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2020 July PSMB MEETING

**ANNOTATED AGENDA: MONETARY POVERTY
MEASUREMENT GUIDELINES**

July 10, 2020

Pacific Community (SPC) Headquarters: Noumea, New Caledonia. Regional Offices: Suva, Fiji;
Pohnpei, Federated States of Micronesia; Port Vila, Vanuatu. Country Office: Honiara, Solomon Islands.

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I. OPENING STATEMENTS

Vince Galvin (Chief Methodology, Statistics New Zealand; Chair, Pacific Statistics Methods Board) and Kristen Himelein (Team Leader for the World Bank Poverty & Equity program in the Pacific region).

Written comments were received from Peer Reviewers: David Abbott (Manager for Data Analysis and Dissemination, Pacific Community Statistics for Development Division), Gaurav Datt (Department of Economics and Centre for Development Economics and Sustainability, Monash University), and Giovanni Vecchi (Department of Economics at the University of Rome “Tor Vergata”).

II. ENDORSEMENT OF AREAS OF AGREEMENT (INCLUDING TEAM'S CLARIFICATIONS, IF ANY)

The team agrees with the reviewers on the following comments, which will be incorporated in the next draft of the reviewed guidelines:

1. HOW TO PRICE HOME PRODUCTION AND GIFTS? (QUESTION 1)

The reviewers agree with the recommendation to use the median unit values from the lowest area of geographic disaggregation at which stable estimates can be calculated. Further guidance was given on setting a minimum number of observations and including quality checks. The team agrees with these additional suggestions and they will be incorporated into the final guidance note.

2. DIETARY ENERGY REQUIREMENTS (QUESTION 5)

The team notes here that there was some confusion as to the analysis and subsequent recommendation. The team apologises for the lack of clarity in the documentation and will address this issue in the updated guidelines. There is consensus by the reviewers, however, that the use of only the poor population may underestimate the energy requirement, though the team does not necessarily agree with the reviewer's assertion that the poor always have a lower BMI than the population overall. As the analysis shows the choice of subgroup does not substantially change the results for the cases considered, the team agrees with the reviewer's recommendation that the entire distribution be used. This recommendation is also compatible with the data availability restrictions as it will likely not be possible to determine the height and weight specifically of the poor. Therefore, for the population in general, the guidance is to develop a normative threshold value (defined as provides the estimated minimum calorie intake consistent with an economically active and healthy life for the average person in the population) from WHO/FAO 2011 *Human Energy Requirements* and the most recently available population pyramid information.

3. ADJUSTMENTS TO POVERTY LINE OVER TIME (QUESTION 7)

The reviewers agree that poverty lines should be updated using the CPI in successive rounds up until the point at which they become obsolete, and therefore the line should be updated every 5-10 years or when there has been a significant shift in the economic environment. The reviewers did, however, raise the issue of how the CPI updating is applied – i.e. are the food and non-food components updated separately using the food and non-food CPI values, or is the entire line updated using a single CPI value. The team generally agrees with the reviewers' suggestion to do the updating separately, with the caveat that the appropriate CPI measures must be available and considered of good quality.

4. POINTS RELATED TO THE PSMB SLIDES

Beyond the seven questions highlighted for review, the recommendation slides from the October 2019 PSMB discussion were shared and the reviewers were offered the opportunity to provide comments. The team appreciates these recommendations, and many will be taken on board as the PPT presentation is developed more formally into guidelines and training materials. Areas related to comments on the slides that the team would like to include for further discussion are listed in section 3 below.

Finally, in addition to the specific comments above, the reviewers all also highlighted the need for simplicity in the methodology given the capacity limitations at many National Statistics Offices in the region. The team, however, do not believe that simplicity necessarily means that the approach cannot conform to international standards of rigor. The World Bank has worked with many countries over the years with lower levels of education than are found in the Pacific and has had great success in developing analytical capacity. One lesson that can be drawn from those experiences is that there should be a division of labor in the process, with more intensive research-oriented tasks taking place at a central or regional level, and then the focus at the country level being on understanding and implementing the central recommendations. It is that model that the World Bank supports in the Pacific region, and which the design of the recently approved IDA project hopes to foster. What is key to the success though is that countries are not told that analysis is too complex for them or that they are not prepared to use statistical analysis software, rather than an empowering environment is fostered and a continuous, long-term program of capacity building program is implemented.

III. AREAS FOR DISCUSSION (INCLUDING AREAS OF DISAGREEMENT/ UNRESOLVED QUESTIONS, IF ANY)

The team would like to further discuss and seek guidance on the following comments from peer reviewers:

1. WHAT MULTIPLIER TO USE FOR PREPARED MEALS? (QUESTION 2)

There was general agreement by the reviewers that while the analytical approach taken is novel, there remains too much uncertainty to consider the results as a final recommendation. One reviewer proposed using the cost per calorie at the household level, which allows for variation between richer and poorer households, and another reviewer suggested quantile regression to address this issue. Sensitivity analysis is also suggested to determine the impact of the choice of multiplier. Based on the analysis done up to this point and the reviewers recommendations, the team would like to propose adopting as an interim guideline using the value of 1.25, as the alternative of not using any multiplier is likely worse, and that all analysis include sensitivity checks including alternative values for the multiplier, calculating the per calorie cost at the household level, and using no multiplier. The team would then also propose that this question be taken up as a priority research question, with a target of having findings in the next 12 months.

