The Role of Price and Consumption Bundle Aggregation in Poverty Measurement: A Reassessment of Poverty in Uganda

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May 28, 2013

INTRODUCTION

During the past few decades, Uganda has experienced substantial reduction in head-count poverty estimates from 38.8% during 2002/03 Uganda National Household Survey (UNHS), to 31.1% during 2005/06 UNHS and 24.5% during the latest survey conducted during the 2009/10 period, (UBOS, 2010). While part of this poverty reduction is a peace dividend that the government policies have ensured, Uganda has also hit the millennium Development Goal (MDG) of halving poverty head-count estimates from 56.4% in 1992 (MFPED, 2012; World Bank, cited by Fact fish, 2013). Much of the several development programs that have liberated Ugandans to such a positive trend head-count poverty reduction, have been hugely supported by donor funds.

Recently, the tide has been turning. Museveni’s Uganda is quickly losing her status as a donor darling due to corruption and inappropriate donor aid allocations. For instance for the financial year 2012/13, the Uganda government budget descended by approximately 260 million U.S dollars, contributing 6.2% of the national budget because donors including the republic of Ireland sighted graft and cut aid, (Independent, 2012). However, sometimes inappropriate allocation of donor funds due to perhaps mistaken policy guidance by the experts has made donors over and again reviews their aid considerations to Uganda. For instance one of the most popular government programs in the recent past, the National Agricultural Advisory Services (NAADS) meant to enable government fight household poverty under the Prosperity For All (PFA) initiative has been recently suspended by President Museveni. The president realized that the NAADS program that was supposed to run for seven years at a minimum of 108 million U.S dollars per year was misguided by experts. The targeted people in some districts were still in camps thus never reached, selection of beneficiary farmers was biased and agricultural materials for use like animals were at hugely inflated prices. None of the disbursed NAADS monies were ever reimbursed to government, (Uganda Media Centre, 2013). In the wake of these political and social events (corruption, embezzlement and misallocation of national funds etc.), more and more people start questioning the continuing reduction in the official poverty estimates or even develop doubt in its value that may either be underestimated or overestimated and that has clear implications in guiding and enabling Uganda achieve access to donor aid or even decide on how to allocate own revenues from nationally produced goods and services.

Uganda has been using the same food basket for the poor for all regions for over two decades to calculate poverty estimates (MFPED, 2012). In addition this consumption food basket used to estimate poverty rates has been the same for the entire Ugandan population despite clear problems that that influence poverty and have been specific to particular regions of Uganda. For instance the northern region has suffered Lord’s Resistance Army (LRA) rebel group insurgency since 1980’s to an extent that the United States has recently committed 100 armed military advisers towards efforts to eliminate the group (Shanker & Gladstone, 2011). In addition the northern region people have been living in camps for a good time and not involved in household agriculture which also led to the misfiring of the NAADS Programme. Furthermore Ugandan regions that are greatly dispersed on ethnic grounds have clearly different staple foods that form most composition of these regions’ specific food baskets. For instance bananas, the most produced crop in Uganda are a very important staple food in the Central and Western regions of the country as is for sweet potatoes in the East. Therefore in more realistic terms these regions are bound to have different consumption food baskets reflecting area based food differences and characteristics thus also attract different prices. While price heterogeneity has been incorporated in the Uganda poverty measurements from the start, consensus is building that specificity of poverty estimates also requires different food bundles for different spatial or temporal domains, since food is a central element of household welfare and poverty status (Heltberg & Tarp, 2002; Mukherjee & Benson, 2003).

In the current trend of estimating poverty more accurately to explicitly guide national policy in Sub Saharan Africa (SSA) and the donor community, the Cost of Basic Needs (CBN) approach is more feasible taking care of national regions’ specific flexible food bundles (Arndt & Simler, 2010). To estimate national poverty for Uganda more precisely, representatively and critically while considering food as key element of household welfare given the household environment, this paper will follow a CBN approach, using region specific food bundles and prices for the food and non-food products to better reflect region differences and characteristics. These region specific differences and characteristics will specifically contribute to region specific poverty head-count estimates that will in turn be used to project national poverty estimates, grounded on region specific food and non-food poverty lines.

POVERTY IN UGANDA:-RECENT TRENDS AND CONTROVERSIES

Basing on the official figures of poverty estimates for Uganda based on the National Poverty line, as displayed in Figure 1, Poverty in Uganda has been generally declining despite various economic, political and social challenges that have been facing Ugandans including; civil wars, drought, floods, land-slides, corruption and others that have at some times threatened total food disaster for particular regions in Uganda.

