THE CONSUMPTION, INCOME, AND WEALTH OF THE POOREST: CROSS-SECTIONAL FACTS OF RURAL AND URBAN SUB-SAHARAN AFRICA FOR MACROECONOMISTS

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The Consumption, Income, and Wealth of the Poorest: Cross-Sectional Facts of Rural and Urban Sub-Saharan Africa for Macroeconomists*

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Abstract

This paper provides new empirical insights on the joint distribution of consumption, income, and wealth (CIW) in three of the poorest countries in the world — Malawi, Tanzania, and Uganda — all located in sub-Saharan Africa (SSA). Our first finding is that while income inequality is similar to that of the United States, wealth inequality is barely one-third that of the US. Similarly, while the top of the income distribution (1-10%) earns a similar share of total income in SSA as in the United States, the share of total wealth accumulated by the income-rich in SSA is one-fifth of its US counterpart. Our main contribution is to i) document this dwarfed transmission from income to wealth, which suggests that SSA households face a larger inability to save and accumulate wealth compared with US households; and ii) document a lower transmission from income to consumption inequality, which suggests the presence of powerful institutions that favor consumption insurance in detriment of saving. These features are more relevant for rural areas, which represent roughly four-fifths of the total population. We identify the few successful pockets of the SSA population that are able to accumulate wealth by exploring sources of inequality such as age, education, migration, borrowing ability, and societal systems.

JEL: E20; E21; O10; O55; I32

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1 Introduction

Cross-sectional facts on the distribution of consumption, income, and wealth (CIW) are readily available for a large set of modern industrialized economies, see the special issue of the *Review of Economic Dynamics* on "Cross Sectional Facts for Macroeconomists" (Krueger et al. (2010)) and the more recent studies of Díaz-Giménez et al. (2011) and Piketty (2014). Such distributional facts have been extensively used to build and test macroeconomic theories that incorporate heterogeneous household saving behavior for the study of, almost invariably, rich economies (Heathcote et al. (2009)). For these macroeconomic frameworks to be useful in poor countries they need to be fully contextualized and informed by the behavior of households in these countries. Hence, a good understanding of household-level CIW inequality for poor countries is required and to date has been missing. The main contribution of this paper is to help close this gap by providing a careful and comprehensive dissection of CIW behavior in three of the poorest countries in the world in 2010 — Malawi, Tanzania and Uganda — using new and unique nationally representative data. To construct the whole distribution of CIW a series of technical issues had to be addressed: converting consumption from own production into kilograms, deseasonalizing consumption, and assigning a monetary value to the agricultural production that is not sold on the market.

To gain a perspective on the relative poverty of the countries investigated note that in 2010, income per capita was US$359 in Malawi, US$524 in Tanzania, and US$471 in Uganda. That is, our households live with country averages below (or close to) US$1 per capita per day, and less so in rural areas, where the overwhelming majority of the population lives: 84% in Malawi, 71% in Tanzania, and 85% in Uganda.[1] For comparison purposes, in Mexico, the poorest country studied in Krueger et al. (2010), the income per capita in 2010 was US$8,920 and the population living in rural areas was 22%. In Thailand, a country extensively investigated in the development literature, these figures were US$4,802 and 56% respectively.

Our main finding is a large and widespread inability to accumulate wealth in both rural and, to a lesser extent, urban areas of sub-Saharan Africa (SSA). First, while income dispersion in SSA is of similar magnitude to that of the US and Europe, wealth inequality in SSA is close to one-third that of the US.[2] Further, while the transmission from income to wealth inequality is not apparent from the separate inspection of their respective distributions, our study of the joint behavior of income and wealth suggests a substantially lower transmission in SSA than in the

[1] Indeed, Malawi is currently the poorest country in the world in terms of income per capita according to the 2014 World Development Indicators (World Bank). Malawi has been disputing this unfortunate position over the past 10 years with the Democratic Republic of Congo and Niger, also sub-Saharan African countries.

[2] For these cross-sectional comparisons between SSA and the US we largely draw from the US statistics reported in Díaz-Giménez et al. (2011) and Piketty (2014).

US. This phenomenon is clearly starker in the rural areas than in the urban areas of SSA: we find that the top 1% income-richest households in rural and urban SSA, respectively, hold 4% of total wealth in rural areas and 11% in urban areas, while this figure is 26% in the United States.[3] That is, the income-richest households in rural SSA accumulate only as much as 15% of the share of total wealth that the income-richest US households are able to accumulate in terms of US wealth. The equivalent figure for urban areas in SSA is 46%, which also suggests a reduced ability to accumulate wealth in SSA than in the US. The behavior of the joint density of income and wealth strengthens this message as we find significant positive correlations between income and wealth only for the top 20% of the income distribution. The correlation is stronger in urban areas, 0.30, than in rural areas, 0.12, while this figure is much larger, 0.57, for the entire US economy.

The direct exploration of household saving provides further insights. We find that only households in the top 1% and 5% of the income distribution in rural and urban areas are able to save, and they do so with high saving rates similar to those of the top income earners in the US. One way to relate this finding (i.e., saving rates similar to those in the US for the top income earners in SSA) with the result discussed in the previous paragraph (i.e., lower share of total wealth held by the top income earners in SSA than in the US) is through the lesser persistence of high income in SSA than in the US. Indeed, we find that within a span of four years, 51% of rural households at the top quintile of the income distribution fall to a lower quintile, as do 46% of urban households, while this figure is only 23% in the US.[4] That is, households in the top quintile of the income distribution in SSA leave that quintile twice as fast as their counterparts in the US, and this downward mobility occurs somewhat faster in rural than urban areas. This lesser persistence of high income — and hence, of saving — helps to explain the low transmission from income to wealth and the low wealth accumulation in SSA compared with that in the US, even for the top income earners who actually save.

Interestingly, despite the generalized inability to save that we find in SSA, we find a concurrent lower transmission from income to consumption inequality in SSA than in the United States. Precisely, economy-wide, the inequality of consumption is 47% that of income (in terms of the variance in logs). The figure for the United States is larger, roughly 55% (Blundell et al. (2008)). Furthermore, the joint density of consumption and income implies a correlation between consumption and income of 0.30 in rural areas and 0.53 in urban areas, suggesting that this insurability of consumption is larger in rural areas than in urban areas. Combining our two findings — lower transmission from income inequality to both wealth inequality and consumption

[3] For brevity, the precise numbers reported in the introduction refer to Malawi.

[4] We use data from Uganda for these mobility statistics, as it has a panel component not available for Malawi.

inequality in SSA than in the US — suggests that the greater ability to contain the dispersion in consumption in SSA compared with the US must occur through insurance mechanisms other than self-insurance (i.e., own savings).

The higher ability to insure in rural areas is further revealed from direct evidence on self-reported information about shocks, coping strategies, and ability to borrow. Among rural households 71% report being hit by a shock in the past 12 months (most commonly weather-related shocks), and among urban households 39% report a shock (most commonly high food prices). Despite the higher occurrence of shocks in rural areas, of the rural households that report a shock, 51% have some form of insurance to cope with the shock, while this figure is smaller in urban areas, 40%. The ability to insure consumption can also depend on the ability to borrow. In this case, conditional on needing a loan, urban households show higher application rates, 40%, than rural households, 27%.[5] While this urban-rural differential in the ability to borrow suggests urban households might be better able to self-insure, we note that in urban areas borrowing is used 3.6 times more often for start-up capital than for consumption, while this ratio is 1.6 for rural areas. This suggests that such borrowing is used mostly for production and not necessarily for consumption insurance.

In decomposing CIW we find unambiguous signs of a subsistence economy where food consumption requirements can severely limit the ability to save. Specifically, the share of food in total consumption is above 50% throughout the income distribution, except for the top 1% in rural areas and the top 5% in urban areas. Coincidentally, these two groups are the only ones with positive saving rates across the income distribution. The composition of income (mostly agricultural) in rural areas also points towards a subsistence economy. Only in the top 1% of the income distribution in rural areas does the share of agricultural income fall below 50%. The similarity in the wealth portfolio across income groups (except for the top 1%) further reflects an inability to accumulate wealth. The only components of wealth that show signs of accumulation are livestock and non-housing durables.

While the overall power to accumulate wealth is dismal in the SSA countries we consider, the examination of cross-sectional sources of inequality allows us to identify pockets of wealth accumulation. First, over the life cycle, wealth in the rural areas of SSA (i.e., mostly land) follows a hump pattern that increases, in Malawi, by a factor of 2.65, while this increase is by a factor of 7.13 in urban areas, further suggesting a greater ability to accumulate wealth in urban areas than in rural areas. However, again, even the urban increase is small compared to the life cycle behavior of wealth in the United States that increases by a factor of roughly 20. Second, we find

[5] As we discuss below, these figures deal directly with self-selection as households are asked whether they needed a loan and whether they applied or not, independently of the need.

that while education tends to allow for more income and consumption, it does not necessarily imply higher wealth accumulation, particularly in rural areas. In contrast, in urban areas, the more-educated households (i.e., "secondary education or more") are overrepresented in the top 1% of the wealth distribution. Indeed, only the more-educated urban households have positive savings on average. Third, CIW averages in rural areas and urban areas are very similar across countries. The large discrepancy is between CIW averages between rural and urban areas. Indeed, the difference in average CIW between rural and urban areas is an order of magnitude larger than the difference in average CIW across countries. Such large differences should trigger important rural-to-urban migration flows, which we do observe as 60% of current urban household heads report having migrated from rural areas. We find that while rural-to-urban migration improves their consumption and income, we also find that rural-to-urban migrants are not better able to accumulate wealth than the local households in the hosting urban region. The only migration group with a positive saving rate is the one formed by urban-to-urban migrants, who represent 18% of the urban population. Finally, we find that the ability to accumulate wealth can also be related to gender and to the particular societal systems a household belongs to (i.e. matrilineal or patrilineal). In particular, for Malawi, the only group with average positive savings is the the one formed by matrilineal households in urban areas in the center of the country.

Our paper relates to a vast literature in development economics. First, our results on the inability to save and accumulate wealth in Malawi, Tanzania, and Uganda are directly related to the experimental results in Dupas and Robinson (2013a,b) for Kenya on savings constraints.[6] Similar to Rosenzweig and Wolpin (1993) findings for India, we find that the households in rural areas of East Africa that save do so in livestock and other nonhousing durables. This may be due to a lack of alternative saving options. Second, in terms of consumption insurance, Townsend (1994) and Udry (1994) suggest the presence, respectively, of informal arrangements in villages in India and northern Nigeria. These results confirm our findings of a weaker transmission from consumption to income inequality in SSA than in the United States, and in rural rather than urban areas. The phenomenon that the ability to insure consumption is stronger in rural areas than in urban areas has been previously explored in Morten (2013) and Munshi and Rosenzweig (2014) for India, and in Santaeulàlia-Llopis and Zheng (2015) for China. Two aspects set our work apart from previous studies. The first is the use of nationally representative data, which is a natural approach from our macroeconomic perspective. The second, and most important, is that we can establish the joint behavior of the triplet of CIW and document — as far as we know for the first time — the joint phenomenon of a low ability to accumulate wealth (i.e., generate growth in the economy) and a low transmission from income to consumption (i.e., a high ability

[6] See also the recent review in Karlan et al. (2014).

to insure consumption).

The rest of the paper is sectioned as follows. In Section 2, we provide a full account of the data construction. In Section 3, we discuss in detail the distributional facts of CIW for Malawi, Tanzania, and Uganda, with more emphasis on Malawi. The emphasis on Malawi is due to the sample size being four times larger and the data more detailed than for the other two countries. The corresponding tables for Tanzania and Uganda are available in the online appendix. In Section 4, we decompose the consumption basket, the income sources, and the wealth portfolio in rural and urban areas. In Section 5, we investigate the sources of inequality and identify pockets of the population with positive savings. In Section 6, we explore economic mobility using panel information for Uganda in 2005 and 2009. We conclude in Section 7.

2 ISA Data and Measurement Issues

The Integrated Surveys on Agriculture (ISA) are conducted under the umbrella of the Living Standards Measurement Study (LSMS). ISAs greatly improve previous LSMS household surveys in use for decades. In particular, ISAs are unique in the level of detail in CIW for households that make their living through agriculture. The ISAs allow us to recover — for any practical purpose —the entire deseasonalized household-level budget constraint in a set of the poorest countries of SSA.[7] However, in addition to the ISA improvements in data collection and availability, a correct measurement of CIW requires further adjustments. In particular, due to the importance of agricultural production, estimating the monetary value of income and consumption requires us to convert physical units in which production and consumption are reported into a single unit, assign prices to items that are produced by the household for own consumption, and deseasonalize consumption. As we show, the choice of which price to use to value non-sold production — either the price at the gate (i.e., production price) or consumption price — can have large impacts on the estimated monetary values of agricultural production.

2.1 Units Conversion of In-Kind Items: From Pails to Kilograms

In household surveys from poor countries, it is standard to report amounts of consumption (including from own production), production (mainly agricultural) and additional sources of income (e.g., gifts and transfers) in units that are not necessarily harmonized across time or space. For example, in the Malawi ISA, households are asked to report the amount they produce of a given item in any unit they wish, and this varies from bags, dishes, bunches, and pails, to kilograms

[7] To the best of our knowledge, the availability of the CIW triplet is rather unique as these three items are not supplied at the same time by any other single dataset, not even in developed countries. See also the discussion in Heathcote et al. (2009).

(kg). It is then necessary to deal with the measurement issue of converting all these reported units into a single unit, say kilograms.[8]

Here, we use a simple price-unit conversion method separately for production and consumption. In terms of production, this method uses the information on prices from households that produce a given item and at the same time sell the same item in different units.[9] We use the median unit price for a given sold item in a given region, residential area, and season to generate household-specific conversion rates. We merge all household-specific conversion rates from all regions, residential areas, and seasons for 2004-05 and 2010-11. Then, we pick the median conversion rate (if there are at least 7 household specific conversion rates) for each item-unit pair (i.e., conversion rates are item-specific). With the resulting conversion rates, items are first converted into the modal unit, and then into kilograms. In terms of consumption, we proceed similarly, using the information on prices from households that consume a given item and also report bought quantities of the same item in different units. Finally, we need to attribute prices to these quantities. To measure both household production and consumption (that includes own produced and gifts that are collected in in-kind units) we use the median consumption prices in a given season-region separately for rural and urban areas, a matter that is discussed in more detail in the next section.

While agricultural production is reported in annual terms through the recollection of the harvest output from the last dry and rainy seasons separately,[10] food consumption is reported with a weekly recall (i.e., seven days before the interview). This introduces an artificial seasonal component to the measurement of consumption that needs to be netted out. Indeed, Malawi, Tanzania, and Uganda have clearly demarcated lean and plenty seasons that largely determine food consumption; that is, seasonality is crucial to understanding consumption behavior. One of the improvements of the ISAs is that data collection is rolled out throughout the entire year. This means that we can remove month effects with two year-month observations. Here, we use the deseasonalized consumption measures computed in such manner from De Magalhães et al. (2015), who find that the amount of consumption in the pre-harvest month of March is 0.4 log

[8] For Tanzania and Uganda unit-conversion rates are not necessary as in Tanzania all quantities are reported in kilograms and in Uganda households provide unit-conversion rates (we use the median for a given region and season). This does not mean that households report in kilograms, but that under several procedures, interviewers transform all units into kilograms.

[9] For more details, see De Magalhães et al. (2015). There we show that this price-unit conversion method is able to recover more item-unit pairs and has similar precision as the standard market surveys conducted on the field that weighs produce in local markets to obtain physical-unit conversion. This is important because market surveys are costly in monetary terms and are usually not rolled out throughout the year (e.g., the market survey for Malawi in 2014). However, the conversion units might differ across months during the year, as the same crop may have different kilogram weights in two different harvests.

[10] This information is stored in separate submodules of the agriculture module. A submodule for a permanent crop season is also provided.

points below the annual average in Malawi.[11]

2.2 Unsold Agricultural Production and Extended Household Income

The extraordinarily detailed information on agricultural production is one of the most novel aspects of the ISAs. The new agricultural modules substantially extend previous LSMS surveys. The correct account of agricultural production (and income) has proven difficult in the past, as in such settings most rural households represent small-scale farms that sell only a small fraction of what they produce in the open market. ISAs provide detailed collection of agricultural production (separately for each main harvest season, including permanent crops) and their costs (including rentals of capital equipment and structures), fishery production and their costs, as well as business income, wages, and informal sources of revenue (e.g., "ganyu" in Malawi). Agricultural information is available mostly at the plot level (household may farm non-contiguous plots), and fishery and business income are available at the household level. Information on wages for each type of formal and informal activity are available for each and all members in the household (not only husbands and wives). This set of information allows us to construct precise extended-household income measures.

2.2.1 Unsold Agricultural Production

In very poor agricultural economies such as the ones we study, assigning a monetary value to unsold agricultural production is essential to the measurement of household income. The reason is that unsold production represents the majority of total household production. We use maize in Malawi to illustrate this issue. First, we convert maize production into the same units to find that maize represents 69% of the total agricultural production in kilograms. Most households produce maize as their main source of food and calorie intake,[12] but few sell it. Of the 9,280 households in the Malawi survey who report producing maize, only 1,618 (17%) report selling any maize. Among the top 20% of the income distribution in rural areas, 30% of households report selling maize; among the bottom 20%, only 6% sell maize. It is noteworthy that even the rich keep their own production for consumption. Moreover, sales among the poor may indicate desperation rather than a good business strategy.[13]

[11] There, we further show that consumption measures that are not deseasonalized tend to underestimate inequality. We use the Integrated Household Survey of 2004-05 (also rolled over the entire year) as the second year-month observation to deseasonalize consumption for Malawi. For Tanzania, we use the ISA 2008 and for Uganda, the ISA 2005.

[12] See the Malawi Bioenergy and Food Security country brief by the United Nations Food and Agriculture Organization.

[13] See Manda (2010).

Second, we need to assign prices to unsold production. The price at the gate is normally used for this purpose (Deaton and Zaidi (2002)). For valuing maize, this implies using the price of shelled maize reported by households mostly in the immediate post-harvest season. There are two reasons this price underestimates the value of unsold production. The shelled maize is a different good than what farmers produce, as farmers use the cobs, husks, and stems for other intermediate purposes such as fuel and animal feed, and such uses have an important monetary value in subsistence households. Further, maize prices are lowest immediately after harvest (see Kaminski et al. (2014)), whereas consumption takes place throughout the year. While the storage possibilities are limited,[14] almost all households report storing some maize for their own use later. That is, maize has an additional value when consumed when the consumption prices are high, and this option value is not captured by the post-harvest price at the gate.

The underestimation of the value of production by the use of the price at the gate can be illustrated by focusing on rural households that sell neither maize nor tobacco, tobacco being the main cash crop.[15] These are the households closest to an autarkic model, in which the maize they consume is what they have produced. In this sample, the mean estimated quantity of maize produced is 124 kg and the mean estimated quantity of maize consumed is 130 kg.[16] The small 6-kg difference between production and consumption represents their total purchases (or gifts). This comparison is just an illustration as the maize produced is reported in shelled maize and the maize consumed is mostly reported as flour or green maize (i.e., maize on the cob). Nevertheless, since the quantities of production and consumption are similar, it becomes clear that assigning prices at the gate to production and consumption prices to consumption can create an artificial wedge between their monetary values if these two prices differ. Indeed, the price of shelled maize at the gate for these households is approximately US$0.16 per kg, and the consumption price of green maize on the cob is approximately US$0.36 per kg.[17] If we use the price at the gate, the average estimated production value is US$22, which is less than half of the average consumption value, US$47. That is, the price at the gate underestimates the value of unsold production.

In Figure 1 we compare the distribution of the monetary value in dollars of household total food consumption in logs (dotted line) with the value of household agricultural production valued with consumption prices (dashed line) and valued with the price at the gate (solid line). Since we

[14] Only 9% of households have a dedicated storage structure; most crops are stored in the house or in open drums or sacks.

[15] The sample includes 4,384 households that sell neither maize nor tobacco and report producing a positive value of maize and consuming a positive value of home-produced maize. These households represent 36% of the entire sample and 45% of all rural households.

[16] For the entire sample of rural households, these numbers are, respectively, 129 kg and 137 kg.

