Demarcation of ESCWA poverty lines

A validation study

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Economic and Social Commission for Western Asia

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A validation study

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Key messages

- *Global poverty monitoring calls for extending cross-country and cross-time poverty comparisons even to settings where there is no prior information about poverty. This requires the construction of consistent poverty lines from the available information, accounting for countries' varying living standards just as national poverty lines do.*

- *The ESCWA quasi-relative poverty lines that are rising in a concave fashion in mean household income have desirable conceptual and computational properties and are well suited for poverty projection to previously uncovered countries and years.*

- *ESCWA poverty lines also empirically outperform their previously proposed alternatives – relative and fixed international poverty lines and their hybrids – in approximating national poverty lines and yielding reasonable poverty rates across different country groups.*

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Introduction

The present paper measures quasi-absolute poverty across countries and years using poverty lines with a fixed purchasing power that covers essential needs. Prioritizing the reduction of extreme poverty as the primary developmental goal reflects a fundamental commitment to ensuring that all individuals meet their basic needs. Importantly, absolute poverty lines are not necessarily the same across countries, even after adjusting for purchasing power parity, as households' basic needs, products availability and publicly provided goods vary across societies, contexts and years. Absolute national poverty lines (NPLs) provide a good measure of country-specific required basic needs that households should be able to meet. However, they are not available for all countries, and some rely on relative NPLs rather than absolute NPLs. Therefore, there is a need for global poverty lines that enable cross-country comparisons while accounting for the varying standards of living that NPLs tend to capture. As a result, the United Nations Economic and Social Commission for Western Asia (ESCWA) introduced the concave poverty lines (CPLs), which mirror countries' required basic needs in relation to their observed average income levels.

The proposed poverty lines by ESCWA follow a concave relationship with a country's average household income per capita. Well-established norms govern the relationship between household income and the spending on basic needs such as the time-tested Engel's law. According to this principle, the share of basic needs in total household consumption expenditure is expected to decrease as income increases. Extending this principle to international poverty analysis, the ratio of the poverty line value (representing the cost of the basic needs basket) to a country's mean household consumption expenditure is expected to decline as countries become wealthier, with richer countries having a lower ratio. That is, poverty lines are expected to rise with countries' income levels, but at a slower pace. Accordingly, ESCWA poverty lines[1] are constructed to reflect the increasing but strictly concave relationship between countries' living standards and the cost of the basic needs basket.

Section 1 explains the rationale behind the curvature of the modelled relationship between poverty lines and countries' income levels, and presents the main estimates; section 2 extends Engel's law from food expenditure to broader categories of basic goods, proving further support for the concavity assumption; section 3 conducts validation exercises compared to selected alternative specifications; and section 4 concludes.

1. ESCWA, 2022a.

1. Construction of ESCWA poverty lines

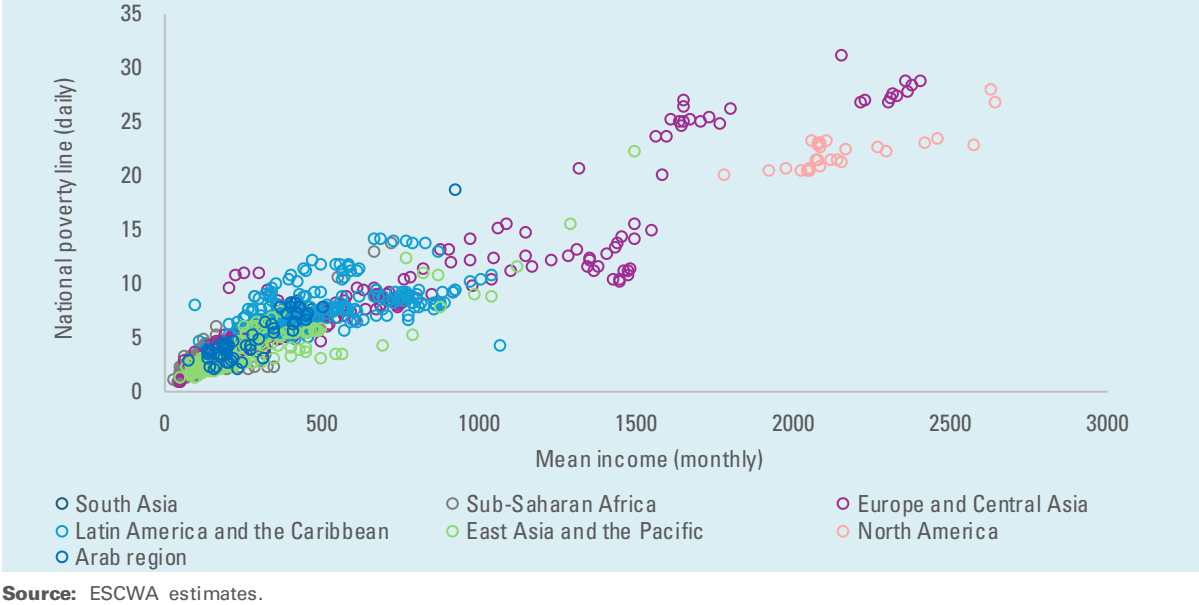
A. Data sources

The raw data include national poverty lines and/or the corresponding poverty headcount ratios, mean household incomes, and distributional information such as Lorenz coordinates or the Gini coefficient for 151 countries, covering the years 1963–2023. However, 90 per cent of the observations are from after the year 2000. This forms an unbalanced panel with 1,087 observations. These observations are categorized into seven world regions based on the United Nations regional classification and four country income groups (low, lower-middle, upper-middle and high-income countries). The data are sourced from the World Bank Poverty and Inequality Platform, its predecessor PovcalNet, and the Global Monitoring Databases of recent household income and expenditure surveys. These surveys were extracted from national sources, such as reports from national statistical authorities, for the majority of countries. National poverty lines are estimated using national poverty rates, mean incomes and income distribution data provided by the Poverty and Inequality Platform.

B. Results

Figure 1 shows how NPLs evolve as countries' household mean income per capita increases. When only absolute NPLs are considered, a concave relationship is observed between them and the mean national income.

Figure 1. Absolute NPLs vs household mean income per capita (In $PPP, 2017)



Source: ESCWA estimates.

The observed concave relationship is consistent with Engel's law which posits that the food share of total household expenditure is inversely related to the logarithm of household income.[2] Using poverty lines as a proxy for basic needs and assuming they follow the same concave relationship with income/expenditure as food shares, suggests a logarithmic–logarithmic, or constant-elasticity, relationship. We thus apply a simple regression model, in which countries' absolute NPLs, in logarithmic form are expressed as a linear function of their mean incomes M, also in logarithmic form. The model is augmented by a control for whether consumption expenditure or income is available for a country (C=1 for consumption).

For countries where absolute NPLs are unavailable, but absolute poverty rates are reported, we use the well-established parametric properties of grouped income data and the Foster-Greer-Thorbecke[3] properties of poverty measures to impute absolute NPLs from the countries' observed income-decile Lorenz coordinates and reported absolute poverty rates[4]. Estimated in a sample of 1,054 survey-year observations from 140 countries (refer to Table A.1 in the annex), the relationship (with heteroskedasticity and autocorrelation-corrected standard errors in parentheses) is as follows:

$$\widehat{Log\ NPL} = -0.0089 + 0.6905 log(M) + 0.0781 C$$

$$(0.0398) \qquad (0.0213) \qquad (0.0404)$$

This regression is weighted by the inverse occurrence of each country's observations in the model sample, thereby assigning equal weight to all countries. Upon estimating this relationship, we exponentiate the fitted values of $\widehat{Log\ NPL}$ and perform a smearing correction of the exponentiation bias without imposing any parametric assumptions on the distribution of model errors.[5] The fitted ESCWA poverty lines are computed for all countries and years for which we observe mean household incomes M, even when this must be derived from the household final consumption expenditure in countries' national accounts.[6] Finally, a floor of $2.15 (in 2017 PPP) is imposed under the normative principle that this represents the lowest expenditure level consistent with the threshold for poverty in any country, in line with the World Bank's approach.

