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Problems of Measuring Changes in Poverty Over Time: The Case of Uganda 1989–1992

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Official reports on household surveys of Uganda in 1989 and 1992 record an increase in consumption much smaller than the rise in the CPI. Use of alternative price deflation and correction for sampling differences still implies a dramatic collapse in reported real consumption. The decline is claimed to be spurious, given production and other data. It is argued that there was a large increase in recall error, due to the switch from a dedicated list format budget survey to a large integrated survey with open format expenditure questions. Food purchase estimates using shorter recall periods are consistent with this interpretation.

1. Introduction¹

Uganda is one of the few apparent success stories of 'structural adjustment' in Africa, recently acclaimed as being among the three fastest growing economies on the continent. However, some critics have argued that the growth reported in the macroeconomic statistics has not been matched by improvements in the living standards of the poor, which may even have deteriorated. Often, the absence of statistically representative data at the household level has meant that such debates over 'structural adjustment' and poverty in Africa generate more heat than light. Some indication of this fundamental lack of knowledge is provided by the language used in the World Bank's recent high profile report, 'Adjustment in Africa'. In it, the Bank asserts: 'The poor are probably better off and almost certainly no worse off' as a result of economic reforms (World Bank, 1994). However, the availability of two (nearly) nationally representative household surveys for Uganda — one for 1989 and the other for 1992 — should permit some assessment of how the poor are faring under a period of structural adjustment. Unfortunately, their results are so at variance with each other that they do not seem comparable. As a consequence, this paper does not give substantive results about changes in poverty in Uganda. Instead, it tries to explain the contradictions between the surveys and in doing so, illustrate some serious pitfalls which may arise when attempting to measure living standards from conventional quantitative household surveys.

The paper is structured as follows. Section 2 discusses the mean expenditure per household figures reported in the two official survey reports. Deflating by the CPI, these imply a dramatic and wholly implausible fall in living standards. This result is shown to stand even after a number of corrections for differences in sampling, household size and regional food prices. Section 3 uses insights from other data sources by comparing the surveys' expenditure estimates for a few locally consumed and produced items with production estimates. Section 4 argues that much of the discrepancy between the surveys is due to greater recall error in the SDA survey as a result of its open-format questionnaire design. Section 5 shows that estimates of food purchases based on shorter recall periods are comparable with those in the HBS and argues that asking the shorter recall questions may have biased downwards the 30 day estimates. Section 6 considers some other factors which may have led to spurious discrepancies between the surveys, whilst Section 7 considers whether some of the recorded fall in living standards may have been genuine. Section 8 concludes.

2. Survey Results

This paper compares two large scale household surveys recently collected by the Government of Uganda, namely the Household Budget Survey (HBS) of 1989/90 and the Social Dimensions of Adjustment (SDA) Integrated Survey of 1992/93. Both surveys were fairly large, the HBS covering around 4,500 households; the SDA around 10,000. Table 1 presents the consumption estimates as given in the official reports on these surveys published by the Uganda government (Republic of Uganda, 1994a). There are large rises in reported consumption per household between the surveys:

¹ This paper is one output of a project, 'Changes in Poverty in Uganda', funded by the UK Overseas Development Administration. Earlier drafts have been presented to the Structural Adjustment Forum Workshop on 'Poverty and Adjustment', University of Nottingham, 8–9th July 1994, and a World Bank workshop on 'Changes in Poverty in Africa in the 1980s', Washington DC, 22–23rd September 1994. The author wishes to thank participants at these workshops for their comments. Useful insights were also provided by project collaborators at the Centre for the Study of African Economies, at Makerere University and at the Statistics Department of the Ministry of Finance and Economic Planning, Republic of Uganda. The contribution of Peter Hodgkinson, Co-Director of the Statistics Department was particularly valuable. However, the opinions expressed and any errors of fact should be attributed to the author alone. Alemayehu Taffesse provided substantial research assistance and Tom Emwanu helped in the calculation of price indices.

slightly over 50% in rural areas and just under 100% in urban areas. However, over the same period prices also rose substantially. Converting the consumption figures into real terms is problematic since there were significant and erratic price movements within the period of the surveys². However, simply averaging monthly CPI figures over the periods of the surveys reveals a rise of 141% which far exceeds the increase in reported nominal consumption. Indeed, taking the figures at face value, there appears to have been an incredible 35% decline in real household consumption between the two surveys. Could this be genuine? This issue is considered in more detail in Section 7. For now, it suffices to say that, during the nightmare of the Amin regime, 1972–79, real GDP per capita fell by around 44% (Jamal, 1994) and not even the most trenchant critics of economic reform in Uganda would argue that its effects are comparable to those of Amin.

The comparison of the consumption figures in the survey reports with the CPI is rather too cursory and overlooks a number of qualifications which must be made.

Different sample coverage: The HBS excluded seven districts from the East and North regions due to insecurity³. These are poorer than the country on average. Hence, the proper comparison is between the HBS and the SDA excluding these districts. This reduces the gap between the surveys, raising average household consumption in 1992 by around 6%. However, this does little to reconcile the two surveys, as there appear to be dramatic falls in living standards in the West and Central regions where coverage was comparable.

Per capita comparisons: Average household size was higher in the HBS than the SDA (5.45 compared to 4.76). Hence the surveys imply a higher rise in consumption per capita than in consumption per household: 79% as compared to 56%. However, the marked difference in household sizes between the two surveys is disturbing. The 1991 census reports an average household size of 4.8, corroborating the SDA figure (Republic of Uganda, 1994c)⁴. There are two possible explanations for why the HBS might over-estimate household size, both of which will tend to imply that the per capita comparisons under-state the fall in living standards reported in the surveys. Firstly, it may be that the HBS over-sampled larger households. Since large households have significantly lower expenditures per capita in both surveys, correcting for their over-representation in the HBS would tend to widen the gap in living standards suggested by the surveys⁵. Alternatively, the difference in household size might be a consequence of the looser approach to the definition of household members which that survey adopted. The two surveys used the same 'cooking pot' definition of a household, with identical wording in the manuals of instructions for field workers. However, whilst the HBS questionnaire required the listing of household members only, the SDA questionnaire allowed for other individuals 'associated with the household' to be listed and then subsequently coded them as 'usual' household members or others. The 'others' included 'regular members' who resided elsewhere for more than 6 months. It seems likely that, in the HBS, households may have reported some of this group as

² The two surveys ran from April 1989 and April 1990 and from February 1992 to March 1993 (with a few households surveyed after this time). The CPI rose by a third in the first four months of 1992; thereafter it was stable (Republic of Uganda, 1994b). No monthly national CPI figures could be obtained for 1989, since that was the year in which a new CPI was created (based on weights from the HBS). However, the new price index applied to Kampala give a figure for April 1990 that is 41% higher than that for April 1989 (Republic of Uganda, 1992).

³ There were a total of 34 districts in Uganda in 1989.

⁴ It is most unlikely that household size will have fallen by one between the HBS and the census. Both surveys give similar estimates of the total number of households, implying that the HBS over-estimates total population.

