MJ - Decision on
Manuscript ID
BMJ.2017.041510

Body: 04-Oct-2017

Dear Mr. Ulep,

Manuscript ID BMJ.2017.041510 entitled "The health, poverty and financial consequences of a cigarette price increase among 0.5 billion male smokers in 13 low and middle-income countries"

Thank you for sending us your paper. We sent it for external peer review on a fast track basis and discussed it at our manuscript committee meeting. We recognise its potential importance and relevance to general medical readers, but I am afraid that we have not yet been able to reach a final decision on it because several important aspects of the work still need clarifying. In particular, we feel that the paper needs additional review from an expert methodologist following revision to take account of the comments of the peer reviewers.

We thus are not able to adhere to a fast track schedule for publication of the paper. We think it is more important to fully appraise the methods and make sure of the quality of the paper.

We hope you might be willing to revise the paper so that we can then obtain additional review. We do understand, however, if you wish to take the paper to another journal that might be able to offer faster publication. As I'm sure you understand, I cannot make any firm promises about whether or not the paper would ultimately be accepted, as it would depend on the outcome of additional peer and editorial review.

Very truly yours,

Elizabeth Loder, MD, MPH
eloder@bmj.com

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Report from The BMJ's manuscript committee meeting

These comments are an attempt to summarise the discussions at the manuscript meeting. They are not an exact transcript.

Present: Wim Weber (chair); Jamie Kirkham (statistician); Sophie Cook; Elizabeth Loder; Georg Roeggla; Tiago Villanueva; Rubin Minhas

Decision: Put points but needs additional methodological review after revision

* We thought the scale and breadth of this study was important, especially since it looked at a large number of countries. However, we thought the methods seemed thin and the assumptions were not well described. Most of the editors who read the paper expressed uncertainty about how you arrived at your conclusions.

In your response please provide, point by point, your replies to the comments made by the reviewers and the editors, explaining how you have dealt with them in the paper.

Comments from Reviewers

Reviewer: 1

Recommendation:

Comments:
The manuscript is well written and challenges conventional wisdom about taxes in an important way. All of my comments are minor.

Additional Questions:
Please enter your name: Eric Leas

Job Title: Posdoctoral Fellow

Institution: Stanford Prevention Research Program, Stanford Medicine

Reimbursement for attending a symposium?: No

A fee for speaking?: No

A fee for organising education?: No

Funds for research?: No

Funds for a member of staff?: No

Fees for consulting?: No

Have you in the past five years been employed by an organisation that may in any way gain or lose financially from the publication of this paper?: No

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If you have any competing interests <A HREF='http://www.bmj.com/about-bmj/resources-authors/forms-policies-and-check lists/declaration-competing-interests'target='_new'> (please see BMJ policy) please declare them here: This manuscript is well written and challenges conventional wisdom about cigarette taxes and their effects on the low income smoking population. All of my comments are minor.

- Title: The authors use 0.5 billion here but 500 million elsewhere. Stylistically, I think using integers reads better in a title.

- The clause (as well as of tuberculosis) was a little confusing. There can only be one "leading cause" (unless there's a tie), so which is it smoking or tuberculosis?

- In the 4th paragraph of the discussion the authors discuss tax avoidance behaviors in the context of brand substitution, which is an important point. Couple comments here. 1. There is a fairly large literature on cigarette tax avoidance and evasion that

should receive at least 1 or 2 citations here. Simply googling "cigarette tax avoidance and evasion" will return a few relevant citations. It is also worth mentioning that studies have found other forms avoiding price increases resulting from taxes including purchasing at tax-free locations and using discounts and coupons.

