

Measuring consumption of non-food non-durable goods

LECTURE 8

A quick reminder

- In lecture 1, we argued that analysts are interested in **total household consumption expenditure** as a measure of living standards
- In practice, household surveys typically record household **expenditures**, as well as consumption that does not go through the market (in-kind receipts and own-production)
- It is the analyst's job to come up with an estimate of the total value of consumption, starting from this information
- We have covered this process, and how it reflects on questionnaire design and data collection, for what concerns **food items**
- We now turn to **non-food items**

Today's agenda

The lecture is organized as follows:

1. What analysts **do** (research objectives)
2. What analyst **need** (data collection guidelines)

1. What analysts do

Constructing a measure of living standards

- In lecture 2, we argued that the living standards measure is **not the summation of all expenditures** (*i.e.* purchases) reported by the household: this is because, again, it is the **value of consumption** that analysts are after
- What are the specific expenditures that analysts need, in order to build an **aggregate** that represents the value of consumption?
- Knowing this, we will be able to tackle questionnaire design and data collection based on a clear view of **user needs**

General rules for aggregating non-food expenditures

The key idea is to include the value of the goods and services that are **typically** consumed during the survey period (year), and that **positively contribute** to the standard or living.

Include

- Frequently purchased goods and services (*e.g.* soap, cooking fuel, personal care, recreation, transport...)
- Less frequent but regularly purchased items (*e.g.* clothing, kitchen equipment, textiles, household items...)

Exclude

- Expenditures that do not represent consumption (*e.g.* investments, purchase price of assets...)
- Infrequent expenditures (*e.g.* weddings...)
- Expenditures that are not welfare enhancing (*e.g.* fines...)

Specific rules

Include	Controversial	Exclude
Clothing and footwear ...	Gifts and remittances Health	Taxes and Levies Purchases of assets, repayment of loans Means-tested expenditures Purchase of durables (including houses) Extraordinary (lumpy) expenditures
Education Regrettable necessities Insurance Utilities		

Items in green

- Clothing and footwear
 - ...
 - Education
 - Regrettable necessities (*)
 - Insurance
 - Utilities (*)
- For most items in the list, inclusion is pretty straightforward.
 - For instance, including 'clothing and footwear' means that the more a household consumes on these goods the higher is its standard of living.
 - Is this controversial?
 - No
 - Starred items are deserve a quick discussion.

Regrettable necessities

(Deaton and Zaidi 2002: 32; Lanjouw 2012: 284)

- There are goods and services that yield **no welfare in their own right**, but that have to be purchased, for example, in order to earn income.
- **Classical examples:** transport to work, and work clothing related expenditures
- They **should be included**, despite the fact people are not happy (their welfare does not increase) to spend more for commuting.
- The reason is practical: it is typically not possible to understand whether work-related transportation expenses are a necessity or a choice.

Items in red

Expenditures excluded

- Taxes
- Purchases of assets, repayment of loans
- Purchase of durables (including houses)
- Extraordinary (lumpy) expenditures, e.g. marriages and dowries
- Means-tested expenditures (*)
- Taxes are not consumption, but a deduction from income
- Purchases of assets is investment, not consumption
- Durables will be covered in lecture 9 – we touched on them in lecture 2
- “extraordinary”, is not “typical” which is what analysts aim at.
- Means-tested expenditure are worth an extra slide

Means-tested expenditures

- ‘Means-testing’ is to determine whether a household is eligible for support from a welfare program, for instance.
- If the income is below a certain threshold, the household is eligible for receiving a certain good or service at a subsidized price.
- If the income is higher than the threshold, the household pays the market price.
- The presence of means-tested expenditures requires a correction to the reported expenditures.

Items in orange

- Gifts, charitable contributions and remittances
- Health (*)
- Gifts, as any other transfers are better excluded to avoid double counting if, as one would expect, the transfer shows up in the consumption of the recipient household.
- Health is tricky category, which deserve a proper discussion (next slide)

Health

- Whether to include or exclude health expenditures is a controversial decision
- By including health expenditures for someone who has fallen sick, we register an increase in welfare when, in fact, the opposite has occurred.
- In principle, we should account for two components:
 - 1) loss of welfare due to illness
 - 2) gain of welfare from health expenditure
- In practice, 1) cannot be measured.
- Deaton and Zaidi (2002), p. 30-32 provides a simple discussion, and a pragmatic recommendation: **exclude health expenditures**, unless there is evidence that they are income elastic and are not badly affected by measurement error.