⁵ This contrasts with the case of Cote d'Ivoire, where apparent discrepancies in estimates of welfare between different years of the Living Standards Measurement Surveys in different years were reconciled by correcting for over-sampling of small households in the earlier surveys (Demery and Grootaert, 1993).

household members; for example, children who have moved away and spouses working elsewhere. In such cases, the consumption of non-residents may not have been included, in which case, comparisons of consumption per household are more valid than those per capita.

Some insight into which explanation is correct is provided by comparing household demographic composition in the two surveys (table 2 refers).

Table 2 provides little support for the idea that most of the excess household size in the HBS is due to a wider definition of the household. Males aged 13–59 are perhaps the most likely demographic group to be recorded as household members in the HBS, even though they were residing elsewhere. It is true that this group does constitute a larger proportion of household membership in the HBS than in the SDA survey. However, differences in the number of males aged 13–59 accounts for only 0.2 of the 0.69 difference in mean household size between the surveys. Moreover, including individuals who were not regular household members but are listed in the SDA (eg school children living elsewhere) raises average household size but does not eliminate the difference. This suggests that not all the excess household size in the HBS was due to that survey taking a more inclusive definition of household membership⁶. Ultimately, however, the issue of the difference in household size is something of a distracter. Even if the surveys are compared on a per capita basis, expenditures still rise less than the CPI.

Alternative price deflation: comparing the rise in reported expenditures with that of the CPI may be misleading. The CPI is based on prices in major towns, whereas the nearly ninety percent of the population live in rural areas⁷. Indeed, one initial hypothesis to explain the apparent fall in real consumption between the surveys was that urban prices had risen much faster than rural prices⁸. However, careful examination of the survey data suggests that, while prices in the whole of Uganda may have risen by less than the CPI, the rise still far exceeds the increase in expenditures between the surveys.

Food prices in different areas of the country can be estimated using unit values for consumer expenditures calculated from the surveys⁹. Unit values were calculated for twenty-nine food items and medians computed for every two months of the two surveys for eight different areas of the country (ie each of the four regions of Uganda separated urban and rural)¹⁰. One way of representing these

⁶ For example, it seems unlikely that households will claim that children aged 0–5 as their members when in fact they reside elsewhere. However, the estimate of such children per household is just as over-stated in the HBS as total household size.

⁷ In this respect, it is suggestive that the rise in consumption in Kampala most closely matches that in the CPI given that Kampala prices account for more than 50% of the CPI (Republic of Uganda, 1993b).

⁸ In some African countries, CPI figures have often been spuriously low prior to liberalisation since they reflect 'official' prices which may have been controlled at levels below the black market levels which many citizens purchase. However, this is unlikely to have been a problem in Uganda in 1989, since the price information was gathered in open markets in Kampala and consumer price controls were not a significant feature of the economy at that time.

⁹ Deaton (1987) argues that unit values may give poor estimates of prices, both because of measurement errors in recalling values and quantities and because of inter-household differences in the quality of items consumed. Indeed, the unit values calculated from the surveys varied wildly. However, the effect of this variation was reduced by taking median unit values of regions with fairly large samples.

¹⁰ Unit values often differed according to the units in which the items were consumed. Typically, only observations reported in the same units were used in the calculations. Where possible, the preferred units were metric. In some cases several units were used, when the different units implied the same median value per kilogram. For some item codes, insufficient observations, heterogeneity or other problems prevented direct calculation of median unit values; instead prices were imputed by assuming relations with unit values that could be calculated. For example, one code was for 'other fish'. The price of this item was assumed to be a weighted basket of those fish with specific codes.

estimates of prices is by the food poverty lines reported in Table 3. These lines give estimates of how many shillings per month need to be spent on food in order to provide 2200 calories per day. These lines depend on the composition of the food basket, as well as food prices, and here it is assumed that the food basket reflects the national consumption pattern of the poorest half of the population¹¹. Table 3 suggests that food prices in the country as a whole have risen rather less than reported by the CPI; 115% compared to 127%¹². This discrepancy is consistent with prices in most urban areas having risen at higher rates than in the rest of the country. In particular, excluding Western region, food poverty lines in other urban areas — which collectively account for 88% of the CPI — have risen by over 130%.

The household surveys do not allow direct inferences about the prices of most non-food items, since they inquired about only expenditure values and not quantities. How much is required for 'essential' non-food expenditures can be estimated, following Ravallion and Bidani (1994), by assuming that they can be equated to the non-food spending of households whose total expenditure is equal to the food poverty line¹³. Adding such 'essential' non-food spending to the food poverty line gives the total poverty line (Table 3 refers). However, this procedure does not seem useful in making inferences about non-food prices. Indeed, the total poverty lines rise slightly less between the surveys than do the food poverty lines, yet the CPI shows that non-food prices rose faster than food prices during the period — at around 154%. This is probably because a rise in the relative prices of non-food items caused a substitution away from non-food, reducing the value of apparently 'essential' non-food spending. This suggests that the total poverty lines calculated following Ravallion and Bidani understate the rise in the cost of living in Uganda.

Revaluation of self-consumption at market prices: the SDA survey interviewers were trained to value goods consumed out of home produced stocks at farm gate not market prices. Table 1 simply gives total reported consumption, without revaluing home produced consumption at market prices. However, making such a revaluation does not appear to dramatically alter the expenditure estimates¹⁴. In 1989, it causes an upwards revision of 5.6%; in 1992 the adjustment is slightly less at 3.4%.

Exclusion of the rich sub-stratum from the HBS: the HBS survey deliberately over-sampled rich households. Within parishes, a separate sub-stratum for those with good housing was created and

¹¹ More specifically, the food basket is such that the shares of expenditure on different items is equal to the average shares amongst the poorest half of the population. By defining the food basket in terms of expenditure shares rather than quantities, there is some allowance for substitution to cheaper items. The poorest half of the population were identified according to their real food consumption per adult equivalent. The adult equivalence scales used here and subsequently weight children according to the minimum calorie requirements for boys recommended by the WHO (see West, 1987).

¹² This and subsequent calculations based on the CPI follow the procedure given in the notes to Table 1. There are some conceptual differences between the food poverty line and the CPI. The former is based on the consumption patterns of the poor whilst the latter is for the entire population. Moreover, a calorie based food poverty line is liable to rise more slowly than the price of the food basket used in the CPI. In particular, the food poverty lines in Table 3 represent the cost of two different food baskets (one for 1989 and one for 1992) that give 2200 calories per adult equivalent per day. Consumers are likely to have substituted away from goods whose relative price has risen.

¹³ The rationale is that, since households on the food poverty line are sacrificing calories deemed essential for non-food items, these non-food items should also be viewed as necessities.