2. HEALTH SPENDING (QUESTION 3)

There was some disagreement among the reviewers as to the approach for the inclusion of health spending, with one reviewer advocating for the inclusion of all (non-catastrophic) health spending and another agreeing with the recommendation of splitting spending into preventative and elective care and general expenditure. The reviewers did, however, agree that catastrophic spending should be excluded, and the use of an estimated-elasticity-based rule was likely not a preferred approach. Based on this feedback, the team recommends working on the questionnaire design to as clearly as possible distinguish between preventative and elective care, urgent care, and catastrophic spending, with the first two being recommended for inclusion and the final category being excluded. This approach addresses the first reviewer's apprehension as to whether it will be possible to cleanly distinguish between the categories, as both will be included, but still allows for further research into the practicality of the division. The team will also work to identify a threshold percentage of total spending to define catastrophic spending and include this recommendation in the guidelines.

3. PRICE DEFLATORS (QUESTION 4)

There was also some disagreement among the reviewers as to the best approach for calculating price deflators. Two reviewers raised the point that historically regional baskets were recommended but, as one of these reviewers noted, in more recent work that the use of a national food bundle and regional median unit values perhaps offers a safer bet to arrive at regional food poverty lines as richer regions tend to have high average calorie-price bundles. The third reviewer supported the recommendation of using a national basket. Based on the feedback from the reviewers, and the previous discussion on this issue at the October

2019 PSMB meeting in Noumea, the team prefers to confirm the decision at the previous meeting to continue to use a deflated national poverty line based on a national basket, taking into account the reviewer's recommendation on using an iterative process on its development. The one reviewer that considered the recommendation on the use of the Tornqvist index endorsed its use but suggested strengthening the technical argument. The team therefore would like to proceed with the recommendation of using a national poverty line with a Tornqvist deflator, though will strengthen the supporting documentation.

4. METHOD FOR COMPUTING THE NON-FOOD COMPONENT OF THE POVERTY LINE (QUESTION 6)

Two of the three reviewers recommended using one of the methods originally developed in in Chen and Ravallion (1996), though there is some disagreement as to whether it should be the Ravallion upper or lower bound method. One reviewer suggests using the Ravallion upper bound and the other advocates for more flexibility in calculating both the upper and lower bound and decided which is most appropriate. As the latter reviewer's recommendation gives additional flexibility to address one particular aspect of the Pacific noted by two of the reviewers in that the interval chosen should contain enough observations, which is a concern in the relatively small sample sizes and relatively low poverty rates in the region, the team suggests adopting this recommendation.

5. POINTS RELATED TO THE PSMB SLIDES

Areas from October 2019 PSMB meeting on which the reviewers raised additional points:

- *OECD Adult Equivalence scales.* Two reviewers commented on the appropriateness of the recommendation to use the old OECD equivalence scales (where an adult is given the value of 1 and a child under age 15 is given the value of 0.5). One reviewer suggested a per capita measurement and the other reviewer suggested updating to the new OECD definition of a value of 1 to the first household member, of 0.7 to each additional adult, and of 0.5 to each child. The latter considers economies of scale in consumption. The team supports the recommendation of the reviewer to update the guidelines to the new OECD recommendations.
- *Exclusion of the poorest decile.* Two reviewers also questioned the decision to automatically exclude the poorest decile from the analysis as potentially problematic. As one reviewer noted, "The exclusion of the poorest decile comes with a price: putting aside outliers, an important share of the poor population is excluded from the calculation, which means a poorer coverage of the ideal reference group," and suggested instead removing outliers or using reweighting techniques to reduce the impact of potential outliers. As the team is wary of introducing additional complications from complex reweighting, the team agrees instead with the reviewer's recommendation to exclude the top and bottom ventiles / deciles as appropriate if presence of outliers in the distribution are detected.

IV. DISCUSSION, DECISIONS AND NEXT STEPS

The team seeks guidance on the above points in order to finalize the recommendations and proceed with next steps. The next steps proposed by the team are as follows:

1. For the PSMB to adopt the recommendations from today's discussion as the interim guidelines on monetary poverty measurement in the Pacific and endorse their use for the analysis on all newly collected HIES (and equivalent) datasets.
2. The World Bank, with input from SPC, FAO, and other relevant partners, will develop reference and training materials on these guidelines that can be used in the training around the upcoming HIES analysis, including sample Stata / R code.
3. The experience of the countries implementing the new guidelines will be collected following the completion of their analysis and presented to the PSMB at the spring 2021 meeting. At

that time, the PSMB will suggest any final revisions and the recommendations will be adopted as the recommended methodology in the region going forward.