The 'rules' and the COICOP system



- **Classification of Individual Consumption by Purpose**
- COICOP is an integral part of the SNA, but it is intended also for use in (...) household expenditure statistics based on household budget surveys (p. 4)

In or out? – I/VI

01	Food and non-alcoholic beverages	✓
01.1	Food	
01.2	Non-alcoholic beverages	
01.3	Services for processing primary goods for food and non-alcoholic beverages	
02	Alcoholic beverages, tobacco and narcotics	
02.1	Alcoholic beverages	✓
02.2	Alcohol production services	✓
02.3	Tobacco	✓
02.4	Narcotics	✓
03	Clothing and footwear	⚠
03.1	Clothing	✓
03.2	Footwear	
04	Housing, water, electricity, gas and other fuels	✓
04.1	Actual rentals for housing	
04.2	Imputed rentals for housing	⚠
04.3	Maintenance, repair and security of the dwelling	⚠
04.4	Water supply and miscellaneous services relating to the dwelling	
04.5	Electricity, gas and other fuels	

In or out? – II/VI

- 05 Furnishings, household equipment and routine household maintenance
- 05.1 Furniture, furnishings, and loose carpets
- 05.2 Household textiles
- 05.3 Household appliances
- 05.4 Glassware, tableware and household utensils
- 05.5 Tools and equipment for house and garden
- 05.6 Goods and services for routine household maintenance
- 06 Health
- 06.1 Medicines and health products
- 06.2 Outpatient care services
- 06.3 Inpatient care services
- 06.4 Other health services

In or out? – III/VI

- 07 Transport
- 07.1 Purchase of vehicles
- 07.2 Operation of personal transport equipment
- 07.3 Passenger transport services
- 07.4 Transport services of goods
- 08 Information and communication
- 08.1 Information and communication equipment
- 08.2 Software excluding games
- 08.3 Information and communication services

In or out? – IV/VI

- 09 Recreation, sport and culture
- 09.1 Recreational durables
- 09.2 Other recreational goods
- 09.3 Garden products and pets
- 09.4 Recreational services
- 09.5 Cultural goods
- 09.6 Cultural services
- 09.7 Newspapers, books and stationery
- 09.8 Package holidays
- 10 Education services
- 10.1 Early childhood and primary education
- 10.2 Secondary education
- 10.3 Post-secondary non-tertiary education
- 10.4 Tertiary education
- 10.5 Education not defined by level

In or out? – V/VI

11	Restaurants and accommodation services	✓
11.1	Food and beverage serving services	
11.2	Accommodation services	
12	Insurance and financial services	
12.1	Insurance	✓
12.2	Financial services	⊘
13	Personal care, social protection and miscellaneous goods and services	✓
13.1	Personal care	
13.2	Other personal effects	
13.3	Social protection	
13.9	Other services	

In or out? – VI/VI

14	Individual consumption expenditure of non-profit institutions serving households (NPISH)	
14.1	Housing	
14.2	Health	
14.3	Recreation and culture	
14.4	Education	
14.5	Social protection	
14.6	Other services	
15	Individual consumption expenditure of general government	
15.1	Housing	
15.2	Health	
15.3	Recreation and culture	
15.4	Education	
15.5	Social protection	

What welfare analysts do, in conclusion

- The choice of which expenditure items to collect is key to the measurement of poverty
- Analysts need to construct a variable, the so-called **consumption aggregate**, that needs to be carefully defined.
- Certain household expenditures are **included**, others are **excluded** from the consumption aggregate (and other components need to be **estimated**, as we will see in lectures 9 and 10).
- This leads to the second part of this lecture, which focuses on how to best collect the data needed.

2. What analysts need

Guidelines for non-food non-durable data collection - I/II

- Literature on data collection for non-food non-durables is not as rich and detailed as for food: **no single reference** to look at.
- Items in this group are more heterogeneous than food items
- **Few clear-cut guidelines** that apply to all non-food non-durable expenditures

Guidelines for non-food non-durable data collection – II/II

- We will cover **general recommendations** on basic questionnaire design choices:
 - A. Comprehensiveness
 - B. Level of disaggregation
 - C. Recall periods
 - D. Organization of topics within questionnaire
- In addition, two expenditure categories will be discussed **in depth**:
 - E. Education
 - F. Health

Comprehensiveness

Deaton and Grosh (2000: 102)

