BBVA Research

High Frequency data at BBVA Research

ECB Workshop on high-frequency data

The industry of high-frequency data: a view from the trenches

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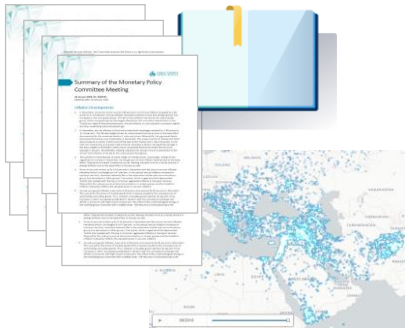
October 2020

Creating Opportunities

How do we manage data at BBVA Research?



Text as Data

(Macroeconomics, Politics, Geopolitics, society, communication strategy,...)

National Accounts in "Real Time" & "High Definition"

(Macroeconomic & Sectorial analysis)

Structural Analysis In real Time

(Bank transactions interconnectedness, Network analysis,...)

Bank transaction data requires efforts to make Big Data indicators robust and stable … we look for a “Good Data Driven” strategy…

Individual to firm transactions

Firm to firm transactions

Firm to individual transactions

Reassuring data management process

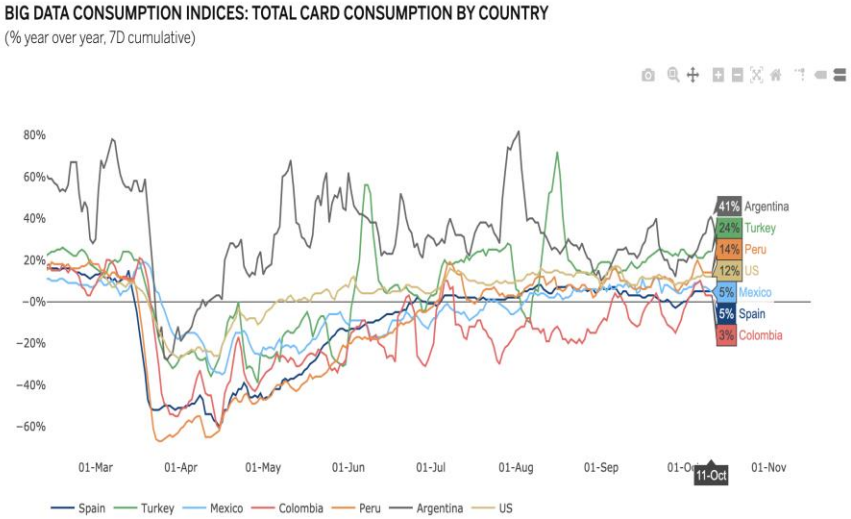
Data Ingestion

Data Quality

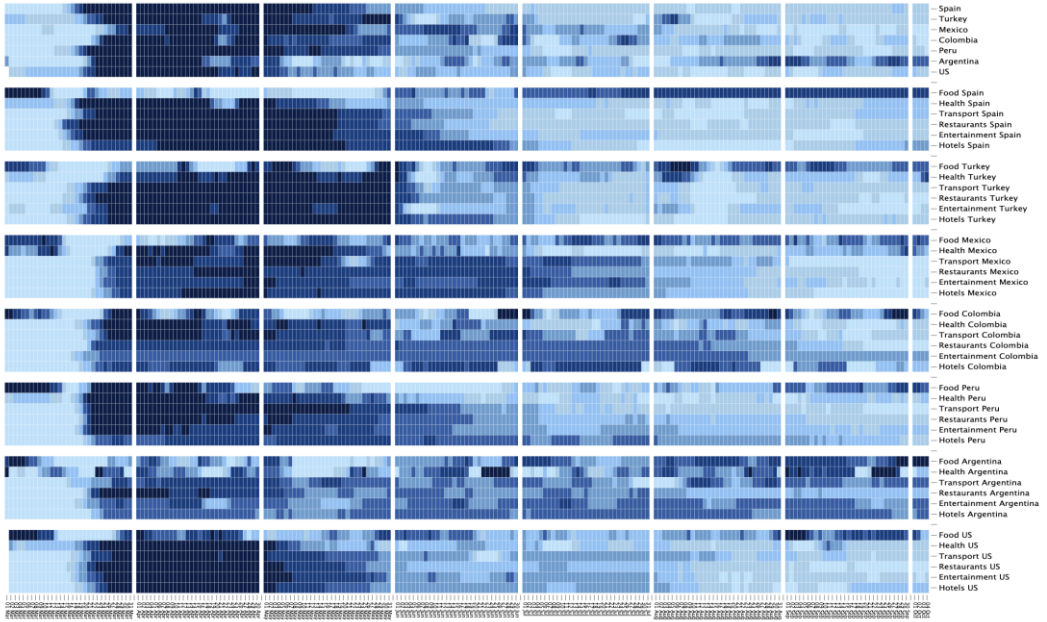
Data Representativity

…but efforts pay off as the analysis of bank transactions offers a huge potential in terms of economic analysis ….

Individual to firm transactions



