Measuring material conditions: income, consumption, and wealth

Discussion of presentations by

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Outline

Outline of the discussion

1) Administrative data for the purpose of studying income, consumption, and wealth

2) Euro area coordinated wealth surveys: international comparability of debt patterns

3) Statistical matching methods

4) High frequency surveys

1. Administrative data

- **Luigi is right in that administrative data have a huge potential for empirical research**
- **Also for developing economic statistics**

- **Administrative data are preferable to survey data along three dimensions:**

  1. They offer much larger sample sizes: these are needed to study rare events

  2. They have a longitudinal dimension: following individuals over time is needed to study long term effects and transitions.

  3. They provide higher quality information than is usually available for survey data: absence of non-response and under-reporting.

- **The research frontier has moved to using administrative data. Striking results have been obtained**

- **Algorithmic and statistical methods for analyzing these data need to be developed**

Implementing administrative data access

- **Nordic countries pioneered systems to allow access to admin data for research purposes. For example, Statistics Denmark prepares anonymized data by combining information from administrative databases for approved research projects:**
  - Data are accessed by researchers remotely through a secure server.
  - Researchers apply for data access through accredited institutions, and access is provided through an open competition based on scientific merit.

- ***Direct access* to microdata is critical for success. Submission of computer programs to agency employees essentially rules out exploratory data analysis (Card et al 2010).**

- **An ingredient of this system is a *centralized agency* that can obtain admin data from all government branches, maintain them, and supply anonymized data to researchers**

- ***Merging of data*: easier in a centralized agency system than with multiple agencies**

Accessibility issues in the foreseable future

Decentralized government

- **A centralized agency is unlikely to work in the case of decentralized governments with multiple agencies at different levels of government with legal limitations**

- **Also less likely in the context of ”a long tradition of distrust of centralized government in the US, and in particular of monopoly control by a single government agency” (Card et al)**

- **Still possible to develop systems of cooperation/competition in a multiple agency setting, including data merging across different agencies**

Accessibility issues in the foreseable future

Trust in government

- **More generally, the confidence of citizens in the actions of government to do what is right varies substantially across countries (OECD Government at a Glance 2013)**
- **A political economic dimension: distrust of government affects ability to implement efficient administrative data access programs**
- **Trust is also related to data safety: concern with leakage of individual records after processing and merging of records**

Confidentiality

- **Admin data: concerns with confidentiality may make replicability impossible**
- **Requesting data has become the standard code of conduct in scholarly journals. But journals increasingly grant exceptions on grounds of data confidentiality**
- **Systems to access admin data should address protocols to facilitate replication**

Survey and administrative data as complements

Aspects that are unlikely to be in administrative data

- **Time use: consumption, search, work, leisure, home production, child care**
- **Self reports: health, wealth, adult skills**
- **Subjective expectations: income, mortality, economic environment**
- **Example: House price expectations and consumption in the EFF (Bover 2012)**

House price expectations and consumption in the EFF

- **New question to elicit household price expectations in the EFF2011 (very likely in HFCS 2017)**

- **Importance of real estate in household wealth**
  - 80% of the value of household assets
  - all along the wealth distribution: 88% bottom quartile 68% top decile
  - 83% of owner occupiers, 36% of Spanish households hold other real estate property

- **One of the main purposes of collecting subjective expectations data is to help understand behavior**

  → whether HP expectations predict household expenditure decisions

House price expectations and consumption in the EFF

- **Subjects answering the 2011 EFF questionnaire were asked the following:**

  "*We are interested in knowing how you think the price of your home will evolve in the next 12 months:*

  Distribute 10 points among the following 5 possibilities, assigning more points to the scenarios you think are more likely (assign 0 if a scenario looks impossible)

  Large drop (more than 6%)

  Moderate drop (around 3%)

  Approximately stable

  Moderate increase (around 3%)

  Large increase (more than 6%)

  DK

  NA"

House price expectations and consumption in the EFF

- **Expenditure questions in the EFF**
  - Car purchase in last 12 months (if purchase; and amount if purchased)
  - Housing equipment (furniture, washing mashine, etc.) (if; amount)
  - Amounts spent on food expenditure (at home and outside) as well as on other non-durables also collected
  - Purchase of other housing (for home-owners)

- **2 variables measuring household beliefs about future HP**
  1. Location of expectations: 0/1 dummy taking value 1 for people expecting a large certain drop with certainty (ie all ten points to more than 6% drop)
  2. Uncertainty about expectation location: 0/1 dummy taking value 1 for respondents assigning points to more than one option

