






National Accounts in a World of Naturally Occurring Data: An Application to Consumption

Gergely Buda (Barcelona GSE),
Vasco Carvalho (University of Cambridge),
Stephen Hansen (Imperial College),
Alvaro Ortiz (BBVA Research),
Tomaso Rodrigo (BBVA Research),
José V. Rodríguez Mora (University of Edinburgh)

June 14, 2021

**** Work in Progress! ****

- Financial Transaction Data 
- Evolution of Household Consumption 
- Evolution of the Channel of Payment 
- Evolution of Sector Composition 
- Income and Consumption Inequality 

Pre-COVID: growing interest, relatively small-scale datasets.

COVID: explosion of data that uses payments data for tracking activity.

Post-COVID: use of new data sources for national accounts construction?

Our project: takes near-complete record of financial transactions from BBVA and asks whether they can be used to build national statistics.

- Real time, high frequency → tracking impact of shocks on national accounts.
- Huge samples → granular measures (e.g. geography, income)

...but Not intended for research: many potential sources of bias and noise.

Partnership with Big Data division of BBVA Research.

Universe of transactions.

Includes both

- card transactions
- transactions from/to accounts

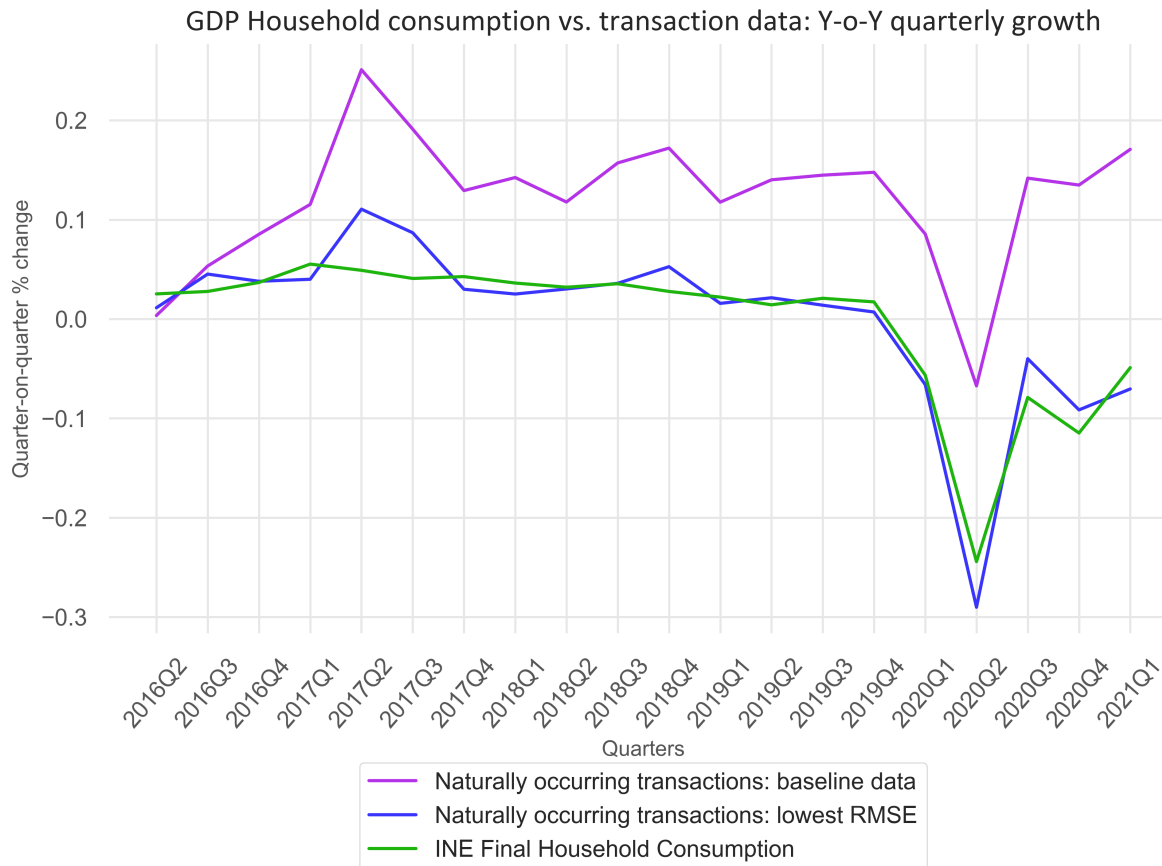
BBVA card transactions from 2015 Q2-2021 Q1.