US is proxied by US Sunbelt . Spending at BBVA POS by BBVA and non-BBVA customers plus spending by BBVA customers at non-BBVA POS. This data considers final expenditures, so not intermediate consumption is included. Therefore, the correspondence with national accounts household consumption is not fully equivalent. Reference for the methodology could be found in the publication "Tracking the COVID-19 Crisis with High-Resolution Transaction Data" and the weekly publications "The COVID-19 impact on Consumption in Real Time and High Definition".



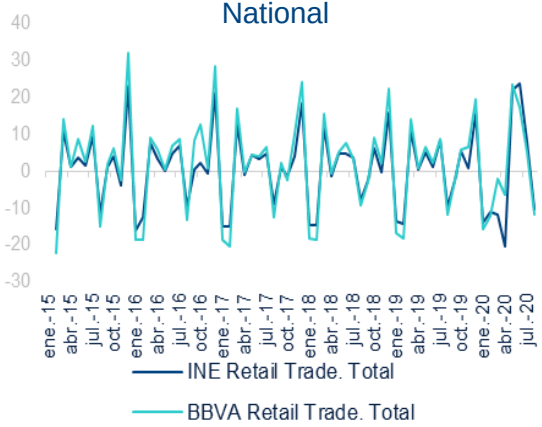
Daily indicators are provided on our website with weekly updates

See Carvalho et al (2020) for further detail

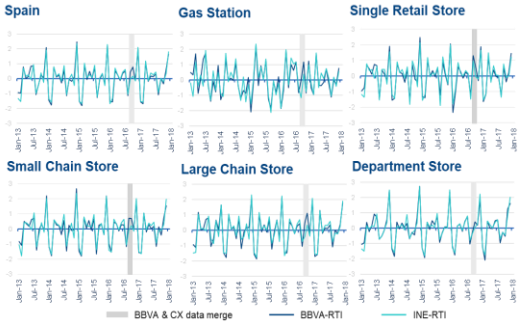
The time advantage on consumption evolution can be important… especially in emerging countries

BBVA Big Data Consumption Index Spain VS Official data: the retail sales index (monthly growth rates)

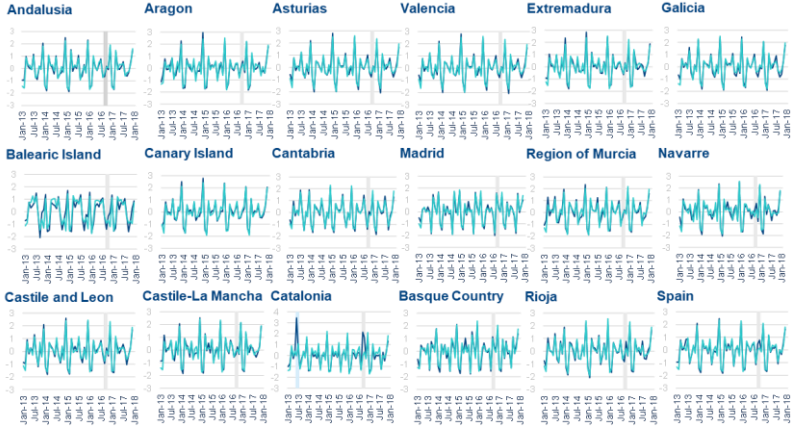
National



By distribution class



By region



See Bodas et al (2019) for further detail

Publication calendar for consumption according to the National Institutes of Statistics by country