Reviewer: 2

Recommendation:

Comments:
Thanks for the opportunity to review this interesting and important study.
The paper is well presented, the methods appear robust and the conclusions are in keeping with the clearly presented results.
The major limitation of the paper it does not address the issue of price differences in cigarette markets. Price differentials between cheaper and average/premium cigarettes are substantial in the LMIC countries included in study. This probably reflects deliberate tobacco industry strategies to undermine the impact of tax increases as has been documented in the UK market.
Gilmore AB, Tavakoly B, Taylor G, et al. Understanding tobacco industry pricing strategy and whether it undermines tobacco tax policy: The example of the UK cigarette market. Addiction 2013;108:1317–26. doi:10.1111/add.12159
Recent evidence suggests that cigarette price differentials may have an important bearing on health outcomes.
Filippidis FT, Laverty AA, Hone T, et al. Association of cigarette price differentials with infant mortality in 23 european union countries. JAMA Pediatr 2017.
I would suggest that this issue is given more weight as a limitation. I additionally think it is wrong to focus the message solely on budget cigarettes as this could be misconstrued as only needing to eliminate very low priced cigarettes. The main policy objective should be to eliminate any price differentials in cigarette markets to stop smokers trading down to less expensive cigarettes.

Minor comments:-
The study is also directly relevant to achievement of Sustainable Development Goal (SDG) 10, which addresses reducing inequalities. This appears worth mentioning given the "pro-equity" impacts of the 50% tax increase demonstrated
Additionally, although the study did not directly look at child health benefits it may be worth mentioning that raising tobacco tax can contribute to the SDG child mortality reduction target.
Faber T, Kumar A, Mackenbach JP, et al. Effect of tobacco control policies on perinatal and child health: a systematic review and meta-analysis. Lancet Public Heal 2017;2:e420–37. doi:10.1016/S2468-2667(17)30144-5
More detail on what an "Extended cost-effectiveness analyses" involves is needed in the main text – 98% of readers won't look at your appendix for this detail
The rationale for why these 13 countries were selected for inclusion in the study is not clear. As part of this, the authors should justify why they included countries (two) that have already achieved the WHO target of "at least 70% excise tax share in final consumer price"
"We applied age-specific benefits of cessation from epidemiological studies in the US and the UK." Citations please
The results should refer throughout to income quintiles – not just quintiles
Rationale for excluding India and China from sensitivity analyses needs to be stated (presumably due to very low female smoking)

Additional Questions:

Please enter your name: Christopher Millett

Job Title: Professor of Public Health

Institution: Imperial College London

Reimbursement for attending a symposium?: No

A fee for speaking?: No

A fee for organising education?: No

Funds for research?: No

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Reviewer: 3

Recommendation:

Comments:
This paper considers a very important and interesting question and adopts a very thoughtful approach to answering it. Unpacking the potential effects of a major tobacco tax increase across income quintiles and age groups in lower-middle-income countries promises to be an important contribution. I am not the right person to comment on all the epidemiological dimensions, but offer the following comments on the economic aspects:

Major points
1.   The big analytical issue to clarify for the reader is one of stocks versus flows and embedded time horizons. If I understand correctly, the model is aiming to estimate the effects of a (likely one-time) tobacco price shock for a current population. There are two main outcomes of interest: life years gained and aggregate economic benefit. The time horizon for these respective effects needs to be clarified, distinguishing between the cumulative effects and the annualized effects. It would be especially interesting to see any graphs showing how the estimated effects of a tax increase would evolve over time.

To illustrate: the health and economic benefits of persuading today's 15-year olds not to start smoking might be accrued over many years and might not be substantial in macroeconomic terms for several decades. The implicit income benefits (money not spent on cigarettes) can be estimated for each year of life, while the health cost savings are lumpier and likely to take shape at a later stage of

life. A one-time OOP cost might then cause a one-off negative income shock, a permanent negative income shock, or both.

An economic model needs to apply a specified discount rate to those projected annual costs and benefits in order to estimate a current net present value. For the present model, it also needs to assume trajectories for different cohorts' incomes, in line with lifecycle assumptions and country-specific projections about long-run economic growth across the income distribution. The model can also specify any range of reasonable assumptions about the cost and impact of health technologies over the same time horizon, and potentially even demographic shifts in countries with fast-declining fertility rates. This is not intending to recommend an unduly complex model – only to recommend explicit clarification of the assumptions and the inherent limits to precision in any long-range estimates of this nature.