FULL REVIEWER COMMENTS

David Abbott (Manager for Data Analysis and Dissemination, Pacific Community, Statistics for Development Division)

Thanks for sharing these documents and apologies for being a tad late in submitting my comments. I have added notes to both documents (see highlighted items), my comments may be a little duplicated as some topics are covered in both documents.

I note the three topics that you have requested for the focus of the review and my comments try to address these by considering: a) the various components of the methodology being proposed, b) the appropriateness of the this methodology for the Pacific, and c) suggesting that further research is desirable to determine that the proposed methodologies give significantly better results (however that might be defined) compared to the much simpler and easier to understand and apply Pacific methodology that has been used thus far.

Clearly a lot of research and scholarly thought has gone into the methodologies being advocated, but for me the question has always been around what level of complexity in the analytical process is appropriate or necessary for the Pacific. We are all aware of the very limited technical skills and statistical capacities in many, if not most of the NSOs around the region, and the imposition of relatively complex statistical tools in poverty analysis would need to be accompanied by a very strong, and sustained programme of capacity building. This would of course be greatly welcomed, but any such capacity building would, in general, have to start at a very basic level. A skills audit undertaken a few years ago indicated that only about one-third of NSO staff engaged in any sort of analysis had a first degree (unspecified subject), and less than 5% had a masters level qualification – many NSOs had no staff above a first degree level. Although the situation might have improved since the audit, it is still likely that high-level statistical capacity remains very limited. This is an important consideration for what is appropriate for the Pacific.

You are well aware of the Pacific methodology that has been used by UNDP, ADB, SPC and Pacific NSOs over the last fifteen years or so in more than 20 poverty analyses; this was methodology was specifically developed to be appropriate to the Pacific context and the results have been generally accepted by governments and development partners. There are certain aspects of the Pacific methodology that do not follow the theoretical rigours recommended, but it is not clear that the Pacific methodology necessarily gives any less valid results given that there is: a) no single definitive methodology, and b) some aspects of the recommended approaches do not work well in the Pacific situation.

A couple of specific points are as follows and others are highlighted in the comments in the two documents:

1. THE ESTIMATION OF THE NON-FOOD COMPONENT IN THE BASIC NEEDS POVERTY LINE:

Engels Curve: The method identifies the non-food expenditure of those households whose total monthly per adult equivalent expenditure is within 5 percent above or 5 percent below the food poverty line – para 6.1.2. For many, if not most PICTs this does not work well since the proportion of HH whose total AE expenditure is within +/- 5% of the FPL is less than 10% and, as noted elsewhere, the lowest decile should not be relied upon.

Ravallion Lower Bound: The Ravallion lower bound method also focuses on households whose total expenditure is around the food poverty line, thus the same problem arises as with Engels. In most cases in the PICTs this would only consider HH in the lowest decile.

The Pacific methodology has consistently used a simple average of per capita (or AE) non-food expenditure in the lowest three deciles, this has effectively captured the non-food component of HH whose average total pc/AE expenditure has been above the FPL but generally below the BNPL, an adaptation and simplification of the Ravallion upper bound approach. Is this any less valid as a methodology for the Pacific where Engels and the lower bound approaches do not work well.

2. CULTURAL EXPENDITURE

Expenditure on cultural, community and church events and donations are recommended for exclusion from the consumption estimates as they are deemed not to have any welfare benefits.

The Pacific methodology has always included these items as it has been a widely held view that these are important and real items of expenditure that do convey welfare benefits in the traditional and community based Pacific societies. The benefits may be intangible but they are nevertheless real, not least because if such contributions are not made, then there may actually be tangible disbenefits of exclusion. It is therefore recommended that expenditure on such cultural events and donations continue to be included in the consumption aggregates.

3. PRICE DEFLATORS:

Price deflators are intended to address a theoretical question regarding how people respond to differing prices, cultural preferences and availability constraints, e.g. people that face higher prices for certain goods may choose to buy less of that good or to purchase an alternative. These considerations may be important in countries where retail outlets and food markets are widely available, and choices are available. But in the Pacific, this is often not the case. Rural areas and outer islands often lack choice and/or availability, and rural retail prices are often higher than urban prices to take account of transport costs.

There are four methodologies described (section 4.2) but the conclusion is that none work well and a compromise methodology (Tornquist) is recommended, however this includes using a contrived basket of goods for the calculation of the deflators. It is therefore not obvious that this gives a better result than the existing Pacific methodology. This is important since the figures quoted in the paper (Table 5) suggest that applying the \$1.90 IPL to the 2015/16 Tonga HIES gives a national extreme poverty rate of 14.5% and over 30% in 'Eua and the Niuaus, these rates seem extremely high since in comparison the food poverty rate in 2009 was only 3.1% (on an FPL of T\$3.4 pcpd) and the BNP incidence was 22.5%. In addition, the WB estimated the 2009 \$1.90 IPL rate as only 1.1% on a IPL of T\$2.80 ppp pcpd (EACNF Country Briefs 2018). Using the deflators as suggested would therefore seem not to be appropriate.