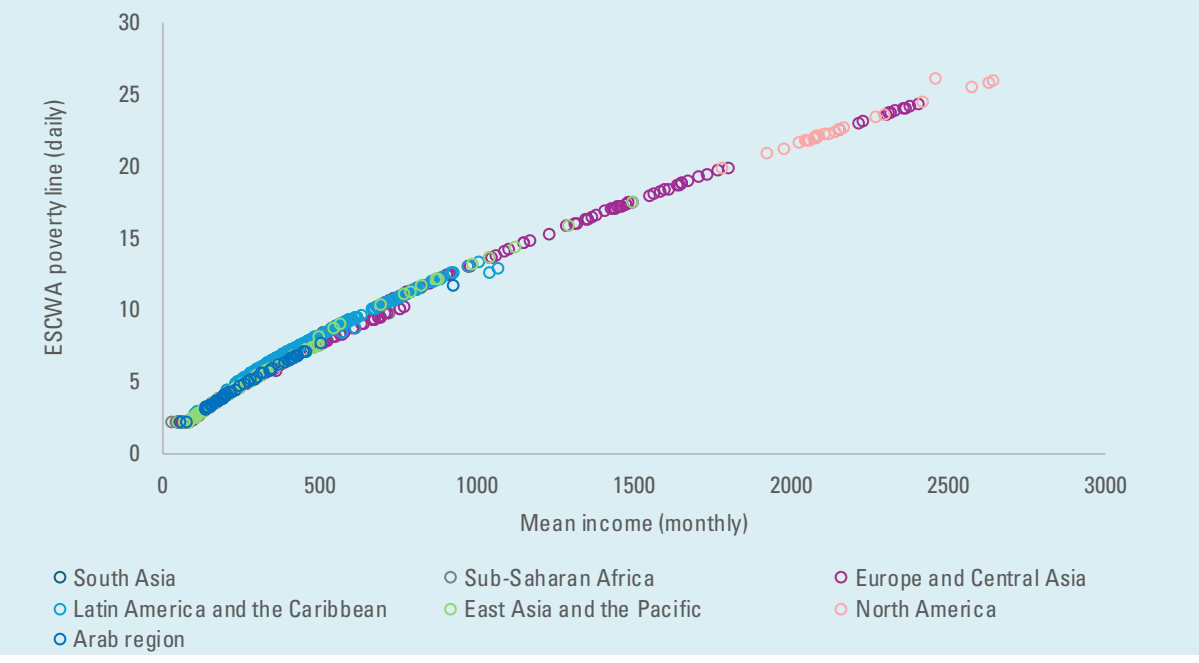
ESCWA poverty lines are consistent with the strong standard of poverty-relativity, dictating that poverty measures should not increase when all income levels rise proportionally. The log–log regression specification applied to the values of NPLs and mean incomes results in a concave relationship between the income means and ESCWA poverty lines in levels. This concavity reflects Engel's law, as wealthier households allocate a smaller share of their income to basic needs compared to lower-income households.

By incorporating the concave functional form, the ESCWA poverty line accurately captures how the cost of basic needs rises with income but at a rate that is slower than income growth itself. Thus, as countries' average income increases, the poverty line also rises but at a slower pace, reflecting the diminishing cost of

2. Perali, 2008; ESCWA 2022a.
3. Foster, Greer and Thorbecke, 1984.
4. Datt, 1998.
5. Duan, 1983.
6. ESCWA, 2022b.

basic needs relative to income. Figure 2 illustrates the concave relationship between mean income and the predicted ESCWA poverty lines based on the log-log model.[7]

Figure 2. Mean income vs predicted ESCWA poverty lines (In $PPP, 2017)



Source: ESCWA estimates.

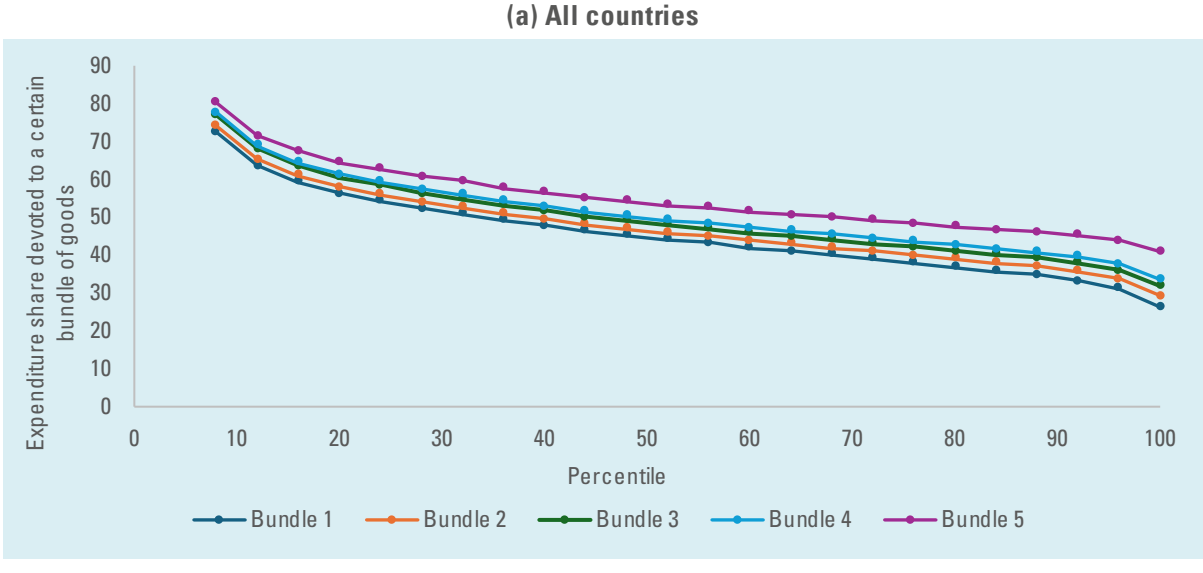
7. The extreme poverty lines, which are also country-specific, are derived from the ESCWA moderate poverty lines and are set at two thirds of their value. This proposition is based on the typical share of food consumption in total consumption.