- **Controlling for expectations about future income, income shocks, log net wealth and demographics**
- **Location variables: postal codes or municipality size**

House price expectations and consumption in the EFF

Results

- **Households with pessimistic expectations have significantly lower probabilities of buying a house and of buying a car (and amounts spent smaller)**
- **No association between HP expectations and expenditure on other big ticket items, nor on food and other non-durable expenditure**
- **Greater uncertainty in HP expectations is associated with lower probability of buying a secondary house (and smaller amounts spent) but not with the purchase or the amount spent in other goods**
- **Results vary with wealth**

Linking survey data and administrative data

- **A way of introducing high quality variables into survey samples without asking survey respondents. Recent example:**

  Debt registers and firm-level surveys data to disentangle supply from demand factors in the amount of credit in Jiménez, Ongena, Peydró, and Saurina: "Hazardous Times for Monetary Policy..." 2014

- **Administrative registries as basis for survey frames, smaller linked surveys**

Another example of complementarities: Income heterogeneity in administrative and survey data

- **Arellano, Blundell, and Bonhomme 2015 find strong evidence that nonlinear persistence and conditional skewness are key features of PSID household earnings and Norwegian administrative records**

- **Similar empirical patterns hold in US administrative tax records (Guvenen, Karahan, Ozcan, and Song 2015)**

- **Arellano et al. also find that this nonlinearity in income is a key driver of heterogeneous consumption responses**

- **In conclusion: new quantile methods are able to uncover previously unknown income results in PSID survey data, and these results also hold in administrative "big data"**

- **This is important because PSID uniquely provides joint longitudinal data on wealth, income and expenditures at household level**

2. European Household Finance and Consumption Survey (HFCS)

The HFCS is a Eurosystem initiative aimed at collecting comparable micro-level information

- **It collects information on household income, assets, liabilities, some consumption and many household characteristics**
- **The first wave was conducted in 15 euro area countries**
- **The first wave was conducted between end-2008 and mid-2011**
- **Sample size of just over 62,000 households**
- **Second wave already conducted in all countries; data and results Spring 2017**

Advantage of ex-ante comparable data

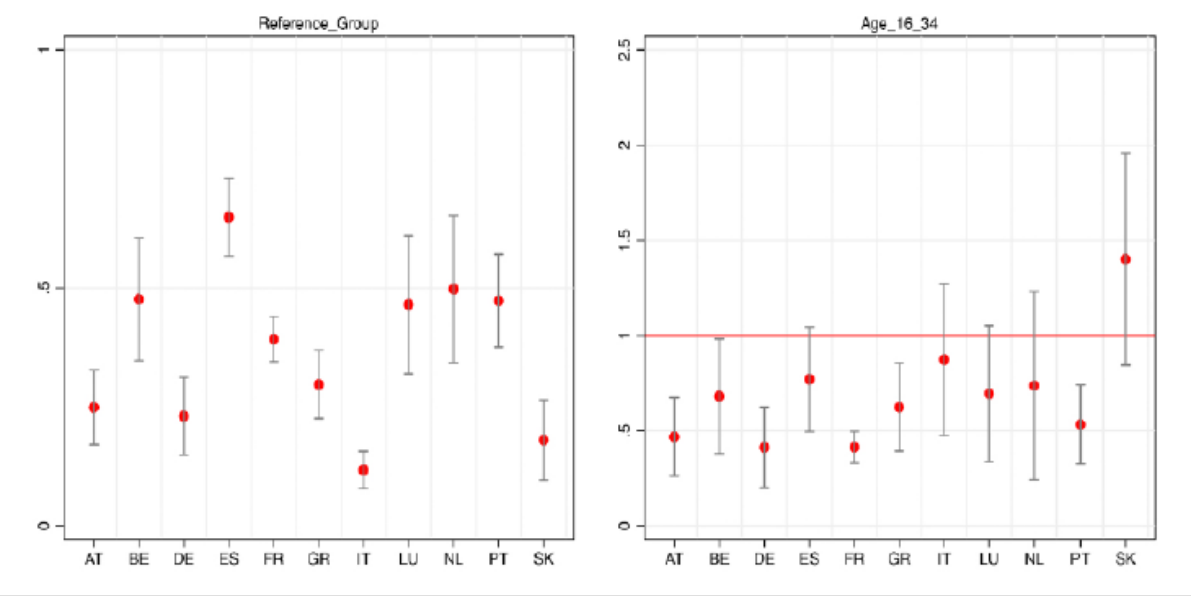
- differences across countries for comparable groups
- also role of institutions

