Comments on “Building a Comparable Measure of Consumption: Concepts and Measurement Challenges Faced by Emerging and Advanced Economies ”

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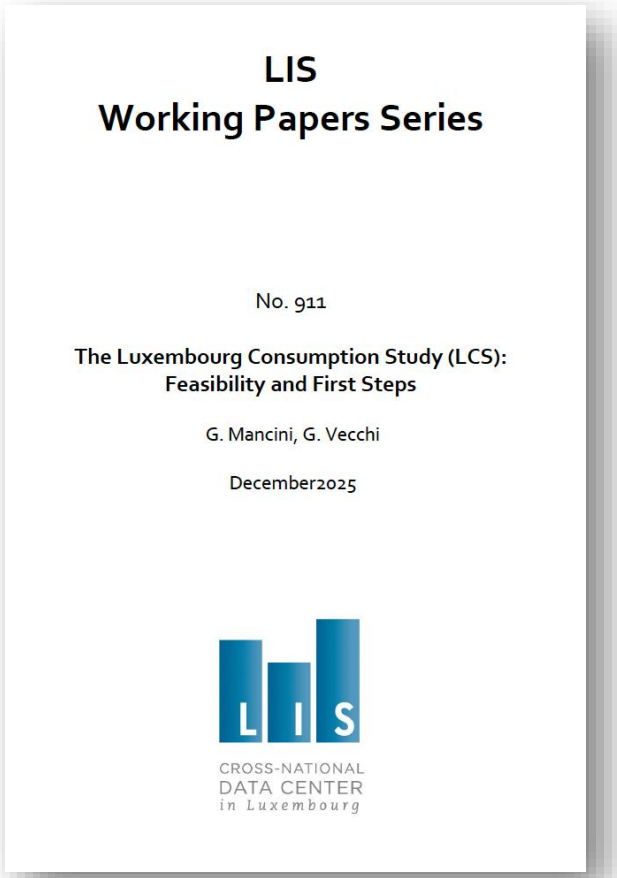
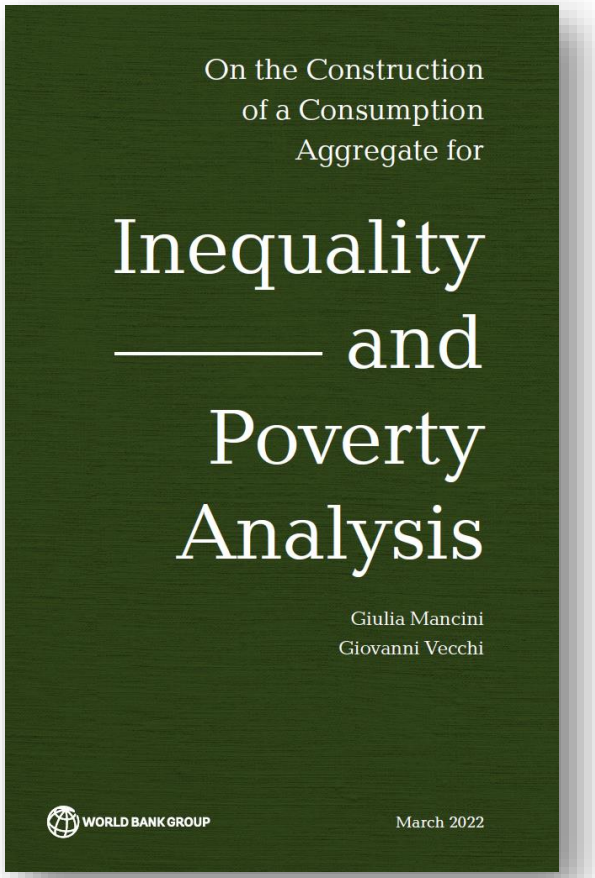
LCS Workshop - Belval, January 15, 2026

Some context

LCS feasibility study (2025)



World Bank Guidelines (2022)



The goal

- We share a common analytical framework (standard consumer theory) according to which consumption of goods and services delivers utility.
- Money-metric utility is what we are after (Deaton and Zaidi 2002).

$$MMU^h \approx \frac{q^h \cdot p^h}{P^h}$$

  - q^h is the bundle of goods and services consumed by household h;
  - p^h are the market prices faced by household h;
  - P^h is a household-level Paasche price index.

In practice

- The nominal consumption aggregate (CA) is our best possible approximation of $q^h \cdot p^h$
- Deaton and Zaidi did not muddle the concepts: theory is solid, target is clear, implementation is admittedly difficult in practice.
- Sub-optimal data: surveys record expenditures, not consumption.
  We are forced to estimate some components of CA.
- Comparability: trade-offs between the quality of CA and its cross-country comparability.
- We must pick our battles.

