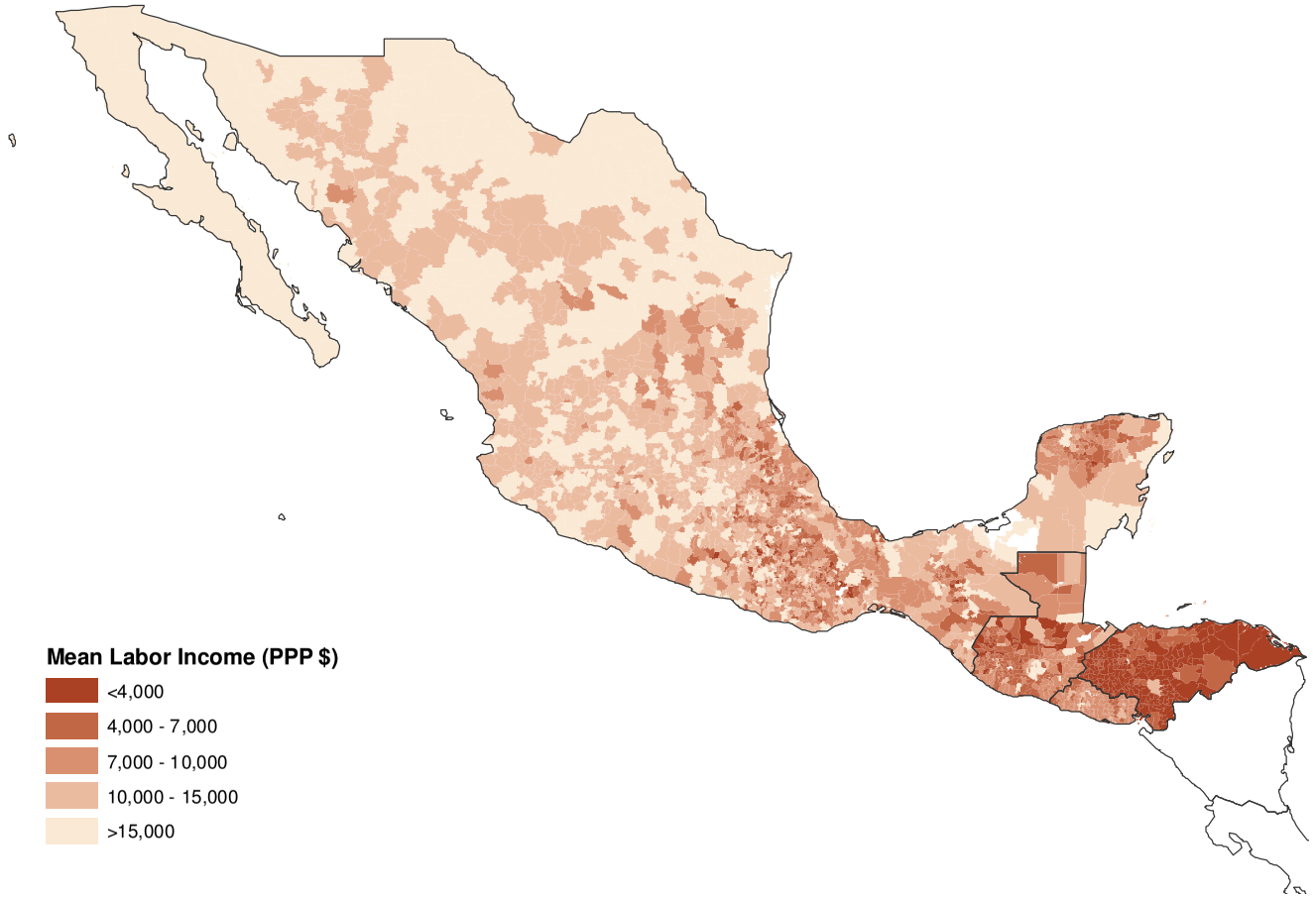

Figure A3: Labor incomes in South America