[17] We use the following exchange rates for 1US$ in March 2010: Malawi, 152; Tanzania, 1,350; and Uganda, 2,110.

are focusing on households that sell neither tobacco nor maize and these are rural households close to subsistence, one would expect the distribution of agricultural production and food to overlap. This is actually the case in raw quantities and, hence, also the case if we value home production with consumption prices. However, if we value production with prices at the gate, the total value of food production is estimated to be considerably lower than food consumption.[18] Even if we value production with consumption prices, the distribution of the value of food production is slightly shifted left in relation to consumption. This is to be expected as these households may have other sources of income, albeit small, such as informal labor and business. In light of our results, it is our view that the shadow price of unsold agricultural production is best captured by consumption prices.

Finally, the remaining issue is how to value the part of agricultural production that is actually sold on the open market. We have chosen to use the price at the gate to value sold production as sold items lose their storage value for the producer household, but this is of relatively small consequence given the low share of sold production in the sample. The estimated average per capita value of maize production for the sample of all rural households is US$101 under our preferred measure — that is, if we use consumption prices for the unsold production and prices at the gate for the sold production. This figure is US$109 if we use the consumption price for all production, sold and unsold.

2.2.2 Extended Household Income

The main resource in rural areas is agricultural production. Production is reported by crops per plot and by season (rainy season, dry season, and permanent crop). After converting unsold production into the same physical units and assigning prices to it as described in the previous section, we can measure the entire agricultural production, sold and unsold, in monetary terms, which is household agricultural income. In our computations, we use net measures of income and subtract the full set of production costs from intermediate inputs (seeds and fertilizers), rental cost of plots, rental costs of capital equipment and structures, hired labor, and transportation costs associated with inputs purchases and production sales.[19] Note that in net agricultural income

[18] That is, the consumption price is higher than the price at the gate, and it should be so, as in addition to the value of the other parts of the plant that are not eaten, it includes the storage value for future consumption, or barter. This is also reflected in the change of consumption prices across seasons. Even market prices for shelled maize (sold in bulk) are approximately 40% higher in the lean pre-harvest season compared with the immediate post-harvest prices; see Kaminski et al. (2014). It is our view that the shadow price of unsold maize is best captured by the *consumption* price of green maize (maize on the cob), as this is the closest to the produce that is actually consumed by the household. For other food items that do not store well or that do not produce valuable by-products, this difference between the consumption price and the price at the gate should be less than for maize.

[19] In Malawi, the majority of households receive seed and fertilizer subsidies by the Farm Inputs Subsidy Program. We use the subsidized (coupon) prices reported by each household.

we include the contribution of household labor to agricultural production.[20] Livestock sales and animal produce are also reported for the past 12 months, and we include this in agricultural income after netting out their associated costs (e.g., animal feed, vaccinations, veterinary services, and hired labor). As in the previous section, we include in agricultural income the value of livestock produce that is not sold.

Labor income is reported by occupation (main, secondary, and informal). For each activity there is information on the average hours worked per day, average days worked per week, and number of weeks worked per year. This allows for an estimate of yearly labor supply.[21] Wages are reported by activity but potentially in different units of time, mostly on a monthly basis for those with steady labor income (specially in urban areas), and on a weekly or daily basis for those working on ganyu or informal activities (e.g., landowners' seasonal labor supply outside their own farm in the lean season). Wage payments include salaries plus additional allowances. These allowances could be in kind (mostly in maize) but are reported in monetary value. By combining the wages and the labor supply in a consistent unit of time we build an estimate for annual labor income for all individuals in the household. By summing individual labor income of all members within households we construct a measure of annual household labor income.

We define annual household business net income using information from all enterprises owned by the household.[22] For each enterprise we compute net income as total annual sales minus costs. In the Malawi ISA, households report the average net income for a bad, standard, and good month. Households are then asked how many of each type of month occurred in the past year. In Uganda, households report both gross income and costs. In Tanzania households report net income directly.[23]

Fishing net income (by fish species) is also collected. These are provided separately for each of the two landing seasons in a year, high and low. We transform the total quantity per species in kilograms depending on the units reported and the form of packaging, which we use to value

[20] This is innocuous for our purposes of measuring household income because the labor income generated by household members in agricultural production is also part of household income. Under some assumptions, this labor income can be separated from net profits, but this is beyond the scope of our paper.

[21] Previous LSMS datasets provide information on labor supply with the reference period of "the past 7 days". ISAs complement that information with recalled hours worked per day, week, and month over the past 12 months, which greatly facilitates the determination of the annualized labor supply. In particular, this avoids potential measurement error from labor supply seasonality. See Rosenzweig and Udry (2014) for a discussion on how wages are affected by seasonal weather patterns.

[22] Privately held businesses per household (potentially more than one) include owned nonagricultural businesses that process/sell agricultural byproducts (e.g. flour, juice, beer, jam, oil, seed, and livestock by-products), sales of forest-based products, street or market trading businesses, taxi or pickup truck drivers, bar/restaurants, professional services (e.g., doctor, accountant, lawyer, and midwife) etc..

[23] As was the case for agricultural net income, business net income includes the contribution of household labor to household businesses.

sold and unsold production. We net fishing income from intermediate input costs such as rented gears (e.g., mosquito nets, beach seine, long/hand line, gillnet, fish traps), rented boats/engines, fuel, oil, and maintenance, hired labor salaries and other in-kind payments.

Household annual capital income includes net interest income, pension income, rental income from nonagricultural land rental; apartment and/or house rental; shop and/or store rental; car and/or truck, other vehicle rental; capital gains (including sales) from real estate; nonagricultural asset sales; agricultural/fishing asset sales; and other income from inheritance, lottery, or gambling winnings. This information is available for the past 12 months. We include in capital income agricultural land rentals (per season) and income from renting fishing equipment (gears). As we describe in the next section, despite the level of detail, household capital income is negligible compared with other sources of income.

Finally, household annual net transfers are defined as income transfers/gifts received from rural areas/urban areas/other countries minus income transfers/gifts given in the past 12 months. Further, the value of received aid (e.g., free maize, other free food, food/cash-for-work programs such as Malawi Social Action Fund or Public Works Program) provided by social safety nets is added to transfers received. The survey also records remittances in cash received from children 15 years of age or older who no longer live in the household. Neither the Tanzania nor Uganda ISAs have a specific question on in-kind food transfers received by the household. The Malawi survey has such a question, but less than 20% of households report receiving in-kind food transfers in the past 12 months. Nevertheless, in the consumption questionnaire a much higher proportion of households report eating food gifts in the past 7 days. In this 7-day recall data, 62%, 41%, and 25% of households, respectively, in Malawi, Tanzania, and Uganda report consuming food gifts. We therefore include food gifts (deseasonalized and annualized) in our definition of disposable income. In Malawi, we can compare the contribution of this source of income with other reported transfers. Food gifts represent approximately 6% of total disposable income and dwarfs the 1% contribution of net transfers in Malawi.[24]

2.3 Wealth and Its Portfolio

Our definition of wealth (i.e., net worth) includes land, housing, livestock, agricultural equipment and structures (e.g., tools and barns), fishing equipment, other durables (e.g, cars, furniture, and household electrical appliances), minus debt.[25] The main difference between ISAs and previous LSMS surveys is that in ISAs the quality of capital and its depreciation is measured in a straightforward way by asking: *"How much would you get for this piece of equipment if you sold it now?"*

[24] See further details on the computation of household income in Appendix Section A.3.

[25] A detailed construction of our wealth measures is available in Appendix Section A.4.

This selling price accounts for capital quality and depreciation and avoids the alternative use of the age of the assets (with potential recall error) plus assumptions on the depreciation factor to impute the current value of capital (see Deaton (1997)). While we prefer the use of the selling price, this is not without potential measurement error, particularly for assets such as land, for which the market is largely underdeveloped (an issue that we discuss next).[26]

The most important components of wealth are land and house values, which are self-reported. This poses a potential measurement problem, particularly for land, which is only partially marketized in rural areas. For example, in the 2010 survey in Malawi households are asked to provide an estimate of the value of their land and all households do so, but more than four-fifths of households live in areas where no market for land operates (see Restuccia and Santaeulàlia-Llopis (2015)). Most land is either granted by a village chief, inherited, or obtained as bride price.[27]

The valuation of land is available for all three countries, Malawi, Tanzania, and Uganda. We find the price of land varies considerably across countries. In Malawi, the median and mean prices of an acre are, respectively , US$214 and 473. In Tanzania, the price distribution is much wider, the median and the mean are, respectively, US$136 and 1,762. In Uganda, prices are consistently higher; the median and mean are, respectively, US$ 582 and 1,811. Some of these differences in prices may be driven by differences in land quality. In Uganda and in the north of Tanzania, there are two rain-seasons, the territory is hillier, and there is access to Lake Victoria; the staple crops are also more varied. The average price of land in northern Tanzania, US$2,463 per acre, is similar to Uganda's. In south-west Tanzania the land and climate are similar to those in Malawi (e.g., there is one rain-season and the main crop is maize). The average price of land in southern Tanzania, US$ 255 per acre, is closer to Malawi's. It is reassuring that land quality and prices are correlated as this suggests that price differences tend to capture genuine variation.

For Malawi, Restuccia and Santaeulàlia-Llopis (2015) show that the correlation between land quality (at the plot level) and its price is positive and increasing with the amount of marketed land. For instance, for rural households that do not operate any plot obtained through the market, the effects of land quality on land price is a significant .116, while for rural households that operated purchased land (with title), this figure increases to .503. Analogously, the difference

[26] An alternative to measure wealth is the construction of an asset index based on *"yes/no"* answers to questions about the ownership of each individual asset. However, note that an index cannot be measured in the same units as consumption and income, which limits the comparison between wealth and the remaining economic variables discussed here. Further, an asset index misses some informative aspects of quintile analysis such as the measurement of how much wealth is held by any given proportion of the population (e.g., the top 1% wealth-rich), which we pursue in detail.

[27] In the 2004 survey in Malawi, households are first asked whether there is a market for land in their area; only if the answer is "yes" are they then asked to provide an estimate for land value. We find that 83.0% of households report there is no market for land.

in the reported price of land across countries might also be due, in part, to differences in market development. In Uganda, on the other hand, in 1998 the government enacted the Land Act with the explicit aim of turning dwellers on land held under customary tenure into freeholders. Even if the policy was not fully successful (see McAuslan (2003)), the development of a land market in Uganda may help explain the disparity in valuations compared with Malawi. This issue deserves further attention beyond the scope of this paper. Nevertheless, we should keep the issue of land markets (or lack thereof) in mind when comparing the reported monetary value of land, hence, wealth — across poor countries.

Finally, we also note that the survey for Uganda does not report the value of outstanding debt, whereas the surveys for Malawi and Tanzania do so. While debt is a minor component of net worth in Malawi and Tanzania, Uganda's wealth measure is likely to be overestimated for this reason. Also, the survey for Tanzania does not report the value of housing; thus, the monetary value of wealth reported for Tanzania is likely to be underestimated, particularly for urban areas.

2.4 Further Measurement Issues

An important feature of the ISAs is that they are not top coded and there are very few missing observations. Our understanding from discussions with the World Bank survey managers is that the surveys were conducted in conjunction with national statistics offices. Ground staff were provided with official government identification badges and respondents understood the survey to be official government business. While this largely resolves survey response biases, the quality of the data merits further scrutiny. Previously, we discussed two potential sources of measurement error of annual quantities and our efforts to mitigate their effects: (i) deseasonalizing consumption (see Section 2.1) and (ii) comparing our monetary measures of wealth with physical measures (i.e., acres for land) to overcome the presence of underdeveloped markets for assets, particularly for land (see Section 2.3).

Food consumption is the lion's share of household consumption in our settings and hence, this measurement is perhaps the most important aspect of consumption. The ISA collection of food consumption is based on a 7-day recall questionnaire. These short-recall periods tend to yield better consumption measures (Beegle et al. (2012)),[28] but at a cost. Given that ISAs are spread over 12 months, the surveys will do a good job in recovering average food consumption in the population, but they will potentially do a poor job in measuring annual dispersion as part of this dispersion will be artificially due to seasonal variation. This shortcoming can easily be dealt with using standard deseasonalization techniques (see Section 2.1). Measurement error for

[28] See also Gibson et al. (2014).

other types of consumption, particularly information on durables collected with 12 month recall, is potentially still present, although we note that durable consumption represents a minor share of total consumption (4% in rural areas and 6% in urban areas; see below).

Income is based on recall of the entire production per crop and plot for the past two harvests. The harvest referred to in the questionnaire may have taken place months earlier. We conduct robustness testing for potential recollection bias for production using measures of household income only for those households interviewed within 3 months after the rainy season harvest has been completed (May, June, July); the mean and median of total agricultural production in kilograms is virtually identical for these three months and for the yearly values. The rainy season represents 93% of total agricultural production. In addition to potential recall bias in agricultural production, the underreporting of income is a recurrent issue in household surveys in both rich and poor countries (Deaton (1997)). This is potentially more stringent for the self-employed and, hence, of particular relevance for our rural settings, where most households operate as farms. In this context, it is reassuring that when we focus on rural households that we can categorize as autarkic (i.e, with no production sales) the reported agricultural production (with potentially months of recall bias) and the reported annualized consumption imply very similar quantities (see Section 2.2.1). That is, if we use the measure of food consumption from own production as external validation for our measure of agricultural production, we find only a small scope for measurement error in the ISA's agricultural production (from recall or elsewhere). Further, in many instances surveys provide checks for internal consistency. For example, interviewees are asked about both total sales, and also sales by crop. The interviewer then must check in situ that the sum of the crops coincides with the total or otherwise reinterview. This design is not applied to nonfarm business income. Hence, the problem of underestimating income potentially persists, in particular, for those households with a large proportion of business income (i.e., urban areas).

Finally, our trimming strategy consists of two steps that mitigate the presence of outliers. As a first step, we exclude households with zero calorie consumption or with an intake per person above the maximum daily of 10,000 Kcal.[29] As a second step, we trim clear outliers after a visual inspection by subitems and then by aggregated measures. We finalize with an implied trimming of 2% of households for Malawi and Tanzania and 4% for Uganda.[30] The final samples for Malawi, Tanzania, and Uganda include, respectively, 12,015, 3,012, and 2,337 households.

[29] We describe in detail how we construct caloric intake in De Magalhães et al. (2015).

[30] The 2010 surveys for Tanzania and Uganda are the second waves of panel surveys. Splitter households were dropped to compute the tables in this paper and are not accounted for in the percentage of trimming reported.

2.5 Household Survey Data vs. National accounts

Table 1 compares our household survey data from ISAs with the national accounts data for 2010 from the World Development Indicators at the World Bank database. The national accounts figures are reported in panel (a), and the mean income and consumption per capita computed with the ISA household survey data adjusted as described in this Section are reported in panel (b). Focusing on Malawi, we find that the mean income per capita from our household survey data is US$343, which is very close to the national accounts number of US$359. However, note that the composition of income as estimated by the household survey implies that agricultural ouptut represents 43% of total income, while this figure is solely 29% in the national accounts. Further, also note that in Section 2.2 we showed that ISAs do an excellent job of measuring unsold agricultural production. Combining these two findings suggests that national accounts are underestimating agricultural income by 41% in Malawi.[31] After such an adjustment, the national accounts estimate would result in a higher income than the household survey estimate. This then also implies that, if the national accounts are doing a good job in measuring nonagricultural income, the household survey is potentially underestimating (or not observing) some component of nonagricultural income. For example, illegal income from the diversion of international aid (e.g., in the form of bribes) could potentially account for some of this discrepancy.[32] Finally, while in Tanzania the household survey estimates of mean income are lower than those from the national accounts, in Uganda the household survey estimates and national accounts are not significantly different. Further, in Tanzania and Uganda the household survey measures of agricultural income are similar to the national accounts counterparts.[33]

The main disparity between the household survey and the national accounts estimates is found in consumption. The ISA estimates of consumption per capita are higher than the national accounts estimates for all three countries. But, in fact, the high quality of consumption data in the household survey is consistent with the value of consumption per capita being higher in household survey data than in the national accounts.[34] For example, the national accounts are likely to underestimate the value of consumption from own agricultural production, which we

[31] That is, the ratio between the agricultural income from the household surey and the national accounts is, US$343×0.43/US$359×0.29=1.41.

[32] The reason is that international aid shows up in national accounts but not necessarily in household survey data. See, for example, the cashgate scandal covered by The Guardian, http://www.theguardian.com/global-development/2014/nov/11/malawi-official-jailed-cashgate-scandal-aid. This way, it is likely that the household survey will capture some, but not all, of the international aid, which according to WDI represents 26% of the total income in Malawi in 2010.

[33] The ratio between the agricultural income from the household survey and the national accounts is, US$378×0.34/US$524×0.28=0.87 for Tanzania and US$509×0.28/US$471×0.25=0.99 for Uganda.

[34] ISA provides close to gold standard measures are based in short-recall periods (Deaton (1997) and Gibson et al. (2014)), see our discussion Section 2.

estimate to be 20% of total consumption from the household survey data in Malawi. This suggests that national accounts might not only be underestimating consumption growth, as suggested in Young (2012), but also the consumption level.[35] The ranking of consumption across countries is maintained in the macro and the micro data: Malawi is the poorest, following Tanzania, and Uganda.

3 Cross-Sectional Inequality in sub-Saharan Africa

Here we investigate the distributions of CIW separately for the rural and urban areas of Malawi, Tanzania, and Uganda. First, we investigate the level and distributional behavior of CIW in Section 3.1. Second, we explore the behavior of saving rates and CIW conditional on income in Section 3.2. Third, we study the top and bottom of the distributions and their respective welfare in Section 3.4.

3.1 Rural and Urban Differences in Levels and Inequality

We present the mean for CIW split between rural and urban areas in Table 2. We find that differences in the levels of income and consumption between rural and urban areas are an order of magnitude larger than the differences across these countries. Across rural areas, the largest difference in mean per capita consumption is between Tanzania (US$280) and Uganda (US$321) — a 15% difference[36]— while the mean per capita consumption in Malawi is US$297. The largest difference in mean income per capita in rural areas is between Tanzania (US$221) and Malawi (US$246) — an 11% difference.[37] In contrast, in urban areas, mean per capita consumption and income in urban Malawi is, respectively, US$648 and US$618, which implies a difference of 118% and 151%, respectively, compared with its rural Malawi counterparts. The magnitude of the difference between rural and urban areas is even higher for Tanzania and Uganda. In all, the rural-urban gap in consumption and income within countries is at least 10 times larger than the country differences across Malawi, Tanzania, and Uganda.[38]

[35] However, note that our measure of consumption is entirely different from that in Young (2012), who uses the ownership durables (and other education and health measures) to proxy for real consumption. We use actual consumption data.

[36] These two estimates are statistically different. The confidence intervals are, respectively, [US$271; US$290] and [US$299;US$343].

[37] The respective confidence intervals are [US$203; US$239] and [US$236; US$256].

[38] In more detail, urban Malawi and Tanzania have virtually identical per capita consumption — respectively, US$648 and US$641 — and very similar income — respectively, US$618 and US$578. Neither comparison is statistically different. Moreover, the composition of income and consumption is also very similar (see Table 2). In rural areas, agricultural income represents more than 50% of total income, followed by labor and then business. In urban areas, labor represents more than 50% of total income followed by business and agriculture. In contrast, Uganda is relatively different from Malawi and Tanzania. Even though the estimated income per capita in

While the differences in the level of CIW between rural and urban areas are perhaps well understood, whether distributional differences exist across rural and areas is a lesser-understood phenomenon. We find that inequality is higher in urban areas than in rural areas (see Table 3). This is true for the triplet of CIW in all three countries.

Focusing on consumption, we find that the log variance in rural areas is 0.49 in both Malawi and Tanzania, which is lower than their respective variances 0.59 and 0.60 in urban areas. That is, consumption is more unequal in urban areas than in rural areas, by roughly a factor of 1.20 for Malawi and Tanzania. The similarity between the shape of the entire distribution of consumption in Malawi and Tanzania can also be seen in Figure 2. In Uganda, consumption inequality is roughly 70% larger than in Malawi and Tanzania in both rural and urban areas.[39] Hence, as in Malawi and Tanzania, urban consumption inequality in Uganda is roughly 1.26 times larger than in its rural areas.

The variance of logged income varies across all three countries; Malawi has the lowest inequality (rural: 0.99 and urban: 1.60), following by Tanzania (1.44 and 1.90) and Uganda (1.67 and 2.01). Income is also more unequal in urban areas than in rural areas, by a factor of 1.6 for Malawi (i.e., a larger factorial rural-urban difference in log variances than that of consumption inequality, 1.2). Further, the inequality of income is larger than that of consumption in both rural and urban areas, indicating a substantial degree of partial insurance. Precisely, the log variance of consumption is between 32% and 50% of the log variance of income across countries and residency areas.