Number of transactions	4,739,263,647
Total volume of transactions	254,862,281,174
Number of distinct customer IDs	7,224,844 ^a
Number of 'Active Customers' ^b	1,921,652

^a717,514 self-employed

^bAt least one transaction in each quarter

Evolution of Household Consumption

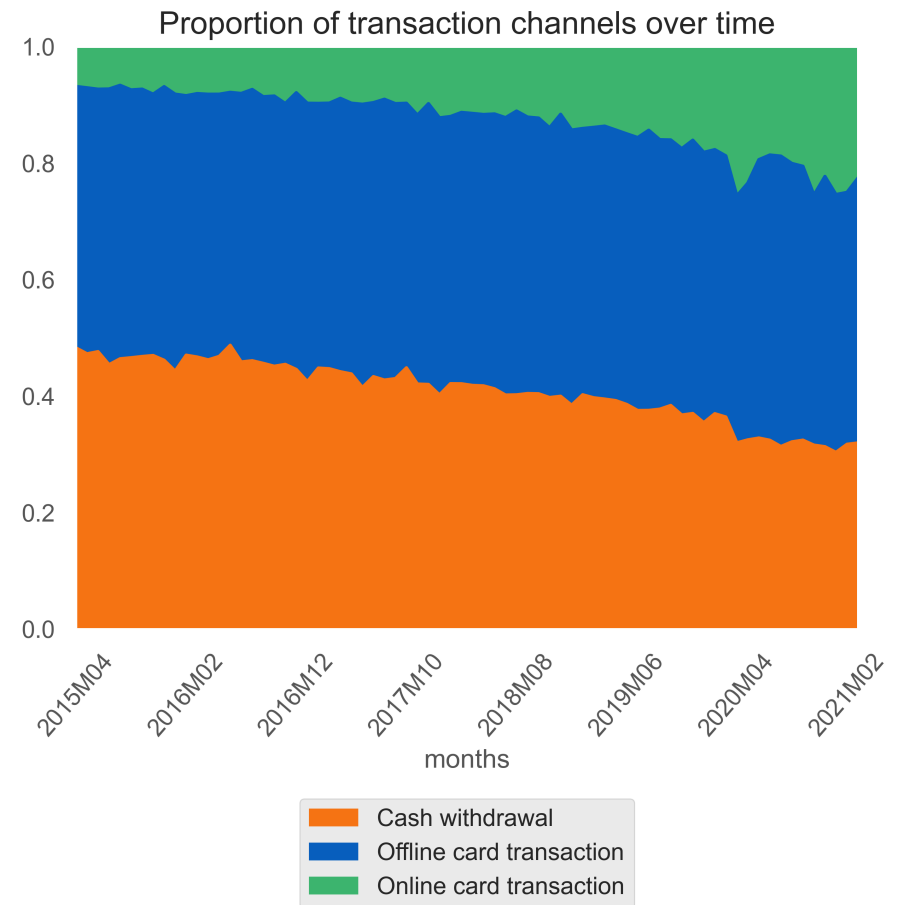
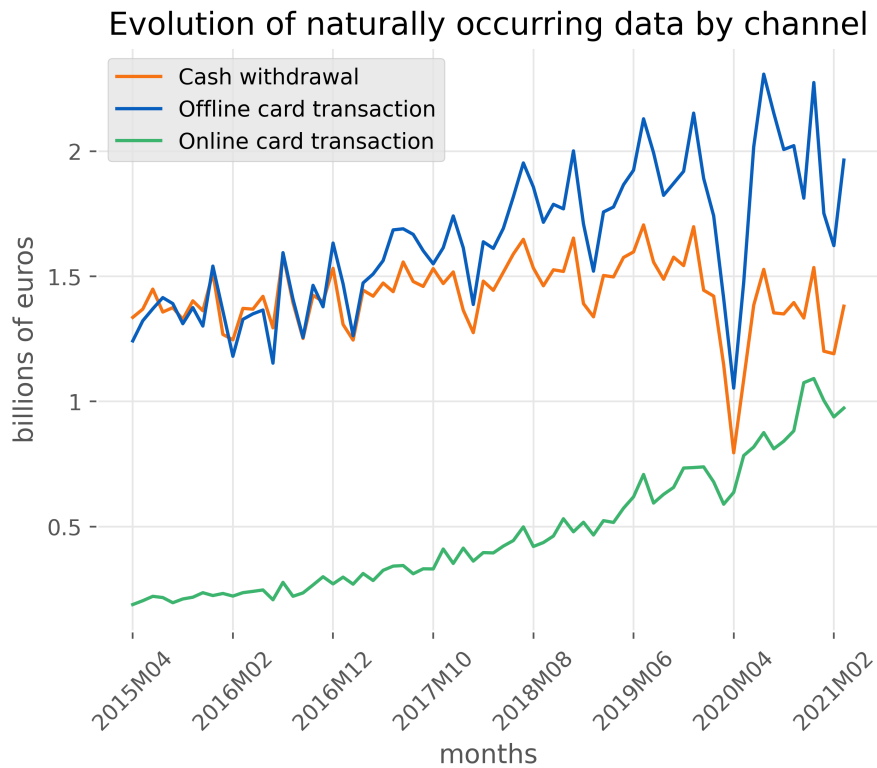