- Which categories of non-food non-durable expenditure should be recorded?
- When discussing “what analysts do” we saw that some household expenditures are not relevant when constructing a measure of living standards
- However, it is best for household surveys to collect data on all categories of non-food expenditures, regardless of inclusion/exclusion:
 1. Many expenditures are of interest in their own right (e.g. amount of taxes paid is not consumption, but good reasons to collect data on it)
 2. It is best to design questionnaires around items that are familiar to respondents (cash flows, budget of the household), while gathering enough information to allow ex-post estimation of consumption (e.g. purchase value of durable goods is not what the welfare analyst needs, but it is what respondents are best informed about; consumption flow can be estimated later)

Level of disaggregation – I/II

Deaton and Grosh (2000: 106)

- How detailed should the list of non-food non-durable items be?
- Trade-off similar to food items: precision vs. respondent burden
- Evidence is limited, guidelines on best balance are general
- LSMS draft modules include about 70 non-food non-durable items

Level of disaggregation – II/II

Deaton and Grosh (2000: 106)

- Choice on disaggregation should be guided by some of the analytic needs discussed earlier:
 1. Within a single expenditure category, say utilities, some items may be subsidized and some may not: questionnaire should record them separately, to allow for repricing
 2. Analysts tend to treat preventative care and other health expenditures differently: they should be recorded separately (more on this later)
- Choice may be guided by additional survey objectives: household budget surveys are typically more detailed than LSMS-type surveys, as they are usually the basis for computation of CPI weights

Recall periods

Deaton and Grosh (2000: 109)

- Which recall period is best for non-food non-durable expenditures?
- Similar biases as those discussed for food:
 - **Telescoping**: arises with shorter periods, salient expenses
 - **Memory decay**: arises with longer recall periods, "forgettable" expenses
- Non-food items are heterogeneous: expenditures typically recorded using **different recall periods** for different categories of goods
- Choice of recall period depends on **frequency of purchase**: the more habitual the expense, the shorter the period

Organization of topics – I/II

Deaton and Grosh (2000: 122)

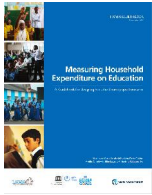
- How should questions be organized within the questionnaire?
- Different ways to group questions together:
 - **by item category** (most commonly),
 - by place of purchase,
 - by the type of follow-up questions asked...
- This choice is also highly **context-dependent**: ideal layout varies with what people consume, how they acquire goods

Organization of topics: General advice – II/II

Deaton and Grosh (2000: 122)

1. Some expenditures are best collected in a **dedicated module**, together with related non-expenditure information
2. **Housing, durables, health, education** usually have their own module; **employment** module is best place to gather information on household consumption of non-food items provided in kind
3. Create a cross-check to **avoid double-counting** in these instances; make sure questions are worded carefully so analysts are able to exclude duplicate measures of the same item, if needed.

Education



Discusses best practices for collecting information on **education expenditure** in household surveys

General principles

- All expenditures incurred by individual members of the household for the purpose of formal education should be recorded
- It is recommended that **for each school-attending member** of the household, surveys obtain individual information **for each of the listed items**

List of education-expenditure items to include in a household survey

Minimum list	More detailed optional list
Payments to educational institutions	Tuition fees
Tuition and other fees (e.g., exam, registration fees)	Exam, registration, and other official fees
Other contributions to school (PTA, SMC, school fund, in-kind contributions)	Contribution to parent-teacher associations and/or school-management committees
Ancillary fees (boarding, canteen, transport, health services)	Contribution to construction, maintenance, or other school funds
	Cash estimates of in-kind contributions
	School canteen fees
	School boarding fees
	Fees for transport organized by the school
	Fees for health services

- **Table 2** lists what analysts need
- The “minimum” list covers the essential elements of household education expenditure
- Items listed under the “more detailed optional list” can be added if judged relevant

Five specific recommendations – II/II

- 3) **Age range**
What the best age group of targeted respondents? 5-24?
No, it is best *not* to restrict the age range.
- 4) **Respondent**
The ideal respondent is the person who is most familiar with education expenditures for individuals in the household. Parents or guardians who make educational payments may be best placed to provide information for children.
- 5) **Recall period**
The baseline recall period should be a full **12 months**. For **recurring** expenditure items (e.g., transportation, school meals), it is appropriate to shorten the recall period to **one month**.