¹⁴ Revaluation of home consumption to market prices was carried out for major items. Median unit values were computed for home consumed items in the same manner to that adopted to estimate prices of purchased food; that is to say median unit values were constructed for each region for every two month period of the survey. Home consumption values of major items were then adjusted by dividing by the unit value for home consumption and multiplying by that for purchases.

accounts for around 8% of the sample. The average consumption of such households is markedly higher than that of the rest of the sample. By contrast, the SDA survey used simple random sampling within each enumeration area. However, each household sampled in the two surveys was assigned a multiplier equal to the number of households in the population it was designed to represent. The rich households in the HBS had much lower multipliers and when weighted constitute less than 1% of the sample. Consequently, excluding these households does not greatly reduce the weighted expenditure figures for 1989: the reduction would be 823 Shillings per household per month (or 2% of the mean).

Adjusted comparisons of living standards: the two surveys still show an implausibly large fall in living standards even after adjusting the raw data in the ways listed above. This can be seen most clearly by calculating the number of households whose per capita consumption at market prices falls below the poverty lines given in Table 3¹⁵. The results imply that 73% of the population surveyed were poor in 1992 compared to 55% in 1989^{16,17}. That the number of poor in Uganda rose by a third over three years seems incredible and suggests serious problems of comparability between the surveys.

3. Insights from Other Data Sources

Given the implausible difference between the surveys, it is natural to look for other sources of data which can help adjudicate between the two. This is difficult in a country such as Uganda where much production is informal and where international trade is often unrecorded. However, the government Statistics Department did refer to other sources when adjusting the HBS figure to provide an estimate of private consumption for the national accounts. They came to the conclusion that the consumption reported by the survey was in excess of what was plausible from other data and hence revised the figure down by 20–25% for national accounts purposes. A similar evaluation has yet to be performed with the SDA survey.

More specific information is provided by the regular surveys of manufacturing establishments which are believed to provide reasonable estimates of local production. Where items are largely domestically consumed and produced, these production estimates can be directly compared with the consumption figures from the surveys. Unfortunately, the range of manufactured items which are almost exclusively locally produced and consumed is rather small. However, the Statistics Department have carried out comparisons for four such items: Uganda sugar, washing powder, fizzy soft drinks (sodas) and cigarettes (Table 4 refers).

Table 4 is disturbing for those who use household surveys to try to quantify living standards and accurately measure poverty. There is little correspondence between most of the survey estimates of consumption and the production data. It is perhaps not surprising that both surveys seem to underestimate consumption of cigarettes and soft drinks. Whereas sugar and soap are likely to be regularly purchased by a single household member, soft drinks and cigarettes may be bought intermittently and often by different individuals (only one of whom may be the survey respondent). However, the discrepancies between the consumption figures from the surveys and the production estimates are otherwise complex and perplexing. The SDA is reasonably accurate on Uganda sugar and washing

¹⁵ In fact, within survey price variation meant that it was important to use seasonal poverty lines. These were calculated for every two months of the survey. The poverty lines in Table 3 are simple annual averages of the seasonal poverty lines.

¹⁶ If children are assumed to have lower expenditure needs than adults, poverty is less pervasive. Comparing household consumption per adult equivalent with the poverty lines in Table 1, the proportion in poverty is 60% in 1992 and 44% in 1989.

¹⁷ As previously noted, the HBS survey did not include seven districts for security reasons. Excluding them also from the calculations using the SDA survey lowers the percentage of the remaining sample in poverty by 2%.

soap, but massively under-reports cigarettes and soft drinks. The HBS also under-estimates the latter two items — although not as heavily — but greatly over-states Uganda sugar and soap. Some of the excess of HBS consumption over production may reflect higher imports prior to the liberalisation of foreign exchange and trade in 1991 and the strengthening of domestic sources of supply. In the case of Ugandan sugar, the over-estimate of production by the HBS may be due to respondents incorrectly describing imported sugar as local: local production was just coming on stream at the time of the HBS.

However, there is one general pattern which emerges from Table 4: the proportionate increases in expenditure between the HBS and SDA are far less than would be expected from the production figures. The case of sodas is revealing. In 1989, 10% of households reported purchasing sodas, compared to only 4% in 1992. Bearing in mind the production estimates, perhaps the simplest explanation of the discrepancy is that most consumers of soft drinks in 1992 are simply omitting to report any purchases at all. There are alternative explanations for this, but perhaps the most plausible is questionnaire design.

4. Questionnaire Design in the Two Surveys

Although the two surveys were implemented by the same agency (the Statistics Department of the Ministry of Finance and Economic Planning), they had very different objectives. The HBS was a detailed consumption survey, aimed at providing information on expenditure shares of individual items in order to weight prices collected for the CPI. Only minimal non-consumption data was sought. By contrast, the SDA was an integrated survey funded by the World Bank with the aim of collecting a general purpose data-set covering not only consumption but also health, education, time use, income, fertility, mortality, assets and anthropometrics. One indicator of this difference is the number of variables not connected with consumption in the computer databases containing the surveys. With the HBS, there were less than 20 such variables; in the files recording the SDA main questionnaire, there were over 200 non-consumption variables. In addition, the SDA interviewers had separate questionnaires for household enterprises, including farms.

Nonetheless, at first glance, it appeared that the two surveys would give comparable consumption estimates. The phrasing of the questions about expenditures was similar, as was the coding for the items and their units, although the HBS had a more exhaustive listing of goods, especially non-food¹⁸. However, the lay-out of the questionnaires was very different. The expenditure sections of the SDA questionnaire were open format and rather condensed, consisting of five tables which were blank except for column headings. The names of individual items or even groups of items were not printed on the questionnaire, leaving the interviewer to write them in on every row. By contrast, the HBS questionnaire had 15 pages on which to list expenditures, with the name of sub-groups of items printed on the questionnaire with ample lines between each sub-group¹⁹. For example, one sub-group printed on the HBS questionnaire was 'non-alcoholic beverages'. Such a heading would surely have acted as a prompt for the interviewers, making it unlikely that they would omit to ask the household whether they had bought any soft drinks. Conversely, the SDA questionnaire provided much greater opportunity for such an omission. In principle, enumerators were supposed to work their way down the list of items in the code book, inquiring whether households had consumed any of them. However, a total of 73 food, beverages and tobacco items were listed in the code book making such a procedure very time consuming and tedious. Moreover, interviewers may not have referred to the code-book, since doing so is rather cumbersome and might have disrupted the flow of the interviews,

¹⁸ Forty-five food, beverages and tobacco items are directly comparable between the surveys, each being given their own code.

¹⁹ Extracts from the two questionnaires are appended to this paper: one page from the HBS covering a few food items and another from the SDA survey showing the table used to record all food, beverage and tobacco consumption.

which are likely to have been more conversational and less prescribed than might be thought from the questionnaire. The author questioned some field workers who had been interviewers or supervisors in the SDA survey and they differed in the procedure they reported having used. Some claimed to have read out the list from the code book. Others say they first asked the household to list its own consumption and then selectively prompted for consumption of some items omitted from this initial listing. Under the second procedure, it is likely that some items will not be recorded simply because the household respondent did not mention them and the interviewer did not prompt for them. Such dangers are amplified by the increased time pressures and likely interview fatigue arising from the much more comprehensive SDA survey. Although the survey was designed to be implemented in two interviews, field workers reported that they sometimes made only one visit in order to save time. One interviewer who had worked on both surveys said that it was clear with the HBS that he had the full attention of households, whereas with the longer SDA interviews, he could see the respondents' eyelids drooping.