The Pacific methodology has calculated separate poverty lines for each national subregion based on the actual consumption baskets for each subregion. A national poverty line is calculated from a weighted average of the subregional poverty lines. National poverty incidence is calculated by summing the results of each subregion alongside the calculation of Gini coefficient for each subregion. The different approaches should be tested to determine which provides the most acceptable results.

4. ADULT EQUIVALENCE:

The Pacific method has used the so-called OECD approach where all children aged 14 and below are counted as 50% adult equivalent, all children 15 and above plus all other adults have been counted as 1. This approach is recommended to be continued by WB.

The issue here is the difference in poverty incidence resulting from the use of AE compared to per capita consumption. In the .ppt presentation the table suggests that using an AE approach would (for Lao) have increased the rate of poverty incidence from 1.1% to a potential high of 22.7% or in Myanmar, from 0.2% to 6.4%, using the Claro conversion factor. These levels of increase of 20x and 32x in the incidence of poverty when using AE instead of pc seem implausible; in comparison when the use of AE and PC were computed for Samoa in 2008 a difference of less than 1 percentage point was recorded (26.9% pc to 27.5% pcae).

I am well aware of the scholarly nature of the recommendations, but as requested, I am trying to look at the recommendations from a practical and pragmatic Pacific perspective, what works and what is appropriate in the particular circumstances in the region. As indicated in my comments there are some aspects of the recommended approaches which may not work in the region, and some aspects which might not be necessary or appropriate, or which appear to give markedly less useful answers than the current methodology. Does the more scholarly approach therefore lead to materially better results, and what

would actually constitute a better result for the region. We want the NSOs to have more ownership and understanding of the methodologies being applied in the Pacific but it will take considerable capacity building to bring some of the smaller NSOs to a level where they are able to apply the econometric methods being proposed. I have therefore suggested that more research is needed to test the benefits of applying the recommended methodologies to determine whether they do lead to better results for poverty analysis in the Pacific.

Gaurav Datt (Department of Economics and Centre for Development Economics and Sustainability, Monash University)

I have limited my comments to the seven questions in the above note, though some of them overlap with issues covered in the slides. In general, I have attempted to keep the Pacific context in mind, in particular, the context of limited statistical capacity in the region and the consideration that we do want to build some local ownership of the suggested approach. I have thus been guided by considerations of a practical nature with a view to containing the complexity of the suggested procedures and opting for greater simplicity and transparency wherever reasonable. In the end, one needs to strike a balance between the two. I hope the comments below will be helpful in that regard.

1. HOW TO PRICE HOME PRODUCTION AND GIFTS?

I agree with the recommendation here to use unit values from the survey at the lowest possible level of disaggregation permitted by the survey. That will depend on the sample size. If the sample size is large enough, it could be at the PSU level; otherwise, the next higher level of aggregation should be chosen. I would also add that whatever the level of disaggregation, it would be best to go with median unit values. It would be useful to offer some guidance on the minimum number of observations on unit values for a particular item at a certain level of disaggregation. Not sure what that number could be, perhaps, say about 20 observations, in which case, if say the PSU-level of disaggregation has less than the minimum number of observations, the next higher level of disaggregation could be selected.

I also agree that information on conversion factors for non-standard units for particular items should be collected as part of the surveys.

2. WHAT MULTIPLIER TO USE FOR PREPARED MEALS?

My suggestion here would be to keep matters simple. I think going with the simple assumption that the price per calorie for prepared foods consumed by a household is the same as that for other food for that household. I think figuring out “disaggregated multipliers” through regression-based analysis of the type that is discussed in the note, in my view, introduces many other complications and even potentially unknown effects of alternative specification choices such that the correction may not be better than the alternative of the simple assumption. Note that the simple assumption when applied at level of each household takes care of one important source of comparability across households. That is, richer households are likely to consume relatively more expensive prepared food with a higher calorie price, but this would be accounted for insofar as richer households are also likely have a higher price per calorie for the other food they consume than poorer households.

3. HEALTH SPENDING

In my view, distinguishing between the health spending categories of preventive and elective care, hospitalization and emergency care, and urgent care and outpatient services is going to be difficult in practice. I find the suggestion of estimating income elasticities of health spending to be also potentially problematic and difficult to implement. For instance, there is no reason to assume a constant elasticity across all households; it could vary for different categories of households and by income level itself.