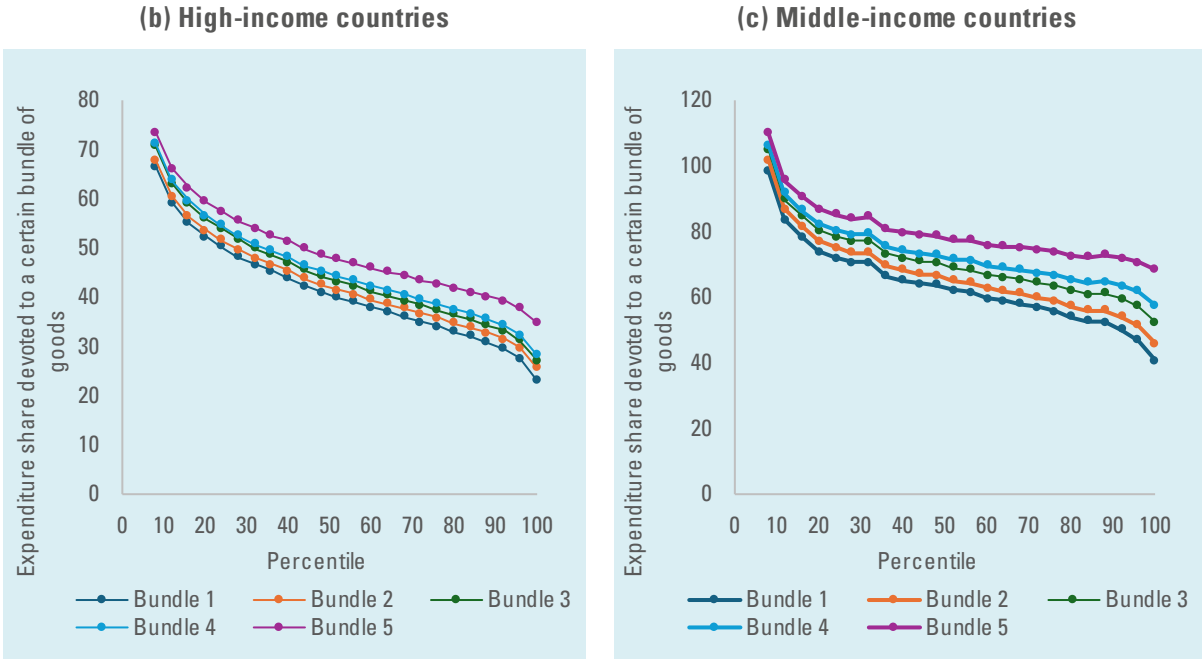
2. Does Engel's law apply to broader baskets of basic needs expenditures?

A key assumption in the conceptual framework underlying ESCWA poverty lines is that Engel's law applies not only to food components, but also to non-food components of basic needs expenditures. Validating this assumption would entail confirming that the shares of food and non-food basic needs expenditures decline as income rises. Figure 3 shows the results using harmonized cross-country data on household basic needs expenditures, covering 537 country-years across 59 countries, sourced from the Luxembourg Income Study database. The figure clearly shows a pattern of declining percentage share of total expenditures on a basic bundle that includes food, clothing, housing and utilities, or even broader bundles that also include housing equipment, health, education and transport.

Moreover, we confirmed the relationship using raw microdata from a national statistical office – the 2019 Household Income and Expenditure Survey (HIES) of Kuwait – which allowed for more granular disaggregation of commodities, enabling the exclusion of non-basic expenditures within commodity groups (e.g., caviar in food expenditures). The results in figure 4 again confirm the declining share of total expenditure allocated to basic commodities.

Figure 3. Expenditure shares for alternative basic needs bundles across 537 surveys, by population deciles (Percentage)

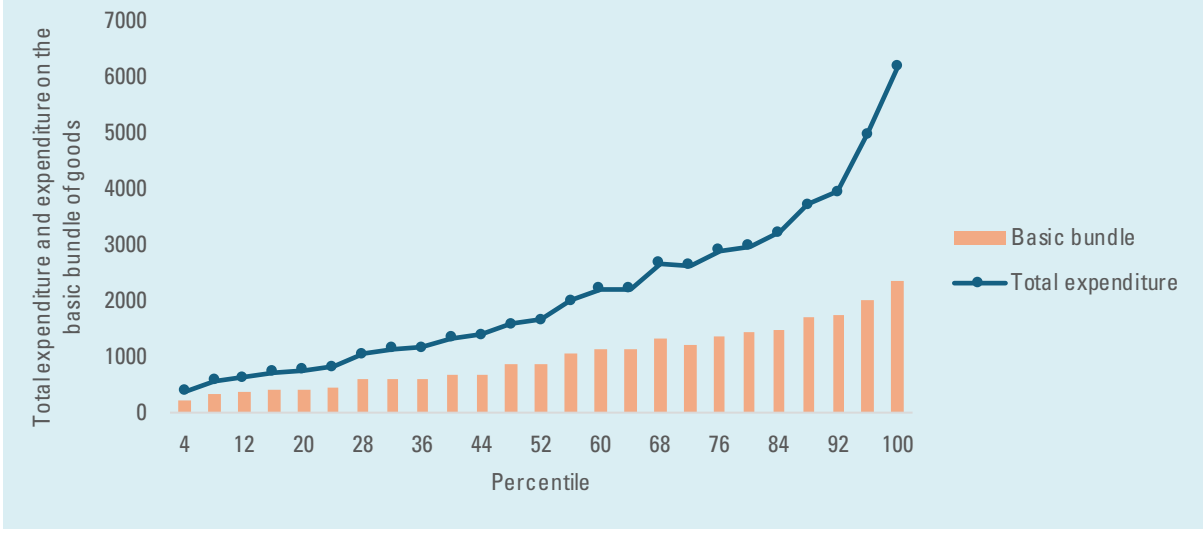


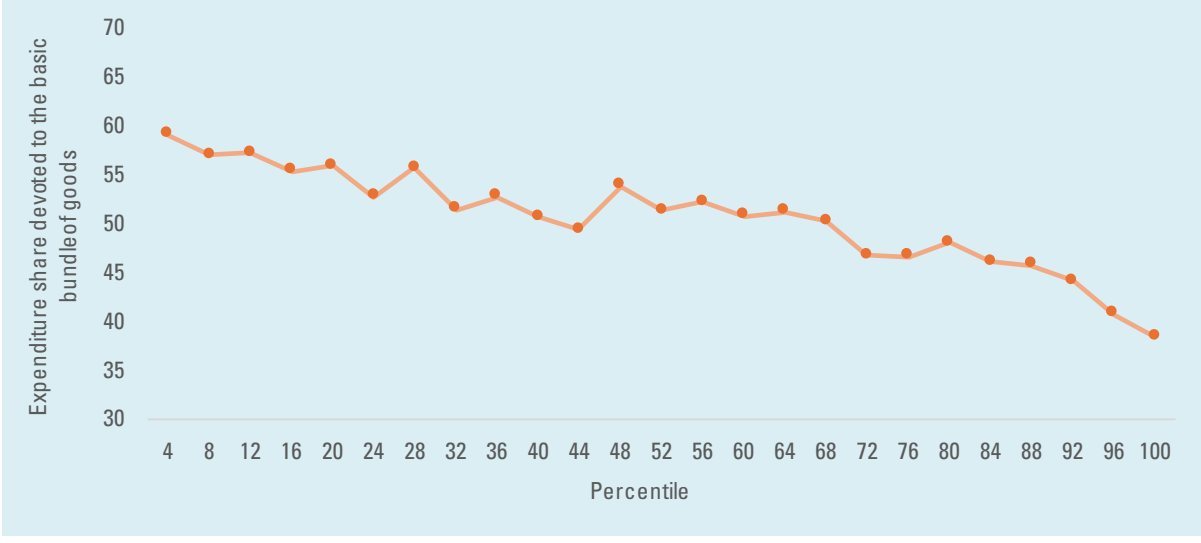


Source: ESCWA estimates based on the Luxembourg Income Study (2024) database of 537 surveys from 59 countries.