Finally, wealth inequality is larger than income and, hence, consumption inequality. This can also be observed in Figure 2; the densities for wealth are flatter than for consumption and income. For example, focusing on Malawi,[40] wealth inequality is roughly 1.5 larger than income inequality (in terms of variance of the logs) in rural areas and roughly 3 times larger in urban areas. Further, there is certainly much more wealth inequality in urban than in rural areas, by a factor of 3 (i.e., a larger factorial rural-urban difference than that of income inequality, 1.6), suggesting a stronger

rural areas is very similar across all three countries, the main source of income in rural Uganda is business, not agriculture. Business, instead of labor, is also the dominant source of income in urban areas. The difference in urban consumption is even more striking: Uganda's urban per capita consumption is around two-thirds higher than Malawi's and Tanzania's. Moreover, consumption of durables in Uganda is relatively more important than in the other two countries. According to the household survey data, Uganda as a whole is clearly richer on average than the other two countries, and this difference is related to relative higher business income and more durable consumption in urban Uganda.

[39] The higher consumption inequality in Uganda than in Malawi and Tanzania is largely driven by the share of durable consumption, see Table 2. See also Table A-6 in the online appendix.

[40] In terms of wealth (i.e., net worth), we focus on Malawi because Tanzania lacks housing data and Uganda debt data.

ability to accumulate wealth, and hence, to create dispersion in urban areas than in rural areas.[41]

Comparing our results with US inequality, we find that income dispersion does not transmit as much into wealth dispersion in SSA as it does in the United States. Precisely, in terms of household income, the United States has a log variance of 0.99 for the year 2010, as reported in Díaz-Giménez et al. (2011) using the Federal Reserve's Survey of Consumer Finances, while the variance of logs for urban income for Malawi, Tanzania, and Uganda is, respectively, 1.60, 1.90, and 2.01. That is, urban income inequality is larger in SSA than in the United States. In contrast, in terms of wealth the United States has a log variance of 4.53, which is surprisingly similar to the inequality measures of urban Malawi, Tanzania, and Uganda, respectively, 4.52, 4.44, and 4.67. That is, using urban Malawi as a benchmark, the Unites States is able to generate the same amount of wealth dispersion as urban Malawi with about 60% of its income dispersion. This lower transmission from income to wealth inequality in urban SSA compared with the United States is also present in rural SSA. For example, rural Malawi has income inequality similar to that in the United States, with a variance of logs of 0.99, while wealth inequality in rural Malawi is 1.49: one-third of the US wealth inequality. That is, with the same income dispersion as rural Malawi, the United States is able to generate three times the wealth dispersion of rural Malawi. Similar relations are attained for Tanzania and Uganda.[42]

To summarize, the inability of income dispersion in SSA, which is at least as large as that of the United States, to translate into wealth dispersion as large as that of the United States, points to an inherent inability to save and accumulate wealth in both urban and, more so, rural SSA. Moreover, despite this evidence on a lesser ability to save, we find that consumption inequality is 49% and 37% of income inequality (in terms of the variance in logs) in rural and urban Malawi, while this figure is larger and close to 55% in the United States (Blundell et al. (2008)).[43] Combining these two dimensions suggests that the greater ability to contain the dispersion in consumption in SSA compared with the United States must involve consumption insurance mechanisms other than self-insurance (i.e., own savings), a matter to which we return in Section 5.4.

[41] Since most of the variation in wealth in rural areas comes from land (roughly 80%), this suggests that either land cannot be accumulated (or create wealth dispersion) in rural areas or rural households do not have access to the accumulation of other types of assets.

[42] Similar insights are obtained from alternative measures of inequality such as the Gini index, mean to median ratios, and 90th/10th percentile ratios, also reported in Table 3.

[43] These figures are 34% and 33%, respectively, for rural and urban Tanzania and 50% and 52%, respectively, for rural and urban Uganda. For the United States, we use the reported average from the mid-1980s to the early 1990s in Blundell et al. (2008).

3.2 Rural-Urban Differences As Income Increases: Conditional and Joint Distributions

Here, we rank households by their income and carefully study the behavior of their CIW. This analysis is conducted for rural and urban areas, respectively, in panels (A) and (B) in Table 4.[44] Note that while we focus on Malawi in this Section, the analogous partitions for Tanzania and Uganda can be found in the online appendix.

The average difference in the level of consumption between rural and urban areas translates into the entire distribution of income. That is, on average consumption is 2.20 times larger in urban than in rural areas, and this rural-urban consumption gap is relatively stable across all income quintiles with roughly a factor of 2, except for the top income quintile for which urban consumption is larger by a factor of 2.64 (and 3.53 for the top 1%). If we look at consumption per capita, urban consumption remains two times higher than rural consumption, which shows that the difference in levels is not driven by the larger size of rural households. Note also that the US$1 dollar per capita a day threshold is only achieved by the fourth quintile of the income distribution in rural areas, whereas in urban areas, all quintiles have per capita consumption above the US$1.

In contrast to consumption, while the rural-urban income gap is on average similar to that of consumption (i.e., 2.23), this gap increases with income. Starting at the bottom 20% of the income distribution we find similar income per capita levels between rural and urban areas (a higher level in urban areas by a factor of 1.09), but this gap increases monotonically to 2.82 for the top 20% and to 3.83 for the top 1%. Finally, as in income, the rural-urban gap in wealth also increases with income, starting with urban wealth that is 1.41 times larger than rural wealth for the bottom 20% of the income distribution and increasing to a factor of 3.62 for the top 20% of income earners and to 6.46 for the top 1%. Thus, the growth in the rural-urban gap as income increases is virtually identical for income and for wealth except for the top 1% and top 5% of the income distribution.[45]

Similar findings are extracted from the joint densities of CIW for rural and urban Malawi plotted in Figure 3. The correlation between income and wealth is higher in urban areas, 0.36,

[44] Hereafter, we focus on Malawi because its sample size is large enough to maintain accuracy in our estimates when we partition the distribution of CIW. The sample size for Malawi is 12,015 households, while in Tanzania it is 3,012 and in Uganda 2,337. Note that our sample size is roughly 2.5 times larger than the Survey of Consumer Finances used to conduct a similar partition for the United States in Díaz-Giménez et al. (2011). Analogous distributions of CIW conditional on wealth, land, and consumption can be found in Tables A-1, A-2, and A-3 in the online appendix.

[45] Precisely, the rural-urban gap from the respective bottom 20% to the top 1% (and top 1% to 5%) of income earners grows by 251% (186%) in income and by a larger 355% (237%) in wealth. Instead, this increase for the second, third, and fourth quintiles of the income distribution is on average lower for wealth (21%) than for income (32%).

than in rural areas, 0.17.[46] In rural areas income and wealth have a correlation of 0.10 and 0.12, respectively, for the bottom 80% and top 20% of the income distribution. In urban areas, we find a slightly opened L-shaped joint density, which implies that for the bottom 80% of the income distribution, the correlation between income and wealth is 0.06, while this correlation is 0.30 for the top 20% of income earners. Thus, only the income-rich households in urban areas are able to accumulate wealth. Overall, there is a weaker link between income and wealth in SSA than in the United States, where the correlation of these two variables is 0.57 (Díaz-Giménez et al. (2011)). Finally, the correlation of consumption and income is also higher in urban areas, 0.53, than in rural areas, 0.30.

To summarize, only the households at the top of the income distribution in urban areas are able to transform their rural-urban income differential gain (i.e., their higher income compared with the top income counterparts in rural areas) into a somewhat sizable rural-urban differential in wealth. The joint densities of income and wealth reinforce this result, implying that the income-rich households in urban areas are able to accumulate more wealth than their rural counterparts. This suggests that the high saving rates of the top-income earners in rural areas might be less persistent than those of the top income earners in urban areas. Finally, we find less growth for the rural-urban consumption gap than for income, which suggests an ability to partially insure. The joint density of consumption and income suggests that this insurability of consumption is larger in rural areas than in urban areas, an argument further developed in De Magalhães et al. (2015).

3.3 Saving Rates

New insights emerge by looking directly at the saving rates — that is, one minus the consumption-to-income ratio. As is the case in the United States, a large fraction of the population has a negative saving rate in Malawi. Using the Consumer Expenditures Survey (CEX), Sabelhaus and Groen (2000) find that approximately half of the households in the United States have a negative saving rate. In rural Malawi, we find that the saving rates are, on average, positive for only the top 10% of the income distribution, while in urban Malawi the saving rates are, on average, positive only for the top 5% of the income distribution (see Table 5). This implies that while in the United States the average saving rate is 0.12 for the 1992 CEX, the saving rates in rural and urban Malawi are, on average, negative and, respectively, -0.23 and -0.15.

Interestingly, for the top income earners in Malawi we find saving rates that are very similar to (or slightly above) the saving rates of the top income earners in the United States. The saving

[46] In Tanzania, this correlation is 0.45 for urban households and 0.40 for rural households. For Uganda, the numbers are 0.42 and 0.32.

rates for the top 10% of the income distribution are 42% for rural Malawi, 46% for urban Malawi, and 36% for the United States.[47] In rural and urban areas, the top 1% and top 5% of the income distribution share a very similar saving rate. For the top 1%, the saving rate is 0.72 in rural areas and 0.74 in urban areas; for the top 5%, the saving rate is 0.37 in rural areas and 0.36 in urban areas. Across the income-poor households, we find a larger negative saving rate in Malawi than in the United States. The saving rates for the bottom 10% of the income distribution are, on average, -5.0 in rural Malawi and -12.0 in urban Malawi, and this figure is -1.30 for the United States. That is, unlike at the top of the income distribution, the rural-urban differences in saving rates are large at the bottom of the income distribution.

In contrast, when we rank households by wealth, we find larger discrepancies in the saving rates between rural and urban areas across the top wealth groups. The top 1% (and 5%) of the wealth distribution saving rate is 0.08 (and 0.09) in rural areas and 0.42 (and 0.08) in urban areas. This difference reinforces the idea of a larger persistence of wealth in urban areas compared with rural areas. The bottom of the wealth distribution in rural and urban areas behave similarly with a negative saving rate of -0.60 and -0.87, respectively. In terms of land, only the top 1% land-richest households show positive saving rates in rural areas.

To summarize, only the top income earners in Malawi are able to save, and they do so with saving rates that are high and similar to those of the top income earners in the United States. Now, with such similar saving rates, can the top income earners in Malawi accumulate as much wealth as the top income earners in the United States? This is the question we turn to next.

3.4 The Top and Bottom of the Income and Wealth Distributions and their respective Welfare

Here, we closely explore the top and bottom of the income and wealth distributions. In Table 6 we use the entire country data, combining rural and urban areas, to compare the concentration of income and wealth in Malawi, Tanzania, and Uganda with rich and emerging economies as

[47] Here, we compare in a bit more of detail the saving rates by income decile between the United States from the 1992 CEX as documented in Sabelhaus and Groen (2000) and the saving rates that we find for Malawi (ISA 2010):

	Saving Rates by Income Deciles									
	1	2	3	4	5	6	7	8	9	10
U.S. CEX 1992	-1.3	-0.63	-0.66	-0.12	0.00	0.05	0.10	0.19	0.26	0.36
Malawi — Rural	-5.0	-2.48	-1.57	-1.27	-0.97	-0.76	-0.46	-0.30	-0.06	0.44
Malawi — Urban	-12.0	-3.81	-2.47	-1.65	-1.41	-1.12	-0.90	-0.32	-0.22	0.47

The income decile 1 represents the bottom 10% of the income distribution and the income decile 10 represents the top 10% of the income distribution. This table excludes 73 observations with either zero or negative income.

reported by Piketty (2014). In both the United States and in Malawi, the top 1% of the income distribution earns 20% of the total income. In Uganda, the concentration is even higher at 31% of total income, by far the highest concentration of income in all countries reported. In Tanzania, the top 1% earns 15% of total income, the same as in Britain, and similar to the average of emerging countries. If we consider the top 10%, it becomes clear that income is at least as concentrated in SSA as in the US; the top 10% in the United States earn 48% of total income. In Malawi, the top 10% earn 50% of total income, in Tanzania 51%, and in Uganda 65%. It is not the case, however, that higher income inequality translates to higher wealth inequality than in the United States. The top 10% of the wealthiest households in Tanzania and Uganda hold 72% and 69%, respectively, of the total wealth, a similar number to the United States, 71%. In Malawi, wealth concentration is lower; the top 10% holds no more than 57% of total wealth, a concentration lower than Sweden's.

We now take a closer look at the entire distribution of income separately for rural and urban Malawi in Table 7, panels A1 and B1. Those panels show the share of total CIW ranked by household income. In rural Malawi, the top 10% of the income distribution earns 43% of total rural income. In urban areas, the top 10% earns 62% of total urban income. The top 1% of the income distribution earns 14% and 25% of total income, respectively, in rural and urban areas. On the other end of the distribution, the bottom 20% in rural areas earns 3% of total rural income and the bottom 20% in urban areas earns 2% of total urban income. In urban Malawi, the income gap between the rich and poor is very similar to that of the United States in 2010, where the top 1% of the income distribution earns 21% of total income and the bottom 20% earns 3% of total income (Díaz-Giménez et al. (2011)).

In terms of wealth, we find that the top 10% of the wealth distribution holds 49% of total wealth in rural Malawi and 73% in urban areas (see, respectively, panels A2 and B2 in Table 7). Further, the top 1% of the wealth distribution holds 17% and 32% of total wealth in rural and urban areas, respectively. Strikingly similar to urban Malawi, the top 10% and top 1% of the wealth distribution in the US holds, respectively, 71% and 34% of total wealth (see Díaz-Giménez et al. (2011)).[48] However, the current concentration of wealth at the top of the distribution in Malawi is much lower than that attained by developed countries when these economies were experiencing growth takeoffs and industrialization. For instance, in Britain the top 10% and top 1% of the wealth distribution held 82% and 53%, respectively, of the total wealth in 1810; in France these figures were 80% and 46%, and in Sweden 83% and 57% (Piketty (2014)). If these

[48] In Tanzania, in terms of income, the top 10% and top 1% rich in rural (urban) areas earn, respectively, 50% (41%) and 14% (18%), and 62% (66%) and 27% (26%) in Uganda. In terms of wealth, the top 10% and top 1% rich in rural (urban) areas hold, respectively, 67% (90%) and 20% (44%) in Tanzania, and 67% (70%) and 28% (23%) in Uganda. See Tables A-2 and A-3 in the online appendix.

high levels of inequality are an integral part of the process of growth takeoff, then it seems that none of the three SSA countries studied herein is experiencing such a takeoff.

Further, exploiting the joint information about each household's income and wealth, we find that income inequality transmits to wealth inequality, but much less so than in the United States. In Malawi, the top 10% income-rich households hold 27% of total wealth in rural areas and 49% in urban areas. In contrast, in the United States the top 10% of the income distribution holds 60% of total wealth — a substantial difference between the United States and Malawi, particularly rural Malawi. This differential is largest for the top 1% income-rich households, who hold 26% of total wealth in the United States, but merely 4% of total wealth in rural Malawi and 11% in urban Malawi. This implies a nationwide average of 5%, that is, the top income-richest 1% households in SSA hold a share of total wealth that is one-fifth of its US counterpart. This is further direct empirical evidence on the weaker connection between income and wealth in SSA. This happens despite the similar saving rates between Malawi and the US for the top income earners as reported in Section 3.3. These two factors together suggest that high saving rates do not last long enough for households to accumulate wealth — for example due to a lower persistence of high incomes in SSA than in the US, a phenomenon discussed in Section 6.

Finally, unlike previous studies such as Díaz-Giménez et al. (2011) and Piketty (2014), our data allow us to link income and wealth to a more direct measure of welfare: consumption. We find that in Malawi the top 10% of the income distribution accounts for 21% of total consumption in rural areas and 30% in urban areas, while the bottom 10% of the income distribution accounts for 6% of total consumption in both rural and urban areas. Therefore, in terms of consumption, the difference between the top 10% and the bottom 10% of the income distribution drops substantially from a 90^{th}-10^{th} percentile ratio of 43 in income to 4 in consumption in rural areas and from a ratio of 63 in income to 5 in consumption in urban areas.

To summarize, while the disparities between the top and bottom of the income distributions are large in SSA and indeed are similar to those previously documented for the United States and Europe, we find that these income disparities do not translate into wealth or consumption inequality in SSA as they do in the United States and Europe. The inability of high-income households to either accumulate more wealth or consume more suggests powerful redistributive arrangements, particularly in rural areas, that mitigate the high income inequality and serve as consumption insurance mechanisms. For example, the somewhat uniform distribution of consumption across land quintiles (see Table 7 Panel A3) suggests that the nonmarketed land distribution is likely to be used to mitigate inequality of consumption.

4 Deconstructing Consumption, Income, and Wealth

In this section, we investigate the composition of consumption by item, the sources of income, and the wealth portfolio (Table 8).

The main component of consumption is food. In rural areas, the food share remains above 60% throughout the entire income distribution except for the top 1%. In urban areas, the food share varies between approximately 50% and 60% across the income distribution except for the top 20% and above (e.g., food consumption represents 21% of total consumption for the top 1% income earners). In rural areas, food consumption from own production and purchases account for similar shares of total consumption, and consumption from own production stays above 25% of total consumption across all income quintiles. In urban areas, food consumption from own production is no higher than 5% of total consumption throughout the quintiles and purchased food accounts for 46% of total urban consumption.

Most other components of consumption (i.e., clothing, utilities, and health) are relatively stable across the income distribution in both rural and urban areas except for durables (other than housing), which remains very low across the distribution except for the top 20% and, in particular, the top 1% of income earners. Precisely, the average share of durables consumption in total consumption is 2% in rural areas and 4% in urban areas, while the top 1% of income earners consume a share of 13% and 20% of durables, respectively, in rural and urban areas. A similar phenomenon occurs for other nondurable consumption (candles, matches, cigarettes, public transportation, soap, paraffin lamps, mats, carpets, bricks, cement). We also find a moderate increase in schooling expenditures as income increases, particularly in urban areas: from an average share of 3% of total consumption to a share of 10% for the top 1% of income earners.

In terms of sources of income, we find that the share of agriculture and labor income in rural areas is similar across the entire income distribution. On average, agricultural income represents 60% of all income and labor represents 19%. In rural areas, the difference across the income distribution is that the income-rich households have a high share of business income (the top 20% of households have a business share of 14% and the top 1% of 29%, while the bottom 20% have a business share of 3%) and the poor have a high share of food gifts (the bottom 20% of households have a food gift share of 17%, while for the top 20% the food gift share is 3%).[49] In urban areas, the main components of income are labor, varying from 50% to 60% across the

[49] Note that our measure of food gifts as a source of income is compiled from the consumption questionnaire. The results in Table 8 suggest that the questions on annual transfers in the income questionnaire are not able to capture the most relevant transfers received by the poorest 20%: food gifts.

quintiles, and business income with a share that is (roughly) 20% across income quintiles except for the top 20% of households where business income represents 40% of total income. For the top 1% of income-rich households, the business share is highest (i.e., 57%) and represents a higher share than labor (i.e., 38%). There is still a sizable share of agricultural income in urban households, between 14% and 19% for the bottom 80% of the income distribution, that declines to 5% for the top 1% of the income distribution. The share of food gifts as a source of urban income is 11% among the poor and decreases to 1% among the rich.

The wealth portfolio in rural areas has three major components: land (44%), housing (30%), and livestock (11%). The share of land wealth varies between 46% and 52% in the bottom 80% of the income distribution and decreases to 36% for the top 20% of the distribution and to 21% for the top 1%. Note that the bottom 1% of the income distribution in rural areas has a low share of its wealth derived from land, 30%. This is not surprising as precisely 49% among the bottom 1% owns no land. The share of housing wealth tends to decline with income in rural areas, from a share of 50% for the bottom 1% of the income distribution, to 38% for the bottom 20%, and to 24% for the top 1%. Instead, the share of livestock (a mechanism to accumulate wealth explored in Rosenzweig and Wolpin (1993)) and other durables seems to correlate positively with the income in rural areas. Other durables and livestock each represent 5% of the wealth portfolio for the bottom 20% in the wealth distribution, whereas for the top 20% they are, respectively, 15% and 20%. In urban areas, the major components of wealth are housing (59%), other durables (27%), and land (14%). To put these figures into context, note that the share of housing wealth is 24% in the United States (Díaz-Giménez et al. (2011)); thus, the share of housing in Malawi is about 2.5 larger than in the United States. This suggests that saving constraints in SSA might also take the form of limitations in the available savings portfolio.[50] Further, the share of housing wealth is roughly invariant to income, ranging from 45% to 61% across income quintiles in urban areas. The share of other durables is substantially larger for the top 20% of the income distribution (33%) and top 1% (37%) than for the rest of the income distribution (approximately 20%). The share of land among urban households is largest for the middle quintile (37%) and lowest for the bottom and top quintiles (respectively, 8% and 5%). The highest reported debt is -3% of total net worth for the top 1% of the income distribution.