Thus, in my view the recommendation that the questionnaire design should categorize health expenditure into the three categories will in practice lead to a lot of arbitrary classification. I would instead be inclined to go with the default recommendation that all out-of-pocket health spending should be included. A justification for this is that such health spending (like any other spending) has an opportunity cost; the same amount could have been spent on other goods and services and hence it should be part of total consumption. A possible exception is for catastrophic health expenditure (e.g. on costly surgery), but there it seems to me the key consideration is lumpiness of such spending. If catastrophic health expenditure is excluded, some guidance ought to be provided for what cut-off ought to be used to identify such expenditure. For instance, there could be scope for a norm that any health spending in excess of say 25 or 30 percent of total spending is considered catastrophic. Using a transparent (though admittedly somewhat arbitrary) norm seems to be a better way to go.

4. PRICE DEFLATORS

The discussion in this part of the note is mainly in terms of spatial price deflators; temporal price deflation is dealt with separately under item 7. There are several points to note here. To begin with, assuming that the construction of any of the price indices relies on survey-based information, such price indices in practice would have to be mainly limited to food items as prices for non-food spending are likely to be ill-defined. This raises the question whether the issue of spatial price indices is best posed in terms of constructing poverty lines for different regions such that the ratios of these poverty lines effectively serve as spatial price indices. Posed this way, the question becomes how should one construct spatial poverty lines. Issues in the construction of spatial poverty lines thus ought to be discussed, which in turn, comes down to issues in the construction of food and non-food poverty lines in different regions.

One big issue here is whether to use a national or regional food bundles. There can be different views here. Quite a bit of my own work in the past, as well as in many WB poverty assessments, uses region-specific food bundles to construct food poverty lines. Though more recently I have come to appreciate that in practice the use of different food bundles tends to introduce relative poverty elements into the calculations – mainly as richer regions tend to have high average calorie-price bundles. [Note that the food poverty line can be viewed as the product of calorie requirement multiplied by the average price per calorie.] This is an effect that can be difficult to eliminate even with an iterative procedure as the iterations often converge locally to a point where there are substantial average calorie price differentials across regions that seem larger than genuine price differentials.

This could in part (but only in part) be due to the use of unit values in constructing the average price per calorie. In principle, one can purge unit values of a quality premium by using expenditure elasticities of unit values. However, this is complex and also subject to variations depending upon how the expenditure elasticities of unit values are modelled.

It seems to me this is an area that needs further research to distil best practice. I am generally coming around to the view the use of a national food bundle and regional median unit values perhaps offers a safer bet to arrive at regional food poverty lines. The use of median unit values could be justified on the grounds that everyone ought to be entitled to at least the median quality of the food item in the region. That still leaves open the question of how the national food bundle should be constructed. On this, an iterative procedure could be used at the national level.

Beyond regional food poverty lines, there is the issue of regional mark-ups for non-food allowances. There are potential concerns here too, which I take up under item 6 below on the computation of non-food component of poverty lines.

5. DIETARY ENERGY REQUIREMENTS

The recommendation in the note seems to be at some variance with that in the slides. The latter recommends that countries should continue to use the OECD adult equivalent scales. The notes on the other hand states that:

“Countries which have the data available on the weight and height distribution of the population, as well as solid evidence on the level of activity of the poor and vulnerable, should use this information to calculate a minimum number of calories per adult equivalent following the formulas used by the FAO for the Average Daily Energy Requirement using the actual survey data.”

The note further says that:

“For countries that do not have this information, they may continue to use a default value of 2100 calories per capita, or the analogous adult equivalent value, per day, or increase that value to 2300 or 2400 kcal as suggested by the calculations from Tonga and RMI. What is critical is that the decision be carried forward in any subsequent rounds of analysis.”

In my view, the adjustment for weight, height and activity level at the level of each household (if that is what is intended) is too complex and also potentially problematic since weight, height, activity of individuals are endogenous. Should a household with members who are underweight or stunted have a lower number of equivalent adults and hence a relatively higher consumption per adult equivalent? Seems difficult to justify this normatively. Thus, it seems to me that going with the OECD scales-based consumption per adult equivalent or just even per capita consumption is a reasonable default.

Having done that, the calorie requirement for estimating the food poverty lines could still take into account the age-sex specific caloric norms and the age-sex distribution of the population for each of the spatial domains for which the food poverty lines are calculated.

6. METHOD FOR COMPUTING THE NON-FOOD COMPONENT OF THE POVERTY LINE

Here, if I had to go with a single recommended method, I would be inclined to suggest the “Ravallion upper bound”. I do not think this is any harder to explain than the lower bound. However, the main reason for preferring the upper bound is a particular attribute of the lower bound method. This attribute is that an individual who is at the lower bound poverty line will, by construction, have a food consumption level that will be below the food poverty line. This seems normatively somewhat unsatisfactory. The use of a non-parametric procedure to evaluate the upper bound line seems fine.

The more difficult issue is whether non-food component should be separately evaluated for each region, and if so, how. Conceptually, there is a case for evaluating the non-food component separately for each region, but this still needs to be subject to the practical caveat that implied nonfood shares of the poverty lines across regions are not implausibly different. The issue here is that richer regions tend to have higher non-food shares and even evaluating these shares at the food poverty lines (more precisely at a point where food expenditures are equal to the food poverty lines) in practice may not adequately control for regional non-food share differences that are on account of the regions’ relative prosperity. In such a situation, using the same allowance for non-food across regions may be normatively preferable.