Notes: Food consumption may exceed income when some food is home-produced or received as a gift.
Bundle 1 includes expenditures on food, clothes, housing and utilities.
Bundle 2 includes expenditures on bundle 1 + housing equipment.
Bundle 3 includes expenditures on bundle 2 + health.
Bundle 4 includes expenditures on bundle 3 + education.
Bundle 5 includes expenditures on bundle 4 + transport.

Figure 4. Expenditures and shares for alternative basic needs bundles, by population quantile: Kuwait 2021 (KWD, Percentage)





Source: ESCWA estimates based on the 2021 Kuwait HIES.

Note: Basic expenditures include food, clothing and housing.

3. Validation and robustness of the log-log functional form

Having established that Engel's law applies to expenditures on both food and non-food basic needs, this section provides empirical justification for the log-log functional form by comparing its performance to alternative parametric and non-parametric specifications including the World Bank Societal Poverty Lines (SPLs). Section 3.A compares ESCWA poverty lines with the World Bank SPLs, showing that ESCWA poverty lines align more closely with national poverty rates. In contrast, SPL tends to overestimate poverty in high-income countries and underestimate it in middle-income ones. Section 3.B evaluates ESCWA poverty lines against James Foster's hybrid poverty line (HPL), which combines absolute and relative poverty measures. While both ESCWA poverty lines and HPLs exhibit similar concave relationships with national incomes, ESCWA lines align more closely with national poverty lines, particularly in low- and middle-income countries. Finally, section 3.C assesses alternative model specifications, with results from both the log-log model and non-parametric methods confirming the concave relationship between poverty lines and incomes, which reinforces the importance of the model adopted by ESCWA.

A. Comparisons against the SPL

The moderate and extreme poverty lines of ESCWA are closely aligned with the recommendations of Anthony Atkinson,[8] aimed at improving how poverty is measured and monitored worldwide. Atkinson argued for integrating a relative component in poverty lines, recognizing that the experience of poverty differs across countries. People's well-being is not only shaped by the absolute bundle of goods they can afford, but also by social norms that vary by context, meaning that poverty and destitution are experienced differently in different societies. For example, poverty in Mozambique entails a different level of hardship compared to poverty in the United States. Atkinson proposed a "weakly-relative" definition of poverty by augmenting the absolute poverty line with a country's median or mean income, thereby offering a more nuanced understanding of poverty.

In response to Atkinson's recommendations, the World Bank introduced SPL[9] in its 2018 report on Global Poverty and Inequality.[10] The SPL is a relative measure that assesses individuals' well-being and poverty in relation to others in

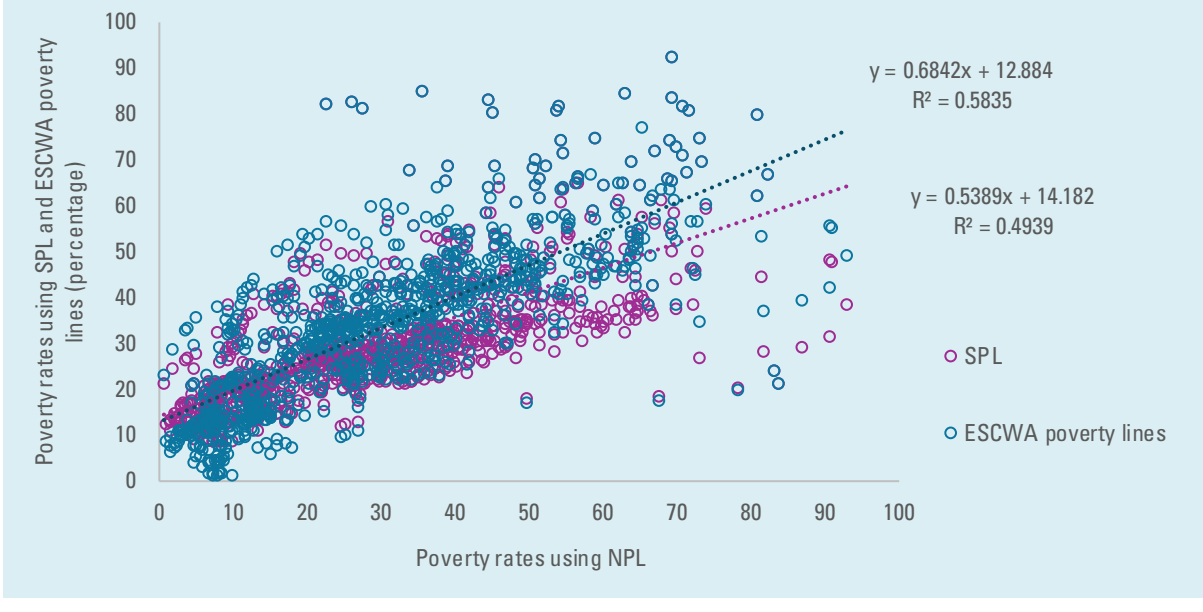
8. World Bank, 2017.
9. SPL is calculated as $1.15 + 0.5*Median in 2017 $PPP with a floor of $2.15.
10. World Bank, 2018.

society, rather than as the absolute inability to afford a basic basket of goods. The SPL adjusts the poverty threshold based on a country's median income level, reflecting the idea that what constitutes poverty varies proportionally with societal standards. This approach acknowledges that poverty should account for the social and economic context in which people live, addressing some of the limitations of fixed international poverty lines. Nevertheless, the SPL presents several limitations. First, it does not measure basic needs, as a person living below one-half of a country's median income may not necessarily be experiencing material deprivation. Similarly, in another country, people living just above the relative poverty line may still face significant hardship. Thus, the SPL tends to emphasize income inequality within a country over absolute deprivation, identifying relative disadvantage rather than minimum living standards. As a result, the SPL may overestimate poverty in higher-income countries and underestimate it in lower-income ones.

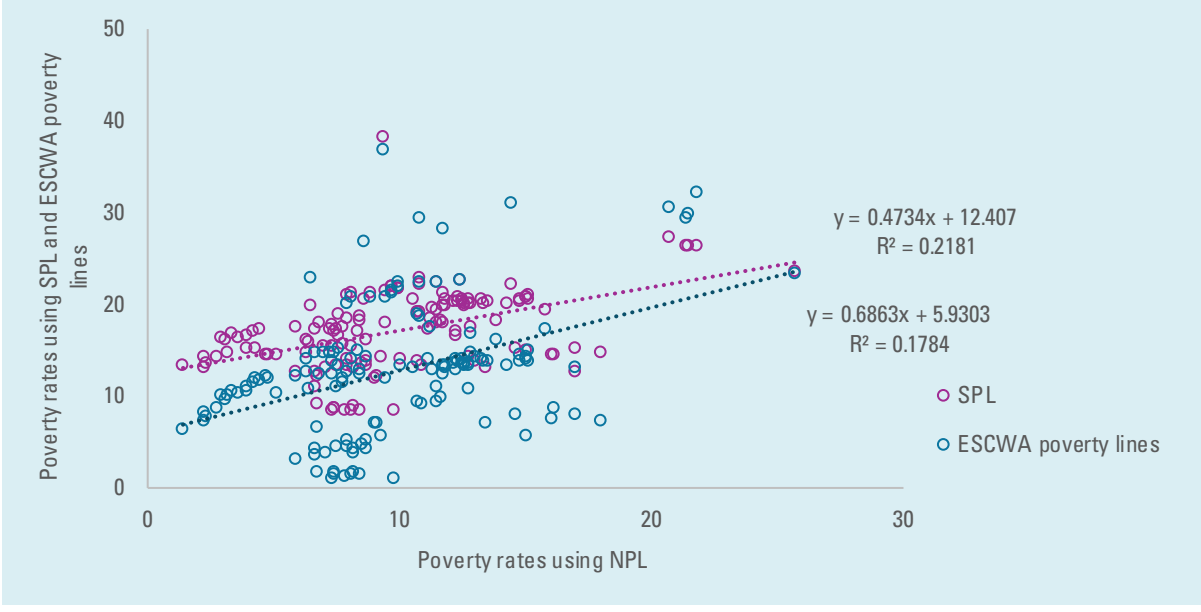
Figure 5 demonstrates that poverty rates according to ESCWA poverty lines align more closely with national poverty rates than those based on SPL. When examining individual country-income groups, ESCWA poverty rates consistently show better alignment with national poverty rates compared to those under SPL. This is evident from the covariance between the pairs – specifically, the coefficients for ESCWA poverty lines are higher and closer to 1 than those for the SPL – and from measures of model fit such as R-squared. SPLs tend to overestimate poverty in high-income countries (figure 5 (b)) and underestimate it in middle-income countries (figures 5 (c), (d)). Poverty rates in low-income countries overlap between ESCWA poverty lines and SPLs due to the common floor of $2.15 in 2017 PPP.

