What Role for Trade Policies in Low-income and Small Economies When Food Prices Spike?

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Background

International cereal prices have spiked three times since 2007, bringing food and agricultural price and trade policies back into the global spotlight. Governments of numerous large economies have responded to the spikes by altering their restrictions on food trade with the aim of insulating their domestic market somewhat from the spikes. Some food-exporting developing countries tightened their export restrictions, while some food-importing countries reduced or suspended their import tariffs and a few even subsidised imports of their staple food. The actions of each of those sets of countries added considerably to the spikes in international grain prices, making it even harder for other developing countries to cope with such external shocks.

This issue of *Commonwealth Trade Hot Topics* seeks to address the question how small and low-income developing countries should respond when such price spikes occur and particularly if there is any role for trade policies in dealing with them. The analysis is undertaken, bearing in mind that the recent volatility of international food prices may be the new norm, thanks to the increased frequency of extreme weather events associated with climate change, the tendency of governments of some large countries to reduce their public grain stocks, and the emergence of biofuel subsidies and mandates in the USA, the European Union and elsewhere that have caused international food and fuel prices to become more closely linked (see Figure 1).

How do trade policy measures affect food security?

Improving food security requires improving food availability, access and utilisation. While subsistence farm households by definition avail themselves of food via self-production, for most people food is most cheaply available in markets. How much access households have to available food supplies depends heavily on their income or assets or other entitlements (e.g. transfers such as remittances). And how well they utilise the food that is accessible to them depends on their knowledge and willingness to ensure a healthy and nutritious diet for all household members. The latter in turn depends on the level of education of particularly female adults in the household, which again is closely related to household income and wealth or other entitlements. In short, food insecurity is a

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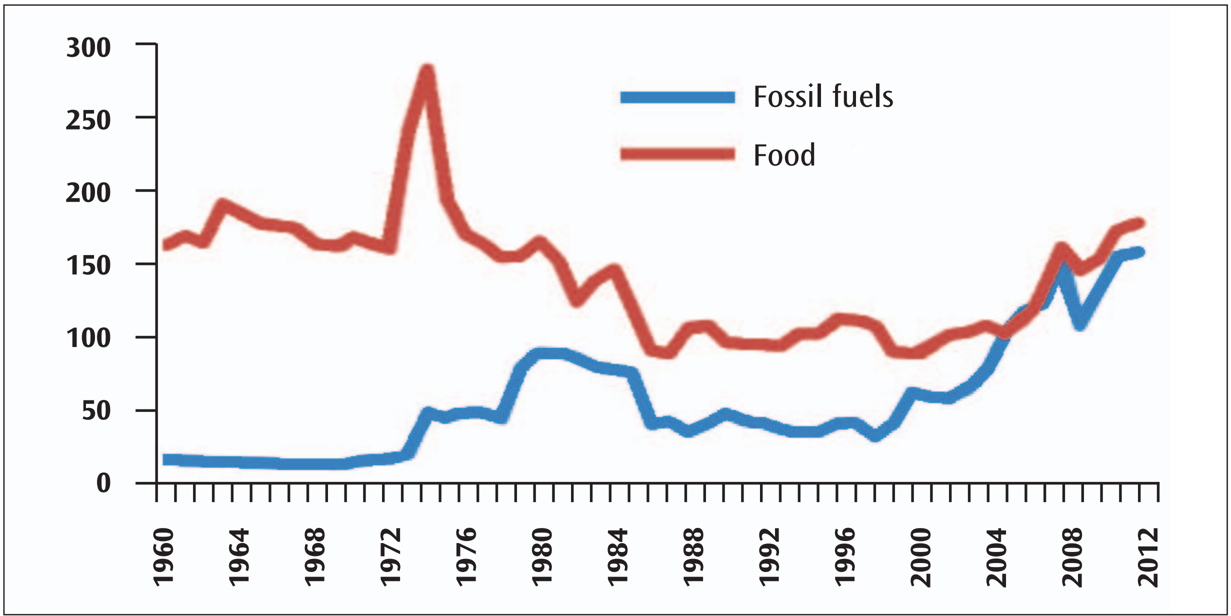
Figure 1: Real international price indexes for food and energy raw materials, 1960 to 2012 (constant US dollars, 2005 = 100)



Source: World Bank, pink sheets, accessed February 2013.

consumption issue that is closely related to poverty and the price of food.