It is not just the “high frequency”… but the “High Definition” component too, which leads Big Data to have “High Potential”

Individual to firm transactions

High frequency consumption indicators

By sector

Health, Transport, Restaurants, Entertainment, Hotels, Food,…

By geography

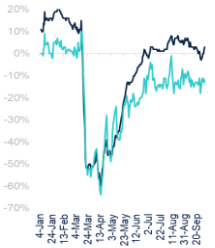
Regions, cities and even postal codes

Online / Offline

Performance of online vs face-to-face purchases

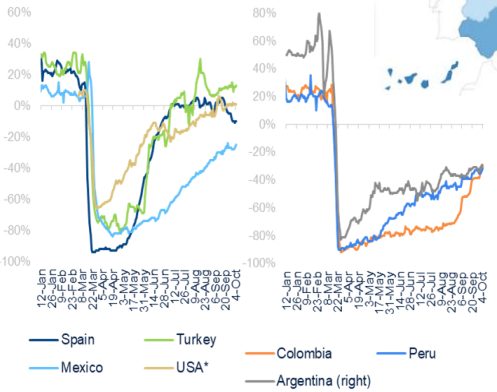
Card purchase / ATM withdrawal

Spain

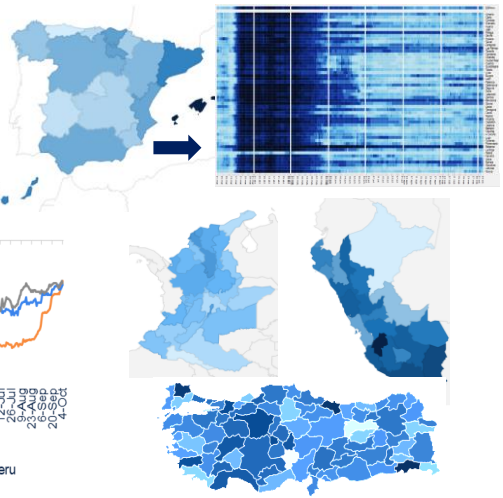


Colombia

Consumption in restaurants



Consumption by region



Spain

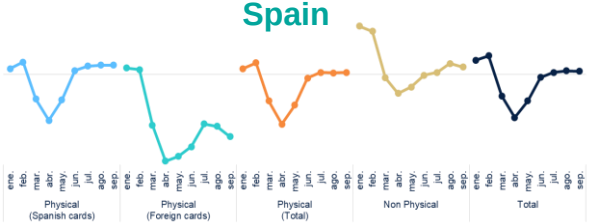