Figure 5. Poverty rates using SPLs vs ESCWA poverty lines (Percentage)

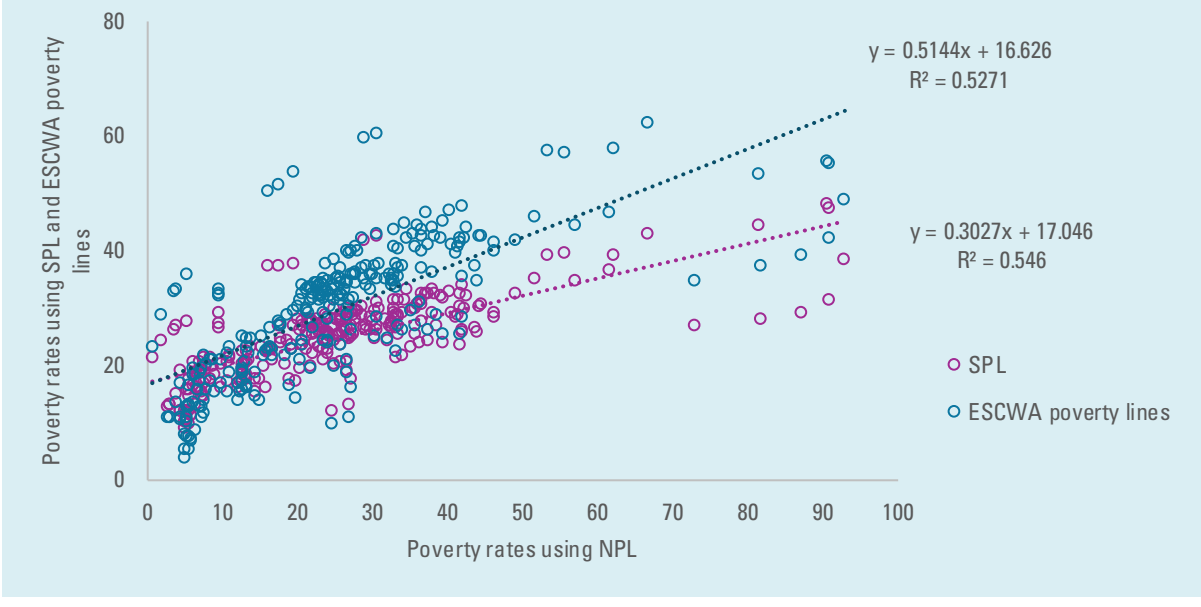
(a) All countries



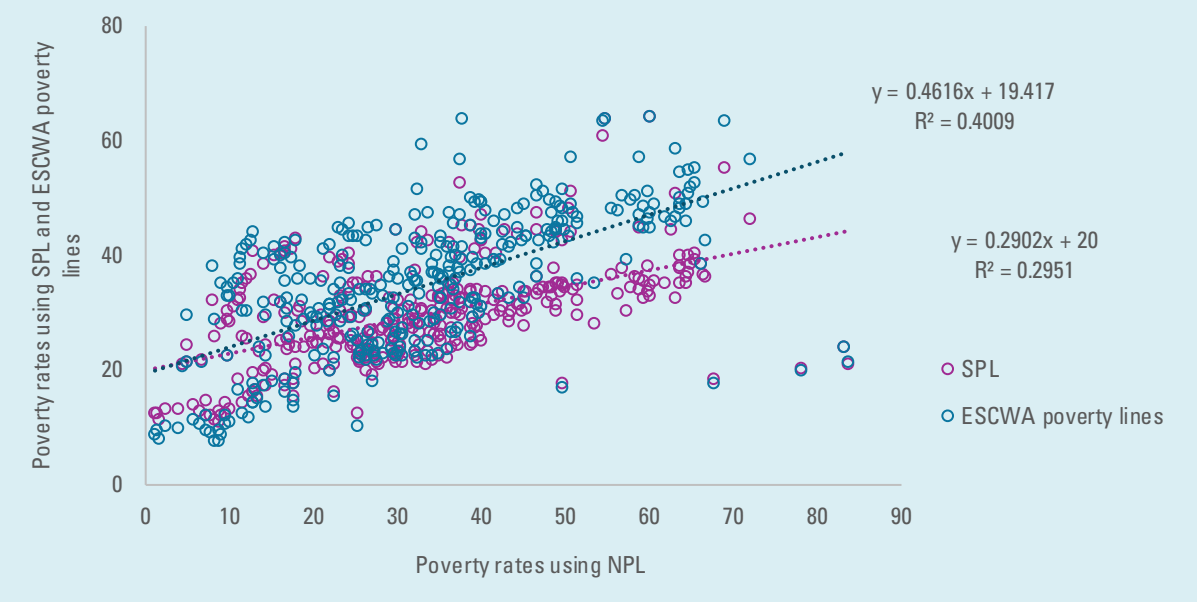
(b) High-income countries



(c) Upper-middle income countries



(d) Lower-middle income countries



Source: ESCWA estimates.

Note: Country income classification is retrieved from the World Bank classification for the year 2022.

B. Comparisons with Foster's hybrid poverty lines

Similarly, the ESCWA poverty lines reflect James Foster's proposal for a hybrid poverty line, which blends absolute and relative elements. The HPL is expressed as a geometric weighted average of absolute and relative measures, and is defined mathematically as follows:

$$HPL = RelativePL^{\rho} \times AbsolutePL^{1-\rho}$$

Here, *RelativePL* refers to a relative poverty line —typically measured as a share of mean or median income — while *AbsolutePL* represents a fixed international poverty line based on the minimum cost of basic needs. The parameter ρ measures the elasticity of the poverty line with respect to income. In other words, it determines the extent to which the poverty line adjusts to changes in societal standards as national income increases.

According to the National Research Council of the National Academy of Sciences, ρ has a historical value of 0.65.[11] This indicates that the poverty line is moderately sensitive to changes in economic conditions within a society. Specifically, nearly two thirds of its variation are driven by changes in income (relative component), while one third remains anchored to absolute basic needs.