From this perspective, national food security could be boosted by any policy initiative that raises real national income enough to ensure any loser from such a policy initiative could be compensated by the gainers via redistributive measures. One such initiative is to open a country to international trade so as to maximise the gains from production specialisation and exchange. There are numerous channels through which trade openness can boost national economic growth: by creating a more attractive investment climate, by bringing in new ideas and ways of producing, marketing and financing products, and by speeding technological catch-up. Even if these static and dynamic gains from trade openness do not also benefit the poorest households in the country *directly*, the gain in national income provides more wherewithal for the government to assist them *indirectly*. This could come via public goods such as investments in rural infrastructure to reduce trade costs in and to/from the poorest regions of the country. It could also come via social protection instruments such as conditional cash payments.

Which types of households would be most likely to gain or lose if a country uses trade measures as domestic food price stabilisers? The *direct* benefits from short-term market-insulating interventions tend to go to net buyers of food at the expense of net sellers of food in both food-surplus and food-deficit countries during upward price spike periods, and conversely during low-price periods. But there is an *indirect* impact to consider: while poor households may benefit on the expenditure side from a measure that reduces the domestic price of food, they could be harmed on the earnings side as sellers of unskilled labour if not also food, thereby making the net effect on their welfare uncertain. What is critical, therefore, is not only whether poor households are predominantly net buyers or net sellers of food, but also the extent to which their income derives from wages linked to the demand for labour on farms. Since around 70 per cent of the US$1/day poor in the world are rural, a significant proportion of households that are net buyers of food may still be made worse off by policies that lower rural wages via lowering the domestic price of farm outputs.

The food trade policies of the rest of the world can also impact on a developing country's poor insofar as they alter the price of food at that country's border. As already mentioned, trade measures used as domestic food price stabilisers exacerbate price shocks for countries choosing to not alter their border measures, harming even more the latter countries' net buyers of food and helping their net sellers of food in the case of upward price spikes, and conversely during low-price periods.

Why trade measures are not good food security instruments

Trade restrictions are far from first-best food security policy instruments, for a number of reasons. First, they are like explicit trade taxes, which means they impose a price distortion at the same rate on production and consumption simultaneously. If they lower the domestic food price, that may help *some* net food buyers (but not *all* of those whose incomes are closely linked to the demand for farm labour), but at the expense of net sellers. Second, they help net food buyers in proportion to their expenditure on food. That makes them very inefficient transfer instruments, because only a fraction of that transfer helps the poor food-insecure households that are net buyers, and it does so at the expense of the poor households that are net sellers of food. Conversely, trade restrictions that raise the domestic food price will help net food sellers but at the expense of net buyers of food, and that help to farmers will be in proportion to their marketed output and so again will be a far larger transfer than is needed for the social protection of low-income farmers.

Trade policy responses to fluctuating food prices: global evidence

It is possible to gauge how farmer and consumer prices in high-income and developing countries have altered relative to international prices when the latter spike by drawing on time series evidence from a recent World Bank study (see www.worldbank.org/agdistortions). The key indicator of price distortions in that dataset is the nominal rate of assistance (NRA), defined as the percentage by which national government policies raise gross returns to farmers above what they would be without the government's intervention. Since fluctuations around trend levels of international food prices always have tended to be transmitted less than fully to national markets, the estimated NRA for each product also fluctuates from year to year around its long-run trend, and in the opposite direction to the international price. In fact, those World Bank data suggest that, within one year, barely half the movement in international prices of primary food products is transmitted to domestic markets on average.

When some governments alter the restrictiveness of their food trade measures to insulate their domestic markets somewhat from international price fluctuations, the volatility faced by other countries is amplified, prompting more countries to follow suit. The irony is, however, that when both food-exporting and food-importing countries so respond, each country group undermines the other's attempts to stabilise its domestic markets. That is to say, what seems like a solution to each importing country's concern *if it were acting alone* turns out to be less effective, the more exporting countries respond — presumably for the same political economy reasons — in a similar way. It is like everyone in a crowded stadium standing up to see better: if people are of equal height, no-one is better off.

With the help of some simplifying assumptions, Anderson and Nelgen (2012) obtain back-of-the-envelope estimates of the proportional contribution of government trade policy reactions to an international price spike such as in 2006—08: 0.40 for rice, 0.19 for wheat, and 0.10 for maize. Exporting countries' policies had the majority of the influence, but importers made a very sizeable contribution as well. In the light of these estimates, it appears changes in trade restrictions were rather ineffective in limiting the rise in domestic prices during 2006—08. On average for all 82 countries in the sample, domestic prices rose slightly more than the adjusted international price change for wheat, and only slightly less for maize and just one-sixth less for rice. These results suggest that the combined responses by governments of all countries have been sufficiently offsetting as to do very little to insulate domestic markets in the intervening countries from that recent international food price spike.