Reference unit, reference population, reference period

Issue 1. *What is the appropriate reference unit for measuring consumption?*
Choice 1. *The reference unit is the household, defined as one individual or a group of individuals living together under the same housing arrangement.*

Issue 2. *What population should be covered when measuring consumption?*
Choice 2. *The population consists of all people living in private households who reside within the territory of the country.*

Issue 3. *Should consumption expenditure amounts be expressed in a common reference period and if so which one?*
Choice 3. *Yes, a common reference period is necessary. Expenditure amounts included in the consumption aggregate are annualized.*

Reference unit, reference population, reference period

- These aspects are important, but essentially exogenous.
- Little to no margin for harmonization of reference units and populations.
- I fail to see an alternative to annualization.
- Realistically: choices 1, 2 and 3 identify minimum requirements for inclusion in LCS.

Metadata

category	variable name	variable label
Survey design and data quality		
	datacoll_months	duration of the data collection period of the survey underlying estima
	datacoll_method	Data collection method (PAPI, CAPI, CATI, other)
	frame_year	year of the census used to construct the sampling frame
	sampling_stages	number of sampling stages
	strata	number of strata
	clusters	number of clusters
	cluster_size	cluster size (number of households)
	n_psus	number of Primary Sampling Units (PSUs)
	n_ssus	number of Secondary Sampling Units (SSUs)
	sampling_ratio	Sampling ratio (%)
	nr_rate	Non-response rate (%)
	sub_unit_nr	Substitution for unit non-response, yes or no
	planned_size	Planned sample size (households)
	actual_size	Actual sample size (households)
	benford	Value of the Benford index (as published)
	whipple	Value of the Whipple index (as published)
Questionnaire and consumption aggregate		
	diary_days	reference period of the food diary (if applicable), in days
	recall_days	reference period of the food recall module (if applicable), in days
	food_acq_cons	food component of the consumption aggregate represents purchase
	food_purch	food from purchases included in the consumption aggregate?
	food_own	food from own-production included in the consumption aggregate?
	food_inkind	food received in kind included in the consumption aggregate?
	food_away	food consumed away from home purchases included in the consum
	food_list_no	number of items in the food list (if applicable)

Acquisition approach

Issue 4. *What approach is to be used to value consumption?*
Choice 4. *Consumption is valued as the expenditure amounts recorded in household surveys following the acquisition approach, with the exception of housing and durable goods.*

- Agreed. If the target concept is MMU, then including the purchase value of durables and housing is conceptually incorrect.

Temporal and spatial price deflation

Issue 5. *Should expenditures be recorded in nominal or real values?*
Choice 5. *Expenditure amounts are recorded in nominal values.*

Issue 6. *How should users adjust for price differences over time and space?*
Choice 6. *Intertemporal and interarea indices, adaptable to the consumption aggregate and its subcategories, are further explored to allow adjustment for price development and spatial price differences.*

- Agreed. The “how” is still an open issue.

Temporal and spatial price deflation

- First step: disseminate “official” consumer price indices (CPIs) and within-country spatial price indices (SPIs), when available. They might be flawed (CPIs too, particularly for developing countries: a typical example is defective coverage of price data).
- A second, more ambitious step: provide LCS-made “harmonized” SPIs computed within a set of guidelines. This would certainly qualify as a stand-alone project.
- NB: how deflation is performed matters, too. Recent research shows that deflating consumption expenditure by sub-categories implies a systematic distortion of the consumption aggregate across population subgroups. The issue is illustrated with an application to the case of Iran.

the review of income and wealth

Review of Income and Wealth
Series 71, Number 1, February 2025; e12685
DOI: 10.1111/roiw.12685

DEFLATION BY EXPENDITURE COMPONENTS: A HARMLESS ADJUSTMENT?

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We investigate the effect that seemingly minor features of the implementation of cost-of-living adjustments have on the distribution of household expenditures, by developing an analytical framework that is consistent with standard consumer theory, and mindful of data limitations faced by practitioners. The main result is at odds with common sense: even when multiple price indices are available (e.g., a food Consumer Price Index and a non-food one), it turns out that using a single price index (e.g., the total Consumer Price Index), to adjust the consumption aggregate is recommended. The practice of adjusting subcomponents of consumption separately (food with a food index and nonfood with a nonfood index) can lead to a systematic bias in the welfare measure, and consequently in poverty and inequality measures. Using Iran's 2019 Household Expenditures and Income Survey, we find that the bias manifests as a systematic underestimation of urban poverty and overestimation of rural poverty.