To summarize, the composition of consumption (largely food) reflects that these are largely subsistence economies. Not surprisingly, the ability to save and accumulate wealth can be limited by the need for food consumption. This constraint is relaxed only for the top 1% of the income

[50] Santaeulàlia-Llopis and Zheng (2015) provide a similar argument for China, where growth over the past 20 years is associated with a portfolio largely dominated by lifetime savings (i.e., housing wealth and investment in children) that deter consumption insurance.

distribution in rural areas and the top 5% in urban areas, for whom the food shares falls below 50%. The composition of income (mostly agricultural) in rural areas reinforces the idea of a subsistence economy. In rural areas, only for the top 1% of the income distribution is the share of agricultural income less than 50%. Finally, the similarity in the wealth portfolio across income groups (except for the top 1%) further reflects an inability to accumulate wealth. Only livestock and durables show signs of accumulation.

5 Sources of Cross-Sectional Inequality

We study several sources of economic inequality and their implication for wealth accumulation. These sources include the usual suspects such as age, household composition, and education. Further, we provide a cross-sectional assessment of the relationship between self-reported types of risk, insurance mechanisms, and inequality. We pay particular attention to the ability to borrow, controlling for self-reported selection in loan applications, and to the implications of the degree of capital market incompleteness for inequality. Last, we find substantial variation in societal systems (i.e., matrilineal or patrilineal) and study their gender-specific implications.[51]

5.1 Demographics

Household composition turns out to be crucial to understanding the life cycle behavior of consumption and income, particularly in rural areas.

5.1.1 Age

Table 9 shows the age distribution of household heads in rural and urban areas. The average age of a household head in rural areas is 43, while it is 39 in urban areas.

The average CIW (in current USD) by each age group is documented in Table 9. We find a clear hump over the life cycle for CIW, particularly in urban areas. In urban areas, panel B2 shows that consumption increases by a factor of US$3,684/US$1,854 = 1.98 from the youngest age group (15-24 years) to the age group (45-54 years) associated with highest consumption. Income follows a similar pattern, which in this case implies an increase by a factor of US$3,623/US$939 = 3.85. This hump behavior over the life cycle has also been documented for industrialized economies and for some middle-income countries, see Deaton and Paxson (1994). Average positive saving rates (close to zero) are observed only among prime age households (35-44 years), who represent 25% of urban households. In urban areas, the hump in wealth is even steeper

[51] In this section, we focus on rural and urban Malawi. The analogous tables for Tanzania and Uganda are available in the online appendix.

than that of consumption and income and peaks at a later age group (55-64 years) at a level US$6,661/US$933 = 7.13 times larger than the wealth of the youngest age group. While this ability of urban households to accumulate wealth over the life cycle is non-negligible, it is dwarfed by the ability of US households to accumulate wealth. In the United States, the level of wealth at ages 55 to 64 is 20 times higher than the wealth of the youngest group (Díaz-Giménez et al. (2011)).

In rural areas, there is a much smaller hump in all three categories of CIW (see panel A2 in Table 9). First, consumption increases by roughly a factor of US$1,559/US$1,137 = 1.37 from the youngest age group (15-24 years) to the age group associated with highest consumption that now peaks at relatively younger ages (35-44 years) than in urban areas (45-54 years). Second, income increases from US$868 at ages 15 to 24 to US$1,327 at ages 45 to 54 — a factor of 1.52. None of the age groups in rural areas has a positive average saving rate. Wealth, driven mostly by land, increases by a factor of US$1,699/US$639 = 2.65 between the ages of 15 to 24 and 55 to 64. Note that land holdings peak in the 45 to 54 age group in rural areas — slightly younger than the peak in wealth — suggesting a wealth portfolio that changes over the life cycle moving away from land.

To summarize, the main difference between rural and urban areas over the life cycle is the ability to generate income and accumulate wealth. While income at the ages of 15 to 24 is only 1.08 times larger in urban areas than in rural areas, at its peak — ages 45 to 54 — income is 3.73 times larger in urban areas. This is also the case for wealth accumulation. While at young ages (15 to 24 years) wealth is only 1.46 times larger in urban areas than in rural areas, at its peak — ages 55 to 64 — wealth is 3.93 times larger in urban areas. Thus, the ability to generate income and accumulate wealth over the life cycle is almost four times larger in urban areas than in rural areas. This large discrepancy between rural and urban areas, however, is much less pronounced for consumption, for which we find that urban areas enjoy 2.36 times more consumption than rural areas — less than half the rural-urban income differential — at their respective life cycle consumption peaks.

5.1.2 Household Structure

Across Malawi, the average household size is 4.58 and the dependency ratio, which is largely driven by the presence of children, is 1.16. This ratio is higher in rural areas than urban areas: 1.22 versus 0.88.[52] The larger share of children in rural households is also present at the tails

[52]ISA household rosters provide individual demographic information about all members of the household. In particular, the relationship between each member of the household and the household head is identified. Relatives who are members of the household include children (i.e., son/daughter-in-law, niece/nephew, grand-

of the distribution. While the population share of childless households is 18% in rural areas, this share is higher in urban areas, 24% (see panels A1 and B1 in Table 10). Further, while the population of households with at least four children is 22% in the rural areas, this share is 15% in urban areas. Indeed, the proportion of households with a dependency ratio higher than 1 is 55% in rural areas, while this figure is 44% in urban areas.

We investigate the CIW conditioning on the number of children living in the household. Panel B2 of Table 10 shows that in urban areas, households with a dependency ratio lower than 1 have clearly higher average consumption and income, respectively, by a factor of 1.38 and 1.89, compared with households with a dependency ratio above 1. This and the lack of a positive relationship between consumption/income and the number of children in urban areas suggests that children represent, on average, a substantial consumption/income cost to urban households.

In contrast, in rural areas, where the vast majority of the population lives, we find that household size is positively related to income (see panel A2 of Table 10). In the same direction, mean consumption and income are similar between households with dependency ratios above and below 1 in rural areas. Our facts suggest that children, taken at face value, are not necessarily a burden on rural household consumption/income. Indeed, children might be important in generating income, helping with farm activities from early ages, and also serving as an insurance mechanism for the short run through labor-supply adjustments (see Beegle et al. (2006) and Jacoby and Skoufias (1997)). Finally, in the environments that we study where wealth accumulation is difficult, children can be viewed as a viable form of asset that substitutes for social security as proposed in Boldrin and Jones (2002) and more recently pursued in Banerjee et al. (2014).[53]

5.1.3 Consumption and Income in Adult-Equivalent Scales

An important aspect of household structure is its potential role in explaining the hump in household consumption, in particular, nondurable consumption (see Deaton and Paxson (1994) and Attanasio et al. (1999)). For completeness, here we reproduce the results in De Magalhães et al. (2015) that find the life cycle behavior of consumption in adult-equivalent scales shows practically

children), wife/husband, father/mother, father/mother-in-law, brother/sister, brother/sister-in-law, and grandfather/grandmother. Non-relatives who are members of the household include servants and lodgers living in the household. We are interested in household size (the sum of all members), as well as the household structure by age and sex groups. We define the household-level dependency ratio as the number of dependants, that is, children younger than 15 years of age in the household, $n_c = n_c^{own-in} + n_c^{other-in}$, and adults older than 52 years of age (average life expectancy), over the number of working-age adults between 15 and 52 years of age. The household size that we obtain for the 2010 Malawi ISA is similar to the one obtained from the nationally representative 2010 Demographic and Health Survey for Malawi, 4.72. If we include all individuals available on the household roster who do not necessarily belong to the household, we obtain a household size of 5.64.

[53] An alternative explanation that merits further investigation is whether larger households are allocated more resources (i.e., land) by the chief/community.

no hump in SSA. That is, the evolution of the life cycle household structure (see the panels in Figure 4) is the main determinant of the observed hump in the age profile of household consumption (see the right panes in Figure 4). This is particularly the case for rural areas where, while household consumption shows an increase from ages 25 to 45 of a factor of roughly 1.25, adult-equivalent consumption does not grow over the life cycle and, if at all, slightly declines to almost 0.90 at age 50 (see the center panels in Figure 4). In urban areas, while household consumption shows an increase from ages 25 to 45 of a factor of 1.70, this factor drops to 1.15 in terms of adult-equivalent consumption (see bottom panels in Figure 4). Combining rural and urban areas (i.e., nationwide) adult-equivalent consumption shows absolutely no trend over the life cycle (see top panels in Figure 4).

Finally, the behavior of income per adult over the life cycle displays a clear hump that increases from the age of 20 to a peak at 35 years of age by a factor of 1.20/0.77=1.55 in rural areas, while in urban areas the hump in income per capita is larger and increases from the age of 20 to a peak at 45 years of age by a factor of 2.25/0.80=2.81 (see the right panel in Figure 4). Our results echo those in Bils and Klenow (2000) and Lagakos et al. (2012) that focus on the behavior of wages and document flatter age profiles in poor countries. Here we instead focus on household total income to consider the fact that in the poor countries that we investigate, there is a large rural population (approximately 80%), for whom agricultural production is the main source of income. Our findings suggest that the flatter country-wide life cycle profiles of income in developing countries may be the result of a composition effect driven by a large share of rural households, which indeed have flat age profiles, and balance the steeper age profiles of urban households.

5.2 Migration

The process of economic growth and structural transformation (Gollin et al., 2002, 2004) is inevitably related to migration. We find clear evidence of this structural shift as 60% of the current urban residents consist of migrants from rural areas (see panel B1 in Table 11), where rural-to-urban migrants are defined as those who resided in rural areas prior to their current urban residency since childhood and independently of the year of migration. Further, there is also urban-to-urban migration that accounts for another 18% of the current urban residents, which implies that nonmigrants represent only 22% of the current urban population. In contrast, the nonmigrants account for the largest share of the current rural population, 65% (see panel A1 in Table 11). Finally, rural-to-rural migration represents 31% of households and urban-to-rural migration is minor and represents merely 4%. This implies that the absolute rural-to-urban migration flow is $\frac{60\% \times 18.3\%}{4\% \times 81.7\%} = 3.36$ times larger than the opposite urban-to-rural flow, which

generates a structural shift that decreases rural population from a counterfactual of 89.4% (i.e., a scenario under which all migrants in the data return to their original residency) to the current 81.7% in 2010/11.[54] Interestingly, our migration patterns differ substantially from the averages recently documented in Young (2013) for 39 countries for which the rural-to-urban migration flows are much more similar to their urban-to-rural counterpart, precisely, by a factor of $\frac{23.9\% \times 41.5\%}{13.2\% \times 58.5\%} = 1.28$.[55]

To explore migration as a potential source of inequality, we study whether migrants fare better in terms of average CIW than nonmigrants. First, note that urban residency is associated with better CIW than rural residency even within the nonmigrant population (see the first columns of panel A2 and B2 in Table 11). Urban nonmigrants enjoy consumption that is higher than the consumption of their rural nonmigrant counterparts by a factor of 1.70, higher income by a factor of 1.59, and higher wealth by a factor of 2.09. Second, exploring the incentives of rural-to-urban migration — that is, comparing the rural-to-urban migrants with the nonmigrants in rural areas — we find that this type of migration boosts consumption by a factor of 2.17, income by a factor of 2.10, and wealth by a factor of 1.89. Further, we find that the rural-to-urban migrants tend to do slightly better than the urban-born who do not migrate but worse than urban-born that migrate within urban areas. Indeed, the urban-to-urban migrants are the group that does best with a consumption that is 1.80 times larger than that of urban nonmigrants, an income that is 2.62 times larger, and wealth that is 2.05 times larger. Third, in rural areas, within rural migration also helps improve CIW, although these gains are less substantial than within urban areas. Specifically, rural-to-rural migrants enjoy higher consumption and income than their rural nonmigrant counterparts by respective factors of 1.17 and 1.15. There are, however, no significant differences in terms of wealth or land. Finally, the few urban-to-rural migrants tend to do, on average, as well as the rural-to-rural migrants but worse than their urban counterparts.

[54] Indeed, using IHS2 data for Malawi we find that in 2004-05 the rural population accounted for 86.8% of the total population, suggesting that a proportion of our migration patterns occurred in a period that spans more than 5 years. Indeed, we find that 50.70% of households have migrated in the past 10 years, 32.1% in the past 5 years, 15.5% in the past 2 years, and 8.86% within the past year. If we focus on the urban residents and define as migrants as only those who migrate in the past five years, rural-to-urban migrants account for 18% of total current urban residents, 8% are urban-to-urban migrants, and 74% are nonmigrants. If we focus on the rural residents and define as migrants as only those who migrate in the past five years, rural-to-rural migrants account for 8% of total current rural residents, 1% are urban-to-rural migrants, and 91% are nonmigrants. Last, migration is a phenomenon of the young, with a median age at migration of 25, and more educated, with 1.54 years of schooling more than the nonmigrants of their cohort; see also De Magalhães et al. (2015).

[55] This last ratio for Young (2013) is computed using statistics reported in his Table II. We find reasonable larger rural-to-urban migration flows for the economies that we study, which are currently in the earliest stages of economic development and still hold a large fraction of their populations in rural areas, roughly 80%. Instead, the average figures in Young (2013) incorporate middle-income countries with substantial completion of the rural-to-urban transition. In those middle income countries the self-selection mechanisms studied in Lagakos and Waugh (2013) are likely to be operative with less frictions and costs to migration than those potentially present in the economies that we investigate, a feature that we acknowledge deserves further exploration.

That is, moving from the city to the countryside is, on average, not a good deal.[56]

It is obvious that migrants might not necessarily attain the average CIW profiles of the hosting locations. First, we focus on the urban areas as hosting locations. Rural-to-urban migrants are underrepresented among the poorest and richest in both consumption and income (compared with their average population, 60%). Thus, rural-to-urban migrants are concentrated in the mid-consumption and mid-income quintiles, and are more underrepresented in the top income quintiles, although they still represent a sizable 49% and 39% of the population in the top 1% of the respective consumption and income distribution. In terms of wealth, the rural-to-urban migrants are slightly overrepresented in the bottom 20% of the wealth distribution and underrepresented at the top 20% of the wealth distribution.[57] The overrepresented group among the consumption and income poorest are the nonmigrants (e.g., 35% of the bottom 1% in consumption are nonmigrants) compared with a 22% share of nonmigrants in the total urban areas. Thus, in terms of consumption and income it seems that rural-to-urban migrants do better than urban nonmigrants, although not in terms of wealth. A potential explanation is that part of the migrant population is temporary and does not stay in urban areas long enough to save and accumulate wealth. Finally, it is clear that urban-to-urban migrants do better as they are heavily overrepresented among the richest in all CIW dimension — precisely, 50% of the top 1% of the consumption distribution, 56% of the top 1% of the income distribution, and 48% of the top 1% of the wealth distribution — while they simply represent 18% of the total urban population. Interestingly, urban-to-urban migrants are also overrepresented at the bottom of the wealth distribution.

Second, focusing on rural areas as hosting locations, we find that rural nonmigrants, similar to their urban nonmigrant counterparts, populate the bottom of the consumption and income distributions and also the top of the wealth distribution (see panel A3 in Table 11). That is, the nonmigrants are relatively more consumption and income poor, but also relatively more wealth rich. Similar to the urban-to-urban migrants, the rural-to-rural migrants are overrepresented in the top of the consumption and income distributions but, unlike urban-to-urban migrants, the rural-to-rural migrants are not overrepresented in the top of the wealth distribution. That is, the rural-

[56] The reasons for migration into or within urban areas are almost exclusively work related, either to start a new job or business (36%), to look for a job (21%), or a job transfer (13%). The reasons to migrate within rural areas are mostly "marriage" (34% of those migrating), "parents move" (21%), "looking for land to farm" (11%), and work-related reasons (15%). For those who moved from urban areas, marriage plays a much smaller role (14%). A substantial part of this movement is due to marriage customs of moving to the spouse's village. In Section 5.5, we discuss how Malawi is divided between a societal system where the wife joins the husband in his village and another where the husband joins the wife in her village.

[57] In more detail, 28% of the population in the top 20% of the wealth-richest are nonmigrants, 46% in the top 10% to 5%, and 24% in the top 5% to 1%, although only 3% of the top 1% of the wealth distribution are nonmigrants.

to-rural migration does not help accumulate wealth as much as the urban-to-urban migration. Finally, the urban-to-rural migrants, like the rural-to-rural migrants, are overrepresented in the top of the consumption and income distributions and underrepresented at the top of the wealth distribution.

To summarize, we find migration is associated with an improvement of average CIW. In particular, rural-to-urban migration and urban-to-urban migration boosts CIW by a factor of roughly two compared with their reference scenarios. However, migration does not always help wealth accumulation. Rural-to-urban migrants still have a difficult time accumulating wealth and are underrepresented at the top of the wealth distribution, while urban-to-urban migrants and, to a lesser extent, urban nonmigrants are somewhat more able to accumulate wealth.[58] Similar patterns arise within rural populations, the top 1% is largely overrepresented by rural nonmigrants instead of migrants, suggesting a lesser scope for wealth accumulation for those who migrate to rural areas (from either rural or urban areas).

5.3 Education

In 2010, the average number of schooling years among household heads was 5.5, 4.8 in rural areas, and 9 in urban areas.[59] This rural-urban differential in education is also attained in terms of education composition: 71% of rural household heads have incomplete primary schooling at most and only 8% have secondary education or more, while these figures are, respectively, 31% and 34% for urban household heads (see panels A1 and B1 in Table 12). This is consistent with smaller returns to schooling in rural areas than in urban areas (see panels A2 and B2 of Table 12). The increase in income is twofold from "primary dropout" to "secondary or more" in rural areas, whereas in urban areas the increase is more than fourfold.

Regarding the ability to save, we note that in rural areas not even the more educated have

[58] As a cautionary note, a more complete picture of the welfare gains of migration would incorporate the possibility of higher income risks and potentially less consumption insurance associated with rural-to-urban migration (e.g., Morten (2013); Munshi and Rosenzweig (2014); and Santaeulàlia-Llopis and Zheng (2015)).

[59] Malawi has an 8-4 educational system (IPUMS international). This implies 8 years in primary school and 4 in secondary school. Individuals who ever attended school record the highest class level attended and the highest educational qualification acquired. For individuals with completed education , we use this information to group individuals into six levels of completed education: no education, primary dropouts, primary, secondary, college, and training college. If the maximum class level attended is nursery/preschool, we consider these cases as never attended school. Primary school dropouts include individuals who attended school for at least one year and do not hold a Primary School Leaving Certificate (PLSC); primary school achievers include individuals have attended school for at least 8 years and hold a PLSC; secondary school achievers are individuals who hold a Junior Certificate (JC) (ages 13-15) or a Malawi School Certificate of Education (MSCE) (ages 16-17), university college individuals have attended at least one year of university and hold a university diploma or a post-graduate diploma; and training college includes individuals with at least one year of training college and who hold a non-university diploma.

positive saving rates. This suggests that human capital accumulation might not necessarily be linked to wealth accumulation in the rural settings that we study. In this same direction, we find that in rural areas the more educated (ie., those with secondary education or more), form the group that is most overrepresented (with respect to their proportion of the total rural population: 8%) in the top 20% and top 1% of the income distribution, by a factor of 18/8=2.25 and 30/8=3.75, respectively, and similar figures are attained in the consumption distribution. However, the more educated are only slightly overrepresented in the top 20% and 1% of the wealth distribution, by a factor of 10/8=1.25 for both the top 20% and 1%. That is, overall, education seems to be associated with more income and consumption, but not necessarily wealth in rural areas. However, in urban areas, we note that households with "secondary or more" (34% of the urban population) have a nonnegative saving rate of 3.1%. In this case, households with secondary or more education are overrepresented (with respect to their proportion of total urban population: 34%) in the top 1% of the CIW distributions (by factors of 82/34=2.41, 75/34=2.20, and 80/34=2.35, respectively). Hence, in contrast to rural areas, education seems to be positively related with wealth accumulation in urban areas.