2.   In line with the points above, it would be helpful if the 450 million years of life gained were placed in the context of denominators over time. What does it represent, for example, in terms of a percentage increase in life years for the relevant population segments of smokers? A cursory calculation suggests that 450 million life years spread across 500 million smokers is equivalent to 0.9 extra life years per smoker. It would be helpful to know, for example, that the estimates suggest a range from an ultimate XX percent life year increase for today's younger people in the bottom quintile, to only a XX percent near-term life year increase for today's older people in the top quintile. Does the annualized increment of increased life years hence grow and then level off over time?

3.   The statement linking a specific number of people avoiding poverty to a 1% increase in LMIC growth (which presumably means either a 1% higher level of current output or average incomes, rather than a 1% higher annual growth rate) needs improved explanation if it is to be included. The underlying reference point appears to come from a 2003 study, and there have been such significant changes in the composition and estimation of extreme poverty since then that a more recent reference point would be required. Alternatively, one could simply apply a generally estimated income poverty elasticity (like -0.8) and apply it to the most recent poverty headcount estimates for the 13 countries of interest.

4.   The body of the text risks giving the impression that assets (a stock) are being used to estimate annual income (a flow), whereas the appendix clarifies that income distributions are being estimated using Gini coefficients and nationally reported average incomes. It would be good if the main text were clearer on this point. (As a detail, for ease of replication it would also be helpful for the appendix to clarify any discrepancies between nationally reported average incomes and World Bank-reported average PPP incomes, since much of the paper seems to rely on World Bank PPP conversion estimates).

5.   In terms of general presentation, some of the wording suggests ex-post precision rather than forward-looking estimation, and could be helpfully recast accordingly. For example, the opening Results summary states that, "A 50% increase in cigarette prices led to about 450 million years of life gained across the 13 countries, half of which were in China." An initial read of this might prompt one to think the study conducts an ex-post assessment of policy changes in those 13 countries.

Smaller points:
-       Footnote 3 appears to be a source for World Bank income groups, but the underlying source listed is a UN document. The UN generally uses different country categories than the World Bank.

-        On page 3, the statement that 100 million individuals fall into poverty every year due to OOP expenditures would benefit from clarification (or perhaps simply removal) if it refers to extreme poverty, since the global number of people living in extreme poverty is estimated to be falling by around 30+ million people per year (e.g., see worldpoverty.io).

-        When discussing the $1.90/day poverty line, it is generally best to use the term "extreme poverty" in order to avoid confusion with other poverty lines.

-        In Table 1, should there be a decimal point for the lines on excise tax and price per pack? And it might be clearer to say "Share of tax to *current* retail price (%)"

-        On page 6, it would be helpful to clarify why the two most populous countries, China and India, are not part of the sensitivity analysis.

-        In Table 2, it would be helpful to clarify whether the "disease cost averted" is an annual figure or cumulative over some time horizon.

-        On page 11, it would be helpful to clarify if this is "health system costs" for the SDGs or multi-sector costs to achieve health SDG outcomes (presuming it not meant to represent total costs for all SDGs).

-        On page 11, where it says the higher "levels" of taxes have been adopted in France and elsewhere, is this referencing the $1.70 figure or the 50% "rate" in the previous sentence?

-        In the appendix, the indexing notation in equation (i) is a bit confusing – it looks like it is summing across all five quintiles ("i") to estimate a number of baseline smokers in each quintile (on the left hand side)?

Additional Questions:
Please enter your name: John McArthur

Job Title: Senior Fellow

Institution: Brookings Institution

Reimbursement for attending a symposium?: No

A fee for speaking?: No

A fee for organising education?: No

Funds for research?: No

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HREF='http://www.bmj.com/about-bmj/resources-authors/forms-policies-and-check
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please declare them here: One of the authors, Prabhat Jha, was an initial
reviewer for an Analysis paper of mine (with co-authors) that is currently under
consideration with BMJ, as subsequently revised and resubmitted as
BMJ.2017.041021 ("How many lives are at stake? Assessing 2030 Sustainable
Development Goal trajectories for maternal and child health.").

Dr Jha and I also co-authored an op-ed in May 2014.

Information for submitting a revision