JEL Codes: C43, E31, I32

Keywords: cost-of-living differences, inequality, inflation, poverty, prices

POLICY RESEARCH WORKING PAPER 10978

Poverty Lines and Spatial Differences in the Cost of Living

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Poverty and Equity Global Practice
November 2024

A full-coverage SPI

surveys. By contrast, the nonfood component is estimated indirectly through the ratio of multiple poverty lines calculated at the subnational level, for instance, the regional level. This results in an easy-to-implement and interpret full-coverage household-level spatial price index that can be expressed as follows:

$$SPI_h = \left[w_h^{food} \left(SPI_h^{food} \right)^{-1} + \left(1 - w_h^{food} \right) \left(SPI_{h(s)}^{nfood} \right)^{-1} \right]^{-1}$$

The index can be obtained as a weighted average of a household-level Paasche spatial food price index (SPI_h^{food}) and a stratum-level non-food spatial price index ($SPI_{h(s)}^{nfood}$), with the weight w_h^{food} calculated as the household-level food budget share.

The formula in simple words

- A price index that captures price variation in both food and non-food consumption can be constructed as a simple (weighted) average:

$$SPI_h = \left[\underbrace{w_h^{food}}_{\substack{\textit{hh-level} \\ \text{food} \\ \text{budget share}}} \underbrace{\left(SPI_h^{food}\right)^{-1}}_{\substack{\textit{hh-level} \\ \text{food} \\ \text{price index}}} + \underbrace{\left(1 - w_h^{food}\right)}_{\substack{\textit{hh-level} \\ \text{non-food} \\ \text{budget share}}} \underbrace{\left(SPI_{h(g)}^{nfood}\right)^{-1}}_{\substack{\textit{group-level} \\ \text{non-food price index} \\ \text{based on regional poverty lines}}} \right]^{-1}$$

Housing

Issue 7. *Should the flow of shelter services be included in consumption?*
Choice 7. *The flow of shelter services is included; self-assessed rental equivalence or imputed rent is used as the first-choice method.*

- Agreed.
- The concept of "operational comparability" is key.
- Ceriani, Olivieri, and Ranzani (2022, *Journal of Economic Inequality*)

The Journal of Economic Inequality
https://doi.org/10.1007/s10888-022-09545-7

Housing, imputed rent, and household welfare

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Received: 2 December 2020 / Accepted: 17 August 2022

Abstract

Housing is the most important durable good consumed by households. This paper assesses the distributional effects of including the value of the flow of dwelling's services consumed by households with respect to the case where such value is excluded, testing different estimation methods in four developing countries. Including rental values leads to statistically significant and sizable changes in indicators of poverty and inequality that might also determine an international reranking of countries. This paper advances for the first time a step-by-step guide to the estimation of rental values, using information typically available in household surveys. As housing gains importance with the level of development of countries, accounting for rental values becomes significant in antipoverty programs, which need accurate information to minimize errors of inclusion and exclusion and the potential waste of scarce public resources.

Keywords Inequality · Poverty measurement · Ranking · Rent imputation · Shared prosperity

Durable goods

Issue 8. *How should durable goods be treated in the consumption aggregate?*
Choice 8. *Consumption flows from durables are excluded from the main consumption aggregate; a second aggregate includes vehicle flows, and a third includes other durable flows where available.*

- Excluding the consumption flow (CF) from durables from the main consumption aggregate is a sub-optimal choice, forced by data limitations and by the need for comparability.
- A CF should be made available to users, whenever possible. The responsibility for estimating it should lay with the data manager/producer, that is, LCS itself. This would be a valuable service to many users. The effort required is reasonable.
- Not sure about a "vehicles only" CF. For most developing countries, it would get rid of useful information, for the sake of comparing to US data. The mix of durables is also very different across countries.

Example: Maldives, 2019

Item	Median MVR/hh/year	% of CF from all durables
Speed boats, dhoni, dingi	26,777	54.5
Car/Jeep	13,580	18.8
Motorcycle	6,002	8.3
Three-wheeler pickup (Rashu pickup)	2,785	3.9
Smartphone	2,059	2.9
Air conditioning	1,806	2.5
Computer/Laptop	1,079	1.5
Battery Cycle/ Battery bicycle	903	1.3
Flat screen TV	806	1.1
Washing machine (fully automated)	803	1.1
Refrigerator	607	0.8
Tablet	504	0.7
Fan	417	0.6
Others	…	0.5 or less

Home-produced services and food

Issue 9. *Should consumption from unpaid domestic services be estimated?*
Choice 9. *Consumption from unpaid domestic services is not estimated.*

Issue 10. *Should home-grown food be included?*
Choice 10. *Home-grown food consumption is included in the consumption aggregate.*

- Agreed.