Trade policy responses to fluctuating food prices: small and poor countries

How did Commonwealth small and poor countries respond to the food price shocks since 2006? Retail price data are available for a subset of small and poor countries from GIEWS (2013) and FEWS (2013) for the most important foods in those countries, namely grains and chicken meat. There is a positive correlation between the domestic and border prices, but the correlation coefficients are well below one. When examined if the insulating policy action reduced instability in domestic relative to international markets, in less than 40 per cent of the cases, for which information was available for Commonwealth small states and low-income developing countries, are domestic prices more stable than international prices. That is, more often than not the interventions for this sample of small and poor countries appear to have *destabilised* domestic markets for their key food staples (perhaps for reasons of poor policy timing).

Movements in the domestic to border price ratio also provide a crude indication of changes in government restrictions on trade. If the governments of these countries are attempting to insulate their domestic market from international price fluctuations, those ratios should be negatively correlated with the international price. Indeed that is confirmed by estimates of the coefficients of correlation between the domestic to border price ratio and the international price. The unweighted average for our available sample is -0.64 for the monthly data since 2006, and -0.40 for the annual data since 1990.

To test further whether these countries' governments have been altering their trade measures in an attempt to shield their consumers somewhat from the recent upward spikes in international food prices, Table 1 shows the increase between 2006 and 2008 in domestic prices for the subset of these countries with data for those years, compared with the increase in international grain prices. It reveals that, except in Sri Lanka and Mozambique, their domestic prices did not rise as much as those observed in international markets during that extreme price spike period (shown in row 1) — and nor even as much as international prices would have risen had governments around the world not altered their trade restrictions in response to the food price spike in that period (shown in row 2 of Table 1). That is, in all but two of these nine small and poor countries it appears the government intervened, to reduce transmission of the price spike in that period, at least as much as the average for all other countries, foregoing some of the national gains from trade openness during that period.

Poverty consequences

Did the short-term trade policy responses to the food price spike around 2008 lead to less people being pushed below the poverty line? A definitive answer is not yet available, but a new study by Anderson, Ivanic and Martin (2013) makes use of household income and expenditure survey data and the methodology in Anderson and Nelgen (2012) to get at least a partial answer (ignoring responses to the quantities produced and consumed and to wage rates). For a sample of 30 developing countries (including the biggest such as China, India, Indonesia, Nigeria and Pakistan, plus seven of our sample small and poor countries), it first identifies what proportion of each nation's households are net buyers of grains and oilseeds. It

Table 1: Comparison of domestic price rise with rise in international grain price gross and net of contribution of changed trade restrictions by all countries, 2006—08

	% by which unweighted annual average price in 2008 exceeds 2006		
	Rice	Wheat	Maize
International price changes			
including contribution of changed trade restrictions	113	70	83
net of contribution of changed trade restrictions	68	56	75
Domestic retail price changes			
Mozambique	49	-	48
Rwanda	53	-	31
Samoa	50	-	-
Sri Lanka	98	90	-
Uganda	-	-	55
Zambia	-	10	19
Domestic producer price changes			
Bangladesh	16	37	-
Jamaica	-	-	53
Malawi	42	-	65
Mozambique	91	-	100
Rwanda	53	22	31
Sri Lanka	121	-	75

Source: Authors' estimates based on international and producer prices from Anderson and Nelgen (2012) and the Food and Agriculture Organization, and on domestic retail prices from GIEWS (2013) and FEWS (2013).

Table 2: Estimates of partial impact of grain and oilseed price insulation behaviour during 2006—08 on poverty (<$1.25/day) in selected Commonwealth countries

	Change in number of poor **ignoring** international price effects (thousands)	Change in number of poor **including** international price effects (thousands)
Bangladesh	-842	1,235
Malawi	105	362
Rwanda	1	66
Sri Lanka	-55	467
Tanzania	-433	292
Uganda	-38	-2
Zambia	-197	-250
Sub-total, above	**-1,459**	**2,170**
China*	-5,710	3,620
India	-59,043	4,380
Indonesia*	1,579	104
Nigeria	-4,377	-1,158
Pakistan	-9,936	-5,898
Rest of world	-2,654	1,966
World	**-81,600**	**7,500**