The above discussion highlights some of the inherent difficulties in the construction of poverty lines. I have given my take on the practical guidance, though there could be different views. I think it would be helpful to include some discussion of practical options and caveats to navigate this territory.

7. ADJUSTMENTS TO POVERTY LINE OVER TIME

I tend to concur with the practical recommendation for the poverty lines to be updated over years using the CPI unless there is a change in the underlying survey that leads to broken trends, in which case that would be a good time to re-estimate new poverty lines from scratch.

However, there could be more guidance on the use of the CPI. First, it is arguably better to inflate the food poverty line with a CPI for food and the non-food poverty line with a non-food CPI. These components of the CPI are generally available. This effectively amounts to re-weighting the CPI to be consistent with the food and non-food shares of the poverty lines. Second, if regional CPIs are available, these should be used to update the regional lines.

Giovanni Vecchi (Department of Economics at the University of Rome “Tor Vergata”)

Comments on: Outstanding questions for PSMB (2020-06-21)

1. HOW TO PRICE HOME PRODUCTION AND GIFTS?

A string of publications by Gibson and collaborators has discussed the problem of unit values in the presence of Alchian–Allen effects, and/or other quality-heterogeneity problems. However, I am not aware of any general solution to these problems, and the recommendation in the document does not provide one: this leads me to ask whether the space devoted to this issue is justified in the context of this document. I agree with the recommendation “to use unit prices from a tight a geographic area as possible (cluster level, district level, region level, etc.) such that there are sufficient numbers of observations to have stable prices”, and would add the suggestion to check the extent to which quality bias is a concern in the data at hand. Even a simple analysis of the gradient of PSU-median values by per capita expenditure decile provides a way to assess the magnitude of the quality bias – empirical adjustments can be designed and implemented, if the gradient is too steep.

2. WHAT MULTIPLIER TO USE FOR PREPARED MEALS?

The analytical approach described in the report is very interesting. Given the limited and thin empirical evidence available, however, I would be hesitant to upgrade the results in Table 1 to the role of a general recommendation. I would suggest to experiment with the use of multipliers using conventional values (e.g. either an overall multiplier set equal to 1.25, or a set of three multipliers – 1.3, 1.1 and 1.5 for breakfast, lunch and dinner – as a way of acknowledging the need of an adjustment). The recommendation could be to produce estimates with and without the adjustment, prior to making a final decision. Also, to the extent to which one can assume heterogeneity of prepared meals consumed by the poor and the rich, I wonder whether the regression-based method described in the report can lead to an overestimation of the “true” cost of prepared meals for the poor. Would quantile regressions help addressing this problem? Overall, it seems to me that further research and evidence is needed before the interesting analytical framework outlined in the report can deliver sound/general operational guidelines.

3. HEALTH SPENDING

I fully agree with the first part of the recommendation (“Preventative and elective care should always then be included in the consumption aggregates as it is clearly consumption, and emergency care and hospitalization always excluded as a lumpy expenditure”), but am less convinced by the second part (“For other health spending, it should be included if the elasticity compared to total spending, controlling for household size, basic household demographic characteristics and location, is greater than 1.”). DZ explain that the advantage of a comprehensive CA, one that is inclusive of health expenditures, can be offset by the fact that health expenditures are often plagued by measurement errors. This might be exactly the case in the context described in the report. In short, I would *not* recommend the use of an automatic estimated-elasticity-based rule for including or excluding health expenditures.

4. PRICE DEFLATORS

The argument in support of the recommendation to use the Tornquist index is technically correct, but weak. Outliers could (should?) be dealt with prior to the construction of the index, for example. I believe the section would benefit from adding a discussion of both temporal (within-survey) and spatial price adjustments, as well as the role of the sequence (see comment 18 above). The recommendation after covering temporal and spatial deflation *jointly*, could turn out to be different.

5. DIETARY ENERGY REQUIREMENTS

Regarding the ‘reference population’, I would not recommend focusing on the bottom part of the distribution. In principle, the energy requirement (ER) is a *normative* threshold (i.e. it provides the

estimated minimum calorie intake consistent with an economically active and healthy life for the average person in the population): the calculation of the ER should not be based on specific population sub-groups in the survey data – if we focus on the poor, for example, and the BMI of the poor is used in the analysis, then we will underestimate of the ER, by construction.

Why not recommending the standard method where *individual* energy requirements (separately by age and gender, as from WHO/FAO 2011 *Human Energy Requirements*) are applied to the population pyramid (best if constructed on recent census data)? Any additional adjustment (working children, pregnant and/or breastfeeding women) can also be suggested, provided suitable data are available.