It seems likely therefore, that the detailed list based approach of the HBS survey will have recorded a larger number of expenditures than the condensed open format of the SDA questionnaire. Indeed, respondents in 1992 do report consumption of a smaller number of items. Of the 45 item codes for food, beverages and tobacco that are directly comparable, the number recorded as being consumed by respondents in the HBS averages 12.5. For the SDA the figure is considerably lower at 9.5²⁰. This fall could be due to households being poorer in the SDA survey, but may simply reflect increased recall error. For the items without directly comparable codes, one might expect even greater differential recall error with the SDA survey, since it tended to use catch-all 'other' codes for items which were individually listed in the HBS. In the case of food, beverage and tobacco, there is some evidence to support this, although the effect is likely to have been rather modest. The share in total food, beverage and tobacco consumption of items without directly comparable coding falls from 27.9% in 1989 to 25.2% in 1992. The greater detail of the HBS may have been more important in the case of non-food items since these are less homogeneous than food. For example, in the case of clothing, the HBS listed 104 different items whereas the SDA gave only 15 categories, including 'other mens' clothes', 'other women's clothes' and 'other children's clothes'. Given this difference in detail, it is unremarkable that the HBS records higher expenditure on clothing. However, the magnitude of the difference is surprising: the two surveys give roughly equal estimates in nominal terms, despite the CPI having more than doubled over the period.

Table 5 looks at the expenditures over the last 30 days reported for the 45 food, beverage and tobacco items which can be directly compared. Along with mean household expenditure (averaged over the whole sample), it records the percentage of households who bought the item and the mean expenditure over this subset of households (termed the conditional mean expenditure). What is striking from the table is that there are widespread and dramatic falls in the proportions of households reporting buying items, whilst the conditional mean expenditures of those who do say they have made purchases rise much more than the unconditional mean expenditures²¹. This implies that most of the apparent fall in real expenditure between the survey is due to fewer households reporting any purchases rather than smaller purchases by the others. If the proportions buying each item in 1992 had been the same as those in 1989, total expenditure on the 45 items would have risen by 90% rather than the 56% observed²². This pattern is not easy to explain if the apparent fall in real consumption between the surveys was due to a large drop in general living standards. In such circumstances, one would

²⁰ This figure is weighted by the population multipliers in the survey and excludes from the SDA those districts which were not covered by the HBS.

²¹ Comparing the simple sums of the conditional means for the two surveys, there is a 127% rise between the surveys.

²² If the proportions with positive purchases had been at the 1992 levels in both years, the rise in expenditure between the surveys would have been 91%.

expect to see substantial drops in average purchases as well as falls in the proportion of households consuming any. Instead, the open format of the SDA questionnaire is likely to have led to some items of expenditure not being reported at all when they would have been picked up by the list format of the HBS questionnaire. One suggestive example is that of eggs. This item was printed on the HBS questionnaire but is a sufficiently small and rather idiosyncratic item for it to have been often omitted when using the open format SDA questionnaire. 12% of households in 1989 reported buying some eggs in the 30 days before the survey compared to only 5% in 1992. However, of those households buying eggs, mean expenditures rose from 654 shillings per month to 1545 shillings. Unfortunately, if it is true that there are large differences in recall error between the surveys, this makes comparison between them extremely difficult since one might expect those who do remember to mention an item in 1992 to have spent more on it than those who forget.

The possibility that the open format of the SDA questionnaire led to greater omission of consumption items was implicitly recognised by the Statistics Department even before the contradictions with the HBS became apparent. In particular, the 1993 Monitoring Survey implemented to follow-up the SDA survey explicitly listed a large number of both food and non-food items in its questionnaire.

5. Recall Periods

Further support for the idea that greater recall error may account for the fall in reported consumption between the surveys is provided by comparing the reports of purchases made within shorter recall periods. For food, beverages and tobacco and a few regularly consumed household items, two recall periods were used. The estimates referred to previously are all based on 30 day recall questions. However, shorter recall periods were also used for purchases (but not home consumption). Comparisons are problematic because of differences in the short recall concepts between the surveys. In the HBS, the recall period was the previous seven days. In the SDA survey, the recall period was the period between the first and second visit of the interviewer. This seems likely to also be seven days, although this is rather unclear²³. The HBS estimates are relatively robust to which recall period is taken. For those items for which the two recall periods are available, the seven day estimate of mean household expenditure is 1.1% smaller than the 30 day one. However, with the SDA survey there is a large discrepancy, with 'the between' visits estimate being 25% larger than the 30 day figure. There are two explanations for why the two alternative food expenditure estimates should differ in the SDA survey and not the HBS. One is that respondents find it easier to recall purchases made after a memorable event such as the first SDA interview than they do when simply asked to think back 7 or 30 days. Recalling 'between visits' may be more likely to induce actual recall of expenditures, whereas the seven day recall may lead to 'normative' recall, that is to say reporting typical weekly expenditures. There is some evidence for Africa that actual recall may produce higher figures than normative recall (Scott and Amenuvegbe, 1990). This argument seems plausible, but is subject to two criticisms. First, the pilot for the HBS survey experimented with both a 'between visits' approach to

²³ In general, interviewers were instructed to return to households after an interval of seven days. However, the data available on the timing of the visits was very unclear: 16% of households in the version of the data-set supplied to the author had nonsensical visit dates. Moreover, the author was informed that only a single visit was made in some cases towards the end of the survey but such cases are not apparent from the computer data-base. Nonetheless, more than four fifths of households appear to have been visited after the prescribed seven day interval. It is not clear what interviewers did when the actual interval between visits was different from seven days. A further source of confusion is provided by the field manual set for interviewers. This specifies that interviewers were to inquire about purchases made from the day after the first visit to the day before the last; this would imply a six day recall period. In practice, the Statistics Department believes that they are more likely to have asked about any purchases since the first visit; a seven day recall period.

measuring food expenditure and a single visit with seven day recall. It found no significant differences, which is why the cheaper seven day technique was used for that survey. Secondly, the idea that the SDA's 'between visits' questions elicited a more comprehensive recall of items than the simple seven day recall concept of the HBS is hard to reconcile with the evidence presented earlier of fewer items being reported in this survey. Instead, an alternative explanation is that asking 'between visits' questions in the SDA survey biased the 30 day recall questions. The 'between visits' questions come before the 30 day recall ones and thus, as was mentioned earlier, interviews are likely to have begun with the respondents listing all the items they had bought since the first visit. Interviewers would then have to selectively prompt for possible omitted purchases. It is possible, therefore, that interviewers might fail to prompt for some items that were not purchased since their first visit but were in the last 30 days. By contrast, the item-by-item lay-out of the HBS questionnaire makes it much easier for interviewers to proceed systematically down the list of all items as they were supposed to do. If the between visits questions in the SDA survey did indeed bias downwards the 30 day estimates, one would expect to find fewer cases in the SDA survey of items being reported as consumed in the last 30 days when they had not been purchased in the last 7 days. This is indeed observed. For the 45 comparable items, only 23% of reports in 1992 were of this kind compared to 27% in 1989. Similarly, use of the shorter reference period reduces the disparity in the number of comparable food, beverage and tobacco items reported as being consumed. In the HBS, the mean number of such items is 5.2 per week; in the SDA, the figure is 4.8.

