

Adjusting GiveDirectly transfers for inflation

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Background: GiveDirectly began making \$1000 USD transfers to poor, rural household around June 2011. Inflation in Kenya has been high and variable, and GiveDirectly wants to keep the purchasing power of the transfers the same.

Objective: Estimate new nominal transfer amounts that keep the real value of the \$1000 transfer the same, and provide a methodology to update amounts in the future.

Bottom line: My best estimate with available data is that if GiveDirectly wants to transfer the same purchasing power to households as it did with \$1000 USD in 6/2011 then it needs to give \$1,347.40 USD in 9/2014.

Methodology: Two pieces of data are needed to carry out the estimation: expenditure shares of program households and inflation for each expenditure category.

Ideally, we would have price data on a monthly, quarterly, or yearly basis on all categories of goods consumed by program households in their local economies (wherever households make purchases). I could not find this data for rural Western Kenya (it may be collected by the World Bank, and this would be worth checking into further). Absent that data, I used inflation figures from the Kenyan National Bureau of Statistics (KNBS) (http://www.knbs.or.ke/index.php?option=com_phocadownload&view=category&id=8&Itemid=509), which contains inflation rates for several broad categories of expenditure. The downside is that these figures represent an average urban consumer.

The CPI basket that KNBS identified reflects an urban consumer as well, and so is likely not a good representation of the rural GiveDirectly recipients. The best data we have on expenditure shares for GiveDirectly recipients comes from Haushofer and Shapiro (HS) 2013 (http://www.princeton.edu/~joha/publications/Haushofer_Shapiro_UCT_2013.pdf). Their Table 2 contains mean consumption amounts in dollars for control households. It's clear that rural households spend a higher percentage of their income on food, and less on things like rent, so using the rural consumption shares is important.

One could argue that it is more appropriate to base the inflation adjustment on the distribution of what households spent the transfer on (i.e., the treatment effects), and this data is available from the RCT in HS 2013. I did not do this, but it is

clear the estimates would not be too different since households spend the transfer in rough proportion to their pre-transfer distribution of expenditure. Certainly more could be done on this point if desired.

The consumption categories in HS don't match perfectly with those in the KNBS documents, but I matched as best I could. This procedure could be made more precise if we wanted (i.e., get more detailed/less aggregated consumption amounts from HS and the KNBS), but I suspect that this won't change the results much.

The attached spreadsheet calculates an index from June 2011 to September 2014 (the latest inflation data), and then applies it to a \$1000 transfer in June 2011 dollars. My best estimate with available data is that if GiveDirectly wants to transfer the same purchasing power as \$1000 USD could demand in 6/2011 then it needs to give \$1,347.40 USD in 9/2014. As new KNBS inflation figures come out, one can simply insert new columns into the spreadsheet and re-calculate the index.