Finally, we note that education can have farther-reaching implications for inequality through its interaction with health as more educated individuals in developing countries tend to have access to more treatment in case of illnesess/injuries and are more likely to take preventive action to reduce the probability of illness, see Dupas (2011). This extends to the HIV epidemic that ravages African economies (Young, 2005, 2007; Santaeulàlia-Llopis, 2008). For example, Iorio and Santaeulàlia-Llopis (2015) explicitly study the relationship between human capital and HIV and find that while the probability of being HIV-positive increases with human capital at the early stages of the HIV epidemic, this probability decreases as the more educated switch to safer sex behaviors by decreasing the number of sexual partners,[60] and finally, the relationship between human capital and HIV status rises again at subsequent stages of the epidemic as the more educated gain more access to antiretroviral (ARV) drugs than the less educated. This phenomenon potentially increases income inequality further given the effects of HIV on productivity (Levinsohn et al. (2011)) by making the more educated with relatively more access to ARVs even more productive than the less educated.[61] Overall, these patterns between human capital and HIV suggest that a

[60] Related to this sexual margin, Greenwood et al. (2013) recently consider short- versus long-term relationships to explicitly model the HIV epidemic when the information about the HIV status of potential partners is not perfect.

[61] This might not be straightforward as education subsidies that increase schooling do not reduce sexually transmitted infection by themselves and require a combination with a governmental HIV curriculum to do so (see Duflo et al. (2015)). Further, by decreasing life expectancy and the returns to schooling, it is natural to think that HIV potentially reduces schooling and, hence, human capital accumulation (see Fortson (2011)). Indeed, the increasing availability of ARVs tends to increase physical and human capital investments through a lower perception of mortality risk (Baranov and Kohler (2015)).

universal ARV policy in countries like Malawi — where about 10% of the population is infected with HIV — could help mitigate income inequality but we acknowledge this deserves further exploration. Note that ISA does not test the sampled households for HIV.[62]

5.4 Risk and Insurance

Here we exploit the large household sample in the Malawi ISA 2010 to study the cross-sectional relationship of risk, insurance, and inequality, relying on both the risks and consumption insurance mechanisms self-reported by households. We pay particular attention to the self-reported ability to borrow.

5.4.1 Self-Reported Risks and Insurance Mechanisms

In the past 12 months, in rural areas, 43% of households have suffered an aggregate shock, 6% an idiosyncratic shock, and 22% both types of shocks in the past 12 months, leaving 29% of the population without shocks. In urban areas, 15% of households have suffered an aggregate shock, 13% an idiosyncratic shock, and 11% both types of shocks in the past 12 months, leaving 61% of the population without shocks. The most common aggregate shock in rural areas is rain, 43% of households report a rain shock (too little or too much), followed by agricultural costs (33%) and food prices (26%) (see panel A1 in Table 13).[63] In urban areas, a smaller number — 49% of households — report some shock. The most common aggregate shocks in urban areas are unexpected high food prices, reported by 18% of households, which highlights the tight link between rural and urban areas. In both rural and urban areas, health shocks are the most important idiosyncratic shocks, followed by death and theft.[64] In general, households that report suffering one of these main shocks (in particular, rain in rural areas) are poorer in consumption and income compared with those that report no shock (see panels A2 and B2 in Table 13). However, households have the same average wealth and land holdings independently of having self-reported a shock or no shock. Further visual inspection suggests that these self-reported shocks are not correlated with wealth. This apparent lack of correlation between shocks seems to hold for both rural and urban households (see panels A3 and B3 in Table 13).

Table 14 shows the self-reported insurance mechanisms used to cope with shocks. We group

[62] See also Durevall and Lindskog (2012) for further discussion on the effects of HIV on inequality.

[63] Here we define rain as a type of aggregate shock, but we acknowledge there is rainfall dispersion across households. If we redefine rain as an idiosyncratic shock, then we find that in rural areas 14% of households have suffered only an aggregate shock, 25% only an idiosyncratic shock, and 31% both types of shocks in the past 12 months. The planting of maize needs to be timely. Rains that come too early or too late are as problematic as droughts and floods. Our measure of shock includes all these possibilities.

[64] In Table A-22 in the online appendix we examine the compositions of each quantile according to health indicators.

insurance mechanisms as specific strategies to cope against these shocks into "no insurance", "self-insurance", and "mutual insurance". We focus on what households declared as their main coping strategy. The items "no Insurance", "mutual Insurance", and "self-Insurance" do not sum to 100%; instead, they sum up to the percentage of households that reported having a shock (see Table 13). Precisely, in rural areas, 71% of households reported suffering a shock: 35% of total rural households reported using no insurance to deal with that shock, 28% reported some form of self-insurance, and 7% reported some form of mutual insurance. In urban areas, 39% of households reported suffering a shock: 22% of total urban households report using no insurance, 15% reported some form of self-insurance, and 2% reported some form of mutual insurance. That is, in rural areas, 35/71=49% of households report not using an insurance mechanism conditional on having reported a shock, while this figure is slightly higher (22/39=56%) in urban areas.

The results in previous sections imply that only those at the top of the income distribution have some ability to accumulate wealth. This suggests that only those households will be able to use their savings or accumulated wealth to smooth shocks as a form of self-insurance. Indeed, we find that households that report report self-insurance are better off in CIW than those that report no insurance or some form of mutual insurance (see panel A2 in Table 14). In particular, note from panel B2 Table 14 that urban households that report using "savings" as their main coping strategy are the only ones with a positive saving rate of 0.12.[65]

We note that the households that resort to mutual insurance in the event of a shock are those that are the worst off in terms of CIW. This seems to suggest that those that report not having used insurance mechanisms are self-selected; that is, the households that report no insurance are possibly not in bad enough shape to resort to mutual insurance. Indeed, among the bottom of the CIW distributions, self-insurance (mainly "savings") is less common as a coping strategy. Among the bottom 20% of the CIW distributions in rural areas, "mutual insurance" is cited by 10% of the households as the most important coping strategy (see panel A3 in Table 14).[66] This is similar to the number of households that report using "savings" (12-15%) as their main coping strategy. This is further evidence that using accumulated wealth to deal with shocks is more problematic in rural areas compared with urban areas. In urban areas, even among the bottom 20% in CIW, "savings" is more than twice as likely to be cited as the main coping strategy than "mutual insurance" (see panel B3 in Table 14). Nevertheless, "savings" as a coping strategy is also problematic for the bottom 20% of the CIW distribution in urban areas. The main coping

[65] Udry (1995) provides evidence of the use of savings as an insurance mechanism to smooth consumption in northern Nigeria.

[66] Note that mutual insurance is exclusively family help; the percentage of households that report receiving mutual insurance from government and nongovernmental organizations is negligible in both rural and urban areas.

strategy for the bottom 20% of the urban distribution of CIW is "diet" restrictions.

5.4.2 Credit and Ability to Borrow

Here, we explore the ability to borrow from self-reported needs, actions, and outcomes of loan applications. This provides direct evidence of the degree of capital market incompleteness at the household level.[67] First, households are asked whether they have applied or not applied for a loan in the past year. Second, households are asked whether or not a loan was needed. The main reasons for not applying for a loan when needing one (i.e., direct evidence of capital market incompleteness) are "not knowing any possible lender" and "having no collateral". Note that combining "need" and whether or not they applied, we directly address the issue of self-selection. Third, households are also asked whether they succeeded in receiving the loan and the amount borrowed if they were successful.

We investigate the differentials between rural and urban areas in the ability to borrow. We find that a slightly higher percentage of households report needing a loan in rural areas, 75%, than in urban areas, 67% (see panels A1 and B1 of Table 15). However, we can see that in both rural and urban areas only a very small group of households actually receive a loan: 13% of rural and 20% of urban households. This suggests that loans are not easily available in either urban or rural areas. The large majority of households do not even try to obtain a loan: 56% in rural areas and 40% in urban areas. As expected, rural households are less likely to meet the necessary requirements to apply for a loan. This can be seen directly from the data as the application rate conditional on needing a loan is 27% in rural areas and 40% in urban areas. However, once we condition on the households that do meet the requirements to formally apply for a loan, the data show that the success rate is nearly identical in rural areas, 48%, and urban areas, 50%. This suggests that if we deal with the selection of who applies for a loan, being in an urban or rural area makes no difference on the odds of obtaining a loan.

In rural areas, those households that obtain a loan are richer on average in all dimensions. In particular, those that obtain a loan are richer than those that claim not to need a loan (see panel A2 of Table 15). In urban areas those that claim not to need a loan are the ones who are richer in all three dimensions (see panel B2 of Table 15). Across the CIW distribution, the median interest rate charged is considerably higher for the poor than for the rich in both rural and urban areas (see panels A3 and B3 of Table 15). For example among the consumption poor in rural areas the interest rate is 10%, while among the rich it is 5%.

[67] See Buera et al. (2011) for an study of the implications of credit constraints for occupational choice and growth.

Finally, it must be noted that the fact that urban households have higher loan application rates and an overall larger ability to borrow does not necessarily imply larger consumption insurance in urban areas than in rural areas. To link credit to consumption insurance we must dig deeper into the motives to borrow, which are available in the survey. We note that there are 45/18=3.6 times more loans acquired for start-up capital than for consumption in urban areas, while this ratio is much less, 1.6, in rural areas. This suggests that in urban areas, relative to rural areas, borrowing is used to target production activities rather than for consumption insurance purposes.

5.5 Societal Systems

Malawi is a particularly interesting country to explore the role of gender in macroeconomics[68] as it has two clearly distinct societal systems: one matrilineal and matrilocal, and the other patrilineal and patrilocal. In patrilineal societies the wives join their husbands in the husband's village. In matrilineal societies, the husbands join their wives in the wife's village. We find that a large proportion of households in Malawi are headed by women, and quite a few by divorced women. Among the rural households in our sample, 26% are headed by women: 38% of these women are divorced and 46% are widows. In urban areas, the percentage of households headed by women is lower, 18%, but the proportion of divorced and widowed women is similar. On the other hand, there are very few households headed by divorced or widowed men: 3% of all households, and a negligible proportion is headed by men or women who never married. The majority of households are monogamous households headed by men, 65%, and there is also a sizable minority of polygamous households, 6%.[69] As we discuss next, the phenomenon of women as household heads is more prominent in the matrilineal south of Malawi.

In Malawi, different regions are associated with different societal systems. The north is patrilineal, the south is matrilineal, and the center has a mix of societal systems.[70] The clear regional demarcation can be seen in the panels A1 and B1 of Table 16. The north is exclusively patrilineal in both rural and urban areas (i.e., no household in our sample lives in an enumeration area where less than 80% of households are patrilineal). The south is overwhelmingly matrilineal but there is a nonnegligible minority of patrilineal households. The center has a similar number of households that live in patrilineal and in mixed areas, and a minority of households that live in

[68] See a general discussion in Tertilt (2012).

[69] In the online appendix Table A-17 we explore the composition of each quantile by its gender and marital status.

[70] In the IHS3 survey the information on societal systems is not provided by household but in the community questionnaire, in which a local knowledgeable informant reports the percentage of households in each enumeration area that are matrilineal and patrilineal. We have defined an enumeration area as patrilineal if the informant reported that at least 80% of households in that enumeration area were patrilineal; we have then coded these households as patrilineal. We have defined matrilineal households analogously. Households have been declared mixed if located in districts where neither systems had more than 80%.

matrilineal areas.

Separation arrangements also differ substantially across societal systems, and separations have important implications for wealth accumulation. In matrilineal societies, in case of divorce, the man leaves behind the land to be reassigned within the woman's village, the dwelling goes to the woman, and the children stay with the woman in her village. In patrilineal societies the women leave without the children, leaving behind the land and housing (a bride price may be paid back).[71] These differences imply a higher bargaining power for women in matrilineal societies, evidence of which can be seen in much higher divorce and remarriage rates in matrilineal areas of Malawi (Reniers (2003)). Specifically, we find that households headed by divorcees (80% of which are women) represent 7% in north Malawi and twice as much, 13%, in south Malawi. We also find that that 38% of all households are headed by women in south Malawi, compared to 26% for the entire country.[72]

In rural areas, in terms of CIW, we find that the rural south is the poorest region and the rural center is the richest region (see panel A2 in Table 16). In the rural center households in all three societal systems have similar consumption, but the patrilineal areas are slightly richer in income, wealth, and land. The only societal group (with non-negligible population) that has a clear positive saving rate are the matrilineal households in the urban center (see panel B2 in Table 16).[73] These households represent 12% of the urban population, are the richest group in all CIW dimensions, and have a saving rate of 33%, which is similar to the saving rate of the top income decile in the United States. In fact, this societal group is overrepresented in the top 1% in all dimensions: 50% of the consumption top 1%, 42% of the income top 1%, and a staggering 75% of the wealth top 1% (see panel B3 in Table 16). All this suggests that the restrictions to wealth accumulation are also likely to be related to societal system affiliation and the norms within that group.

[71] Different societal systems may also have implications regarding the relative population growth of lineages with each group. As noted by Miers and Kopytoff (1979), the growth rate of a particular matrilineage is fixed by the number of sisters, whereas in a patrilineal group the men can marry more wives and therefore increase the lineage's growth rate. This way, the institution of slavery allowed matrilineal societies to relax this constraint, as slave wives were accepted as "acquired" sisters, and could therefore carry on the lineage. This has implications on the role of slavery in growth models such as Lagerlöf (2009).

[72] In this direction, Gneezy et al. (2009) find experimental evidence that women take more risk in matrilineal societies — as much as men in patrilineal societies.

[73] In the north, mixed and matrilineal households also show positive saving rates, but they represent a minority of households as almost all households living in the north are patrilineal.

6 Income and Wealth Mobility

Why are the top income earners in SSA not able to accumulate wealth despite high saving rates? Indeed, top income earners in SSA save at rates as high as the top income earners in the United States (see Section 3.3). However, they are not able to accumulate as much wealth as their US counterparts. Specifically, the top 1% income earners hold 4% of total wealth in rural Malawi and 11% in urban Malawi, while this figure is 26% in the US (see Section 3.4). In this context, note that wealth accumulation is the result of past saving behavior and, hence, at saving rates similar to those of the US, the top income earners in SSA will accumulate sizeable wealth only if they remain at the top for a period of time comparable with their US counterparts. Therefore, a simple way to reconcile these two facts — high saving rates but relatively low wealth accumulation for the top income earners in SSA — is through the study of income (and wealth) mobility.

Table 17 shows the economic mobility patterns we find. To discuss mobility we focus on the fraction of households that leave a given income or wealth quantile. We focus on two cases, the United States from 2001-2007 PSID data reported in Díaz-Giménez et al. (2011) and Uganda, for which we have available panel ISA data for two waves: 2005-06 and 2009-10.[74] First, we find much less persistence in the bottom and the top of the income distribution in Uganda than in the United States. Precisely, in rural Uganda, 51% of households in the top quintile leave it within four years, whereas this figure is 46% in urban Uganda; that is, there is more income persistence in urban areas than in rural areas. Instead, in the United States only 23% of households at the top quintile leave it within four years; that is, the income earners at the top quintile in both rural and urban Uganda are likely to leave that quintile at least twice as fast as their US counterparts. This implies a larger downward mobility in SSA than in the United States. Second, focusing on the bottom of the distribution, we also find larger upward mobility in the SSA than in the United States. Specifically, around 70% of households in the bottom 20% of the income distribution leave that quintile in both rural and urban Uganda, whereas only 23% of households at the bottom of the income distribution move upwards from that quintile in the United States. Third, wealth mobility is large in absolute terms, suggesting a substantial amount of wealth risk. At the same time, wealth is more persistent than income. For instance, while 71% of households move upwards from the bottom income quintile in rural Uganda within a span of four years, this figure is 58% for wealth. Similarly, while 51% of households would move downward from the top income quintile in rural Uganda, this figure is 45% for wealth. The scenario for urban Uganda is very similar to the rural scenario but with higher persistence in both income and wealth.

[74] We transform the mobility statistics for the 6-year span reported in Díaz-Giménez et al. (2011) for the PSID data into 4-year span statistics using simple averages to make the mobility statistics between the United States and Uganda comparable.

To summarize, the fact that the rich remain rich and the poor remain poor is more a feature of the United States than of SSA; there is larger economic mobility in SSA for both income and wealth. These results suggest that the fact that top income earners in SSA are not able to transform their saving into wealth at the rate that US households do can be explained, at least partially, by a relatively lower persistence at the top of the income distribution.

7 Conclusion

We provide a comprehensive study of the cross-sectional joint distributions of consumption, income, and wealth using new and unique nationally representative ISA data for three of the poorest countries in the world: Malawi, Tanzania, and Uganda. First, we find that the transmission from income to wealth is low, which we relate to a large inability to save and accumulate wealth in SSA compared with other world regions. Second, we provide evidence of a low transmission from income to consumption, which suggests that despite being unable to persistently save — and hence, self-insure — SSA households are able to insure their consumption relatively well, a phenomenon that requires the presence of powerful informal insurance arrangements. Combining these two findings suggests a trade-off between growth and insurance in SSA. This raises the question of whether the process of accumulation (i.e., saving) and growth potentially requires the disruption of consumption insurance for SSA, a phenomenon already experienced by China (see Santaeulàlia-Llopis and Zheng (2015)).

Looking ahead, our analysis opens the road to potentially more empirical and theoretical assessments of how the joint distributions of consumption, income, and wealth are determined across aggregate stages of economic development. This implies expanding our analysis not only to other SSA countries for which ISA data are becoming available (Burkina Faso, Ethiopia, Mali, Niger, and Nigeria) but also to other developing countries worldwide. We are currently exploring this type of analysis using LSMS cross-sections beyond those under the ISA umbrella.

