

Association between economic growth and early childhood nutrition

Authors' reply

We thank Harold Alderman and colleagues for their engagement with our study findings.¹ Indeed, we acknowledged the importance of their earlier investigations (and others) in our study (see references 4 and 7 in the Article). Alderman and colleagues agree with our main conclusion that the contribution of economic growth to the reduction in early childhood undernutrition in developing countries is very small. Since we noted that there was no significant association in a substantial number of analytical specifications and that the coefficient itself was very small in most of the specifications, we believe this conclusion is well supported by our analysis. Alderman and colleagues do not provide any evidence to change this fundamental conclusion of our study.

The key critique stated by Alderman and colleagues in their Correspondence is that the role of economic growth in reductions in child undernutrition should not be dismissed. Unfortunately, little evidence is provided to support this statement. Economic growth does not necessarily benefit poor households.² Even if economic growth did lead to substantial improvements in the incomes of individuals, and especially those from poor households, these changes would still affect mainly one of the proximal risk factors that can causally reduce undernutrition—ie, access to sufficient food and micronutrients. Indeed, in countries such as India, where food inflation has been rampant, there is hardly any evidence that income improvements have vastly outstripped the food inflation, especially for poor people.³ In fact, the evidence suggests a decline in caloric consumption in India.⁴ More importantly, a reduction in child

undernutrition is also dependent on other risk factors that are unlikely to improve automatically from increases in household incomes. These include access to clean water and sanitation,⁵ access to treatment to reduce recurring morbidities, and prevention of infection through immunisation. Improvements in these disorders are more affected by robust public investments, which often depend more on the policy and political environment than on the availability of resources. In many of the countries included in our analysis, there is no compelling evidence that economic growth has led to improvements in the above mentioned determinants of child undernutrition. For instance, a recent analysis finds alarmingly high contamination rates of water from so-called improved water sources in India.⁶

Alderman and colleagues also raise specific issues about our Article, which we will briefly address. First, they argue that we report a significant correlation between economic growth and changes in stunting rates at the country level (figure 3 of our Article). This correlation is mostly driven by two observations from Nigeria with annual growth rates of gross domestic product (GDP) per person of about 20–30%. For the remaining sample, the correlation coefficient is -0.077 ($p=0.49$). They further interpret the significant correlation between GDP per person and childhood undernutrition at the country level (figure 2 of our Article) as evidence for a long-term effect of economic growth on childhood undernutrition. We believe that it is a stretch to interpret such a simple correlation as evidence for a long-term relation, but, more importantly, we find no evidence for such a statement in the data. Our results do not change when we include lagged GDP per person as an explanatory variable and our results are also robust to different indicators that show more immediate outcomes of undernutrition, such as underweight, and more chronic

outcomes of undernutrition, such as stunting.

Second, they argue that the presentation of our results “underplays the effect of economic growth by reporting the odds ratios for a 5% increase in GDP per person, a change that is hardly the aspiration of a growth strategy.” The aspirations might be higher, but the actual median annual growth rate in our sample was only 2%. Therefore, our interpretations of small or weak association were actually more exaggerated since we used an average rate that was substantially higher than empirically observed to interpret our findings.

Third, Alderman and colleagues claim that the significance and sizable coefficient of the asset index in our regressions results can be interpreted as strong evidence for the importance of economic progress for the reduction of child undernutrition. This is not correct because the asset index is a country-specific and year-specific measure to rank the asset position of households in a country at a certain period of time. It does not capture economic progress but rather the relative wealth position of a household within a society; and, as we argue in the paper, we find that such a relative position does matter. We show in another article⁷ that asset indices, even when constructed as a measure of absolute wealth-holdings, are a poor proxy for economic growth.

Fourth, they argue that measurement error of per-person GDP and little cross-country variation biased our regression results. We discuss and acknowledge this particular issue in our Article and try to address it in various sensitivity analyses, including an instrumental variable regression; these analyses did not affect our results.

Finally, Alderman and colleagues query how our results can be so different to some other studies that they cite. We had a full discussion of these differences in a previous version, but had to omit them due to space constraints. The main differences



between our findings and other studies are that they considered earlier time periods, household surveys from one point in time, or a cross-country aggregate framework. By using several recent household surveys per country, we were able to assess the effect of income growth in the 1990s and 2000s on child undernutrition in a much more detailed way than could those other studies.

We agree that if economic growth is actually pro-poor, and if the increased public revenue as a result of such growth is invested in improving proximal risk factors that matter for child undernutrition, then such growth can have an effect on child undernutrition. Sadly, the evidence and reality seem to be to the contrary. The growth pattern over the past

20 years in the countries that we studied has apparently not been of this type, which is why economic growth seems to matter so little for reductions in child undernutrition.

We have no competing interests.

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