6. METHOD FOR COMPUTING THE NON-FOOD COMPONENT OF THE POVERTY LINE

The robustification method illustrated in the report was first suggested, I believe, in Chen and Ravallion (1996) – I am surprised to see it covered in great detail in the report. There are other variants (e.g. kernel functions centered at the poverty lines, that are as interesting as the band-increasing method). My recommendation would be to stick to the original procedure described in Ravallion (1994, 2016): *i)* use the non-parametric method for calculating both upper- and lower-bound estimates of the non-food allowance, *ii)* let the analyst decide the bandwidth most appropriate to the context (I see no harm in reminding the reader that the interval chosen should contain enough observations), *iii)* check the robustness of the result by estimating the poverty lines parametrically (fingers crossed that estimates are in line with the non-parametric approach), and/or experimenting with the bandwidth used to identify the reference group. As said before, “CBN method” should be used instead of “Ravallion method”.

7. ADJUSTMENTS TO POVERTY LINE OVER TIME

In my experience, many scholars share the view that a given poverty line should be updated once it has become obsolete (or is close to become obsolete). A poverty line is obsolete when a significant change in the economic environment has occurred. This statement is vague, and does not translate into a general operational rules for all countries. But this is intentional. For many countries, the discussion on whether and how to improve/update the poverty line is thought to be appropriate every 5-10 years. Once the discussion has started, it is often the best time to consider implementing other improvements (in the sampling design, in the questionnaire and/or methodology). A change in any of these aspects implies a discontinuity in the historical trend of all distributional indicators (in particular, of poverty and inequality measures). Once clarified the that new estimates are not comparable with the old ones, then I would leave it to the analyst to decide whether and how to deal with the broken poverty trend. The method discussed in the report is interesting but is one of a number of strategies available. I personally do not see the reconstruction of the historical trend of poverty as a task to be included among the general recommendations. In my experience, the most important objectives should be *i)* to explain why a CBN PL should *not* be re-estimated every survey, and *ii)* how to update the existing poverty live with the CPI – in particular I would deal with a few ‘tricky’ technical details (how to implement a CPI-update of CBN poverty line, exactly? Should we use one CPI? Or two CPIs, one for food and one for nonfood? What about a poor-specific CPI, i.e. a CPI where the weights have been borrowed from the consumption pattern of the poor? Etc. Adding a practical example would extremely useful, I suspect).

Comments on: Monetary poverty measurement guidelines (PSMB October 2019) - discussion draft

1. Slide 12: “unit prices” should be replaced with “unit values”. The second bullet is not about a price but a ‘unit value’. In contrast, terms are used correctly in slide 13.
2. Slide 14: regarding FAFH, I believe it should take advantage of the findings in:

- a) Farfan, G., M.E. Genoni, and R. Vakis (2017), “You are what (and where) you eat: capturing food away from home in welfare measures”, *Food Policy*, 72:146–156.
- b) Farfan Bertran, Maria Gabriela, Kevin Robert Mcgee, Julie Ting Ting Perng, and Renos Vakis. Poverty Measurement in the Era of Food Away from Home: Testing Alternative Approaches in Vietnam. No. 8692. The World Bank, 2019.

Both references deserve to be explicitly mentioned.

3. Slide 18: health expenditures should be in the list (with the usual caveats and/or qualifications).
4. Slide 19: I agree with the recommendation but disagree with the argument in support of the recommendation. We exclude lumpy expenditures for the reasons explained in Deaton and Zaidi (2002): they add noise to the welfare indicator and, ultimately, they alter its interpretation as a measure of the ‘typical’ standard of living. The current explanation mixes up stock and flow variables – I would advise to review this slide carefully.
5. Slide 20: the recommendation is in line with the guidelines set up by the Canberra Group *Handbook* for constructing an income aggregate. I would consider mentioning this point (relevant to countries in the region that have opted for income as a welfare indicator).
6. Slide 21: Deaton and Zaidi (2002) recommend to *include* regrettable necessities – so the recommendation (last line in the slide) is not consistent with the argument put forward by DZ. Are DZ wrong? If so, the reader needs to be explained why, otherwise the slide need to be fixed.
7. Slide 23, third bullet: in fact, DZ end up recommending to include regrettable necessities.
8. Slide 30: “Excluding these items will have a tendency to overestimate poverty and underestimate inequality.”: What is the evidence in support of this claim? I do not think one can tell, *ex ante*, what would happen to poverty and inequality. If we use a CBN poverty line, the threshold is defined after defining the consumption aggregate, and consequently there is no automatic link that justifies that assertion. Regarding inequality, the evidence for Europe is that “net imputed rents tend to *decrease* inequality” see, for instance, Törmälehto and Sauli (2013). This suggests the opposite of what is written in the slide.
9. Slide 32: what is the use of the question in bullet 4?
10. Slide 33: “2018” should be “2016”.
11. Slide 44: “a much more complicate” should be “a much more complicated”.
12. Slide 45 – I do not understand how one can be “slightly wrong for some households but consistent for all households”.
13. Slides 34-50: I have enjoyed reading the material on housing. My sense is that 17 slides qualify as a “presentation within a presentation” and would consider shortening this section. On the other hand, given the emphasis on the econometrics underlying the exercise, I would recommend to cover two specific issues: a) whether to use the Heckman correction, and b) whether to use Duan’s smearing estimator for predicting imputed rent. My vote would be “no” for a), and “yes” for b).
14. Slides 51: I’m surprised by the small shares for durables and education. Not clear what ‘health’ contains, here, exactly.
15. Slides 53-54. Questions arisen after reading these two slides:
 - a) Why using the old OECD equivalence scale? That scale was modified in the mid-1990s and the OECD-II scale has replaced – de facto – the old OECD scale.