Source: MFPED, (2012) and World Bank cited by Fact Fish, (2013)

According to MFPED, (2002) over the

TABLE 1: ORIGINAL POVERTY LINES FOR UGANDA BY UBOS (UNHS DATA 2009/10)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Region | | Poverty Lines | | |
| Food | Non-Food | Total |
| Central | Rural | 21,258 | 10,848 | 32,106 |
| Urban | 21,258 | 8,314 | 29,572 |
| Eastern | Rural | 21,258 | 9,427 | 30,685 |
| Urban | 21,258 | 7,384 | 28,642 |
| Northern | Rural | 21,258 | 8,976 | 30,234 |
| Urban | 21,258 | 7,689 | 28,947 |
| Western | Rural | 21,258 | 8,735 | 29,993 |
| Urban | 21,258 | 6,907 | 28,165 |

Source: UBOS final UNHS data 2009/10

Note: Data are monthly per capita figures in Uganda Shillings (UGX)

**Setting CBN Poverty Lines**

TABLE 2: ORIGINAL FOOD POVERTY LINES FOR UGANDA USING UNHS DATA 2009/2010

|  |  |  |
| --- | --- | --- |
| Region | Food Poverty lines | |
| By UBOS | By Authors |
| Central Rural | 21,258 | 19,184 |
| Central Urban | 21,258 | 24,971 |
| Eastern | 21,258 | 18,278 |
| Northern | 21,258 | 15,589 |
| Western | 21,258 | 23,461 |

Source: UBOS and Authors’ calculations (Authors using region specific flexible food bundles)

Note: Data are monthly per capita figures in Uganda Shillings (UGX)

**Revealed Preference Tests**

TABLE 3: REVEALED PREFERENCE TESTS FOR UGANDA FOOD POVERTY LINES USING UNHS DATA 2009/10

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Region Specific Bundles | Region Specific Prices | | | | |
| Central Rural | Central Urban | Eastern | Northern | western |
| Central Rural | 1 | 0.883 | 1.100 | 1.517 | 0.906 |
| Central Urban | 1.306 | 1 | 1.310 | 1.703 | 1.200 |
| Eastern | 0.962 | 0.915 | 1 | 1.269 | 0.838 |
| Northern | 0.967 | 0.850 | 0.870 | 1 | 0.769 |
| Western | 1.087 | 0.924 | 1.212 | 1.549 | 1 |

Source: Authors’ calculations from the UBOS-Uganda National Household Survey 2009/10

Note: Values less than one (1) show letdown of a revealed preference condition

**Obtaining Utility-Consistent Poverty line Bundles and Poverty Comparisons using the Entropy Estimator**

**Poverty Comparisons**

TABLE 4: ENTROPY ADJUSTED (UTILITY CONSISTENT) FOOD POVERTY LINES FOR UGANDA, 2009-10: REVEALED PREFERENCE TESTS AND PERCENTAGE CHANGE

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Region Specific Bundles | Region Specific Prices | | | | |
| Central Rural | Central Urban | Eastern | Northern | western |
| Central Rural | 1 | 1.034 | 1.027 | 1.240 | 1 |
| Central Urban | 1.126 | 1 | 1.053 | 1.199 | 1.146 |
| Eastern | 1.044 | 1.162 | 1 | 1.120 | 1 |
| Northern | 1.180 | 1.221 | 1 | 1 | 1.023 |
| Western | 1 | 1 | 1.032 | 1.144 | 1 |
| %change in food poverty line\* | -12.20 | 3.09 | -11.28 | -13.55 | -0.43 |
| %change in food poverty line\*\* | -1.25 | -13.83 | 4.32 | 16.73 | -10.84 |

Source: Authors’ calculations from UBOS-UNHS data 2009/2010

\*signifies percentage change in value of food poverty line due to entropy adjustments relative to values of UBOS, and \*\* signifies percentage change relative to Authors’ calculations in table 2

TABLE 5: POVERTY HEAD-COUNT PERCENTAGE ESTIMATES FOR UGANDA CONSIDERING SEVERAL POVERTY LINES FROM VARIOUS CALCULATION METHODOLOGIES