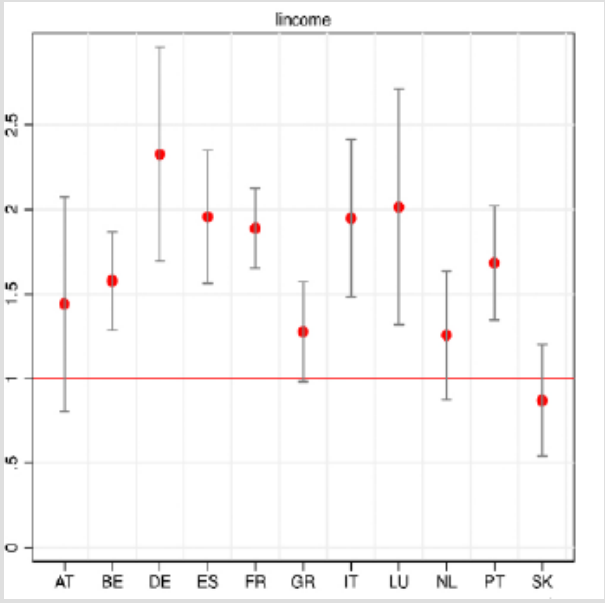
European Household Finance and Consumption Survey (HFCS)

Documenting country differences in the relationship between household characteristics and secured debt: (i) holding debt, (ii) amount, (iii) rate

Reference group: couple, aged 35-44, medium education, both employed, country median income

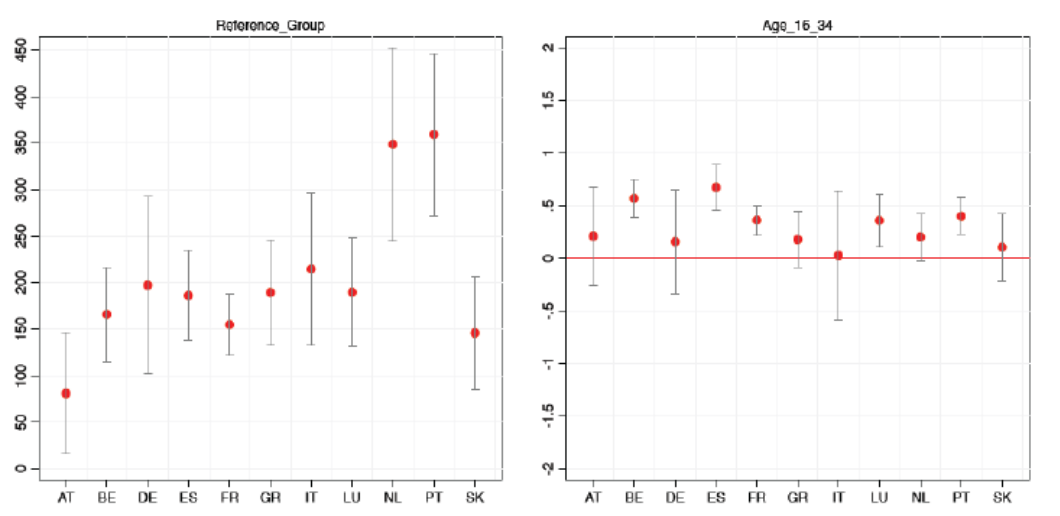
Figure 1: Probability of holding debt (odds-ratios)





European Household Finance and Consumption Survey (HFCS)