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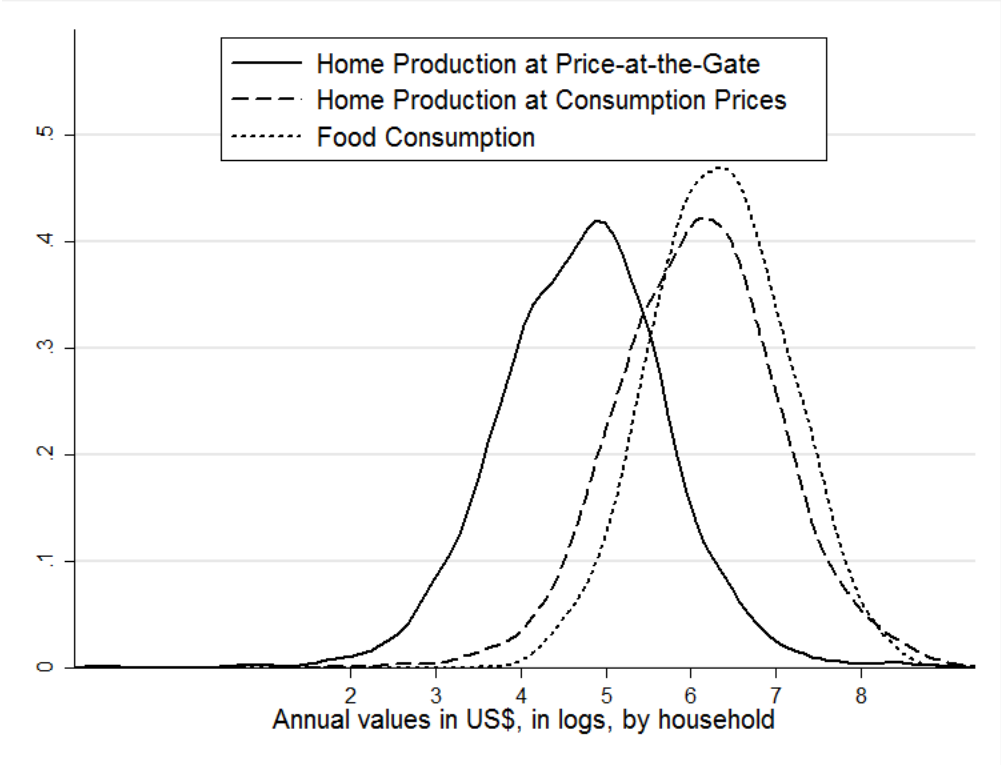
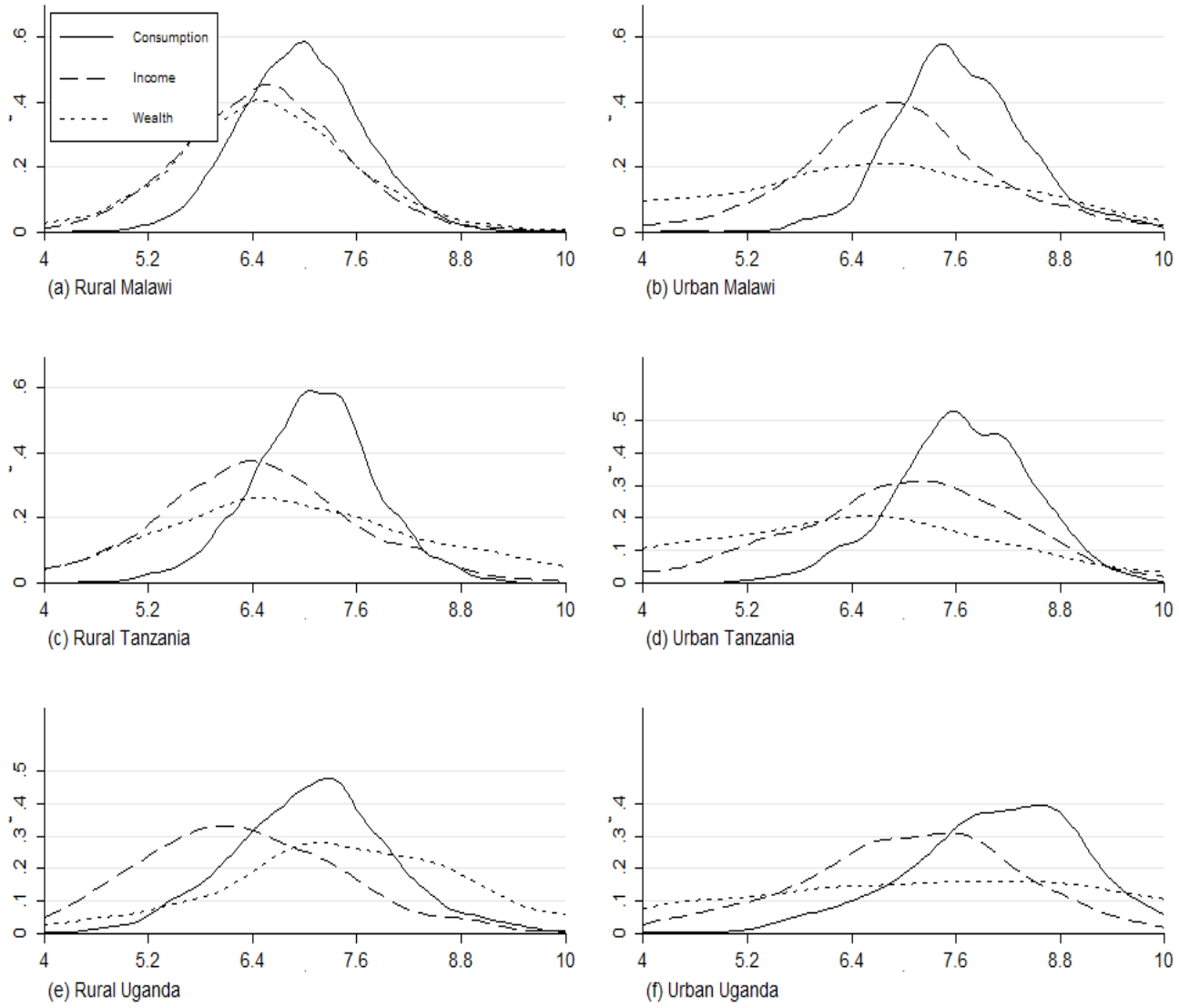
Figure 1: Agricultural Production: Consumption Prices vs. Prices at the Gate



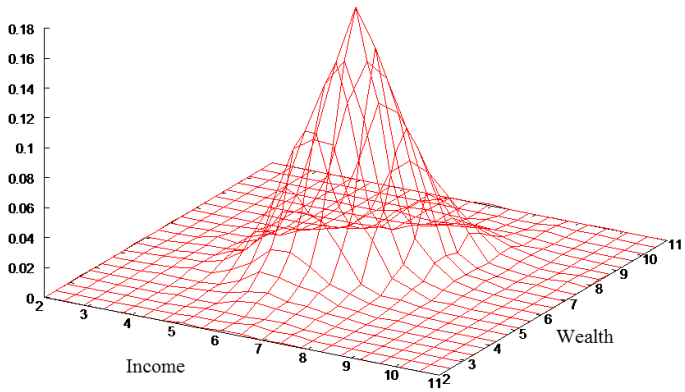
Note: Sample of 4,385 households in rural Malawi that sell neither maize nor tobacco and report consumption from own production.

Figure 2: Density of Consumption, Income, and Wealth in Malawi, Tanzania, and Uganda (ISA 2010)

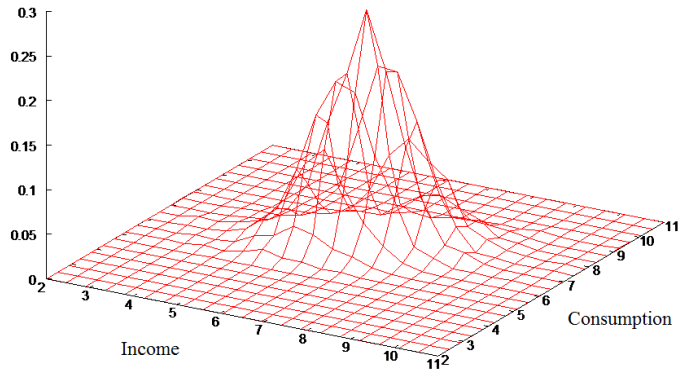


Notes: The construction of household consumption, income, and wealth is described in Section 2. All variables have been logged.

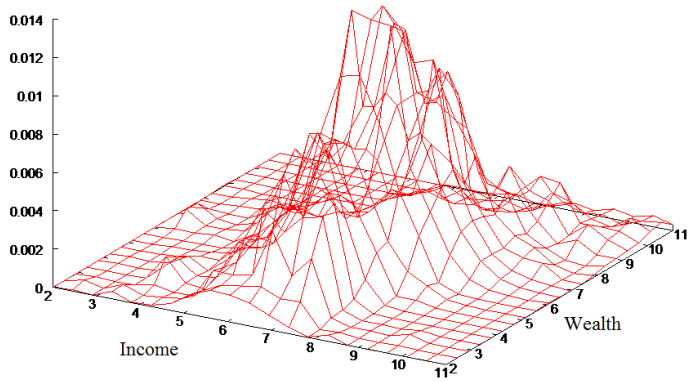
Figure 3: Joint Densities of Consumption, Income, and Wealth (Malawi ISA-2010)



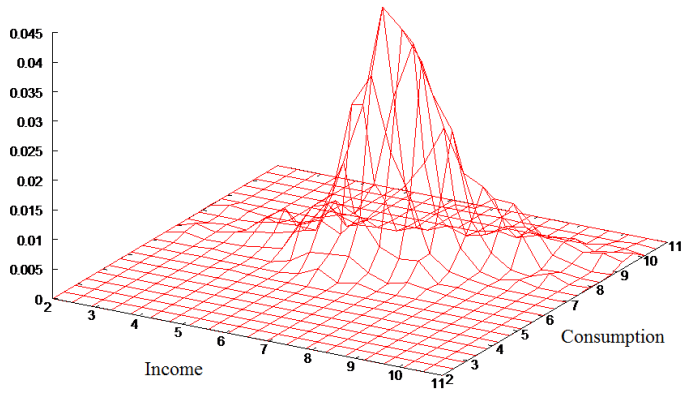
(a) Income and Wealth, Rural



(b) Income and Consumption, Rural



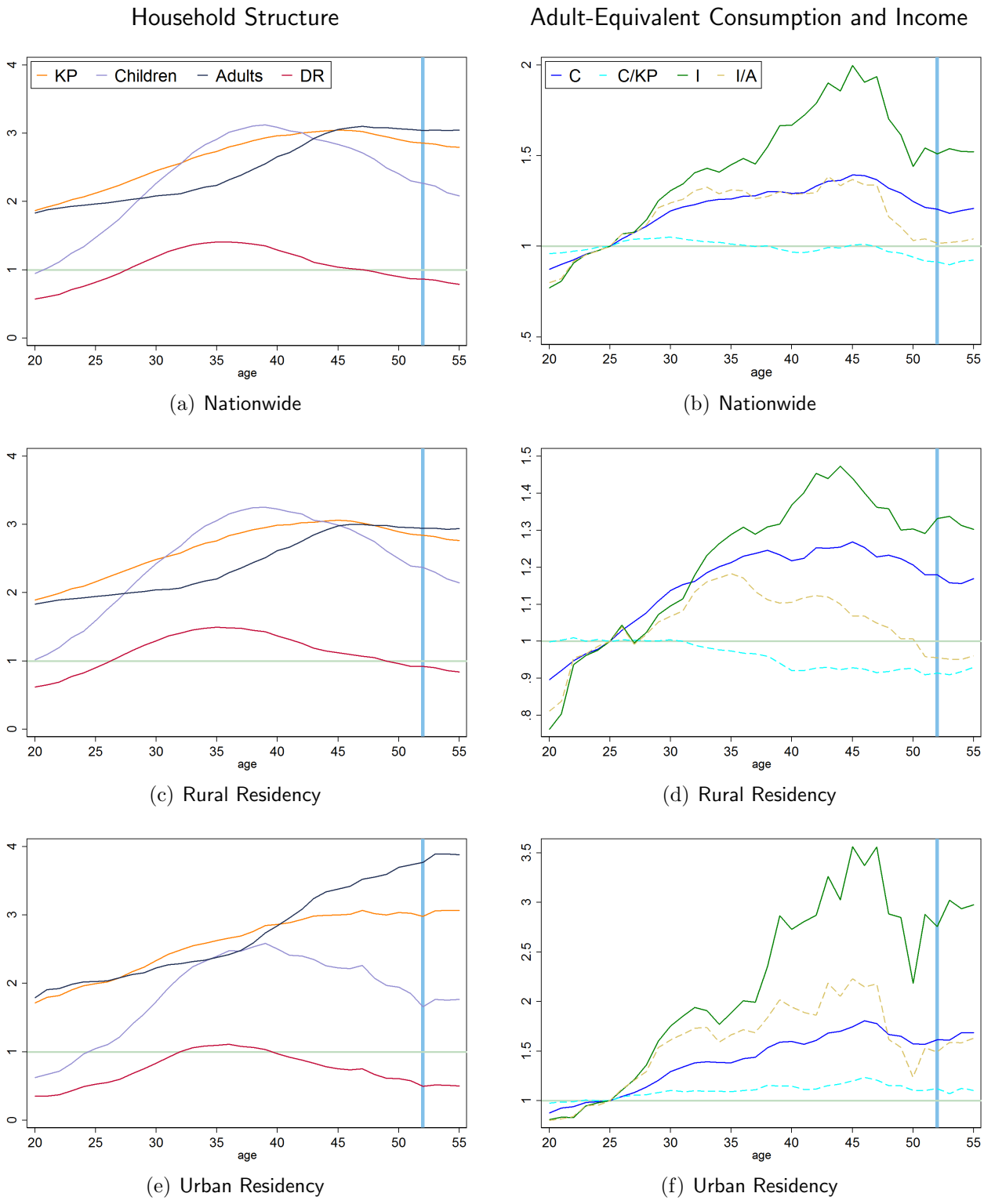
(c) Income and Wealth, Urban



(d) Income and Consumption, Urban

Notes: The construction of household consumption, income and wealth is described in Section 2. All variables have been logged.

Figure 4: Life Cycle Profiles



(a) Nationwide

(b) Nationwide

(c) Rural Residency

(d) Rural Residency

(e) Urban Residency

(f) Urban Residency

Notes: The life cycle profiles refer to adult-equivalent consumption and directly extracted from De Magalhães et al. (2015). They are normalized to 1 at age 25. In the left columns, KP refers to the equivalence scales used in Krueger and Perri (2006), children are defined as household members younger than age 15, adults above the age of 15, and DR refers to the weak dependency ratio defined as the ratio of adults to children. In the right columns, C refers to household consumption, C/KP refers to adult-equivalent consumption that uses the KP scales, I refers to household income, and I/A refers to income per adult. The definition of household consumption and income are in Section 2. These life cycle profiles control for time effects using a second cross-sectional dataset for Malawi, the Integrated Household Survey in 2004-05 (IHS2) of similar quality to our current survey (i.e, IHS3). We apply to IHS2 data exactly the same methodology discussed in section 2 to construct household consumption and income.

Table 1: World Development Indicators and LSMS-ISA (Current USD, 2010)

(a) Macro Data: World Development Indicators, 2010

	Malawi	Tanzania	Uganda	Thailand	Mexico	US
Income per capita	359	524	471	4,802	8,920	48,377
Agricultural share (% Income)	29	28	25	12	3	1
Consumption per capita	257	328	376	2,577	6,023	32,783
Rural population (%)	84	71	85	56	22	19
Life expectancy	53	59	57	73	77	79

(b) Micro Data: LSMS-ISA, 2010

	Malawi	Tanzania	Uganda
Income per household	1,384	1,625	1,623
	[1,314; 1,453]	[1,465; 1,786]	[1,358; 1,888]
Income per capita	343	378	509
	[328; 358]	[342; 414]	[335; 682]
Agricultural share (% Income)	43	34	23
Consumption per household	1,601	1,931	2,366
	[1,569; 1623]	[1,869; 1,994]	[2,240; 2,491]
Consumption per capita	416	456	589
	[407; 425]	[436; 475]	[545; 633]
Rural households (%)	82	69	77
Sample size	12,015	3,012	2,337

Notes: Statistics in panel (a) are provided by the World Development Indicators at the World Bank and are based on national accounts data. Statistics in panel (b) are produced from the ISA household surveys data provided by the World Bank and adjusted as described in Section 2. Brackets denote 95% confidence intervals.

Table 2: Rural and Urban Levels: Cross-Country Comparison (ISA 2010)

	Malawi		Tanzania		Uganda	
	Rural	Urban	Rural	Urban	Rural	Urban
Consumption	1,366	2,912	1,545	2,891	1,809	4,910
" (p.c.)	297	648	280	641	321	1,043
▷ Nondurables	1,272	2,561	1,466	2,615	1,254	3,205
▷ Durables	40	173	4	77	328	1,060
Income	1,131	2,781	1,225	2,610	1,268	3,217
" (p.c.)	246	618	221	578	225	676
▷ Agriculture	665	247	690	204	426	132
▷ Labor	212	1,630	248	1,390	183	846
▷ Business	128	1,052	178	800	534	1,843
Wealth	1,309	3,976	3,361	1,760	6,148	10,256
▷ Assets						
Land	575	401	2,341	1,588	4,421	4,774
House	404	2,690	*n.a.*	*n.a.*	1,190	4,336
Land (acres)	2.3	0.4	6	2.5	4.7	1.5
▷ Debt	5	37	11	22	*n.a.*	*n.a.*
Sample size	9,820	2,195	2,067	945	1,809	528

Notes: All variables except land acres are in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix. Per capita variables are computed dividing by total household size; alternative adult-equivalent measures are discussed in Section 5.1.

Table 3: Rural and Urban Inequality: Cross-country Comparison (ISA 2010)

	Malawi				Tanzania				Uganda			
(A) Rural Residency:	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$
Consumption	0.49	0.39	1.3	6	0.49	0.37	1.3	6	0.83	0.48	1.5	10
Income	0.99	0.54	1.7	11	1.44	0.61	2.0	21	1.67	0.74	2.6	24
Wealth	1.49	0.60	2.0	16	2.95	0.76	4.3	110	2.81	0.75	3.7	52
▷ Land	1.15	0.64	2.1	-	2.25	0.79	4.5	-	2.35	0.81	4.7	-
(B) Urban Residency:	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$	Var.	Gini	$\frac{mean}{med.}$	$\frac{90^{th}}{10^{th}}$
Consumption	0.59	0.44	1.5	6	0.60	0.40	1.3	7	1.05	0.48	1.4	14
Income	1.60	0.71	2.9	22	1.90	0.66	2.3	33	2.01	0.76	2.8	98
Wealth	4.52	0.84	6.8	282	4.44	0.94	-	-	4.67	0.80	6.5	369

Notes: All variables are in current USD. The measures of inequality that we study are the variance of logged variables (i.e., Var.), the Gini index, the mean-to-median ratio (i.e., $\frac{mean}{med}$), and the ratio between the top 10% and bottom 10% of the distribution (i.e., $\frac{90^{th}}{10^{th}}$). The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 4: Consumption, Income and Wealth by Income Partition (Malawi ISA 2010)

	Bottom (%)			Quintiles					Top (%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
(A) Rural Residency												
Consumption	911	738	796	832	1002	1269	1498	2218	2140	2596	4501	1364
" (p.c.)	297	236	258	267	312	336	367	466	473	510	905	350
Income	-40	90	165	183	416	679	1091	3182	2397	4092	15983	1110
Wealth	419	632	592	642	854	971	1396	2521	2331	3544	5243	1277
▷ Land	125	241	291	320	396	475	723	919	955	1069	1118	567
(B) Urban Residency												
Consumption	1990	1903	1708	1761	1771	2182	2677	5877	5309	8300	15902	2851
" (p.c.)	623	550	453	524	581	662	720	1381	1066	2028	2939	773
Income	-121	62	169	201	577	979	1674	8979	5220	12881	61655	2478
Wealth	1567	800	747	910	1930	1527	1888	9134	6154	16954	33881	3074
▷ Land	17	67	66	77	445	564	520	490	415	521	2287	419

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix. Per capita variables are computed dividing by total household size; alternative adult-equivalent measures are discussed in Section 5.1.

Table 5: Saving Rate by Income, Wealth, and Land Partition (Malawi ISA 2010)

	Bottom (%)			Quintiles					Top (%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
(A) Rural Residency												
Saving rate :												
By income partition	n.a.	-7.20	-3.82	-3.55	-1.41	-0.87	-0.37	0.30	0.11	0.37	.0.72	-0.23
By wealth partition	-0.79	-0.66	-0.50	-0.60	-0.25	-0.26	-0.28	-0.06	-0.11	0.09	.0.08	-0.23
By land partition	-0.22	n.a.	n.a.	-0.26	-0.33	-0.32	-0.25	-0.09	0.00	-0.10	0.13	-0.23
(B) Urban Residency												
Saving rate:												
By income partition	n.a.	-29.69	-9.11	-7.76	-2.07	-1.23	-0.60	0.35	-0.02	0.36	0.74	-0.15
By wealth partition	-0.77	-0.56	-0.54	-0.87	-1.03	-0.38	-0.33	0.18	0.18	0.34	0.42	-0.15
By land partition	-0.21	n.a.	n.a.	n.a.	n.a.	-0.21	-0.31	0.06	0.24	0.08	0.15	-0.15

Notes: Household saving rates are defined as 1 minus the household consumption to income ratio.

Table 6: Cross-Country Comparison: Top of the Income and Wealth Distributions (2010)

	Micro Data				Macro Data
	Income		Wealth		Income (p.c.)
Countries	Top 1%	Top 10%	Top 1%	Top 10%	WDI
SSA:					
Malawi	20%	50%	24%	57%	359
Tanzania	15%	51%	24%	72%	524
Uganda	31%	65%	28%	69%	471
Rich:					
US	20%	48%	34%	71%	48,377
Britain	15%	42%	28%	70%	38,363
France	9%	33%	24%	62%	40,706
Sweden	7%	28%	20%	59%	52,076
Emerging:					
India	12%	*n.a.*	*n.a.*	*n.a.*	1,417
Indonesia	13%	*n.a.*	*n.a.*	*n.a.*	2,946
China	11%	*n.a.*	*n.a.*	*n.a.*	4,433
South Africa	17%	*n.a.*	*n.a.*	*n.a.*	7,175
Argentina	17%	*n.a.*	*n.a.*	*n.a.*	11,460
Colombia	20%	*n.a.*	*n.a.*	*n.a.*	6,179

Notes: The figures for rich and emerging countries are retrieved from Piketty (2014). All numbers refer to 2010, except for Argentina, which refers to 2005. The construction of the measures of household income and wealth for SSA countries is discussed in Section 2, with further details in the online appendix.