- Aim to reproduce Non-Durable consumption
- Data is "naturally occurring", it is prone to produce biases and perhaps to amplify fluctuations.
- Clean data with criteria like
 - Removal of non-consumption MCCs.
 - Include cash withdrawals.
 - Active clients filter for minimum of 10 transactions per quarter
 - Exclude self-employed.
 - Weight by INE demographic characteristics.

Evolution of the Channel of Payment

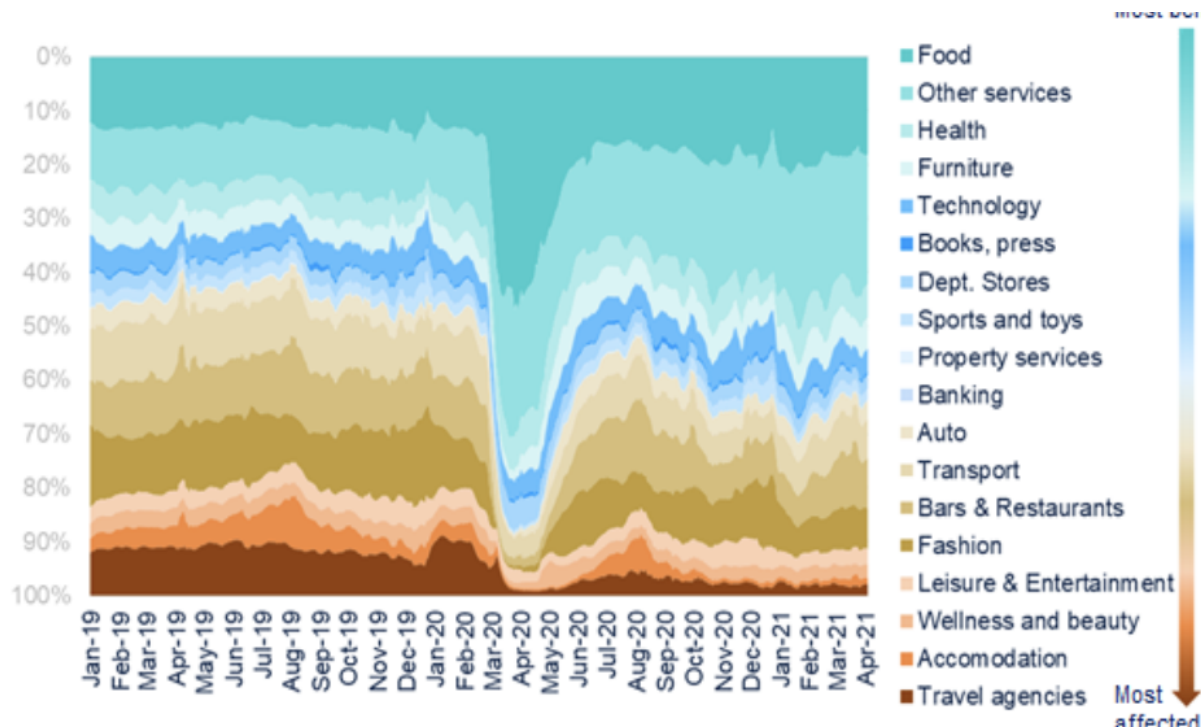


Trend towards more online and less cash predates Covid.



Massive swings in composition of consumption during lockdown

In previous paper we did show:

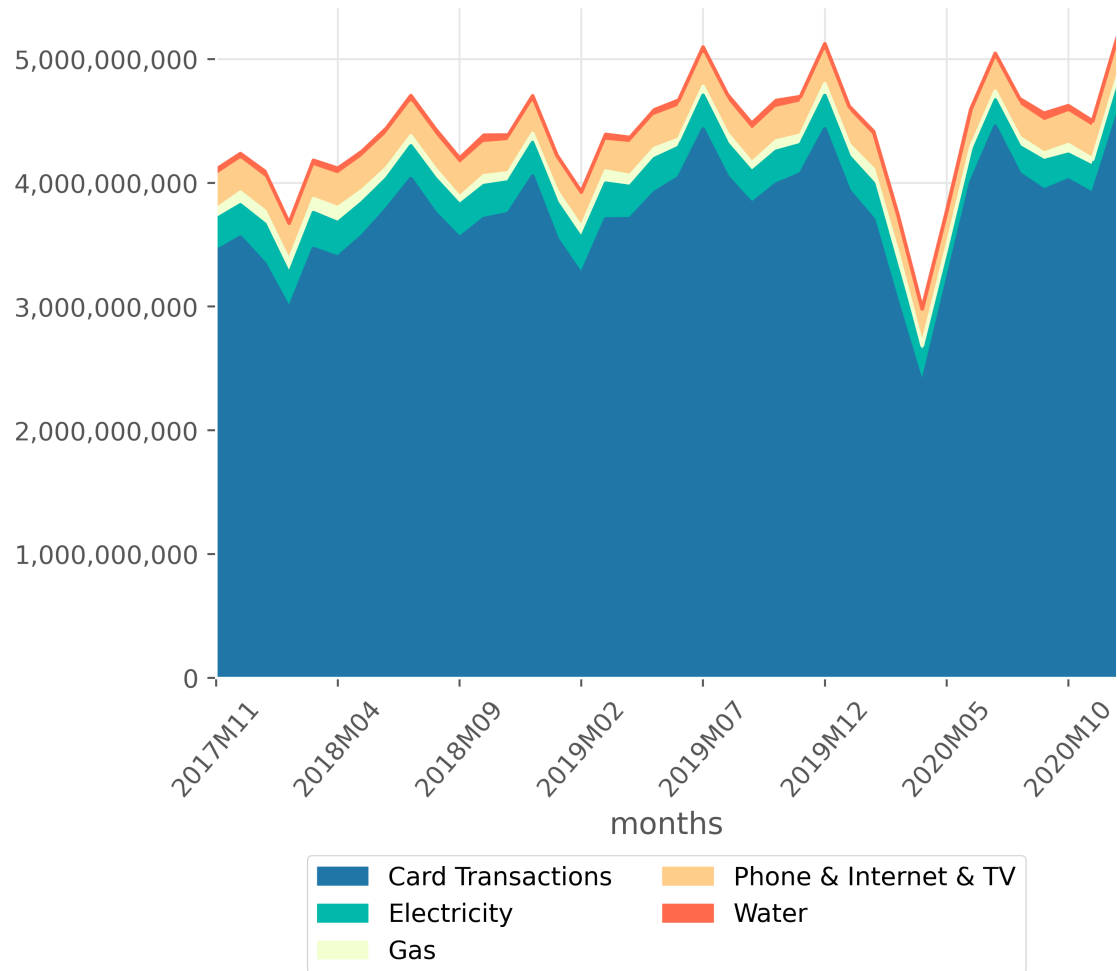


That the timing of lockdown and consumption restrictions (closures, etc.) determines to a large extent the movements of consumption.

(using differences in timing of the restrictions across provinces)

That the restrictions affected more the pattern of consumption of the better-off (evaluated at zipcode income), whose consumption decreased more during lockdown