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Head-count Poverty estimates for Uganda 2009/10 | | | | | | | | | |
| Estimation Methodology | UBOS (Using Non Region Specific Food Poverty lines) | | | Authors (Using Region Specific Utility-Inconsistent bundles) | | | Authors (Using Region Specific Entropy-Adjusted Utility-Consistent bundles) | | |
| **Region** | **P0** | **P1** | **P2** | **P0** | **P1** | **P2** | **P0** | **P1** | **P2** |
| National | 24.5 | 6.8 | 2.8 | 10.5 | 2.8 | 1.2 | 13.6 | 3.7 | 1.6 |
| Rural | 27.2 | 7.6 | 3.1 | 11.6 | 3.1 | 1.3 | 15.1 | 4.2 | 1.8 |
| Urban | 9.1 | 1.8 | 0.6 | 3.4 | 0.8 | 0.2 | 3.7 | 0.5 | 0.2 |
| Central Rural | 13.5 | 3.2 | 1.1 | 6.6 | 1.3 | 0.4 | 6.6 | 1.3 | 0.4 |
| Central Urban | 5.4 | 1.0 | 0.3 | 3.9 | 0.9 | 0.3 | 3.3 | 0.3 | 0.1 |
| Central | 10.7 | 2.4 | 0.8 | 5.7 | 1.2 | 0.4 | 5.5 | 0.9 | 0.3 |
| Eastern | 24.3 | 5.8 | 2.1 | 7.6 | 1.4 | 0.4 | 12.0 | 2.5 | 0.7 |
| Northern | 46.2 | 15.5 | 7.3 | 19.9 | 6.9 | 3.4 | 30.1 | 10.7 | 5.4 |
| Western | 21.8 | 5.4 | 2.0 | 11.5 | 2.9 | 1.2 | 10.2 | 2.3 | 0.9 |
| Kampala | 4.0 | 0.6 | 0.2 | 4.9 | 1.1 | 0.3 | 4.2 | 0.3 | 0.1 |
| Central 1 | 11.2 | 2.3 | 0.7 | 4.8 | 1.0 | 0.3 | 4.7 | 0.9 | 0.3 |
| Central 2 | 13.6 | 3.4 | 1.2 | 7.1 | 1.4 | 0.4 | 7.0 | 1.3 | 0.4 |
| East central | 21.4 | 4.8 | 1.7 | 5.5 | 1.1 | 0.3 | 10.6 | 1.9 | 0.6 |
| Eastern | 26.5 | 6.5 | 2.3 | 9.3 | 1.7 | 0.4 | 13.2 | 2.9 | 0.8 |
| Mid-Northern | 40.4 | 12.2 | 5.4 | 10.9 | 3.7 | 1.6 | 21.7 | 6.2 | 2.8 |
| North-east | 75.8 | 35.0 | 19.1 | 68.9 | 27.9 | 14.7 | 75.8 | 36.9 | 21.3 |
| West-Nile | 39.7 | 10.7 | 4.2 | 9.7 | 1.9 | 0.6 | 20.8 | 4.9 | 1.6 |
| Mid-Western | 25.3 | 6.6 | 2.7 | 14.9 | 4.3 | 1.8 | 13.8 | 3.4 | 1.4 |
| South-Western | 18.4 | 4.3 | 1.4 | 7.9 | 1.5 | 0.5 | 6.4 | 1.1 | 0.3 |

Source: UBOS, (2010) and Authors Calculations from UBOS-UNHS data 2009/10

Notes: P0 refers to the head-count poverty estimate, P1 the Poverty gap and P2 the squared poverty gap. According to UBOS (2010), North East covers districts of Kotido, Abim, Moroto, Kaabong, Nakapiripiriti, Katwaki, Amuria, Bukedea, Soroti, Kumi and Kaberamaido; Mid-Northern: Gulu, Amuru, Kitgum, Pader, Apac, Oyam, Lira, Amolatar and Dokolo; West Nile: Moyo, Adjumani, Yumbe, Arua, Koboko, Nyadri, and Nebbi; Mid-Western: Masindi, Bullisa, Hoima, Kibaale, Bundibugyo, Kabarole, Kasese, Kyenjojo and Kamwenge; South Western: Bushenyi, Rukungiri, Kanungu, Kabale, Kisoro, Mbarara, Ibanda, Isingiro, Kiruhura and Ntungamo; Mid-Eastern: Kapchorwa, Bukwa, Mbale, Bududa, Manafwa, Tororo, Butaleja, Sironko, Paliisa, Budaka and Busia; Central 1: Kalangala, Masaka, Mpigi, Rakai, Lyantonde, Sembabule and Wakiso; Central 2: Kayunga, Kiboga, Luwero, Nakaseke, Mubende, Mityana, Mukono and Nakasongola; East Central: Jinja, Iganga, Namutumba, Kamuli, Kaliro, Bugiri and Mayuge; and Kampala: Kampala district

**Conclusions and Future Research**

**References**

Fact fish, (2013), Uganda: Poverty headcount ratio at national poverty line (% of population), accessed on 28th May, 2013 from: <http://www.factfish.com/statistic-country/uganda/poverty%20headcount%20ratio%20at%20national%20poverty%20line>

UBOS – Uganda Bureau Of Statistics (2010), Uganda National Household Survey 2009/2010; Socio-Economic Module, UBOS, Kampala, Uganda