Health



- Health is a critical component of the standard of living
- Analysts need to
 - Assess health problems
 - Identify who receives medical care
 - Household expenditures on health care
- We focus on the last item

Data requirements

- Analysts need data on **all visits** to medical facilities to see which socioeconomic groups use which facilities.
- Analysts also need data on **all expenditures** to estimate the costs to households of obtaining health care.
- Data should be collected by the level of care (**primary, secondary, or tertiary**), by the type of provider (**public, private, or traditional**), by the purpose of the visit (**preventative, curative, or prenatal care**), and by the kind of services received.

Important definitions

- **Primary health care:** provision of basic outpatient services, such as services one would find in a simple health clinic
- **Secondary health care:** provides more advanced outpatient services. This level of health care would be offered by large clinics and regional hospitals.
- **Tertiary health care:** pertains to the best hospitals in the country, which may provide specialized services and may serve as teaching hospitals (hospitals in which doctors are trained and medical research is conducted).

Practical guidelines – I/II

Gertler, Rose and Glewwe (2000: 189)

- Questions on **outpatient** should be limited to the previous **30 days**
- **Inpatient** care is less common and easier to remember – the recommended recall period is the previous **12 months**.

Practical guidelines – II/II

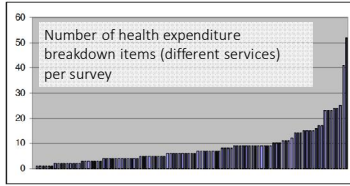
Gertler, Rose and Glewwe (2000: 189)

- Expenditures should include **not only fees** but also any other expenditure incurred by the respondents – more below.
- **Health insurance** poses a problem: data should be collected so as to distinguish between charges paid for (or reimbursed by) the insurance and charges paid by the respondent.

Level of disaggregation

Heijink et al. (2011)

- The majority of surveys include multiple health expenditure items
- Net of a few exceptions, the number of items ranges between 1 and 25



Can you locate the country of your interest in the graph?

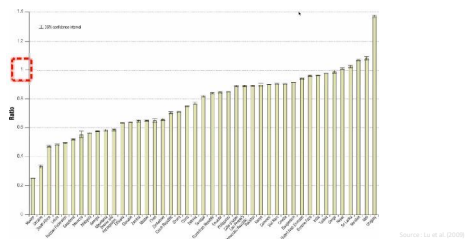
The level of disaggregation matters, too

Lu et al. (2009)

- Total out-of-pocket health expenditure is influenced by the level of disaggregation.
- Lu et al (2009) find that a single-item question (total health spending) generates significantly lower aggregate expenditures than the sum of eight disaggregated questions.

Effect of disaggregation on out-of-pocket health spending

ratio of average derived from single-item measure to average derived from eight-item measure



Question structure and phrasing

- When it comes to designing the questionnaire, **two options**:
 - 1) health expenditure questions can be included in the health module. In that case expenditure questions are preceded by questions on illness and health care use which may help respondents to remember health expenditures.
 - 2) out-of-pocket health expenditures are included in the non-food-non-durable module of the questionnaire. They are surrounded by questions on other services and goods.
- According to Lu et al. (2009), 40% of surveys follow 1), 60% follow 2).



Lessons learned

- There is **no handbook** we can recommend for dealing with data collection on non-food non-durable expenditures
- We discussed a **few general principles**, which help making decisions
- We identified specific guidelines for **education and health**
- No need to repeat here: important to read the references suggested during the presentation.

References

Required readings

Deaton, A., & Zaidi, S. (2002). Guidelines for constructing consumption aggregates for welfare analysis (Vol. 135). World Bank Publications. p.23-38

Suggested readings

Deaton, A., and Grosh, M. (2000). "Consumption." Designing Household Survey Questionnaires for Developing Countries: Lessons from Ten Years of LSMS Experience. Washington, DC: World Bank.

Gertler, Paul J., Elaine Rose, and Paul Glewwe. (2000). "Health." In M. Grosh, and P. Glewwe eds., Designing Household Survey Questionnaires for Developing Countries: Lessons from 15 Years of the Living Standards Measurement Study. Washington, D.C.: World Bank.

Hejnik, R., Xu, K., Saksena, P., & Evans, D. (2011). Validity and comparability of out-of-pocket health expenditure from household surveys: a review of the literature and current survey instruments. Geneva: World Health Organization, 28.

Hentschel and Lanjouw (2000), "Household welfare measurement and the pricing of basic services", *Journal of International Development*, 12: 13-27.