USA

Turkey

Mexico

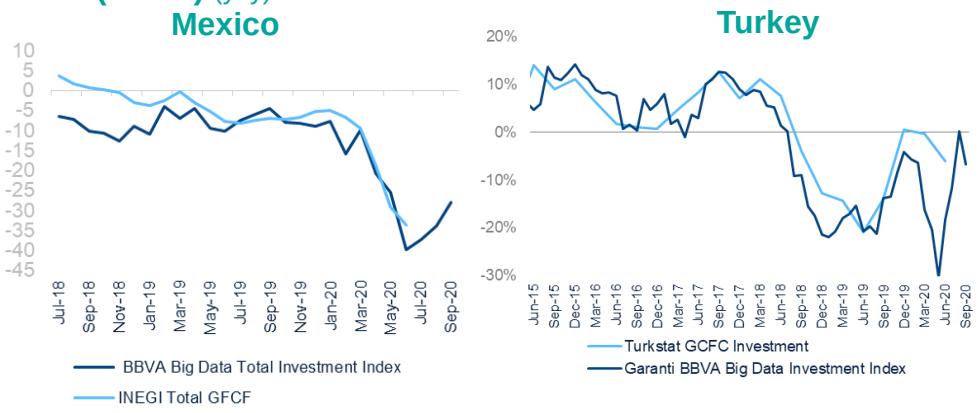
By nationality

Spain



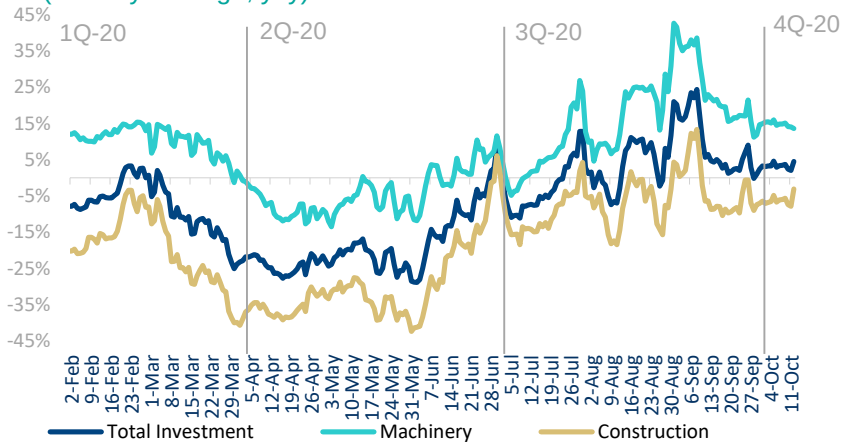
Our scope is wider. We focus on “National Accounts”. In this sense, we have just released our Big Data Investment indices in real time …

Investment : BBVA Big Data Investment Indices and Official Data (GFCF) (yoy)



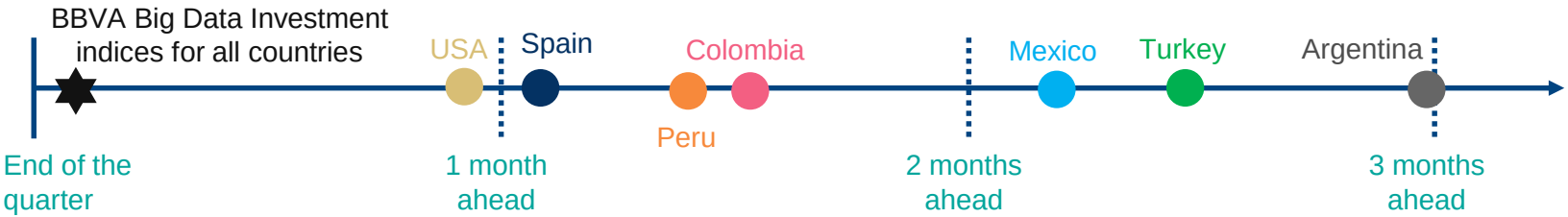
Turkey: Daily BBVA Big Data Investment index

(28 daily average, yoy)



See Barlas et al (2020) for further detail

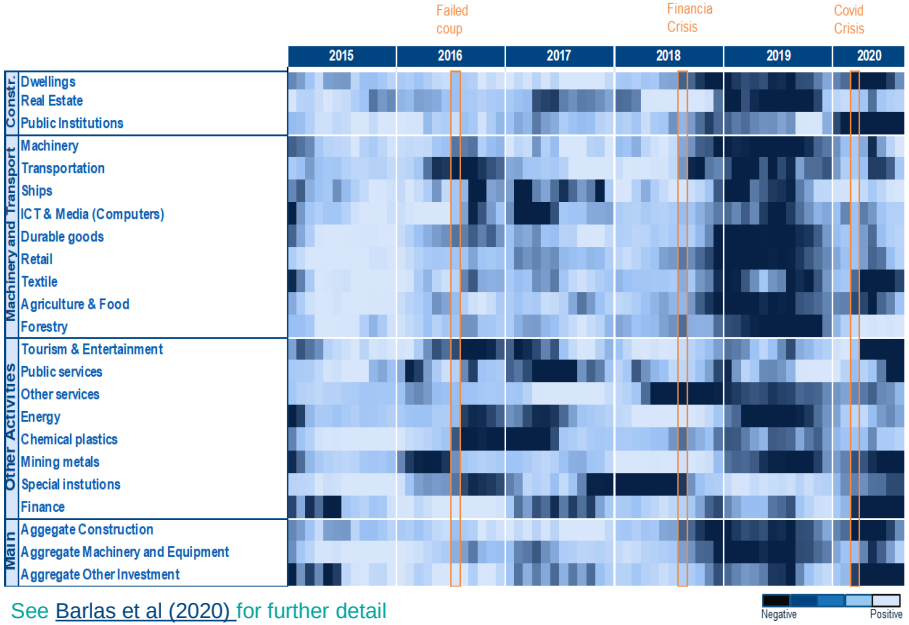
Publication calendar for investment according to the National Institutes of Statistics by country