From this discussion, it seems likely that the between visits estimates from the SDA survey are more accurate than the 30 day figures. Whether they can be compared with the seven day recall figures from the HBS is questionable, given the previous argument that questions about expenditures between visit intervals may induce better recall than simple retrospective questions about the last seven days. However, any downward bias to the HBS figures due to its use of retrospective rather than interval questions may be offset by the downwards biases on the SDA estimates arising from the open format of its questionnaire. If a comparison is made, then food purchases in the two surveys appear more consistent. In the SDA survey, the between visits measure puts mean household food purchases at roughly twice their level in HBS (Table 6 refers). This rise is still rather less than the estimated 115% increase in the poverty line, but the shortfall is much less dramatic.

Unfortunately, short recall questions were asked only about food purchases and not home produced food or non-food purchases. Switching from the 30 day recall period for food purchases to the between visits estimate merely raises mean expenditure per household in 1992 by less than 10%. The key question, therefore, is whether other consumption besides food expenditures may be similarly under-reported in 1992 compared to 1989. Since consumption of home produced food is recorded item-by-item simultaneously with food purchases, the same problems may have arisen. Indeed, the biases may be greater since goods that are consumed from own stocks are most unlikely to have been purchased between the visits and hence will only be mentioned through further probing. Consequently, the problems noted in Table 5 may also affect estimates of home consumption. For example, in 1989 29.4% of households reported consuming some eggs in the last 30 days (whether through purchases or home consumption); in 1992, the figure was 9.5%. It seems unlikely that this signals a general fall in living standards, since mean consumption of those reporting any was valued at 461 Sh. per household in 1989 and 1261 Sh. in 1992. Eggs may be something of a special case — having been printed on the HBS questionnaire. In other respects, self-consumption may be less subject to recall error since it typically covers fewer items and is often regular (indeed daily), in contrast to the intermittent nature of purchases. Against this, the change in the food purchases estimates without corresponding adjustments in food self-consumption implies a large increase in the commercialisation of food between the surveys. Under the 30 day estimates, mean purchases are 51% of total food, beverage and tobacco consumption in both 1989 and 1992. If the SDA between survey estimates of food purchases were to be combined with the 30 day figures for home consumption, the percentage would jump to 56% in 1992. Whilst there is a trend towards the market in Uganda, the Statistics Department at Entebbe judges such an increase to be unlikely given that 1992 was a drought year. In

such conditions, people tend to feed themselves first and then market any surplus. Consequently, in its revisions of the national accounts figures, the Statistics Department is assuming that the 30 day reports of home consumption of food are subject to the same under-reporting as the 30 day reports of food purchases. Hence, the reported quantities of home consumption in the SDA survey will be revised upwards²⁴. Some further evidence of this should be available from the crop farming enterprise modules which accompanied the SDA survey. These will provide production estimates and some information on how output was allocated between sales and home consumption.

With non-food expenditure, it is even harder to know whether it should be adjusted upwards in line with food purchases²⁵. No 'between visits' questions were asked about most non-food items and hence the possibility of items being omitted if not consumed 'between visits' does not exist for non-food, as it does for food. However, the possibility that the open format of the SDA survey catches less consumption than the more detailed HBS list approach is probably more serious for non-food. This is both because non-food expenditure is less regular and more diverse (consider the 104 clothing items listed in the HBS codebook). Furthermore, the fact that non-food items were placed before food in 1989 and after food in 1992 implies that recall error due to interview fatigue will be worse for non-food than food. It is suggestive that expenditures on fuel, power, rent and water all show reasonable rises between the surveys since these are fairly regular and homogenous items of expenditure which should be subject to less recall error²⁶. By contrast, spending on clothing and durables — which are particularly intermittent and heterogeneous — stagnates even in nominal terms.

Comparability between the two surveys could be attempted by using the 'between visits' data on food purchases and adjusting other consumption items. However, such adjustments would have to be large and it is far from clear how much confidence could then be placed in subsequent judgements about living standards or poverty. Moreover, substantial revisions upwards of the expenditure data would take them still further away from the figures on reported incomes, which generally fell short of whatever expenditures were reported.

6. Other factors contributing to the discrepancies

Sampling: The 1989 survey seems to have over-sampled some non-poor households, even excluding the rich sub-stratum and controlling for region. It is not clear why the HBS sampling should have a major bias²⁷. Nonetheless, a higher proportion of households in the second survey were reported as

²⁴ The ratio of the short recall reported quantities of food purchases to the 30 day recall reported quantities will be used as the adjustment factor.

²⁵ An additional complication is the sensitivity of the HBS estimates of non-food spending to the choice of recall period. For expenditures on services and semi-durables recorded in block seven of the HBS questionnaire, estimates based on a monthly recall are around twice as large as those based on a yearly recall. This is hard to explain, especially since similar sensitivity does not arise with clothing expenditures in the HBS or with non-food expenditures in general in the SDA. The published reports use the yearly estimates but do not mention the discrepancy with the monthly figures.

²⁶ See also the cases of health and education spending, discussed below in Section 6.

²⁷ Supervisors were present at the selection of villages to be surveyed and at all stages choices were to be made randomly. However, the HBS report complains of a lack of maps and poor listing of households within RC1s. Moreover, the method of sampling changed three times within the course of the HBS. At first, interviewers were supposed to enumerate entire sub-parishes. Then it was discovered that sub-parishes were too small. Instead, all the Resistance Council 1's (RC1s) in a sub-parish were divided into large and small stratum, with one of each being chosen. Finally, it was discovered that the RC1s put into separate strata did not differ much in size, so one was selected from the whole sub-parish using simple random sampling. Although potentially confusing, it is not obvious that these changes will lead to biases. The fact that the first survey was based on the 1980 census and the second on

having dwellings with thatched rather than iron roofs (Table 7 refers). It seems implausible that housing has worsened dramatically between the surveys²⁸. Moreover, the national proportions of dwellings with iron and thatched roofs reported by the 1991 census more closely match those given by the SDA. Both surveys show that expenditures are much higher in households with iron roofs than in those without. However, since over-representation of households with iron roofs in the HBS involves only around 4% of the sample, correcting for this error does not dramatically reduce the expenditure figures for 1989. In particular, the HBS sample was re-weighted so that the proportions with thatched roofs in each of the eight regions is the same as in the SDA survey. This reduces mean household expenditure by 2.4%. This is a substantial when compared with the rise in living standards which is predicted from the national accounts but relatively minor given the massive discrepancy between the surveys.