Card transactions and non-card consumption of home utilities

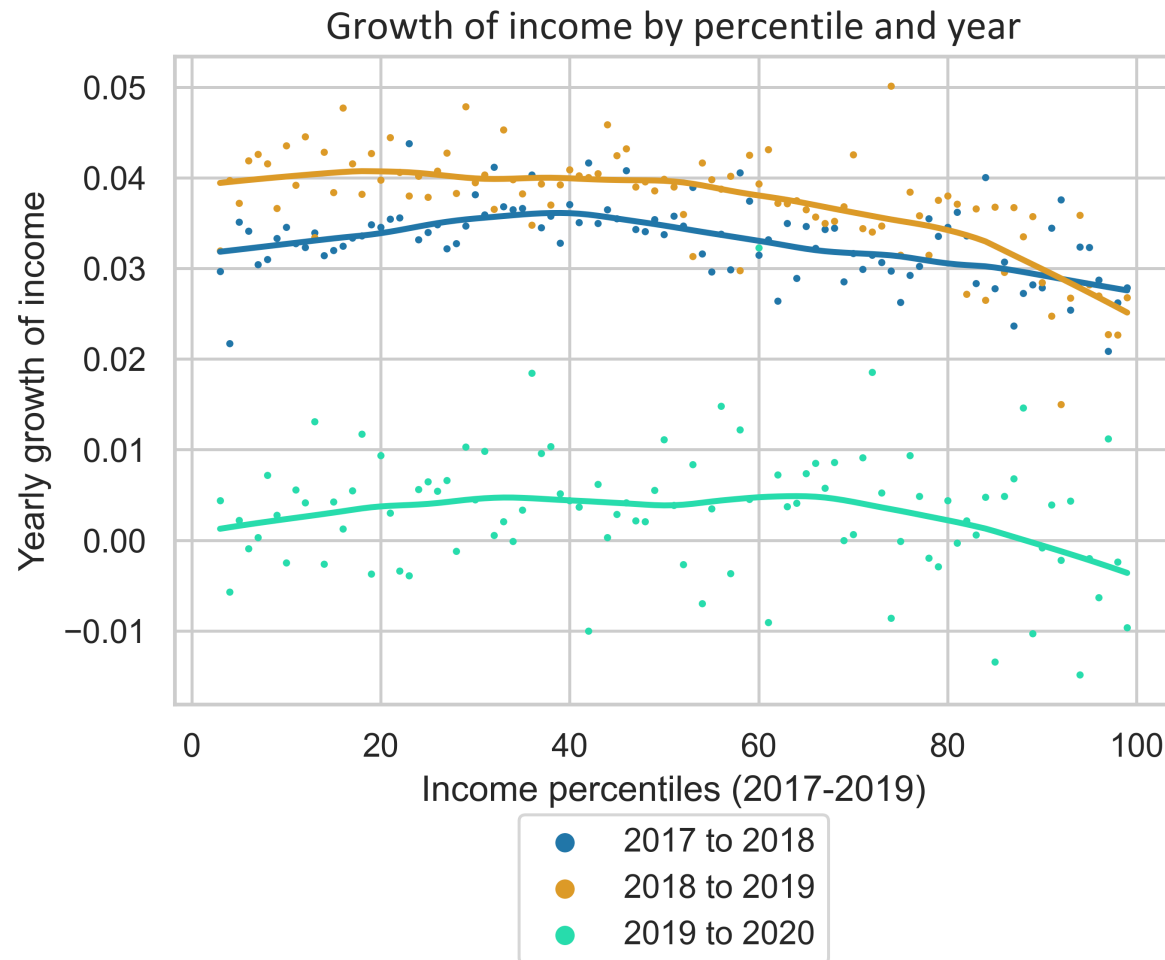


Consumption of utilities is more stable

most likely the same for housing ... ongoing work

... we have not yet computed this for durables

Use account data linking directly the income of the customer to her expenditure in order to create distributional national accounts pre and post covid



Growth Rate of Income

Sample restricted to active clients who receive at least one source of income (salary, benefits or pensions) in each month of 2017-2019.

No unemployed!

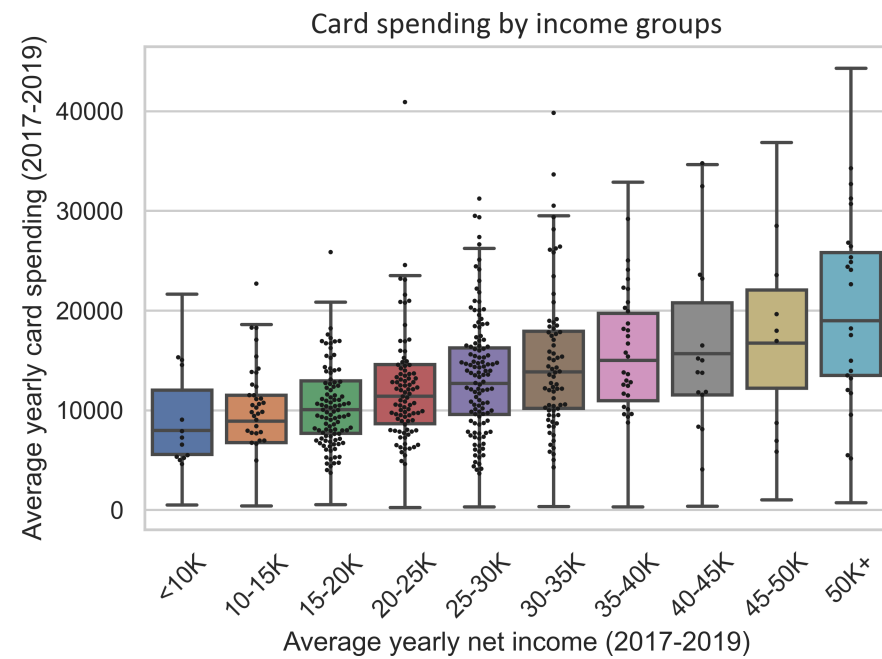
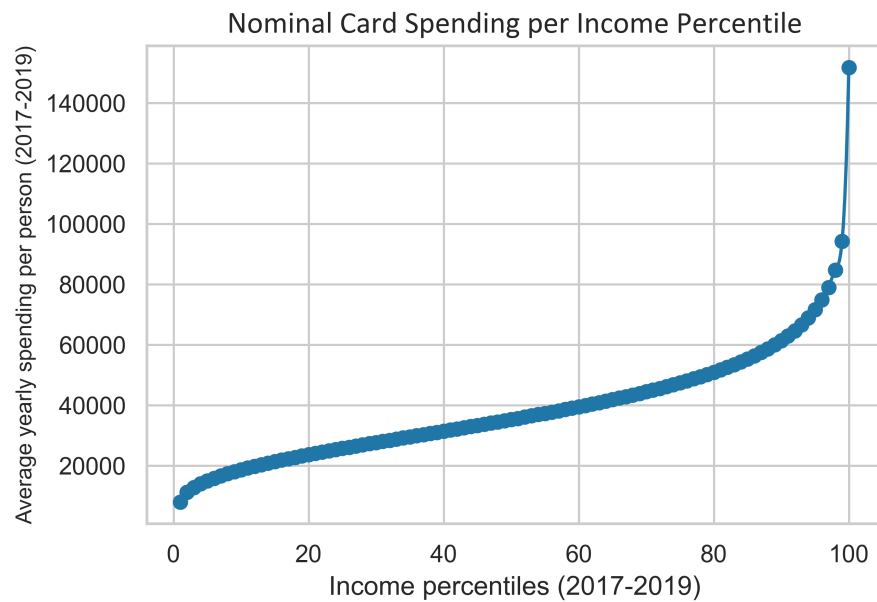
Slight decrease in inequality

