Simulating the Impact of Exogenous Food Price Shock on Agriculture and the Poor in Nigeria: Results from a Computable General Equilibrium Model

N.M. Nkang[*] [1]*, B.T. Omonona*[2]*, S.A. Yusuf*[2]*, and O.A. Oni*[2]
[1]*Department of Agricultural Economics and Extension ,*
University of Calabar,
P. M. B. 1115, Calabar,
Nigeria

[2]*Department of Agricultural Economics,*
University of Ibadan,
Ibadan,
Nigeria

Abstract: Motivated by the recent global economic crisis, this paper simulated the impact of a rise in the price of imported food on agriculture and household poverty in Nigeria using a computable general equilibrium (CGE) model and the Foster, Greer and Thorbecke (FGT) class of decomposable poverty measures on the 2006 social accounting matrix (SAM) of Nigeria and the updated 2004 Nigeria Living Standards Survey (NLSS) data. Results show that a rise in import price of food increased domestic output of food, but reduced the domestic supply of other agricultural commodities as well as food and other agricultural composites. Furthermore, a rise in the import price of food increased poverty nationally and among all household groups, with rural-north households being the least affected by the shock, while their rural-south counterparts were the most affected. A major policy implication drawn from this paper is that high import prices in import competing sectors like agriculture tend to favour the sector but exacerbate poverty in households. Thus, efforts geared at addressing the impact of this shock should strive to balance welfare and efficiency issues.

I. INTRODUCTION

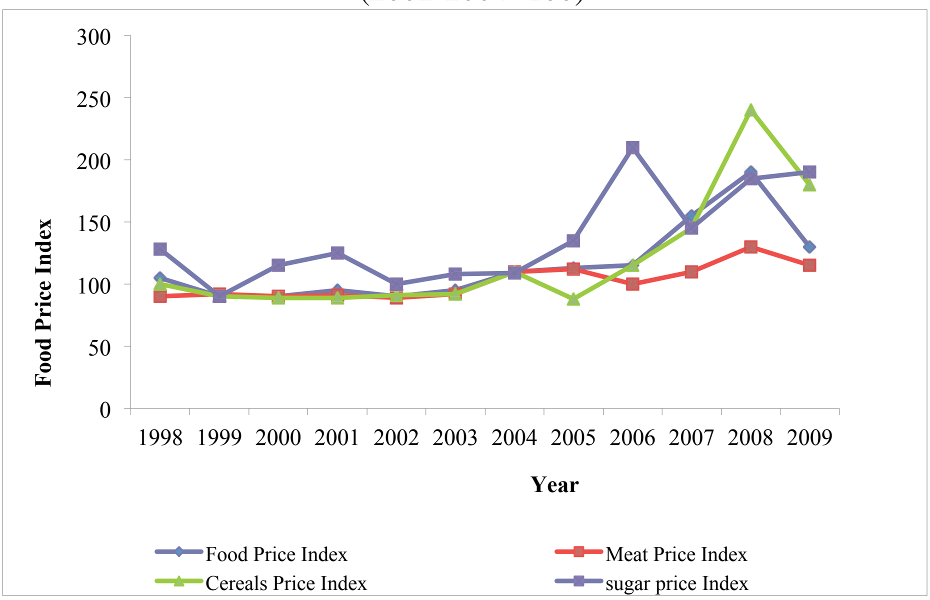
Economic shocks such as food price shocks have often been known to cause social distress, which manifests directly or indirectly in increased poverty and inequality levels, among other welfare issues, as a result of a fall in outputs and real incomes associated with them (Lustig and Walton 1999, Lustig 2000, Skoufias 2003, Damuri and Perdana 2003, Essama-Nssah 2005, Conforti and Sarris 2009). Empirical evidence shows that the poor who are predominantly found in agriculture are most vulnerable to economic shocks, especially food price shocks,

[*] Corresponding author: nkangm@yahoo.com

as they spend 50 to 70 percent of their income on food and have little capacity to adapt as prices rise and wages for unskilled labour fail to adjust accordingly (Decaluwe, Patry, Savard and Thorbecke 1999, National Bureau of Statistics (NBS) 2005, von Braun 2008, Boccanfuso and Savard 2009). In view of these facts, agriculture and indeed production of abundant food becomes very important in the context of development policy, which major goal is poverty alleviation (Yusuf, Adesanoye and Awotide 2008).

In the wake of the recent global economic crisis, a number of macroeconomic shocks were experienced worldwide. In Nigeria, these exogenous shocks included increased food prices, fall in oil revenues (following the sudden plunge in oil prices in the international market), and depreciation of the real exchange rate, among others (see, Soludo 2009). The food price shocks experienced during the crisis, and attributed to increasing global demand for food, high fuel prices and adverse supply movements could have had diverse impacts on agriculture and the poor, especially their impact on substitutability of factor inputs in different production sectors and on households' real incomes. According to Reyes, Sobrevinas, Bancolita and de Jesus (2008), world food prices had risen by 53 percent (as shown in *Figure 1*, below) during the crisis, based on the Food and Agriculture Organisation (FAO) food price index for the first three months of 2008, and this had led to increased social tensions and political upheavals in net food importing countries, and food export restrictions in net exporting countries.

Figure 1: Annual food price indices of selected food commodities, 1998 – 2009 (2002-2004=100)



Source: Boccanfuso and Savard, 2009

To cushion the effect of the food price shock on consumers in Nigeria, the Federal government responded by announcing a removal of import tariff on rice, the single most important staple food import in the country, for six months. This intervention by government was not only a temporary measure of mitigating the social cost of an adverse price shock, but

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