Our Big data investment indicators have "High Definition" too.. This could be key to track investment by economic sectors and regions

TURKEY:GB-BBVA BIG DATA INVESTMENT HEAT MAP

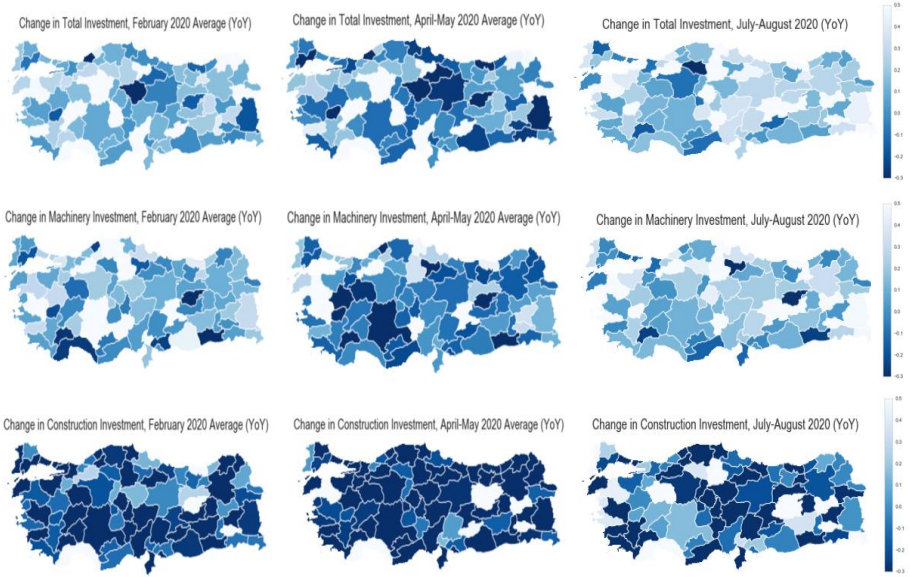
(3mm avg YoY nominal)



See Barlas et al (2020) for further detail

TURKEY:GB-BBVA BiG DATA INVESTMENTS GEO-MAPS

(Change in YoY investment before, during and after the lockdowns by Covids)



*White stands for YoY rates >50% nominal & Dark Blue <-30% nominal declines
Source:BBVA Research

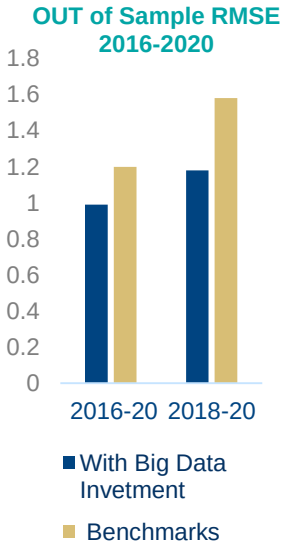
22 Sectors

81 Provinces

Big Data information improves the nowcasting performance and provides an important "time advantage" to analysts and policymakers…

TURKEY: NOWCASTING FINANCIAL CRISIS (SEPT 2018) & COVID CRISIS (MAR 2020)