Table 7: Shares of Total Consumption, Income, and Wealth by Rural and Urban Residency, Malawi (ISA 2010)

(A) Rural Residency

	Bottom(%)			Quintiles					Top(%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
(A1) Income Partition:												
				Shares of Total (%)								
Consumption	1	2	3	12	15	19	22	33	8	10	3	100
Income	0	0	1	3	7	12	20	57	11	18	14	100
Wealth	0	2	2	10	13	15	22	39	9	14	4	100
▷ *Land*	0	2	3	11	14	17	26	32	8	9	2	100
(A2) Wealth Partition:												
				Shares of Total (%)								
Consumption	1	3	4	15	16	18	21	31	7	10	2	100
Income	1	2	3	11	15	17	20	36	8	13	3	100
Wealth	-0	0	0	2	6	10	18	63	11	21	17	100
▷ Land	0	0	0	2	7	12	21	59	11	19	13	100
(A3) Land Partition:												
	0-10			Shares of Total (%)								
Consumption	16	-	-	20	16	19	20	25	6	7	2	100
Income	16	-	-	20	14	17	20	28	7	8	2	100
Wealth	6	-	-	8	8	14	19	51	10	16	13	100
▷ Land	0	-	-	1	5	10	19	65	12	22	18	100

(B) Urban Residency

Bottom(%)			Quintiles					Top(%)			All
0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
(B1) Income Partition:											
			Shares of Total (%)								
1	2	3	12	13	15	19	41	9	15	6	100
0	0	0	2	5	8	14	72	11	26	25	100
1	1	1	5	13	10	12	59	10	28	11	100
0	1	1	4	21	27	25	23	5	6	5	100
(B2) Wealth Partition:											
			Shares of Total (%)								
2	1	3	11	14	17	19	39	9	14	4	100
1	0	2	7	8	14	16	54	12	24	9	100
-0	0	0	0	1	4	10	84	12	29	32	100
0	0	0	0	1	5	20	74	24	20	8	100
(B3) Land Partition:											
0-75			Shares of Total (%)								
75	-	-	-	-	75	5	20	4	6	3	100
72	-	-	-	-	72	4	24	7	7	4	100
64	-	-	-	-	64	3	33	7	13	7	100
0	-	-	-	-	0	3	97	15	46	26	100

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 8: Deconstructing Consumption, Income, and Wealth by Income Partition, Malawi (ISA 2010)

(A) Rural Residency

	Bottom(%)			Quintiles					Top(%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Type (%)												
Food	67	62	65	65	67	68	68	64	68	61	47	65
(a) Purchased	46	35	37	36	33	32	31	33	31	36	33	32
(b) Own prod.	21	24	25	25	27	30	30	26	31	21	12	27
(c) Received	0	2	3	4	6	7	6	5	6	4	2	6
Clothing	2	2	2	2	2	3	3	3	3	4	3	3
Utilities	19	23	21	20	18	16	14	12	12	12	10	15
Other Nondurables	9	10	9	9	9	10	10	13	11	14	24	11
School	1	1	1	1	1	1	1	2	1	2	3	1
Health	1	1	1	1	1	1	1	1	1	1	1	1
(a) Prevention	0	0	0	0	0	0	0	0	0	0	0	0
(b) Treatment	1	1	1	1	1	1	1	1	1	1	1	1
Durables	1	1	1	1	2	2	2	5	4	5	13	3
(a) Housing own	2	2	2	2	2	2	2	2	2	2	2	2
(b) Housing rent	0	0	0	0	0	0	0	0	0	0	0	0
(c) Other	1	1	1	1	2	2	2	5	4	5	13	3
	100	100	100	100	100	100	100	100	100	100	100	100
Income Sources (%)												
Labor	-22	22	17	20	19	17	17	19	17	26	13	19
Agriculture	24	54	61	57	60	63	66	57	66	57	41	60
Fishing	114	-0	0	-1	-0	0	0	5	1	2	16	3
Business	-2	4	3	3	4	5	6	14	8	11	29	10
Capital	-7	1	1	1	1	1	2	2	2	3	0	2
Transfers	1	2	3	3	2	1	1	0	0	-0	0	1
Food Gifts	-9	18	16	17	14	12	9	3	5	2	0	7
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Portfolio (%)												
Housing	50	50	39	38	42	32	27	25	25	27	24	30
Other Durables	10	5	4	5	5	6	7	15	11	16	39	9
Land	30	38	49	50	46	49	52	36	41	30	21	44
Agric. structures	0	0	0	0	0	1	1	1	1	1	1	1
Agric. equipment	2	1	1	2	1	2	2	3	3	3	4	2
Fishing equipment	1	0	0	0	0	0	0	1	2	0	1	0
Livestock	8	6	6	5	5	10	12	20	18	23	11	13
Debt	-0	-0	-0	-0	-0	-0	-0	-1	-1	-1	-0	-0
	100	100	100	100	100	100	100	100	100	100	100	100

(B) Urban Residency

Bottom(%)			Quintiles					Top(%)			All
0-1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Type (%)											
51	48	53	57	62	60	59	43	51	36	22	51
47	46	50	53	55	53	51	40	47	34	21	46
4	1	2	2	4	5	4	2	3	1	1	3
0	1	1	1	3	3	3	1	1	1	0	2
2	2	2	3	3	3	3	4	4	4	3	3
18	24	15	16	15	14	15	15	13	17	11	14
20	14	21	17	16	17	17	23	18	26	34	19
2	1	5	2	1	2	2	6	6	7	10	3
4	8	1	2	1	1	1	2	2	2	0	1
0	0	0	0	0	0	0	0	0	0	0	0
4	8	0	2	1	1	1	1	2	2	0	1
3	2	2	3	3	3	3	8	5	9	20	5
2	2	1	1	2	2	3	2	2	2	3	2
0	1	1	1	1	1	1	1	1	1	1	1
3	2	2	3	3	3	3	8	5	9	20	5
100	100	100	100	100	100	100	100	100	100	100	100
Income Sources (%)											
-10	41	47	53	56	59	60	50	66	52	38	53
-28	2	13	16	14	19	16	8	12	7	5	10
72	-1	0	-3	-0	0	0	0	1	0	0	0
6	53	21	21	20	12	19	40	19	40	57	34
-1	2	1	1	1	0	0	0	1	0	0	0
64	-12	10	2	2	3	-0	1	-0	2	0	1
-4	15	9	11	8	6	5	1	1	0	0	2
100	100	100	100	100	100	100	100	100	100	100	100
Wealth Portfolio (%)											
73	64	61	61	63	45	51	61	62	62	56	59
17	26	26	22	13	16	19	33	31	36	37	27
1	8	9	8	23	37	28	5	7	3	7	14
0	1	0	0	0	0	0	0	0	0	0	0
0	0	0	4	0	0	0	0	0	0	1	1
3	0	0	0	0	0	0	0	0	0	0	0
6	0	4	4	1	1	2	1	1	1	2	2
-0	-0	-1	-0	-0	-0	-1	-2	-1	-1	-3	-1
100	100	100	100	100	100	100	100	100	100	100	100

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 9: Age of Household Head and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Age Groups

	15-24	25-34	35-44	45-54	55-64	65+
Population 2010	9	29	22	15	11	13

(A2) Average US$ by Age Groups

	15-24	25-34	35-44	45-54	55-64	65+
Consumption	1137	1379	1559	1526	1347	1008
Income	868	1073	1294	1327	1106	823
Wealth	639	965	1399	1604	1699	1484
▷ Land	336	471	674	711	660	522

(B) Urban Residency

(B1) Population Shares (%) by Age Groups

	15-24	25-34	35-44	45-54	55-64	65+
Population 2010	8	40	25	13	7	6

(B2) Average US$ by Age Groups

	15-24	25-34	35-44	45-54	55-64	65+
Consumption	1854	2390	3385	3684	3226	2728
Income	939	1858	3401	3623	2023	2850
Wealth	933	1488	3413	6247	6661	3409
▷ Land	311	389	458	233	928	371

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 10: Household Structure, Children, and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Number of Children and Dependency Ratios

	Number of Children					Dependency Ratio	
	0	1	2	3	≥4	DR<1	DR≥1
Population 2010	18	19	22	19	22	45	55

(A2) Average US$ by Number of Children and Dependency Ratios

	Number of Children					Dependency Ratio	
	0	1	2	3	≥4	DR<1	DR≥1
Consumption	1058	1242	1409	1417	1631	1313	1406
Income	905	975	1073	1212	1342	1114	1107
Wealth	1043	1237	1303	1274	1482	1397	1178
▷ Land	444	539	592	622	620	589	548

(B) Urban Residency

(B1) Population Shares (%) by Number of Children and Dependency Ratios

	Number of Children					Dependency Ratio	
	0	1	2	3	≥4	DR<1	DR≥1
Population 2010	24	21	21	20	15	56	44

(B2) Average US$ by Number of Children and Dependency Ratios

	Number of Children					Dependency Ratio	
	0	1	2	3	≥4	DR<1	DR≥1
Consumption	2631	3045	3109	2699	2761	3244	2349
Income	2041	2799	3306	2214	1880	3125	1651
Wealth	2573	3681	4089	2552	2256	4023	1863
▷ Land	377	367	379	460	561	452	377

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 11: Migration and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Migration History

	Not Migrant	Migrant:	R-to-R	U-to-R	R-to-U	U-to-U
Population 2010	65	35	31	4	-	-

(A2) Averages US$ by Migration History:

	Not Migrant	Migrant	R-to-R	U-to-R	R-to-U	U-to-U
Consumption	1278	1522	1505	1645	-	-
Income	1048	1224	1209	1337	-	-
Wealth	1296	1241	1245	1208	-	-
▷ Land	588	526	530	501	-	-

(A3) Population Shares (%) by Consumption, Income, and Wealth Partitions:

	Bottom (%)			Quintiles					Top (%)			All
	1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles												
Not migrant	77	76	70	72	66	67	61	59	58	55	41	65
▷ R-to-R	18	22	27	25	30	29	34	36	36	39	49	31
▷ U-to-R	4	2	3	3	4	4	4	6	5	6	9	4
▷ R-to-U	-	-	-	-	-	-	-	-	-	-	-	-
▷ U-to-U	-	-	-	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles												
Not migrant	70	75	69	71	67	65	63	59	57	55	54	65
▷ R-to-R	28	23	28	26	29	31	33	35	37	39	36	31
▷ U-to-R	2	2	4	3	4	4	4	6	6	6	10	4
▷ R-to-U	-	-	-	-	-	-	-	-	-	-	-	-
▷ U-to-U	-	-	-	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles												
Not migrant	38	43	60	59	68	67	66	65	65	64	72	65
▷ R-to-R	55	51	34	36	29	30	29	31	31	32	24	31
▷ U-to-R	6	6	6	5	3	3	5	4	4	4	5	4
▷ R-to-U	-	-	-	-	-	-	-	-	-	-	-	-
▷ U-to-U	-	-	-	-	-	-	-	-	-	-	-	-
	100	100	100	100	100	100	100	100	100	100	100	100

(B) Urban Residency

(B1) Population Shares (%) by Migration History:

Not Migrant	Migrant:	R-to-R	U-to-R	R-to-U	U-to-U
22	78	-	-	60	18

(B2) Averages US$ by Migration History

Not Migrant	Migrant	R-to-R	U-to-R	R-to-U	U-to-U
2173	3047	-	-	2782	3929
1670	2711	-	-	2206	4389
2711	3180	-	-	2457	5583
849	294	-	-	292	302

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions:

Bottom (%)			Quintiles					Top (%)			All
1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles											
35	40	32	29	27	27	17	13	15	13	1	22
-	-	-	-	-	-	-	-		-	-	-
-	-	-	-	-	-	-	-		-	-	-
51	49	56	54	60	62	63	59	62	49	49	60
14	11	12	18	13	11	20	28	22	39	50	18
100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles											
31	23	24	25	30	19	22	16	17	15	6	22
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
52	65	65	61	56	65	60	57	54	55	39	60
18	12	12	14	14	16	18	27	29	29	56	18
100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles											
10	13	17	14	16	24	29	28	46	24	3	22
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
59	53	71	67	67	59	58	48	36	44	49	60
31	34	12	19	17	17	13	24	18	33	48	18
100	100	100	100	100	100	100	100	100	100	100	100

Notes: Conditional on migration history, R-to-R denotes rural to rural migration, R-to-U denotes rural to urban migration, U-to-R denotes urban to rural migration, and U-to-U denotes urban to urban migration. All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 12: Adult educational Attainment and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Educational Attainment

	No Education	Primary Dropout	Primary	Secondary and More
Population 2010	26	45	21	8

(A2) Averages US$ by Educational Attainment

	No Education	Primary Dropout	Primary	Secondary and More
Consumption	981	1307	1601	2360
Income	743	1035	1316	2255
Wealth	872	1309	1618	1535
▷ Land	434	621	628	532

(A3) Population Shares (%) by Consumption, Income, and Wealth Partitions

	Bottom (%)			Quintiles					Top (%)			All
	1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles												
Av. Schooling Years	2	2	3	3	4	5	5	7	7	7	10	5
No education	55	54	48	45	31	24	20	12	9	11	6	26
Primary dropouts	34	38	39	41	47	47	46	41	41	40	25	45
Primary	10	7	12	12	18	22	25	30	34	26	30	21
Secondary or more	1	1	1	2	4	6	9	17	16	23	39	8
	100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles												
Av. Schooling Years	4	4	3	4	4	5	5	7	7	8	8	5
No education	42	38	40	38	34	27	20	14	15	7	13	26
Primary dropouts	27	42	42	43	45	46	48	41	40	39	27	45
Primary	21	16	15	16	17	23	25	27	28	27	29	21
Secondary or more	10	4	3	4	4	5	7	18	17	27	30	8
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles												
Av. Schooling Years	6	5	5	4	4	5	5	6	6	6	6	5
No education	15	27	30	32	33	27	25	15	15	13	9	26
Primary dropouts	43	41	41	42	43	47	45	46	47	44	47	45
Primary	25	20	19	18	19	20	22	28	26	30	35	21
Secondary or more	16	12	9	8	5	6	8	10	12	13	10	8
	100	100	100	100	100	100	100	100	100	100	100	100

(B) Urban Residency

(B1) Population Shares (%) by Educational Attainment

No Education	Primary Dropout	Primary	Secondary and More
8	23	35	34

(B2) Averages US$ by Educational Attainment

No Education	Primary Dropout	Primary	Secondary and More
1579	1851	2393	4329
1073	1105	1805	4469
1417	1627	2254	5332
213	533	542	261

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions

Bottom (%)			Quintiles					Top (%)			All
1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles											
3	3	6	6	8	6	10	12	13	13	16	9
66	19	17	21	7	4	5	2	1	2	0	8
11	36	38	33	28	36	12	9	5	5	0	23
23	34	32	34	45	35	38	22	19	16	18	35
0	11	13	12	19	24	45	67	76	77	82	34
100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles											
6	6	7	7	8	9	9	12	13	13	15	9
9	13	5	13	10	8	8	2	1	5	0	8
49	37	49	38	32	21	17	9	7	11	0	23
24	38	28	38	38	39	37	22	24	12	25	35
18	12	18	11	20	33	38	67	68	72	75	34
100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles											
7	5	7	7	9	9	9	11	9	13	15	9
8	26	9	11	10	7	6	6	6	4	0	8
38	25	31	30	20	23	28	16	27	12	0	23
38	44	44	39	36	34	35	30	30	19	20	35
16	5	15	20	33	36	31	49	37	66	80	34
100	100	100	100	100	100	100	100	100	100	100	100

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix.

Table 13: Risk and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Risk:

	No. of Shocks				Idiosyncratic Shocks			Aggregate Shocks		
					Type			Type		
	No shock	Both	Ind.	Agg.	Sick	Theft	Death	Rain	AgriC	FoodP
Population 2010	29	22	6	43	12	6	5	43	33	26

(A2) Averages US$ by Risk:

	No. of Shocks				Idiosyncratic shocks			Aggregate Shocks (Agg.)		
					Type			Type		
	No shock	Both	Ind.	Agg.	Sick	Theft	Death	Rain	AgriC	FoofP
Consumption	1369	1346	1773	1315	1468	1751	1234	1193	1451	1229
Income	1213	1013	1549	1032	1082	1426	811	928	1157	1006
Wealth	1166	1259	1639	1315	1362	1965	1073	1192	1384	1033
▷ Land	506	622	575	578	715	810	482	541	638	469

(A3) Population Shares (%) by Consumption, Income and Wealth Partitions:

	Bottom (%)			Quintiles					Top (%)			All
	1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles												
No shocks	26	30	28	28	31	30	29	29	29	26	36	29
Both shocks	42	23	26	25	20	22	21	23	23	23	17	22
Idiosyncratic shocks only	6	4	3	4	3	6	6	8	8	12	14	6
▷ Illness	18	10	11	11	11	13	12	15	16	18	11	12
▷ Theft	7	2	3	4	4	6	6	9	7	12	11	6
▷ Death	13	7	5	6	4	3	5	4	5	3	1	4
Aggregate shocks only	27	43	44	43	46	42	44	40	39	39	33	43
▷ Rain/Drought	55	54	52	51	48	44	41	32	33	30	14	43
▷ High Ag. Costs	29	28	32	31	32	31	34	39	39	43	39	33
▷ High Food Price	51	34	32	31	27	26	23	22	23	21	14	26
Income Quintiles												
No shocks	41	27	30	30	26	29	30	33	32	34	36	29
Both shocks	22	21	20	22	23	23	23	19	23	17	12	22
Idiosyncratic shocks only	4	6	3	4	5	5	6	8	7	11	12	6
▷ Illness	17	11	11	12	12	13	13	13	15	13	6	12
▷ Theft	4	3	3	4	5	6	7	8	9	6	7	6
▷ Death	4	7	4	5	5	4	5	3	2	3	0	4
Aggregate shocks only	33	46	47	44	46	44	41	39	38	38	39	43
▷ Rain/Drought	46	54	52	53	50	43	38	31	31	26	34	43
▷ High Ag. Costs	15	18	25	24	33	36	39	36	37	35	31	33
▷ High Food Price	25	29	26	27	28	27	25	21	22	16	23	26
Wealth Quintiles												
No shocks	39	43	33	33	29	29	27	30	28	30	22	29
Both shocks	31	22	29	25	23	21	22	21	21	20	28	22
Idiosyncratic shocks only	3	7	4	6	5	5	6	7	6	6	9	6
▷ Illness	11	11	12	12	13	12	13	13	13	13	15	12
▷ Theft	11	6	4	5	4	5	6	8	10	8	13	6
▷ Death	1	6	5	5	5	4	4	3	3	3	6	4
Aggregate shocks only	27	28	35	36	43	46	46	43	45	44	41	43
▷ Rain/Drought	27	24	42	38	48	48	45	38	39	38	34	43
▷ High Ag. Costs	10	19	33	31	33	32	35	37	40	36	39	33
▷ High Food Price	38	30	36	33	28	23	24	20	2	17	20	26

(B) Urban Residency

(B1) Population Shares (%) by Risk

No. Shocks				Idiosyncratic shocks			Aggregate Shocks		
				Type			Type		
No shock	Both	Ind.	Agg.	Sick	Theft	Death	Rain	AgriC	FoodP
61	11	13	15	6	6	3	9	9	18

(B2) Averages US$ by Risk

No. Shocks				Idiosyncratic shocks			Aggregate Shocks		
				Type			Type		
No shock	Both	Ind.	Agg.	Sick	Theft	Death	Rain	AgriC	FoodP
3169	2017	2933	2122	2323	3132	2469	1999	2164	1977
2763	1846	2525	1751	1618	2218	1303	1619	1995	1653
3743	1959	2947	1296	2059	3678	3061	1923	2243	1410
364	629	637	285	844	663	475	493	791	378

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions:

Bottom (%)			Quintiles					Top (%)			All
1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles											
75	66	36	48	59	62	66	70	68	84	78	61
7	11	19	17	14	14	8	5	4	4	6	12
5	9	20	12	13	9	14	17	23	7	11	13
0	11	5	7	5	9	4	5	4	4	0	6
0	4	4	5	4	3	8	7	16	3	6	6
2	4	8	4	4	2	2	4	6	1	0	3
13	13	25	23	15	14	12	9	5	5	5	15
1	21	16	15	11	10	7	4	2	3	6	9
7	6	21	14	6	13	7	6	6	4	0	9
19	14	26	29	19	19	13	9	4	5	0	18
Income Quintiles											
91	69	59	67	60	57	55	65	60	71	84	61
1	10	11	11	13	10	16	9	7	7	6	12
0	10	16	10	12	13	15	14	16	14	10	13
1	5	4	4	7	5	9	6	5	3	0	6
0	9	3	6	4	7	6	4	6	3	6	6
0	0	12	5	4	2	2	3	3	1	0	3
9	10	14	12	15	20	14	12	16	9	0	15
5	7	9	10	8	12	9	8	10	4	0	9
1	4	3	4	5	12	16	10	9	6	0	9
5	18	17	17	21	16	23	12	13	6	6	18
Wealth Quintiles											
61	51	73	64	57	59	63	61	59	71	94	61
15	18	7	13	11	13	9	12	12	10	0	11
11	3	4	8	15	12	13	17	24	15	6	13
14	7	4	5	6	7	5	6	11	5	0	6
0	1	2	4	5	7	3	8	4	8	6	6
6	1	1	2	4	2	4	4	7	7	0	3
13	28	16	14	17	16	16	10	5	4	0	14
4	7	3	5	11	13	10	9	5	10	0	9
2	2	3	2	6	13	14	10	13	6	0	9
23	44	19	23	22	18	13	14	12	9	0	18

Notes: "AgriC" stands for costs of agricultural inputs and "FoodP" stands for the price of food. All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix. The construction of the indicators for shocks reported by the households is discussed in Section 5.4.