Figure 2: Amount of debt



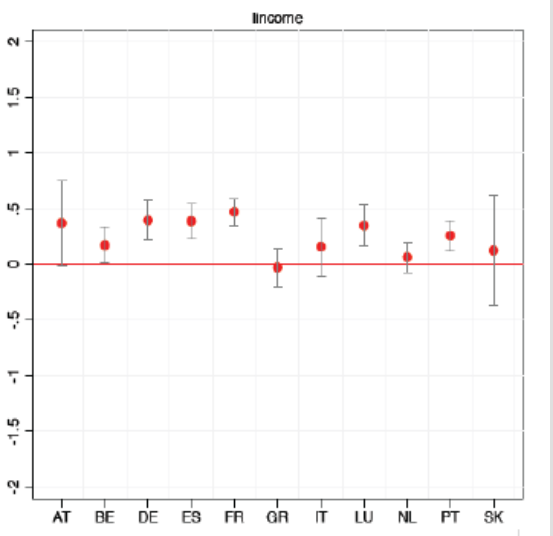
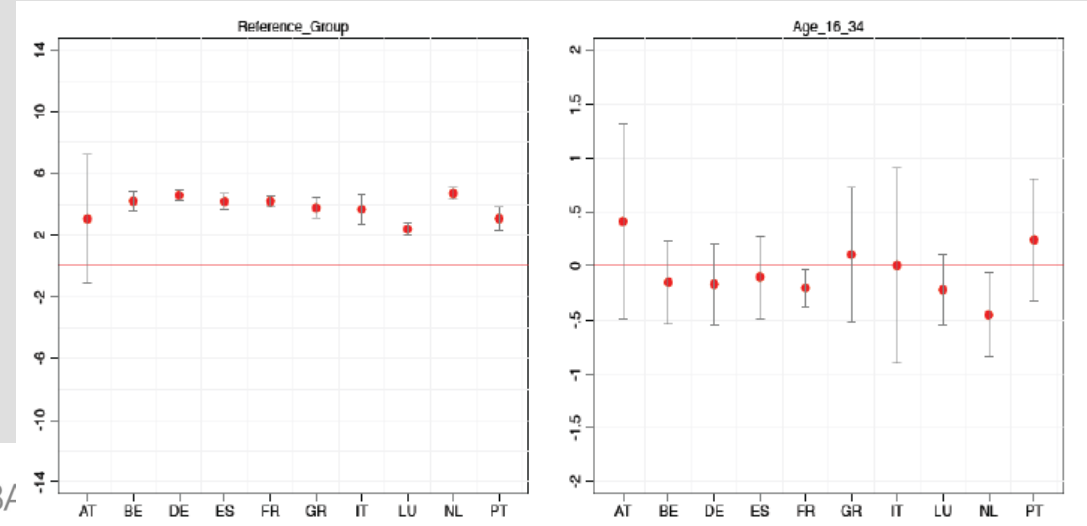
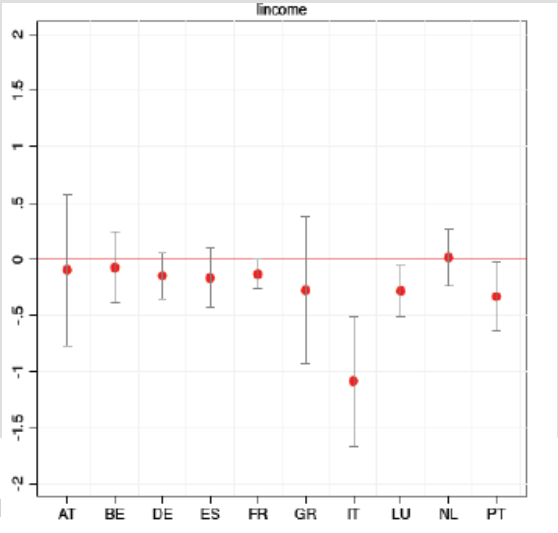


Figure 3: Interest rate





3. Statistical matching

Statistical matching is discussed in the OECD report on an ICW framework.

- **There is a long tradition in applied micro of imputing total expenditure from expenditure in a subset of categories using statistical matching**
- **For example, Skinner (1987) imputed total expenditure of PSID households on the basis of food expenditure and information from the CE**
- **Blundell et al. (2008) apply a similar method with the difference that they impose the (price and demographic) structure of an inverse Engel curve**
- **One lesson of this line of work is that average total expenditure for a demographic group is easier to estimate than the variance or other characteristics of the conditional distribution of total expenditures**
- **An ingenious suggestion to estimate variances is in Browning and Crossley (2009) but it remains a difficult problem**

Statistical matching

What is best practice of reporting the output of statistical matching procedures when concerned with distributions?

- **If an individual total expenditure is imputed, the presumption is that we have been able to estimate consistently the full conditional distribution**
- **Since typically this will be out of reach it is a better practice to offer imputes for (individual) mean total expenditures, (individual) variances and other characteristics if available**
- **What is the difference? If we have been able to impute individual total expenditures, a user could meaningfully use the imputed data to calculate a Gini coefficient,**
- **but it would not make sense to do such calculation from imputed conditional mean total expenditures, whether they are subject to a random perturbation or not.**

Statistical matching

- **Another lesson is that nonlinearities matter in the relationship between expenditure in groups of goods and income**

- **This problem is a big concern when matching datasets with very different supports like consumer surveys and wealth surveys that are designed to capture rich households**

4. High-frequency longitudinal household surveys

- **The Samphantharak-Townsend accounting framework for measuring household income and consumption is a massive undertaking**
- **Their goal is to impose an accounting framework on household data**
- **They use high frequency monthly data (the Townsend Thai Monthly Survey)**
- **Their framework emphasizes the distinction between cash flow measures and measures of performance, which is particularly relevant for rural households in developing countries**