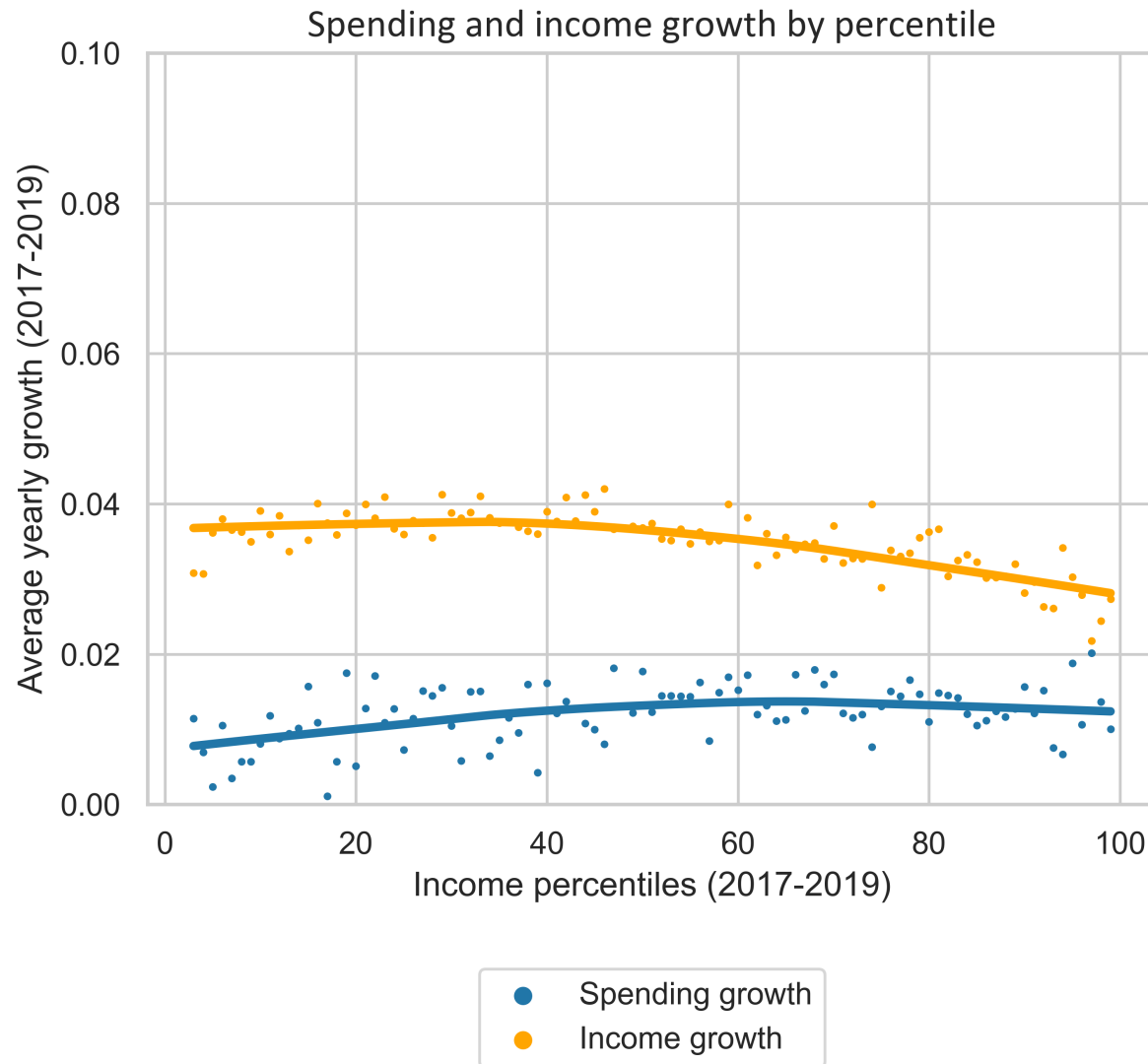
In **Covid times** very low income growth (nominal).