This hybrid approach allows the poverty line to increase with rising income levels, reflecting evolving social expectations, while ensuring that it does not fall below a minimum subsistence threshold. Similarly, the ESCWA

11. Citro and Michael, 1995, p. 143.

poverty lines adopt a balanced approach, acknowledging both the importance of covering basic needs and adapting to a country's relative economic context.

We proceed by comparing the HPL with the ESCWA poverty lines. The relative poverty line is set at 50 per cent of median income, while the absolute poverty line follows the World Bank international poverty thresholds: $21.70 PPP per day for high-income countries, $6.85 per day for upper-middle income countries, $3.65 per day for lower-middle income countries and $2.15 per day for low-income countries.

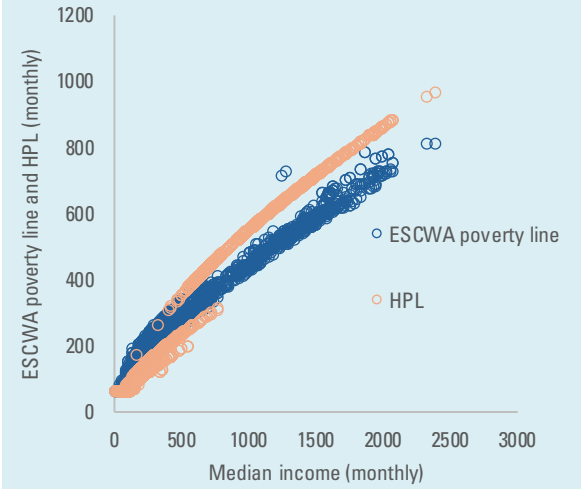
Plotting the HPL against both mean and median incomes (figure 6 (a), (b)) reveals a concave relationship, similar to the pattern observed for the ESCWA poverty lines. Both poverty lines align well with national poverty lines (figure 7). Regression analysis demonstrates a strong relationship between ESCWA poverty lines and national poverty lines, with ESCWA slightly outperforming the HPL when compared to national poverty lines, particularly when focusing on absolute poverty lines, and low- and middle-income countries (table A.2 in the annex).

We further explored using a non-linear relative component of the HPL, where the share of median income used for the relative poverty line varies across countries. In this model, poorer countries are assigned a higher share of median income, while wealthier countries receive a lower share. This approach resulted in a stronger alignment between HPLs and ESCWA poverty lines, as well as a higher correlation with national poverty lines, demonstrating that ESCWA poverty lines are inspired by non-linear relative poverty lines (figure 8).

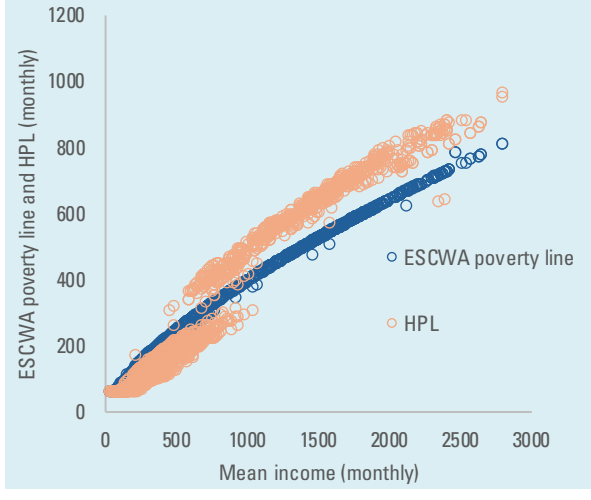
In conclusion, ESCWA poverty lines demonstrate strong theoretical and empirical properties for modelling absolute poverty across countries, outperforming both fixed international poverty lines and other (quasi-) relative poverty lines proposed in previous studies. ESCWA poverty lines are estimated in all countries and years, even in contexts with limited data on living conditions and costs.

Figure 6. HPLs and ESCWA poverty lines vs household income (In $PPP, 2017)

(a) HPLs and ESCWA poverty lines vs median income

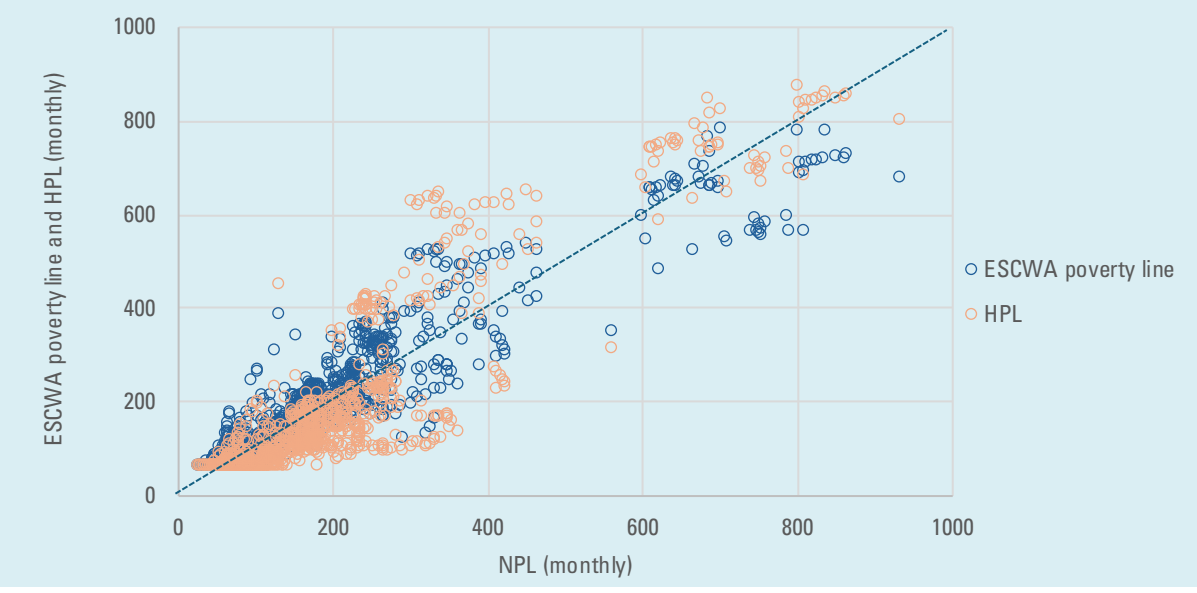


(b) HPLs and ESCWA poverty lines vs mean income



Source: ESCWA estimates.
Note: The relative poverty line component in the HPL is taken as 50 per cent of median income.