Table 14: Insurance Mechanisms and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Insurance Mechanisms

		Self-Insurance						Mutual Insurance			
	No Insurance	Save	Diet	Ext.	Int.	Credit	Sell	Fam.	Gov	NGO	Child.
Population 2010	35	19	2	2	2	1	2	7	0	0	0

(A2) Averages US$ by Insurance Mechanism

		Self-Insurance						Mutual Insurance			
	No Insurance	Save	Diet	Ext.	Int.	Credit	Sell	Fam.	Gov	NGO	Child.
Consumption	1318	1583	1136	1135	992	1388	1558	1160	1529	941	1135
Income	983	1351	902	719	972	1088	1365	770	1752	1198	1005
Wealth	1343	1512	1089	711	862	1228	1461	1022	1687	535	2189
▷ Land	609	631	588	358	428	638	630	509	454	248	1079

(A3) Population Shares (%) by Consumption, Income, and Wealth Partitions

	Bottom (%)			Quintiles					Top (%)			All
	1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles												
No Insurance	36	35	38	37	37	31	36	33	34	34	22	35
Self-Insurance	30	25	24	25	24	30	28	32	29	35	39	28
▷ Own Savings (%)	15	16	13	15	15	19	20	25	22	29	29	19
▷ Diet (%)	0	2	3	3	2	3	2	1	1	1	2	2
▷ Labor Ext. (%)	11	3	4	3	2	3	2	2	2	0	1	2
▷ Labor Int. (%)	4	1	2	2	2	1	1	1	2	0	1	2
▷ Credit (%)	0	1	1	1	1	1	1	1	1	1	0	1
▷ Sell Assets (%)	0	3	1	2	2	3	2	2	2	3	7	2
Mutual Insurance	9	10	11	10	8	8	6	6	7	5	3	8
▷ Family Help (%)	8	8	11	9	7	8	6	5	6	4	2	7
▷ Gov. Help (%)	1	1	0	0	0	0	0	1	1	1	1	0
▷ NGO Help (%)	0	0	0	0	0	0	0	0	0	0	0	0
▷ Send Child. (%)	0	0	0	0	0	0	0	0	0	0	0	0
Income Quintiles												
No Insurance	30	44	42	40	38	37	31	29	28	24	34	35
Self-Insurance	19	23	19	21	26	27	32	34	35	39	27	28
▷ Own Savings (%)	14	11	11	12	16	17	23	26	27	32	23	19
▷ Diet (%)	2	2	3	2	3	3	1	1	1	1	1	2
▷ Labor Ext. (%)	1	5	2	3	3	3	2	1	1	0	1	2
▷ Labor Int. (%)	0	1	0	1	3	1	1	1	0	1	1	2
▷ Credit (%)	0	2	1	1	1	1	1	1	1	1	0	1
▷ Sell Assets (%)	3	2	1	1	2	2	2	3	6	3	1	2
Mutual Insurance	9	6	9	10	9	8	7	5	5	3	3	8
▷ Family Help (%)	8	6	8	9	8	7	7	4	5	2	2	7
▷ Gov. Help (%)	0	0	1	1	0	1	1	0	0	0	1	0
▷ NGO Help (%)	1	0	0	0	0	0	0	0	0	1	0	0
▷ Send Child. (%)	0	0	0	0	0	0	0	0	0	0	0	0
Wealth Quintiles												
No Insurance	27	29	31	33	36	35	36	36	34	33	41	35
Self-Insurance	27	20	25	25	26	29	30	30	32	32	26	28
▷ Own Savings (%)	17	12	13	13	17	19	22	22	26	23	22	19
▷ Diet (%)	6	2	4	3	2	2	2	1	1	2	3	2
▷ Labor Ext. (%)	1	3	2	3	3	3	2	1	0	1	0	2
▷ Labor Int. (%)	1	1	3	2	1	2	1	1	0	1	1	2
▷ Credit (%)	1	2	1	1	1	1	1	1	1	2	0	1
▷ Sell Assets (%)	0	0	2	1	2	2	2	3	4	3	1	2
Mutual Insurance	9	9	11	10	9	8	7	5	5	5	11	7
▷ Family Help (%)	9	8	10	9	8	7	6	4	4	4	10	7
▷ Gov. Help (%)	0	0	0	0	1	1	0	0	1	0	1	0
▷ NGO Help (%)	0	0	1	1	0	0	0	0	0	0	0	0
▷ Send Child. (%)	0	0	0	0	0	0	0	0	0	1	0	0

(B) Urban Residency

(B1) Population Shares (%) by Insurance Mechanism

	Self-Insurance						Mutual Insurance			
No Insurance	Save	Diet	Ext.	Int.	Credit	Sell	Fam.	Gov	NGO	Child.
22	9	3	0	1	1	1	2	0	0	0

(B2) Averages US$ by Insurance Mechanism

	Self-Insurance						Mutual Insurance			
No Insurance	Save	Diet	Ext.	Int.	Credit	Sell	Fam.	Gov	NGO	Child.
2362	2751	1717	2063	3027	1787	2454	1911	1032	1253	1620
1982	3124	772	1862	1722	1291	1529	1268	289	911	586
2096	2443	969	3264	2278	1876	1330	1706	599	469	132
669	346	111	305	522	566	344	393	0	42	55

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions

Bottom (%)			Quintiles					Top (%)			All
1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles											
22	13	45	29	25	23	19	18	21	9	11	23
1	15	15	19	14	14	14	11	11	7	11	15
1	11	4	7	7	10	8	8	11	6	6	8
0	0	10	9	3	0	3	1	0	0	0	3
0	2	1	1	0	0	0	0	0	0	0	0
0	1	1	1	0	1	1	0	0	0	5	1
0	2	0	1	3	2	1	0	0	0	0	1
0	0	0	1	2	1	2	0	1	0	0	1
2	5	4	5	4	3	2	1	0	0	0	3
2	5	3	3	3	3	1	1	0	0	0	2
0	0	1	1	0	0	0	0	0	0	0	0
-	-	-	0	0	0	0	0	-	-	-	0
-	-	-	1	1	0	1	0	-	-	-	1
Income Quintiles											
5	10	21	17	24	26	26	20	24	18	5	23
5	11	13	13	15	14	17	14	14	12	12	15
4	8	3	6	6	8	11	10	10	11	12	8
0	3	5	5	5	4	2	0	1	0	0	3
0	0	0	0	1	0	1	0	0	0	0	0
1	0	2	1	0	1	1	1	2	0	0	1
0	0	2	1	3	1	0	2	0	0	0	1
0	0	0	1	1	1	2	1	1	0	0	1
0	0	8	4	3	4	2	2	1	0	0	3
0	0	2	2	2	3	2	2	0	0	0	2
0	0	2	1	0	0	0	0	0	0	0	0
-	-	-	0	0	0	0	0	-	-	-	0
0	0	3	1	0	1	0	0	0	0	1	1
Wealth Quintiles											
24	29	15	19	22	24	26	21	32	14	6	23
13	17	11	15	17	13	13	16	8	12	0	15
10	1	5	6	8	8	8	11	6	9	0	8
2	14	4	6	4	2	1	2	0	0	0	3
0	0	0	0	1	1	0	0	0	0	0	0
1	0	0	0	2	0	1	1	0	1	0	1
0	0	0	0	2	1	1	2	1	0	0	1
0	2	2	2	1	0	2	0	0	1	0	1
5	2	3	3	4	5	1	2	0	3	0	3
5	2	1	2	2	4	1	2	0	3	0	2
-	-	-	0	0	0	0	0	-	-	-	0
-	-	-	0	0	0	0	0	-	-	-	0
0	0	2	2	1	0	0	0	0	0	0	1

Notes: All variables are averages in current USD. The construction of the indicators for insurance mechanisms is discussed in Section 5.4.

Table 15: Capital Market Incompleteness and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Ability to Borrow

	Applied		Not Applied	
	Got Loan	Loan Denied	Needed	Not needed
Population 2010	13	7	56	25

(A2) Averages US$ by Ability to Borrow

	Applied		Not Applied	
	Got Loan	Loan Denied	Needed	Not needed
Consumption	1635	1391	1237	1481
Income	1390	1085	912	1358
Wealth	1566	1200	1089	1573
▷ Land	834	558	516	550

(A3) Population Shares (%) by Consumption, Income, and Wealth Partitions

	Bottom (%)			Quintiles					Top (%)			All
	1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles												
App. Accepted (%)	8	7	7	8	10	12	15	18	19	17	27	13
Median $i > 0$	14	11	10	10	7	8	7	5	5	7	3	7
Length loan m. $i > 0$	7	9	4	6	6	4	5	6	6	6	18	5
Length loan m. $i \leq 0$	4	6	2	2	4	4	2	3	3	3	6	3
Borrowing US$ $i > 0$	34	7	22	28	31	36	27	96	71	96	432	41
Borrowing US$ $i \leq 0$	7	15	10	8	14	31	17	21	21	26	185	15
App. Denied (%)	11	10	5	7	5	6	7	7	6	10	3	7
Not App.: Needed (%)	58	60	61	60	60	59	56	46	48	40	24	56
Not App.: No Need (%)	23	24	26	25	25	23	23	29	36	46	28	25
	100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles												
App. Accepted (%)	6	7	9	9	9	14	14	17	15	19	16	13
Median $i > 0$	-	6	10	13	10	7	6	4	4	4	3	7
Length loan m. $i > 0$	-	6	5	4	8	4	5	6	7	6	6	5
Length loan m. $i \leq 0$	4	1	3	3	3	4	2	4	3	4	-	3
Borrowing US$ $i > 0$	-	22	15	15	21	36	74	74	71	100	133	41
Borrowing US$ $i \leq 0$	7	5	7	7	8	22	15	28	26	28	-	15
App. Denied (%)	5	7	8	7	6	6	7	7	7	6	4	6
Not App.: Needed (%)	54	68	62	63	63	59	55	41	44	33	28	56
Not App.: Not Needed (%)	35	19	21	22	22	21	25	35	35	42	52	25
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles												
App. Accepted (%)	31	17	10	12	11	10	13	16	19	20	15	13
Median $i > 0$	2	7	6	6	10	10	8	4	5	4	12	7
Length loan m. $i > 0$	12	5	7	7	4	5	4	6	8	6	4	5
Length loan m. $i \leq 0$	2	4	3	3	3	5	4	3	3	3	4	3
Borrowing US$ $i > 0$	295	31	106	43	36	37	28	71	62	50	133	41
Borrowing US$ $i \leq 0$	8	32	14	14	14	22	14	25	37	26	41	15
App. Denied (%)	6	6	8	6	6	7	7	7	7	7	4	6
Not App.: Needed (%)	29	55	58	58	60	57	57	48	47	41	39	56
Not App.: Not Needed (%)	33	22	25	24	23	25	23	29	26	32	41	25
	100	100	100	100	100	100	100	100	100	100	100	100

(B) Urban Residency

(B1) Population Shares (%) by Ability to Borrow

	Applied		Not Applied	
	Got Loan	Loan Denied	Needed	Not Needed
	20	7	40	33

(B2) Averages US$ by Ability to Borrow

	Applied		Not Applied	
	Got Loan	Loan Denied	Needed	Not needed
	2884	2179	2145	3781
	2933	1299	1359	3682
	3333	1888	1509	5117
	420	583	310	507

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions

Bottom (%)			Quintiles					Top (%)			All
1	1-5	5-10	1st	2nd	3rd	4th	5th	10-5	5-1	1	0-100
Consumption Quintiles											
14	15	22	24	22	20	12	23	22	19	32	20
-	7	25	5	5	5	3	2	2	2	5	4
-	12	2	10	5	6	6	8	11	14	4	8
-	5	1	4	4	5	10	6	23	23	-	5
-	66	33	7	134	68	263	333	302	1345	672	124
-	14	3	13	35	27	202	201	269	2158	-	42
3	5	4	8	7	9	8	3	4	1	1	7
76	65	59	49	46	45	36	23	23	13	7	40
7	15	15	19	25	26	44	52	51	67	60	33
100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles											
21	20	26	21	22	20	17	21	22	27	35	20
2	6	8	4	5	5	3	2	2	2	2	4
15	4	6	6	10	4	7	9	9	8	16	8
-	4	4	4	5	5	5	16	1	23	-	5
68	135	34	34	21	134	34	329	269	484	2698	124
-	14	13	14	35	30	132	483	17	2158	-	42
2	7	9	10	7	7	9	2	2	2	0	7
40	37	46	47	49	42	39	23	26	14	7	40
37	36	18	23	22	35	53	56	51	57	58	33
100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles											
39	12	14	22	19	21	17	23	26	28	17	20
4	-	7	7	5	3	3	2	2	2	5	4
9	-	3	5	10	9	5	9	16	12	4	8
5	-	5	4	6	1	10	7	6	23	-	5
202	-	197	129	47	35	34	329	672	672	1008	124
30	-	52	30	68	17	67	201	201	2158	-	42
5	16	10	9	6	6	7	6	10	3	0	7
37	67	43	45	43	43	44	24	17	15	16	40
19	5	34	24	32	29	32	48	47	54	67	33
100	-	100	100	100	100	100	100	100	100	100	100

Notes: All variables are averages in current USD. The construction of the variables on the credit market is discussed in Section 5.4.

Table 16: Societal Systems and Inequality, Malawi (ISA 2010)

(A) Rural Residency

(A1) Population Shares (%) by Societal System

	North			Center			South		
	Patri	Mixed	Matri	Patri	Mixed	Matri	Patri	Mixed	Matri
Population 2010	12	0	0	18	17	6	5	8	33

(A2) Averages US$ by Societal System

Consumption	1403	1718	1278	1603	1517	1568	799	1204	1234
Income	1351	1688	863	1414	1322	1294	774	760	854
Wealth	1445	1949	133	1583	1372	1331	690	1132	1119
▷ Land	524	838	0	830	605	627	261	447	488

(A3) Population Shares (%) by Consumption, Income, and Wealth Partitions

	Bottom (%)			Quintiles					Top (%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	90-95	95-99	99-100	0-100
Consumption Quintiles												
North: Patri	5	9	11	10	11	12	15	14	15	11	7	12
Mixed	0	0	0	0	0	0	0	0	1	0	0	0
Matri	0	0	0	0	0	0	0	0	0	0	0	0
Center: Patri	11	12	11	13	16	17	19	24	23	29	31	18
Mixed	16	16	16	17	15	15	16	21	23	21	34	17
Matri	0	2	2	4	5	6	7	7	9	10	5	6
South: Patri	36	19	10	12	6	4	3	2	2	1	0	5
Mixed	12	10	11	10	11	9	7	6	5	7	8	8
Matri	20	32	39	35	36	36	33	25	23	21	16	33
	100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles												
North: Patri	5	4	5	6	9	14	16	17	20	17	5	12
Mixed	0	0	0	0	0	0	0	0	0	1	0	0
Matri	0	0	0	0	0	0	0	0	0	0	0	0
Center: Patri	15	7	11	10	14	16	22	28	26	34	24	18
Mixed	31	15	14	14	13	17	19	21	20	19	26	17
Matri	1	2	2	3	5	6	8	7	10	6	9	6
South: Patri	19	14	9	11	7	3	3	3	4	1	4	5
Mixed	10	17	14	14	11	8	5	4	3	4	9	8
Matri	20	40	44	42	41	36	27	19	16	18	22	33
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles												
North: Patri	10	11	9	10	11	11	13	16	19	19	9	12
Mixed	1	0	0	0	0	0	0	0	0	0	1	0
Matri	1	1	0	0	0	0	0	0	0	0	0	0
Center: Patri	18	17	14	15	15	15	20	24	23	25	27	18
Mixed	13	22	23	19	16	17	16	17	16	16	27	17
Matri	1	4	6	5	7	6	5	6	6	6	9	6
South: Patri	9	4	8	7	9	6	3	2	2	2	1	5
Mixed	9	9	8	10	9	9	9	7	6	4	3	8
Matri	39	33	32	33	33	37	33	29	29	27	23	33
	100	100	100	100	100	100	100	100	100	100	100	100

(B) Urban Residency

(B1) Population Shares (%) by Societal Systems

	North			Center			South		
	Patri	Mixed	Matri	Patri	Mixed	Matri	Patri	Mixed	Matri
	11	0	0	10	19	12	1	25	21

(B2) Averages US$ by Societal System

	2316	5675	4489	2857	2156	3876	1443	3296	2619
	1987	5726	7310	2309	1739	5796	943	2495	1452
	1823	3735	4129	2396	2049	8336	508	2500	2666
	291	197	62	692	1077	392	105	101	186

(B3) Population Shares (%) by Consumption, Income, and Wealth Partitions

	Bottom(%)			Quintiles					Top(%)			All
	0-1	1-5	5-10	1st	2nd	3rd	4th	5th	90-95	95-99	99-100	0-100
Consumption Quintiles												
	0	14	10	14	11	11	10	8	6	8	0	11
	0	0	0	0	0	0	1	1	1	2	0	0
	0	0	0	0	0	0	1	1	1	2	0	0
	28	17	3	8	8	10	11	11	17	7	0	10
	5	21	41	27	21	21	16	9	3	4	14	19
	5	4	13	9	13	10	11	19	15	19	50	12
	0	10	1	3	1	1	1	0	1	0	0	1
	19	15	12	16	20	26	30	33	35	36	26	25
	43	20	21	23	25	18	20	19	21	22	10	21
	100	100	100	100	100	100	100	100	100	100	100	100
Income Quintiles												
	9	12	7	10	10	10	13	10	8	4	7	11
	0	1	0	0	0	0	0	1	1	1	3	0
	1	0	0	0	0	0	0	1	0	2	2	0
	4	2	7	6	9	11	11	12	11	12	5	10
	9	3	20	12	19	22	31	12	10	16	8	19
	11	12	5	7	10	11	9	24	25	27	42	12
	0	1	0	2	2	2	1	0	1	0	0	1
	30	26	30	32	25	22	22	24	28	23	34	25
	37	43	30	31	24	21	14	17	16	14	0	21
	100	100	100	100	100	100	100	100	100	100	100	100
Wealth Quintiles												
	15	8	12	10	10	13	11	9	7	10	2	11
	0	0	0	0	0	1	1	1	1	1	0	0
	0	0	1	0	0	0	0	1	1	1	0	0
	15	8	8	10	8	11	9	11	6	13	0	10
	16	8	21	17	16	17	25	20	30	11	0	19
	16	11	4	10	12	14	10	16	12	20	75	12
	0	2	1	1	3	2	0	0	0	0	0	1
	15	21	39	26	30	23	23	23	27	27	7	25
	23	43	15	27	20	19	22	18	16	17	16	21
	100	100	100	100	100	100	100	100	100	100	100	100

Notes: All variables are averages in current USD. The construction of the measures of household consumption, income, and wealth is discussed in Section 2, with further details in the online appendix. The construction of the indicators for societal systems is discussed in Section 5.5.

Table 17: Income and Wealth Mobility, Uganda (ISAs 2005-2010)

		Fraction (%) of Households that Left the Quintile				
		1st	2nd	3rd	4th	5th
Income						
US		23	37	40	39	23
Uganda	▷ Rural	71	71	74	72	51
	▷ Urban	70	69	72	71	46
Wealth						
US		25	39	41	37	20
Uganda	▷ Rural	58	69	71	66	45
	▷ Urban	53	66	69	64	39

Notes: The figures of economic mobility use the 2005-6 — 2009-10 Uganda ISA panel. The definition of household consumption, income, and wealth is discussed in Section 2. The data are divided by quintiles with 1st denoting the poorest quintile and 5th the richest.