Subsidies and rations

Issue 11. *Should subsidies and rations be included in consumption?*
Choice 11. *Subsidies and rations are accounted for in the consumption aggregate.*

- Agreed. The paper is silent on how to do it in practice.
- World Bank Guidelines, section 4.2.5: four approaches, in order of preference (secondary market, closest market substitute, self-reported value, expert judgment). See also Hentschel and Lanjouw (2000)

Maintenance, insurance, financial services

Issue 12. *Should maintenance and repairs of dwellings be included in consumption?*
Choice 12. *Minor maintenance and repair of the dwelling are included, with country-specific distinctions between minor and major repairs.*

Issue 13. *Should insurance premiums be included in consumption and if so how?*
Choice 13. *Total insurance premiums as reported by households are included in the consumption aggregate; treatment of health insurance premiums requires further consideration.*

Issue 14. *Should consumption of financial services be estimated?*
Choice 14. *Consumption of financial services is not included in the consumption aggregate.*

- Agreed: not much to add here.

Health and education

Issue 15. *Should consumption of health goods and services be included in the consumption aggregate?*
Choice 15. *All consumption of health goods and services, whether out-of-pocket or in-kind, is excluded from the consumption aggregate.*

Issue 16. *Should consumption of education goods and services be included in the consumption aggregate?*
Choice 16. *Consumption of education goods and services is included, while in-kind general education is excluded.*

- Strong departure from World Bank Guidelines.

Health and education

- Main argument for exclusion is cross-country comparability: including out of pocket expenditures jeopardizes comparisons across different welfare systems.
- Other arguments are less convincing:
  - Exclude health expenditures because they are linked to a welfare loss in the health domain. This should not concern us: we have already lost that battle when we opted for a monetary welfare indicator.
  - Education as investment, not consumption. This seems like an abstract issue, with disproportionate implications. Excluding education expenditures on this basis will lead us to ignore a component that in many countries is key in setting poor and non-poor households apart.

Example: Kenya

- 2018 WB poverty assessment report: “While primary education is universally affordable, secondary education often remains prohibitively expensive (…) Median household expenditure per child enrolled in a public secondary school is close to 50 percent of the absolute poverty line.”
- The net secondary enrolment rate is less than 30% among children of poor households, close to 55% among non-poor.

Health and education

- In the absence of strong theoretical arguments, including health and education expenditures seems preferable.
- The resulting aggregate would better reflect observed consumption patterns within each country, both in terms of levels and budget shares. Many users are interested in the structure of consumption even more than in its level.
- “Political economy” consideration: the discrepancy that would arise between LCS figures and official ones may undermine countries’ ownership of and trust in the project.
- Data users would remain free to compare countries with different welfare states, fully aware that the data reflect precisely those differences – or they could easily exclude health and education if they are so inclined.

“Lumpy” expenditures

Issue 17. *Should extraordinary (“lumpy”) expenses be included?*

Choice 17. *Extraordinary expenses are excluded from the consumption aggregate, with country-specific guidance required to define such expenses.*

- Rationale for exclusion of “lumpy” expenditures: they do not reflect welfare typically enjoyed during a generic year. They can be interpreted as measurement error.
- However, spending net of “lumpy” components is not typical, either. Arguably, if there is displacement, neither of the two measures (net or total) is representative of long-run consumption: both are noisy proxies of it.
- Pragmatic choice: focus on a very short list of “lumpy” expenditures that we may assume are planned (minimal displacement) and exclude them. In practice, little empirical relevance.

Equivalence scales

- This is an open issue – probably another stand-alone project.
- Using the same equivalence scale across countries is not a good idea.
- Deaton and Zaidi (2002) pragmatic recommendation. Cutler and Katz (1996) scale with country-specific parameters:
- $ES = (A + \alpha K)^{\theta}$
- $\alpha = 0.25, \theta = 0.9$ for “poor” economies
- $\alpha = 0.5, \theta = 0.75$ for “rich” economies

Poverty lines?

- Key reasons for building LCS: consumption is well-suited for poverty analysis.
- The topic of poverty lines was never mentioned.
- International poverty lines are an obvious go-to.
- Should LCS disseminate official country-specific “official” absolute poverty lines?
- Disseminate calorie intake?