Strategic Reporting: It appears that the HBS elicited more co-operation from respondents than the SDA survey. In 1989, the Museveni government was still enjoying something of a honeymoon period and staff at the Statistics Department report that there was considerable goodwill towards them. In 1992, however, staff claim that respondents were more reticent and less co-operative. Aside from possible political disenchantment, one problem was that new revenue collection efforts were just beginning in 1992, to considerable public concern. One SDA field supervisor reported that survey teams were perceived everywhere as revenue collectors (even their vehicles were similar). By contrast, in 1989, there was little concern over revenue raising, which was rather ineffective. Consequently, more people are likely to have under-reported consumption in 1992 for fear of being taxed. This may have been aggravated by the fact that the SDA survey, unlike the HBS, asked for income data. Significantly, the questions on income were asked before those on consumption, although they were typically asked on different visits. People tend to under-report income — partly for the strategic reasons mentioned previously — and they may be reluctant to report higher consumption than income, as they know will be queried about it²⁹. This may have led to under-reporting of consumption in 1992³⁰. However, this assumes a certain sophistication on the part of the respondent and may be more important with urban residents and certain traders³¹. Indeed, interviewers may have been able to establish a rapport with respondents, dispelling fears that they were associated with revenue raising³².

Different Treatment of Some Items: some of the gap between the HBS and SDA expenditure figures can be accounted for by differences in the treatment of certain items. The SDA survey is likely to have massively under-reported transport costs due to the absence of any codes for fares on public

the 1991 census could also have led to some problems.

²⁸ It has been suggested that the return of soldiers and displaced people may have led to a fall in average housing quality. However, the demobilisation program started in earnest in 1993 and the return of displaced people is likely to be limited to a few districts.

²⁹ This may affect the 30 day recall measures more than the shorter ones, since 30 days is a natural unit for measuring some incomes, such as salaries.

³⁰ The survey team/scrutiny unit in 1992 made some downward adjustments to consumption where they far exceeded income. In 1989, no such downwards revisions were possible. However, this is unlikely to be a major factor, since when discrepancies arose, consumption figures were treated as correct unless manifestly implausible and it was far more common for income to be revised up than consumption revised down.

³¹ In rural areas, it is possible that the consumption was more under-reported in 1992 because of the greater NGO and developmental activity. People may have wished to present themselves as poor in order to receive some aid.

³² These problems may diminish with time, so if they are significant, the monitoring surveys of 1993 and 1994 should show a rise in reported consumption (especially from the panel households).

transport. As it was, such spending could only be reported under 'operation of personal transport equipment: repairs and other operation expenses'. This omission probably explains why reported transport expenses more than halved in nominal terms between the surveys despite a visible increase in road use during the period and the liberalisation of petroleum prices. The HBS expenditures may be inflated due to the inclusion of funeral and other spending on non-household members. The SDA survey follows the standard practice of attributing all funeral expenses to the household with the deceased member. The HBS did not do this and may have double counted in some cases. On the other hand, the SDA survey may have picked up more health and education spending by inquiring about them in separate health and education sections of the questionnaire. These sections asked about each household member whereas the HBS only requested a total for the household. It is likely that questions about each individual will give a more comprehensive estimate and explain the substantial rises in health and education spending between the surveys.

7. Could things have got worse?

There are a number of reasons why it might be that some of the reported fall in living standards from the two surveys may be genuine. These include:

Subjective reports: many Ugandans questioned by the author believed that poverty increased between the surveys, or at least that conditions in many rural areas had got worse. Admittedly, those contacted were not representative, being mainly academics, survey field-workers and NGO workers. Nonetheless, some were even willing to entertain the possibility of the fall being 35%, although it is not clear how well people can grasp such numbers.

The weather: in Uganda, most peoples' livelihoods are heavily dependent on the rain fed agriculture and 1992 was a drought year. There is some uncertainty about how far the drought extended. Official reports state that the first harvest was 'very poor' in the West but otherwise was 'average'; the second season was 'excellent'³³. The first season in 1989 is described as 'excellent' and the second as 'very good'. Many Ugandans told the author that the poor weather in 1992 was not confined to the Western region. One field worker reported that most areas visited suffered from a shortage of food, with people in some districts, such as Rakai, taking only one meal a day. It is not clear how large the impact of the bad weather was. One indicator of agricultural conditions is procurement of coffee, which fell from 151,157 in 1989 tonnes to 120,757 tonnes in 1992, a fall of 20%³⁴. For months in the second half of 1992, coffee procurement was half the level reported in 1991.

Closure of the border and war in Rwanda: the closure started in October 1990 and may have led to decline of certain Western areas, especially Kabale, Kisoro and Mbarara. However, it is unclear how serious this was, both because the conflict at that time may not have been widespread or prolonged and because the drought in the West meant that trade with Rwanda was less important³⁵.

³³ These assessments and the other figures in this paragraph come from Republic of Uganda (1994).

³⁴ This drop was not a direct response to the low world coffee prices since the producer price for Robusta coffee rose from 60 shillings per kg in 1989 to 240 in March 1992 (far exceeding the rise in the CPI). Some of the fall in procurement may have been a lagged response to low producer prices in the past, due to cumulative neglect and ageing of the coffee stock. However, the Coffee Marketing Board did note that in 1992, in the areas with better weather, abandoned farms were receiving attention.

³⁵ Typically the trade took the form of food exports in return for imports of sugar and manufactures. In a period of drought, people are less likely to want to export their food.

AIDS : this was taking a larger toll in 1992, especially of the high earners and particularly in Masaka and Rakai.

The return of displaced people: The East may have appeared poorer in the SDA data than the HBS because some districts — such as Soroti and Kumi — suffering from the aftermath of insecurity were only included in the SDA. Until 1990/91, people from those areas often lived in camps, with their land lying uncultivated for up to three years. In so far as displaced people were excluded from the HBS, their inclusion as returnees in the SDA may falsely indicate a worsened picture.

Structural adjustment: Some might argue that the economic reform policies pursued have led to lower living standards, for example, through retrenchment of government employees. Future research will address this possibility in detail, although *prima facie*, it does not seem plausible. Far from the government sector contracting, it boomed with the aid inflow. To the extent that there was retrenchment, this is likely to have distributional effects and not to have precipitated a general fall in output (indeed, the reverse is likely). Moreover, the numbers involved are small relative to the total population³⁶. Most of the major policy reforms — such as allowing open trade in foreign exchange and trade liberalisation — are likely mainly to have reduced the rents accruing to a privileged few. The most significant change in relative prices — raising the producer price of coffee — is likely to have been welfare improving.

In general, the balance of the probability suggests a slight rise in living standards between 1989 and 1992. This is likely *a priori* as a consequence of the restoration of transport, improved security and the cumulative effect of a longer period of peace and liberalisation. Substantial aid inflows may also have raised living standards. The national accounts imply a rise of around 2% in real private consumption per capita, which appears plausible. However, such figures embody considerable judgement. Somewhat harder evidence is provided by estimates of industrial production, which is based on regular surveys of manufacturing establishments. These record a rise of nearly a third from 1989 to 1992. Sources used by the Statistics Department in devising estimates of agricultural production and the provision of services also gave no indication of falling living standards. Infant mortality and anthropometric figures from the SDA survey are not significantly worse than those recorded in the 1988 Demographic and Health Surveys (Mackinnon, 1994). Finally, the current large-scale private repatriation of foreign exchange into the country — now exceeding total exports — is scarcely what might be expected had the economy recently contracted by a third in three years.

