Reviewer’s report

Title: Disaggregating catastrophic health expenditure by disease area: cross-country estimates based on the World Health Surveys

Version: 0 Date: 12 Nov 2018

Reviewer: Steven Koch

Reviewer's report:

I was recently asked to review 'Disaggregating catastrophic health expenditure by disease area: cross-country estimates based on the World Health Surveys." I quite like the premise of the manuscript, but find the manuscript to be a bit confusing. It seems to want to look at CHE by disease, but then it adds in a few regressions. I did not really find the discussion in the manuscript to be particularly clear on the value of these regressions, or even the need for them.

Firstly, I am a bit skeptical that a 'past 30 days' analysis tells us quite what is claimed it does. If it is to do so, one must be willing to assume that (a) illness is randomly distributed across time and place, (b) the depth of illness, and, thus, the costs associated with the illness are also randomly distributed, and that (c) it is entirely appropriate to ignore those who did not suffer any illness in the past 30 days. Given the number of countries involved and the number of overall observations, the first two, in particular, are reasonable assumptions. The third, is also probably ok, but if they have actual health spending (and they would generally), then shouldn't they be included? The bigger concern I have regarding these assumptions is that there was one illness that was a serious problem in Africa, in particular, around that time. Yet, the authors do not give much thought to HIV/AIDS. In African countries, this is likely to be an important component of the 'other' category, due to the stigma associated with it. Thus, I think additional thought in that regard is necessary.

Secondly, although I like the premise of the paper, it is far from clear that there is a need to report the findings across World Bank income categories. In terms of financial protection, I would have more interest in the type of health system and implied coverage. For example, did people have access to private insurance, social insurance, is the public system 'free', does it require referral up? Some attempt was made to address that in the regressions, but my basic point here remains. We are really not given much reason for the set of variables included in the regressions or the type of data subsetting used in the presentation of the research. To oversimplify, I would like to see some effort to convince me that the correlations we might uncover are important, and the reason they are important. Similarly, if we find there is no...
correlation, can we get some insight as to why that is meaningful? On the other hand, if the paper is simply about describing CHE by disease type across countries, I would prefer that to remain the focus. I find the regressions to be a digression, partly due to the lack of context around the contribution they supposed to make too the research question.

Thirdly, it is suggested that the analysis is limited by lack of information on the health system. Yet, most of the countries used in this analysis have had papers published regarding CHE in those countries, probably using expenditure data. Those papers are likely to describe, at least to some degree, the health system. More importantly, I think some level of comparative work surrounding previously published papers that have used other data and the analysis here would be beneficial. No, it would not account for disease type, but it would be nice to know if the share of OOP you are finding is at least in line with these other studies. In my view, that would make this a much stronger contribution than one that includes a few additional right hand side variables in a regression.

I also would like to see more discussion of the bootstrap approach. The underlying data generating process is fairly complicated, as there are different countries and different strata structures. How did the bootstrap take all of that into account?

There is another issue that may or may not impact on the outcomes. As I have shown for the case of South Africa, the choice of equivalence scale does not matter much. However, it could matter across countries, as there might be additional forces at play that I did not consider in my South African focused research. I am not aware of any attempt to think more comparatively about that, and I am not suggesting you should change your question to consider that one. However, some thought on that front is probably needed. The reference, if you are interested: Koch, Steven F., "Catastrophic Health Payments: Does the Equivalence Scale Matter?" Health Policy and Planning 33(8): 966-973, October 2018. http://dx.doi.org/10.1093/heapol/czy072.

I have a few minor editorial suggestions.

Page 3 line 56 - many rather than may.

Page 3 line 58 - have rather than has.

Page 4 line 11 - Should try to be consistent with the use of citations throughout the text, Jan et al (2018) is not common referencing in health journals.
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
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