High-frequency longitudinal household surveys

- **Low frequency household survey data provide an X-ray of assets, debts and income over a year but they are mute about the shorter term cash flow dynamics that household face**

- **A conceptual accounting framework may induce useful discipline in questionnaire design for low-frequency multipurpose household surveys, but its force is in the context of high frequency surveys**

- **High frequency data in developed economies help understand the liquidity of poor households and its implications for wealth accumulation**

- **Longitudinal low frequency surveys are important to study life-cycle and business-cycle aspects of household incomes and wealth**

- **High frequency diaries and low frequency longitudinal surveys provide complementary information**

High-frequency longitudinal household surveys

- **The use of diaries to track and record household economic behavior has increased in recent years**
- **Examples include the Consumer Expenditure Survey diary and various Central Bank consumer payment diaries**
- **Also the U.S. Financial Diaries Project of Jonathan Morduch (USFD).**
- **Diaries have several advantages over surveys, such as less recall error, but have problems of their own, such as self-selection due to diary fatigue, and reduced compliance**
- **An important question high frequency data should help answer is whether poor households mismanage their finances due to inadequate financial education, or suffer from liquidity problems and financial market failure (Choi, Griffin, and Seidman)**

THANK YOU

House price expectations and consumption decisions

- **Most pessimistic households have a significantly lower probability of buying a house than the rest**
  - -0.8 pp at the median, -1.24 pp at the 80th percentile
- **Uncertainty about the evolution of house prices also associated with reductions in the probability of buying a house**
  - -0.63 pp at the median, -0.8 at the 80th percentile
- **Expecting a large drop in HP also associated with smaller probability of buying a car**
  - -4.5 pp at the median but not for wealthier households
- **However, uncertain expectations are positively correlated with the probability of buying a car and, mostly with other big ticket items**
  - → could reflect some substitution effects (but not significant when including postal code dummies)

House price expectations and consumption decisions

Effects of HP expectations on average probabilities of purchase

	Other housing		Car purchase		Other big ticket items	
Memo: % of households buying	0.57%		9.42%		41.99%	
Expectation variables[1]	(1) Municip. dummies	(2) Within postal codes	(3) Municip. dummies	(4) Within postal codes	(5) Municip. dummies	(6) Within postal codes
Large certain drop[2]						
at median net wealth	-0.826**	-0.753***	-4.46**	-5.95***	2.80	-3.55
at 80th percentile of net wealth	-1.24***	-0.935***	-2.83	-2.87	2.07	-3.45
Uncertainty[3]						
at median net wealth	-0.629*	-0.600***	2.67*	1.02	8.09***	0.360
at 80th percentile of net wealth	-0.803**	-0.709***	2.64	1.66	12.5***	3.34
Income higher than current	-0.145	0.0841	2.14	-0.477	0.724	1.15
Income lower than current	0.656	-0.231	1.77	1.21	-0.007	-3.40
Observations	5,019	5,019	5,019	5,019	5,019	5,019

Consumption questions HFCS / EFF

Amount spent on food at home and amount spent on food outside home

- About how much does (you/your household) spend in a typical month on food and beverages at home?

-About how much does (you/your household) spend in a typical month on food and beverages outside the home? I mean expenses at restaurants, lunches, canteens, coffee shops and the like. Please, include only the amounts (you/your household) pay out i.e. net of any employer subsidy/discount/promotion etc.

Amount spent on utilities

- About how much does your household spend on utilities (such as electricity, water, gas, telephone, internet and television), in a typical month?

2017 Annual expenses on trips and holidays

- Over the last 12 months, about how much did (you/your household) spend on holiday trips or vacations? Please include transportation, accommodations, meals, package tours, entertainment and any other related expenses.

Consumption questions HFCS / EFF

One shot-question: Amount spent on consumer goods and services

-Overall, about how much does your household spend in a typical month on all consumer goods and services? Consider all household expenses including food, utilities, etc. but excluding consumer durables (e.g. cars, household appliances, etc.), rent, loan repayments, insurance policies, renovation, etc.

Durables

- In the past 12 months did (you/your household) buy any cars, trucks or motorcycles?

What was the total amount that you/your household paid for these vehicles, net of anything you received for trading in or selling an earlier vehicle?

- (EFF) Have you bought any furnishings, fittings or appliances for your home or any of the other real estate properties you own over the last year, such as furniture, rugs, curtains, electrical/electronic goods, etc?

What was the total value of these purchases?