

Discussion

Comment on “Agricultural (Dis)Incentives and Food Security: Is there a Link?”

Magrini et al. (2017) analyze the impact of agricultural incentives and distortions on food security (i.e., availability, access, utilization, and stability) using cross-country and time series data for sixty-four countries between 1990 and 2010. The authors use a continuous treatment approach applying generalized propensity-score matching to reduce potential biases stemming from differences in observed country characteristics. Their paper shows robust evidence of self-selection and heterogeneous impacts on food security at different levels of policy intensity. Estimates of the dose-response functions show that both discrimination against agriculture and large support lead to poor food security performance. The study is important and unique in furthering previous research that has attempted to quantify agricultural incentives and analyze policy impacts at the national level. The rigorous quantitative analysis conducted by the authors helps provide a global perspective on the issue of agricultural incentives.

Magrini et al. (2017) find that, while agricultural incentives have varying degrees of impact on the four dimensions of food security, the incentives do not contribute greatly to food security. In particular, moderate support to agriculture tended to improve food availability, access, and utilization, but excessive support can have a negative impact on agriculture and result in costly and ineffective policy interventions such as large input subsidies. The study's results are in line with previous country-level findings from rural India that suggest that investments in agricultural research, education, and rural infrastructure are more effective at achieving long-term growth in agricultural productivity (and therefore food availability) and reductions in poverty than providing subsidies (Fan, Gulati, and Thorat 2008).

Taken together, these results have significant policy implications for improving food security in a cost-efficient manner, especially for developing countries with limited financial resources. To underscore the policy relevance of these results, consider Jayne and Rashid (2013), who found that in ten countries in Sub-Saharan Africa, 29% of agricultural expenditures went to input subsidies alone.

Cross-country regressions have some distinct limitations, however, that stem from overlooking important country-specific contexts by using country/year as the unit of analysis. Moreover, cross-country regressions do not capture the potential effects of interactions between national policies within a complex package of policies (Levine and Renelt 1992; Levine and Zervos 1993). Notwithstanding such limitations, the findings that taxation of the primary sector negatively impacts food security and moderate support to the primary sector tended to be better for food security justify the need for further country-level analyses. For instance, randomized controlled trials (RCTs) at the household level could estimate the impact of replacing input subsidies with a cash transfer to aid payment of inputs at market prices (or to be used as the household sees fit) on income, nutritional status, and environmental outcomes. Such RCTs can also be conducted to assess the impact of promoting the production of more nutritious foods on similar outcome variables. Another possibility would be quasi-experimental cross-regional studies to analyze the impact of phasing out input subsidies and phasing in cash transfer programs at different times across regions. These studies would provide more detailed information on the level of influence that agricultural incentives have in the context of specific policy interventions for various domestic agricultural sectors. Such studies would also strengthen policy relevance in comparison to results at the aggregate level. Such studies could also

avoid some of the econometric problems stemming from cross-country analyses.

The Magrini study also lends itself to a broader policy question: How should we revise and refine policies in order to enhance food security given these findings and broader political economy realities? Going beyond the authors' second policy implication regarding the negative impact of excessive support to the agricultural sector, further work is needed on potential alternatives to agricultural incentives. In some cases, agricultural subsidies have catalyzed productivity and helped to reduce hunger rapidly. For example, during the early stages of the Green Revolutions in the 1960s and 1970s in Asia, government subsidies for agricultural inputs and outputs played a key role in aiding the adoption of improved farm technologies by correcting market failures. However, there is a tendency for agricultural subsidies to crowd out other potential public investments that could otherwise produce higher returns to investment (Jayne and Rashid 2013). Previous research in China has shown that government investments in rural infrastructure—such as irrigation and roads—and agricultural research and development have a significant impact on agricultural productivity growth and reductions in poverty (Fan, Zhang, and Zhang 2004). These alternative investments would not only impact food availability, access, and potentially stability, but also increase agricultural and rural wages, nonagricultural employment, and, to a lesser extent, gross domestic product.

Finally, it is important to see the research findings of Magrini et al. (2017) in a larger context. Agricultural incentives are political in nature and can be a concrete means of providing support for constituents. Beneficiaries of incentives are often clearly identifiable, while the main costs are the foregone public investments in areas such as research and infrastructure, which are less visible and tend to generate benefits after a number of years (Jayne and Rashid 2013). Considering policy implications needs to account for the political

aspect as well, and in this context, the empowerment of citizens and knowledge exchange regarding the benefits and costs of agricultural incentives in relation to food security is an important element.

Looking forward, Magrini et al. (2017) lay a valuable foundation for future work. In addition to the methodological refinements mentioned above, researchers could explore the impact that alternate investments and the production of more nutritious foods have on food security. With a focus on promoting productive investments, future research can better guide policies towards improving food security.

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Response

“Agricultural (Dis)Incentives and Food Security: Is there a Link?”—Author Response to Comment

We thank Shenggen Fan for his insightful discussion of our paper and what it means for researchers and policymakers alike. We also appreciate the opportunity to respond to his discussion. Specifically, we focus our reply on three main points.

First, we agree that there is scope for methodological developments to improve future research on the impact that agricultural incentives have on food security. It is certainly worth considering the limitations of cross-country regression analysis in this area of work as highlighted in the comment. Indeed, one of the primary motivations behind our chosen methodological approach was to overcome (at least partially) some of these limitations as in the case of the selection bias issue. Although we cannot isolate the heterogeneous impacts of specific national policies by country, our cross-country analysis still provides valuable insights into the net effects that a specific policy stance has to inform a debate that is often based on case-specific evidence, and may guide the direction of further micro-analyses with experimental and/or quasi-experimental designs.

Second and more generally, we believe there are important complementarities between macro- and micro-analyses. As applied economists, we should strive to leverage these complementarities as we move towards more efficient monitoring and evaluation systems that support the design, testing, and implementation of agricultural policy. Unfortunately, in many developing countries this potential is often still hampered by data limitations—especially at the micro-level—and by a lack of resources that does not allow evidence-based policymaking. In this respect, international organizations and donors should increase their contribution to supporting the so-called data revolution (United Nations

2014). Higher-quality, higher-resolution, and more timely data means more opportunities for young researchers to generate rigorous evidence to evaluate and inform policy.

Finally, we are particularly pleased that Fan’s discussion has raised concerns about the broader policy question of how to revise and refine policies in order to enhance food security. We certainly hope our results will help to overcome the polarized ideological positions of whether support policies are good or bad for food security. We acknowledge that no “silver bullet” can properly solve a complex issue like food security, and that a pragmatic approach focused on context specificity helps to identify policy instruments that are better tailored to actual agriculture and food security conditions. Moreover, we think that the global dimension has real value since the changing context of agricultural trade is further complicated by the increasing fragmentation of global production and its reorganization in complex global value chains. Accordingly, those who want to extend our work may need to shift their emphasis from domestic to global impacts and from sectoral policies to the broader issue of interaction across different policies.

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