Lower growth for richer

Spending per Income groups

Non-Durables



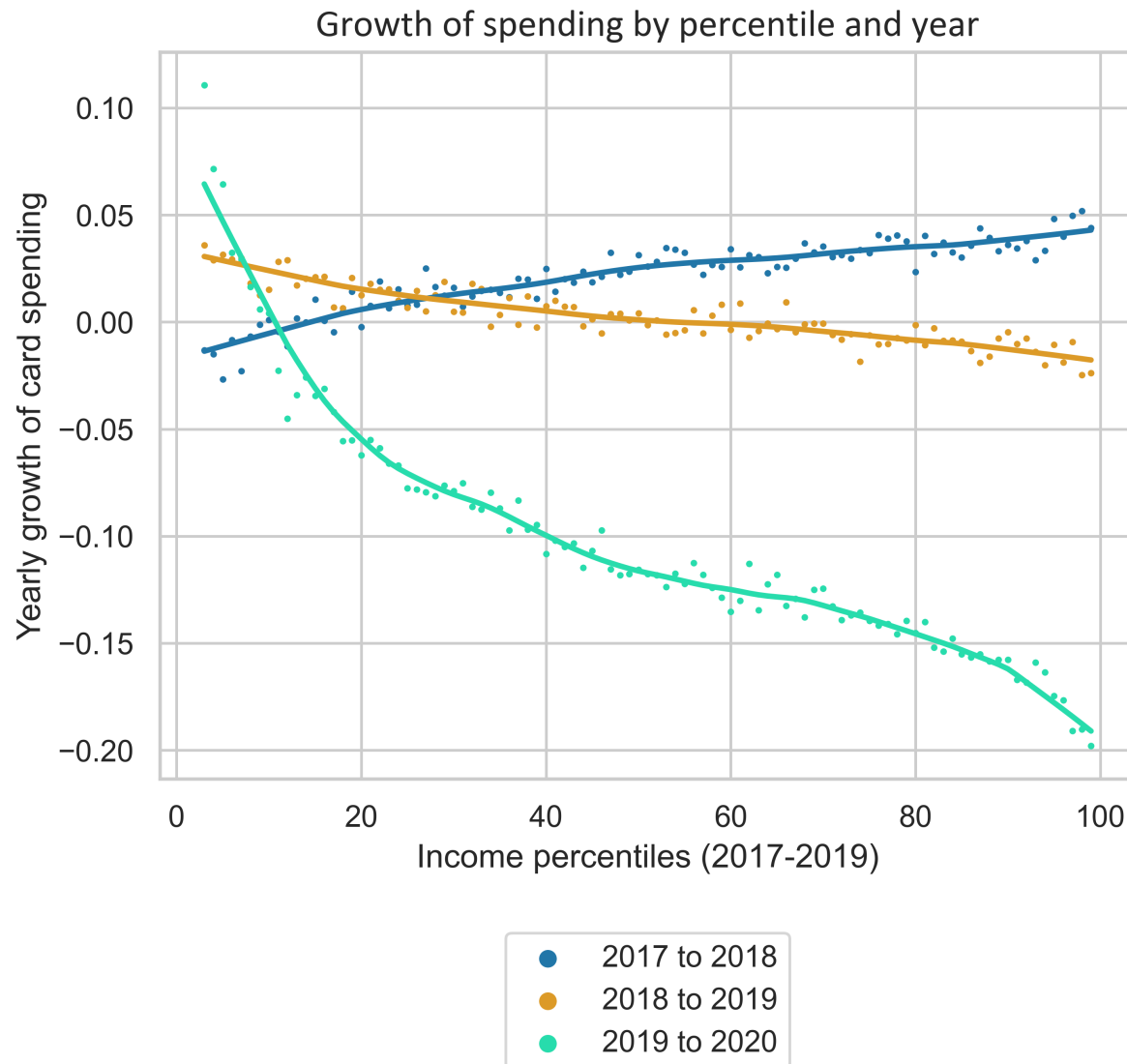


Growth Rates Before Covid

Income grows more than spending.