Lanjouw, P. (2012). "Consumption-Based Measures in Developing Nations. Lessons from Brazil", in Besharov and Couch (eds.), *Counting the Poor*. New York: Oxford University Press. Ch. 13.

Lu, C, Chin B, Li G, Murray CJ. (2009) Limitations of methods for measuring out-of-pocket and catastrophic private health expenditures. *Bull World Health Organ*;87(3):238-44, 244A-244D.

Ozenl, G., Huebler, E., McGee, K., Amankwah, A., Legidi, E., Rakotonirivo, A. (2018). Measuring Household Expenditure on Education: a new guidebook on measurement. LSMS guidebook.

Xu K, Ravndal F, Evans DB, Carrin G. (2009). Assessing the reliability of household expenditure data: results of the World Health Survey. *Health Policy*;91(3):297-305.

Thank you for your attention

Homework

Exercise 1 – Engaging with the literature



- Read Xu et al (2019).
- Write a short essay (not to exceed 3,000 characters) where you summarize their main findings.

Exercise 2 – ‘In or out?’

- Take the UN 2018 COICOP report
- Repeat the exercise done at the top of the lecture, using Table IX on p. 31 (“IX Detailed structure”): for each of the items listed in the table decide whether a welfare analysts would include the corresponding expenditure or exclude it.

05.3 HOUSEHOLD APPLIANCES	
05.3.1	Major household appliances, whether electric or not (D)
05.3.1.1	Major kitchen appliances (D)
05.3.1.2	Major laundry appliances (D)
05.3.1.3	Heaters, air conditioners (D)
05.3.1.4	Cleaning equipment (D)
05.3.1.9	Other major household appliances (D)
05.3.2	Small household appliances (SD)
05.3.2.1	Small appliances for cooking and processing of food (SD)
05.3.2.2	Small appliances for preparing beverages (SD)
05.3.2.9	Other small household appliances (SD)
05.3.3	Repair, installation and hire of household appliances (S)
05.3.3.0	Repair, installation and hire of household appliances (S)

Exercise 2 - Solutions

- Deaton and Zaidi (2002), pages 23-38 is a must read.



Exercise 3 – The treatment of health expenditures

NEPAL LIVING STANDARDS SURVEY 2011



- Read:
 - Bhutan, 2017 (page 47)
 - Nepal, 2010 (page 27)
- Based on the Lessons learned in this lecture and Deaton & Zaidi (2002) comment on the choices of the two countries on whether or not to include **Health expenditures** in the consumption aggregate

Exercise 3 – Solution

Nepal 2010, p.27

- Expenditure on *health* is excluded. Expenditure on health, though very important in its own right, is a bit different from other expenditures. Unlike other expenditures, most health expenses occur only in response to health shocks. Given that there is a health shock, health expenditure is generally welfare enhancing. But the incidence of health shocks itself is a sign of reduction in welfare. Because of this oddity, expenditure on health is excluded as in the previous round.

Exercise 3 – Solution

Bhutan 2017, p.47

5) Health

Expenditure on health is to a large extent a lumpy expenditure. One argument for exclusion is that such expenditure reflects a regrettable necessity that does nothing to increase welfare. By including health expenditures for someone who has fallen sick, we register an increase in welfare when, in fact, the opposite has occurred. The fundamental problem here is our inability to measure the loss of welfare associated with being sick, and which is (presumably) ameliorated to some extent by health expenditures.

Including the latter without allowing for the former is clearly incorrect, though excluding health expenditures altogether means that we miss the difference between two people, both of whom are sick, but only one of which pays for treatment. It is also true that some health expenditures—for example cosmetic expenditures—are discretionary and welfare enhancing, and that it is difficult to separate 'necessary' from 'unnecessary' expenditures, even if we could agree on which is which. It is also difficult without special health questionnaires to get at the whole picture of health financing. Some people have insurance, so

that expenditures are only 'out of pocket' expenditures which may be only a small fraction of the total, while others have none, and may bear the whole cost. Simply adding up expenditures will not give the right answer.

Expenditure on hospitalizations, consultations, and analyses are excluded from the household consumption. Purchase of medicine is, however, included.

Exercise 4 – The education module

- Go to: <http://microdata.worldbank.org/index.php/catalog/lsm> and download the questionnaire(s) of 5 surveys of your choice
- Find the list of Education expenditure items, associated recall periods and level of reporting.
- Based on the Lessons learned in this lecture and Oseni et al. (2018) what can be said about the consistency of the education expenditure data collected w.r.t best practices?