8. Conclusions

This paper has argued that the dramatic fall in living standards in Uganda suggested by the official reports of two recent household surveys is largely spurious. Unfortunately, the suggested flaws with the surveys cannot be easily established or corrected for, so that assessments of changes in consumption based on this data are unlikely to be convincing. Moreover, the SDA survey appears to suffer from large-scale under-reporting of expenditures, so that any attempt to compare this data with absolute poverty lines (such as that proposed by Ravallion and Bidani, 1994) will also be problematic. However, the surveys may still be useful for the analysis of patterns of relative poverty. The SDA survey provides a large amount of non-expenditure data covering income, health, assets and other variables. Although this wealth of other data may have come at the cost of good expenditure information, integrated analysis of the information may still be viable and valid. Even if there is

³⁶ The numbers of public sector workers retrenched between 1989 and 1992 is unknown, although reference is sometimes made to 50,000 sacked 'group employees' (unskilled workers).

substantial recall error with consumption, it may not greatly upset rankings of household consumption (although it may flatten the distribution due to greater recall error amongst those who have consumed more). Analysis of the correlates of poverty may be legitimate, with measurement of the dependent variable leading to less confidence being attached to the results but not inducing bias. To the extent that difficulties are due to sampling biases, this should not affect multivariate analysis of poverty. Consequently, the most promising direction for future work on the surveys is to be to compare patterns of poverty in the two surveys; to look for what is the same in the two surveys, rather than to measure the change. Such analysis may also be more useful for policy purposes. If the real rise in private consumption per capita between the surveys is only of the order of 2%, as suggested by the national accounts, then it may be asking too much of household surveys to reliably estimate it.

More generally, the Ugandan case illustrates a number of serious inaccuracies which may arise when trying to measure living standards using conventional household surveys. Perhaps the most important conclusion is that estimates of living standards based on a survey should be regarded as specific to that survey unless corroborated by other evidence. This specificity is not merely with respect to the geographical coverage of the survey, but also to the wording and design of the questionnaire. That such factors should affect estimates provided by quantitative surveys is not surprising; however, what is striking about the Ugandan case is that they appear to have such large effects. Those using smaller scale and more qualitative techniques are usually cautious to generalise their findings. The Ugandan example suggests that practitioners using large scale household surveys should be similarly modest. The manifest implausibility of the Uganda case has prompted a far more critical evaluation of the two surveys than is otherwise likely (or was apparent in previous analysis of the HBS, such as Jamal, 1994, and World Bank, 1993). Whether similar caveats apply to other uses of large scale household surveys may vary with the focus of the analysis. To some extent, measurements of total consumption are peculiarly sensitive to questionnaire design and the nature of the interview. Being made up of a large number of irregular and often small purchases, they are particularly prone to recall error. However, other variables may be subject to similar or greater problems of measurement, including income, time use and health status.

It might be concluded from the problems with quantitative surveys illustrated above, that such methods are not a promising means of monitoring living standards. However, the Ugandan case also illustrates the limitations of qualitative assessments. The fact that many well educated and informed Ugandans interviewed by the author could disagree over whether living standards had fallen by around a third over three years shows how uncertain and unreliable subjective assessments of changes in living standards can be. Rather than forsaking household surveys, it may be better to ensure that they are both regular and comparable. The problems in reconciling the two Ugandan surveys stem partly from the fact that they cover only two points in time — with different weather conditions — and partly from the differences in questionnaire design. The Statistics Department at Entebbe is currently implementing annual monitoring surveys — with a panel element. Encouragingly, the consumption sections of these questionnaires explicitly list major items and use only a seven day recall period, hence avoiding what this paper have argued are the main sources of the discrepancy between the surveys. Indeed, the results of the two Monitoring Surveys (implemented in late 1993 and 1994) will hopefully settle the question of how household welfare and poverty have changed in Uganda in the early 1990s.

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Table 1:
Monthly Consumption Per Household (shs.)

Location		HBS 1989	SDA 1992	% Increase
CENTRAL	Total	41334	75469	83
	Urban	57546	128078	126
	Rural	36477	52426	44
KAMPALA		59944	143965	140
MASAKA		57234	72108	26
ENTEBBE		36477	109878	56
EASTERN	Total	25856	45653	77
	Urban	49548	70387	42
	Rural	23695	42822	81
JINJA		66117	84017	27
MBALE		48459	86253	78
WESTERN	Total	36621	47831	31
	Urban	49723	70964	43
	Rural	35800	46004	28
MBARARA		51147	73658	44
UGANDA	Total	34468	53708	56
	Urban	53346	104854	97
	Rural	31645	45263	43
CPI		101	243	141

Source: expenditure data is from Republic of Uganda (1994a); CPI figures are from Republic of Uganda (1992, 1994b).

The CPI figures reported in the table are arithmetic averages of monthly figures for February 1989 to March 1990 and January 1992 to March 1993. These periods cover the duration of the surveys plus the month preceding them (since consumption was usually asked for on a thirty day recall basis).

Figures for 1989 refer to the Kampala index only, since this is all that is available for the most recent CPI.

Table 2:
Average Household Size in the Two Surveys

	HBS 1989	SDA 1992 Usual Members	Usual members plus "associates" ³⁷
Household Size	5.45	4.76	4.96
Boys, 0-5	0.63	0.56	0.57
Girls, 0-5	0.63	0.55	0.56
Boys, 6-12	0.63	0.53	0.54
Girls, 6-12	0.59	0.50	0.52
Boys, 13-17	0.34	0.26	0.28
Girls, 13-17	0.29	0.24	0.26
Men, 18-59	0.99	0.87	0.93
Women, 18-59	1.09	1.01	1.06
Men, 60+	0.14	0.12	0.12
Women, 60+	0.12	0.11	0.11

Source: author's calculations from HBS and SDA data.

³⁷ Associates are those listed in the SDA survey as being "associated with" the household, consisting of those who spend more than 6 months of the year residing elsewhere and guests of the household.

Table 3:
Food Poverty Lines in Uganda, 1989 and 1992 (Shillings per person per month).

	HBS 1989/90		SDA 1992/93	
	Food Only	Total	Food Only	Total
Uganda Average	5000	6900	10800	14800
Central Rural	5100	6600	10800	14500
Central Urban	5400	7700	12800	18200
Eastern Rural	4400	5500	9500	13000
Eastern Urban	5100	7400	11700	15600
Western Rural	4400	5500	9100	11000
Western Urban	5500	7400	10800	14700
Northern Rural	3200	4400	9200	12500
Northern Urban	4200	6100	10400	14400

Source: author's calculations from HBS and SDA data.

Food poverty lines show cost of obtaining 2200 calories per day assuming the food expenditure pattern of the poorest half of the population.

Total poverty lines allow for "essential" non-food expenditure, calculated as advocated by Ravallion and Bidani (1994).