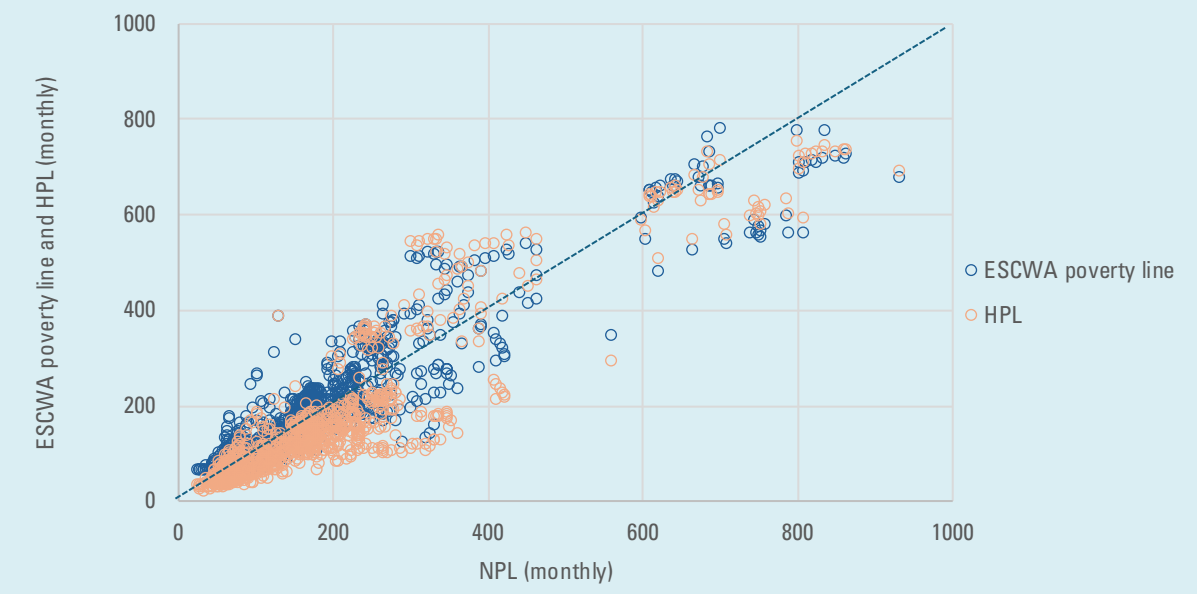
Figure 7. HPLs and ESCWA poverty lines vs NPLs (In $PPP, 2017)



Source: ESCWA estimates.

Note: The relative poverty line component in the HPL is taken as 50 per cent of median income. The dotted line shows the 45-degree line.

Figure 8. HPLs (non-linear) and ESCWA poverty lines vs NPLs (In $PPP, 2017)



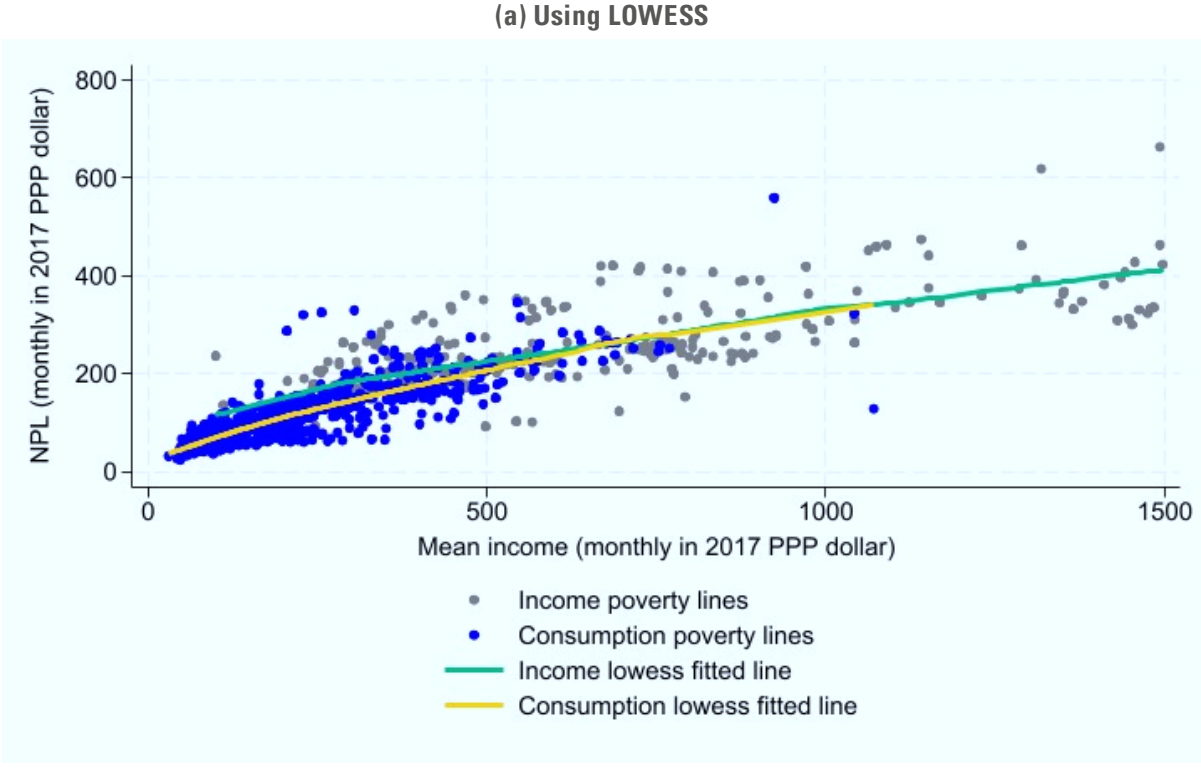
Source: ESCWA estimates.

Note: The relative poverty line component in the HPL is set at 40 per cent of median income for high-income countries, 45 per cent for upper-middle income countries, 55 per cent for lower-middle income countries and 60 per cent for low-income countries. Country income classification is retrieved from the World Bank classification for the year 2022. The dotted line shows the 45-degree line.

C. Comparisons with other parametric and non-parametric specifications

When evaluating different functional forms for the relationship between national poverty lines and mean incomes, the log-log model consistently provides a better fit than other parametric models, as shown in table A.3 in the annex. Among various parametric alternatives with different degrees of concavity or convexity – including linear, log-linear, linear-log and polynomial models – the log-log model achieves the highest measure of fit (R squared). The concavity suggested in the log-log model is further validated through non-parametric models. Specifically, various non-parametric specifications, including locally weighted smoothing (LOWESS), kernel smoothing, chi-square automated interaction detection (CHAID) and random forest ensemble classification, confirm a concave relationship between absolute national poverty lines and mean incomes (figure 9).

Figure 9. Non-parametric models of national poverty lines (In $PPP, 2017)



(b) Using kernel smoothing

(c) Using CHAID and random forest ensemble classification

Source: ESCWA estimates.

4. Conclusion

Global poverty monitoring calls for extending cross-country and cross-time poverty comparisons even in contexts where there is no prior information about poverty. This requires the construction of consistent poverty lines using the available data, while accounting for the varying living standards across countries, much like national poverty lines do.

This paper demonstrates that the quasi-relative poverty lines of ESCWA, which increase at a decreasing rate with a country's average household income per capita, possess desirable conceptual and computational properties and are well-suited for projecting poverty in countries and years previously uncovered.

This paper identifies the concavity in income by appealing to Ernst Engel's law, and by demonstrating empirically that this property applies not only to food expenditures but also to more broadly defined bundles of basic expenditures (beyond strictly food-related expenses). Results from a large database of household income confirm that the share of broadly-defined basic needs in total household consumption expenditure declines as income rises. Extending this principle to international country-level poverty analysis, we show that the ratio of national poverty lines to mean household consumption expenditure decreases over time as countries become wealthier, with richer countries exhibiting lower ratios than poorer ones. As a result, poverty lines are expected to increase but at a gradually decreasing rate as countries' income levels rise.

The ESCWA log-log functional form outperforms several other concave parametric and non-parametric specifications, with the ESCWA poverty lines empirically surpassing previously proposed alternatives –including relative and fixed international poverty lines and their hybrids– in approximating national poverty lines and yielding reasonable poverty rates across different country groups. In conclusion, both theoretical and empirical validation support the use of ESCWA poverty lines for poverty identification and for global and inter-temporal poverty comparisons.