* indicates non-Commonwealth countries
Source: Authors' compilation from Anderson, Ivanic and Martin (2012)

then makes use of the above evidence on how much international prices for those products rose during 2006—08, how much domestic prices rose, and how much international prices would have risen had no countries insulated. The results suggest insulation behaviour by developing country governments would have prevented an extra 81.6 million people temporarily falling below the US$1.25 a day poverty line *had those government responses had no impact on international food prices*. But, because those actions exacerbated the international price spike, the number of people saved from falling into poverty by that insulating behaviour is estimated is estimated to be less than the number of those pushed into poverty, by 7.5 million. It is in just two populous countries, Nigeria and Pakistan, that there is a significant net reduction in poverty because of their policy response. For the rest of the world as a group, the combined trade policy actions on those food staples pushed more people into poverty than they prevented from falling below the poverty line. Table 2 shows that for the subset of our sample of seven small and poor countries for which household data were available to allow their inclusion in the study by Anderson, Ivanic and Martin (2013), only Zambia is estimated to have intervened enough in its grain markets to prevent more people going into poverty. That is, small and poor countries would probably see less of their people fall into poverty when international food prices spike if all countries agreed to abstain from altering trade restrictions so as to insulate their domestic markets from international price fluctuations.

Conclusions and policy implications

In the absence of a multilateral agreement to desist, past behaviour leads one to expect developing country governments to continue to alter their food trade restrictions so as to insulate their domestic markets somewhat from international food price volatility. For the reasons laid out earlier, this behaviour will continue to amplify price fluctuations in the international market and, if both exporting and importing countries continue to respond similarly, such interventions will keep being rather ineffective in preventing fluctuations in domestic food prices.

This is a classic international public good problem that could be solved by a multilateral agreement among World Trade Organization (WTO) members to restrain the variability of trade restrictions. The results summarised in Table 2 suggest small and poor countries should support such an initiative.

Even if WTO member countries liberalised their food trade and bound their trade taxes on exports as well as imports at low or zero levels, there would still be occasions when international food prices spike. At such times, what alternative instruments might national governments use to more efficiently avert losses for significant (especially poor) groups in their societies? A standard answer is that food affordability for the poor is best dealt with using generic social safety net measures that offset the adverse impacts of a wide range of different shocks on poor people — net sellers as well as net buyers of food — without imposing the costly by-product distortions that necessarily accompany the use of not very best trade policy instruments for social protection. They could take the form of targeted income supplements to only the most vulnerable households, and only while the price spike lasts.

This standard answer has far greater power now than just a few years ago, thanks to the digital information and communication technology (ICT) revolution. In the past it has often been claimed that such payments are unaffordable in poor countries because of the fiscal outlay involved and the high cost of administering such handouts. However, recall that in half the cases considered above (i.e., in the food-importing countries), governments *reduce* their trade tax rates when prices spike, so even that intervention may require a drain on the budget of many finance ministries. In any case, the option of using value-added taxes in place of trade taxes to raise government revenue has become common practice in even low-income countries over the past decade or so.

Moreover, the ICT revolution has made it possible for conditional cash transfers to be provided electronically as direct assistance to even remote and small households, and even to the most vulnerable members of those households (typically women and their young children). Evidence of the practical workability of such social safety net programmes in developing countries is growing rapidly. Exposure to these programmes has raised the quantity and quality of food consumed by recipients in poor households. The benefits could be even greater with complementary activities such as nutrition counselling and micro-nutrient supplements.

While the political challenge of encouraging countries to switch from trade to domestic policy instruments for addressing non-trade domestic concerns is evidently non-trivial, this emergence of new, lower-cost social protection mechanisms involving conditional cash e-transfers allows governments to take one more step away from the use of beggar-thy-neighbour trade measures.

Finally, in countries where there continue to be concerns about inadequate local food production, the government could explore whether there is under-investment in such things as rural infrastructure, agricultural research, and rural education and health. In many developing countries the social rate of return for further investment in such areas is very high. It would be wise to undertake more such investments wherever high marginal social returns prevail even in the absence of concerns about high food prices and import dependence but, at this time of historically high food prices, now is an especially profitable time to expand those investments.

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COMMONWEALTH
trade hot topics

ISSN: 2071-8527 (print) **ISSN: 2071-9914** (online)

Series editor: Dr Mohammad A Razzaque

Produced by the Economic Affairs Division of the Commonwealth Secretariat

For further information or to contribute to the Series, please email m.razzaque@commonwealth.int