Lines are rounded up to nearest 100 shillings.

Table 4:
Selected Production and Consumption Estimates (bn Sh.)

	1989		1992	
	Prodn.	HBS	Prodn.	SDA
Ugandan sugar	9	23.7	51.9	62.6
Washing soap	9.7	16.0	31.7	35
Soft Drinks	9.5	5.9	26.1	5.4
Cigarettes	27.0	11.2	56.7	12.1

Source: Statistics Department, Entebbe, personal communication.

Table 5:
Purchases of Comparable Items, 30 day recall

Item	HBS Survey 1989			SDA survey 1992		
	Mean Purchase	% hhs Buying	Conditional Mean Purchase	Mean Purchase	% hhs Buying	Conditional Mean Purchase
Food						
rice	333	25	1330	578	19	3093
maize cob	36	7	513	54	4	1369
maize grain	58	4	1419	87	3	3184
maize flour	657	37	1767	1431	39	3623
simsim	45	6	747	113	6	1994
beef	1211	65	1871	1949	55	3554
pork	152	17	902	147	8	1817
edible offals	50	8	655	45	3	1379
nile-perch fresh	316	27	1181	271	12	2268
nile-perch dried	170	19	915	269	14	1873
tilapia fresh	328	25	1320	525	22	2339
tilapia smoked	115	13	886	203	11	1821
milk	725	36	2003	1144	29	3924
milk powder	20	1	1513	8	0	2148
eggs	79	12	654	82	5	1545
butter	22	3	705	9	1	1406
ghee	66	11	582	79	6	1350
hydrogenated oil	70	11	624	76	6	1179
margarine	13	2	821	21	2	1357
refined cooking oil	205	32	643	361	30	1192
oranges	39	10	372	27	4	770
passion fruit	51	9	540	121	8	1609
pineapples	63	15	424	51	7	734
sweet bananas	81	21	388	71	9	785
fresh beans	43	6	750	116	6	2067
dry beans	255	23	1107	659	28	2334
cabbages	75	22	338	119	16	762
tomatoes	273	54	510	449	48	932
onions	138	51	270	182	43	427
matooke	823	27	3098	1451	24	6160
sweet potatoes	220	16	1404	461	16	2906
irish potatoes	69	7	1036	208	9	2282
sugar ugandan	596	31	1953	1580	47	3345
sugar imported	321	16	2018	216	7	2930
salt	217	94	231	460	91	508
Drinks						
soda	138	10	1423	132	4	3487
beer	194	3	6739	183	1	13165
waragi-refined	38	2	1919	26	1	4262
waragi crude	496	24	2056	331	12	2692
malwa	236	14	1630	245	8	2916
tonto	321	30	1081	197	13	1497
munansi	1	0	431	2	0	893

cont ...

Table 5 cont ...

Cigarettes						
kali	28	3	840	23	1	1727
sportsman	241	13	1851	236	9	2600
rex	16	0	4670	37	1	4983

Source: author's calculations from HBS and SDA data.

Those districts not surveyed in 1989 are not included in the calculations for 1992. Households surveyed after March 1993 are also excluded.

Table 6:
Household consumption per month; by item group and recall period

	HBS 1989			SDA 1992		
	7 day recall	30 day recall	365 day recall	between visits recall	30 day recall	365 day recall
Food purchases	10323	10178	NA	20946	16742	NA
Beverages	1729	1608	NA	1492	1177	NA
Tobacco	355	337	NA	393	357	NA
Home produced food, drink & tobacco	NA	11633	NA	NA	17773	NA
Restaurants and cafes	NA	517	226	785	743	NA
Regular non-food	NA	1334	NA	2286	2012	NA
Clothing & footwear	NA	2216	2085	NA	2059	2553
Glassware	NA	332	448	NA	190	218
Fuel & power	NA	1204	752	NA	3579	3349
Rent & water	NA	1642	1091	NA	3723	3531
Education	NA	1309	631	NA	NA	2727
Health	NA	1393	661	NA	2324	NA
Transport & communications	NA	1807	1009	NA	417	424
Misc. Services & Semi-durables	NA	1106	606	NA	233	239
Household textiles	NA	NA	501	NA	265	430
Durables	NA	NA	1184	NA	NA	1106
Weddings, funerals, insurance & other	NA	470	396	NA	NA	1658

Source: author's calculations from HBS and SDA data.

Those districts not surveyed in 1989 are not included in the calculations for 1992. Households surveyed after March 1993 are also excluded.

Where data was missing for a certain expenditure categories, values were imputed on the basis of the relevant expenditure shares in comparable districts.

NA = not available.

Table 7:
Roof Materials and Consumption in the two Surveys

Location	Percentage households with thatched roof			Mean Household Consumption (sh/month)							
	HBS 1989	Census 1990	SDA 1992	HBS				SDA			
				Thatched	Other	Total	Corrected	Thatched	Other	Total	Total
National	51.6	59.8	55.9	25993	43410	34428	33596	42356	79359	58678	58678
Rural	57.8	66.7	64.5	25814	41859	32591	31660	42208	62977	49573	49573
Urban	10.1	13.2	8.7	32840	48289	46726	46556	48308	114054	108325	108325
Central, rural	38.3	46.1	47.1	27176	43942	37519	36045	42054	64370	53869	53869
Central, urban	2.8	5.4	3.1	37625	45770	45545	45519	58146	129338	127117	127117
Eastern, rural	64.6	69.7*	67.4	22876	34004	26814	26503	41163	62920	48260	48260
Eastern, urban	6.8	21.8*	15.4	35417	56073	54665	52896	37149	79691	73121	73121
Western, rural	60.2	66.6	67.6	29465	44522	35454	34343	42920	59964	48440	48440
Western, urban	16.8	16.1	15.5	45818	54187	52782	52896	50931	79276	74894	74894
Northern, rural	93.2	92.3*	94.9	21482	32031	22189	22018	42692	76903	44447	44447
Northern, urban	73.0	54.2*	62.4	24738	38351	28409	29846	52029	85329	64556	64556

Source: author's calculations from HBS and SDA data; census data provided courtesy of the Census Unit.

For the census data, thatched includes papyrus, grass and banana leaves; where roof type was not stated, households were not included in the calculations of percentages.

Corrected HBS figures assume that the proportion of thatched houses in each of the eight regions equals that in the SDA survey.

Consumption figures use monthly recall for food and yearly recall for non-food.

The calculations using the SDA data give higher estimates than the official figures reported in Table 1.

*Survey figures for Eastern and Northern regions do not include the seven insecure districts excluded from the HBS.

Appendix 1: Extract from 1989 HBS Questionnaire

BLOCK 8 - Quantity & value of purchases of consumer non-durables during the last 7 & 30 days and consumption out of home produced stock during the last 30 days

[illegible]

SECTION 12: HOUSEHOLD CONSUMPTION EXPENDITURE

PART A: FOOD, BEVERAGES AND TOBACCO – PURCHASES AND/OR CONSUMPTION OUT OF HOME PRODUCED STOCKS AND FREE GIFTS OR COLLECTION

[illegible]