Annex

Table A1. Sample of countries used for the estimation of the relationship between absolute poverty lines and household mean income per capita

Algeria	Comoros	Djibouti	Egypt	Iraq
Jordan	Lebanon	Mauritania	Morocco	Somalia
State of Palestine	Sudan	Syrian Arab Republic	Tunisia	Yemen
Cambodia	China	Fiji	Indonesia	Japan
Kiribati	Korea, Republic of	Lao People's Democratic Republic	Malaysia	Marshall Islands
Micronesia, Federation States of	Mongolia	Myanmar	Nauru	New Zealand
Papua New Guinea	Philippines	Samoa	Solomon Islands	Thailand
Timor-Leste	Tonga	Tuvalu	Vanuatu	Vietnam
Armenia	Azerbaijan	Belarus	Estonia	Georgia
Ireland	Italy	Kazakhstan	Kosovo	Kyrgyz Republic
Lithuania	Moldova	Poland	Romania	Russian Federation
Serbia	Switzerland	Tajikistan	Turkmenistan	Ukraine
United Kingdom	Uzbekistan	Argentina	Bahamas	Barbados
Belize	Bolivia	Brazil	Chile	Colombia
Costa Rica	Dominican Republic	Ecuador	El Salvador	Guatemala
Guyana	Haiti	Honduras	Jamaica	Mexico
Nicaragua	Panama	Paraguay	Peru	St. Lucia
Trinidad and Tobago	Uruguay	Venezuela	Canada	United States of America
Afghanistan	Bangladesh	Bhutan	India	Iran
Nepal	Pakistan	Sri Lanka	Angola	Benin
Botswana	Burkina Faso	Burundi	Cabo Verde	Cameroon

Central African Republic	Chad	Congo, Democratic Republic of	Congo, Republic of	Cote d'Ivoire
Eswatini	Ethiopia	Gabon	Gambia	Ghana
Guinea	Guinea-Bissau	Kenya	Lesotho	Liberia
Madagascar	Malawi	Mali	Mauritius	Mozambique
Namibia	Niger	Nigeria	Rwanda	Sao Tome and Principe
Senegal	Sierra Leone	South Africa	South Sudan	Seychelles
Tanzania	Togo	Uganda	Zambia	Zimbabwe

Source: World Bank Poverty and Inequality Platform.

Table A2. Results of simple regression models of NPLs

	(1)	(2)	(3)	(4)	(5)	(6)
	All	All	Absolute	Absolute	Absolute Non-HICs	Absolute Non-HICs
HPL	1.027***		0.780***		1.080***	
	(23.55)		(12.34)		(12.36)	
ESCWA poverty line		1.360***		0.994***		0.893***
		(17.93)		(15.34)		(12.75)
Constant	15.02	-69.25***	49.84***	-11.60	19.93*	6.037
	(1.65)	(-4.53)	(5.00)	(-1.14)	(2.03)	(0.68)
Adjusted R-squared	0.908	0.895	0.817	0.868	0.568	0.710
Observations	1,535	1,539	1,007	1,011	867	871

Source: ESCWA estimates.

Note: Models are estimated on all survey-years (columns 1–2), only on survey-years reporting absolute poverty lines/rates (columns 3–4), or only on survey-years reporting absolute poverty lines/rates in non-high income countries (columns 5–6). Asterisks indicate the level of statistical significance of the estimated coefficients: ***p < 0.01; **p < 0.05; *p < 0.10. These denote significance at the 1 per cent, 5 per cent, and 10 per cent levels, respectively, implying confidence levels of 99 per cent, 95 per cent, and 90 per cent that the corresponding coefficient is statistically different from zero.

Table A3. Regression results of different parametric models between NPLs and mean income

Variables	Linear model	Linear model with controlling for welfare measurement	Linear model with controlling for income group	Linear model with controlling for middle income countries	Linear model with controlling for middle income countries and welfare measurement	Nonlinear model with mean to the power of 0.7	Nonlinear model with mean to the power of 0.7 and controlling for income group	Logarithmic model with controlling for welfare measurement (the adopted model)	Linear-log model with controlling for welfare measurement	Log-linear model with controlling for welfare measurement	Polynomial model with controlling for welfare measurement
M	0.340***	0.336***	0.366***	0.347***	0.343***					0.001***	0.340***
	(0.020)	(0.025)	(0.031)	(0.024)	(0.026)					(0.000)	(0.074)
C		6.707			8.541			0.087	39.647**	0.217**	5.229
		(15.344)			(15.793)			(0.065)	(18.031)	(0.090)	(17.121)
LIC			38.350				63.547*				
			(33.448)				(32.651)				
LMIC			41.473				43.653				
			(31.085)				(29.386)				
UMIC			32.038				15.207				
			(30.119)				(28.947)				
LMICs, LICs				8.840	10.212						
				(10.629)	(11.107)						
Mean^0.7						3.306***	3.741***				
						(0.208)	(0.288)				
Log (M)								0.686***	122.605***		
								(0.032)	(13.386)		

Variables	Linear model	Linear model with controlling for welfare measurement	Linear model with controlling for income group	Linear model with controlling for middle income countries	Linear model with controlling for middle income countries and welfare measurement	Nonlinear model with mean to the power of 0.7	Nonlinear model with mean to the power of 0.7 and controlling for income group	Logarithmic model with controlling for welfare measurement (the adopted model)	Linear-log model with controlling for welfare measurement	Log-linear model with controlling for welfare measurement	Polynomial model with controlling for welfare measurement
Mean income^2											0.000
											(0.000)
Mean income^3											-0.000
											(0.000)
Constant	41.883***	41.837***	-1.042	33.544**	32.193**	-21.596**	-84.366**	1.068***	-516.429***	4.315***	40.654***
	(4.984)	(4.927)	(36.056)	(13.134)	(13.243)	(8.825)	(38.355)	(0.163)	(68.133)	(0.044)	(8.901)
Observations	1,048	1,048	1,048	1,048	1,048	1,048	1,048	1,048	1,048	1,048	1,048
R-squared	0.864	0.864	0.867	0.864	0.865	0.852	0.861	0.833	0.689	0.700	0.864
RMSE	52.58	52.56	52.12	52.51	52.46	54.91	53.25	93.46	79.48	93.46	52.57
Adj. R-squared	0.864	0.864	0.866	0.864	0.864	0.851	0.860	0.895	0.689	0.699	0.864

Source: ESCWA estimates.

Note: Asterisks indicate the level of statistical significance of the estimated coefficients: ***p < 0.01; **p < 0.05; *p < 0.10. These denote significance at the 1 per cent, 5 per cent, and 10 per cent levels, respectively, implying confidence levels of 99 per cent, 95 per cent, and 90 per cent that the corresponding coefficient is statistically different from zero.

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Global poverty monitoring necessitates comparable poverty assessments across diverse countries and time periods, even when prior poverty data is limited. Constructing consistent poverty lines that account for varying living standards, akin to national approaches, is crucial for this endeavor. Such methodologies enable the projection of poverty in previously unmeasured contexts, providing valuable insights for international development efforts and policy formulation.

This paper validates the Economic and Social Commission for Western Asia (ESCWA)'s quasi-relative poverty lines, which increase at a diminishing rate with a country's average household income per capita. The study demonstrates that these poverty lines possess favorable conceptual and computational characteristics, aligning with Engel's Law regarding the declining share of basic expenditures with increasing consumption. Furthermore, the ESCWA poverty lines are shown to effectively approximate national poverty lines and yield reasonable poverty rates across different country groups, outperforming alternative specifications and previously proposed poverty line methodologies.

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