- b) I'm not aware of any published work introducing and discussing a "FAO equivalence scale" – occasionally I see scholars refer to a "FAO/WHO" equivalence scale (for a recent example, see for instance Batana, Y. M., and Cockburn, J. (2018). *Do demographics matter for African child poverty?* The World Bank.), but what they mean is not well identified: different authors mean different things. Indeed, the "FAO scale" is not found in the academic literature (that I am aware of). Finally, the reason the "FAO scale" is rarely used/mentioned, might have to do with is poor coverage: it only adjust for differences in nutritional needs (no economies of scale are accounted for, nor are different needs for non-food consumption).
 - c) I was puzzled by the reference "Claro et al (2010)". I suppose this is the full reference: Claro, R. M., Levy, R. B., Bandoni, D. H., & Mondini, L. (2010). "Per capita versus adult-equivalent estimates of calorie availability in household budget surveys." *Cadernos de saude publica*, 26, 2188-2195. I wonder what is the reason for considering this unusual, Brazil-specific calorie-based scale? To me this choice looks very peculiar and should be motivated.
- 16. Slide 54, second bullet: "The choice of method does not matter much to the ranking (all measures are highly correlated) but can make a significant impact on the headcount." In this specific example the ranking is not affected, but this should not be taken and commented on as a general result. The literature suggests that the choice of the equivalence scale has (or can be expected to have) a significant impact on both the structure (composition) of poverty, and the distance between population groups (even the ranking can be affected).
- 17. Slide 58 – First bullet, "Fischer" should be "Fisher". How common is the availability of a Fisher CPI in the region? Similarly, in Slide 57, how common is the availability of data required by the Weighted Country-Product-Dummy method? Is it really worth recommending their use? Finally, I think an issue worthy of some discussion is the sequence of the deflation procedures: spatial deflation first, and then temporal? Or the other way around?
- 18. Slide 62: the definition of the CBN poverty line is not correct (a CBN poverty line also includes an allowance for non-food goods and services). One option is to use Ravallion (1994, 1998 or 2016) definition, verbatim.
- 19. Slide 64: the claim "The top and bottom deciles should always be excluded as they are outliers in the distribution." is too strong, in my opinion. The exclusion of the poorest decile comes with a price: putting aside outliers, an important share of the poor population is excluded from the calculation, which means a poorer coverage of the ideal reference group (that is we are excluding a relatively large chunk of individuals that should not be excluded, which implies bias in the estimated statistic of interest. I agree on the argument that the presence of outliers represents a risk, but we have tools to detect outliers and treat or downweigh their impact. I would probably advice to check for the presence of outliers and if the analysis reveals that they are a serious threat to the calculation, then one option would be to exclude the bottom decile/ventile (which would lead to rephrasing the original recommendation as follows: "The top and bottom deciles could be excluded in the presence of outliers in the distribution.")
- 20. Slide 65: not clear if the numbers in the table are per adult or per caput.
- 21. Slide 66: the map is in per capita and I think it should be stated. The map is nice, and Our World in Data is a great project, but after checking the data underlying the map, I would not recommend (not even implicitly) the use of these estimates.
- 22. Slide 73 announces that three methods will be considered. I do not see any slide on the CBN lower bound poverty line.
- 23. Slides 72-77: what is referred to as "Ravallion poverty line" is usually referred to as "CBN poverty line". Why departing from a well-established practice?

24. Slide 83: “percentage” should be replaced with “proportion”.
25. Slide 85, first bullet: why? I do not understand the argument underlying this recommendation. What is wrong with Deaton and Zaidi original recommendation (analysts are advised not to abandon the use of per capita consumption)? Also, consider the additional argument in Ferreira, F. H., Chen, S., Dabalen, A., Dikhanov, Y., Hamadeh, N., Jolliffe, D., and Serajuddin, U. (2015). *A global count of the extreme poor in 2012*. Policy Research Working Paper, 7432.
26. Slide 90: I would add to the list of areas not covered in the presentation a discussion on how to deal with extreme values (more generally, on data issues, such as missing values and unit-nonresponse). In Mancini and Vecchi (2020) these issues are discussed at length – I am *not* suggesting to adopt the solutions/methods discussed in that paper, but the issue should be covered in this presentation – in my experience, practitioners badly need advice on this.