More equality of income.

Spending of rich grows slightly more than of poor.



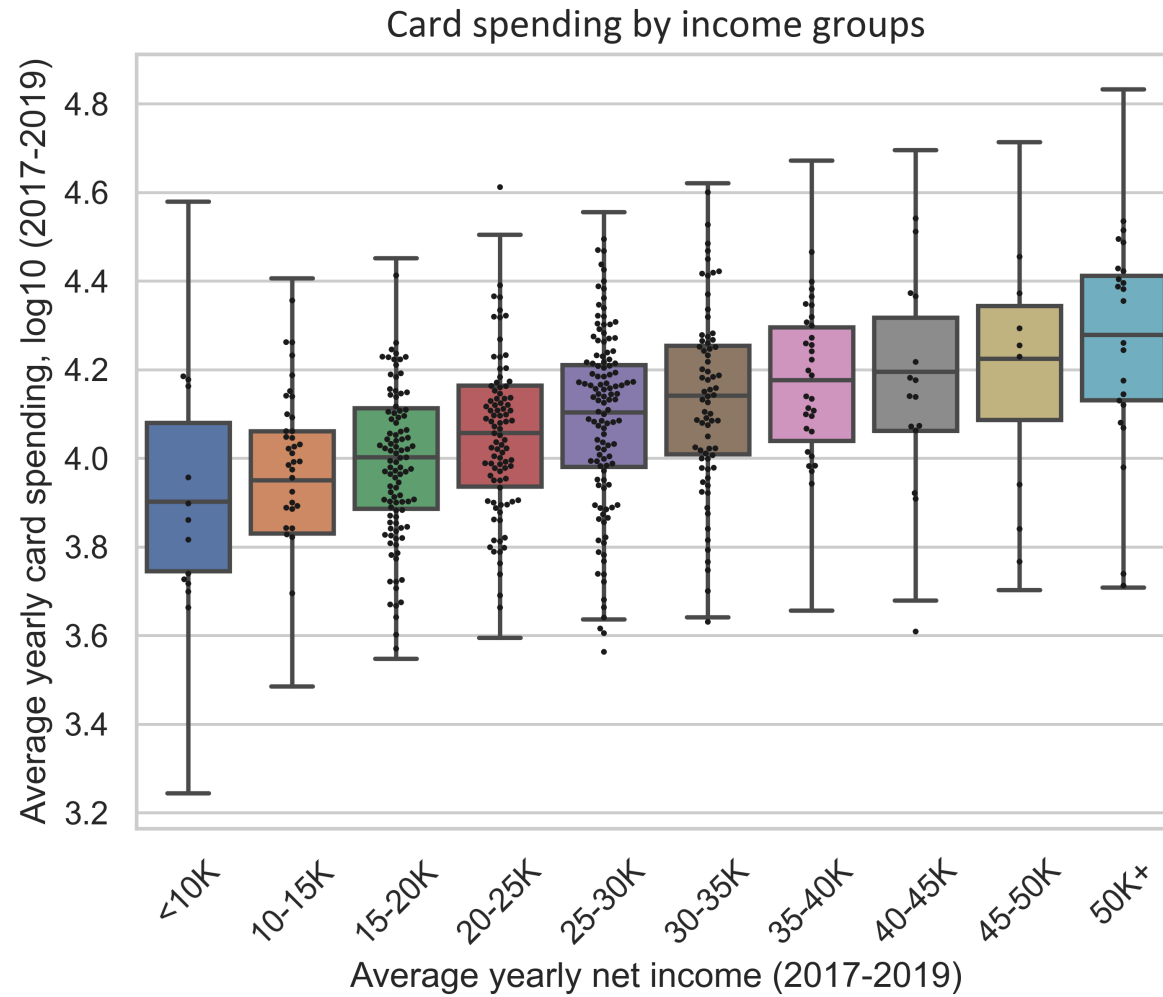
Covid Year

Equalization of Consumption

Massive decrease of consumption of the rich

... Because restrictions make the rich unable to consume the things they like to do: no traveling, no services, etc.

Massive Forced *private* savings



National Accounts in a World of Naturally Occurring Data: An Application to Consumption

Gergely Buda (Barcelona GSE),
Vasco Carvalho (University of Cambridge),
Stephen Hansen (Imperial College),
Alvaro Ortiz (BBVA Research),
Tomaso Rodrigo (BBVA Research),
José V. Rodríguez Mora (University of Edinburgh)

June 14, 2021

**** Work in Progress! ****