(quasi real time nowcasting with and without Big Data Indexes vs Benchmark)**



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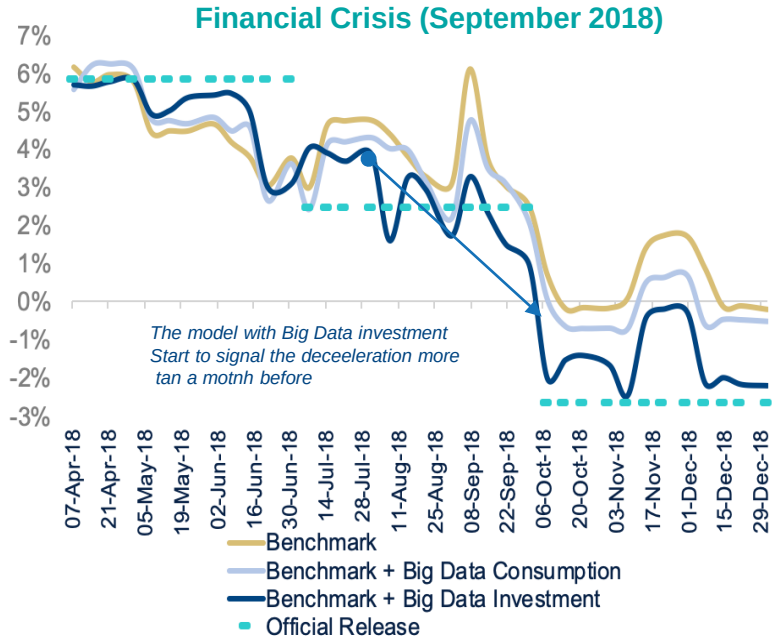
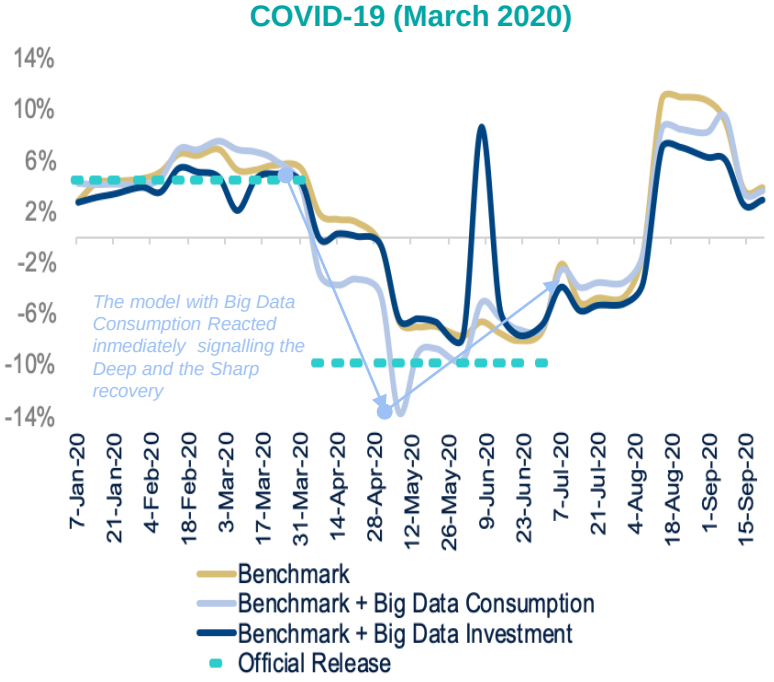
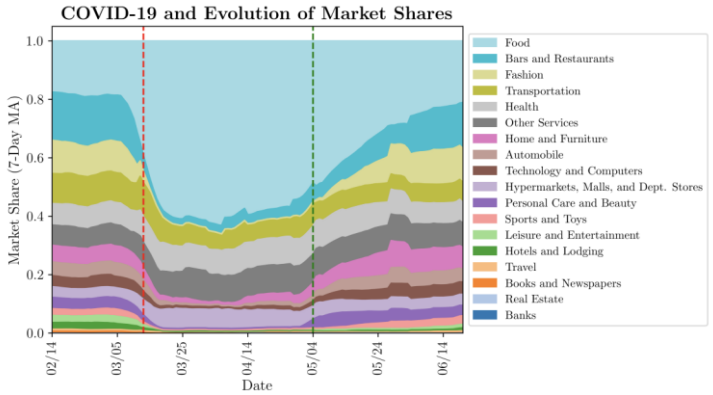
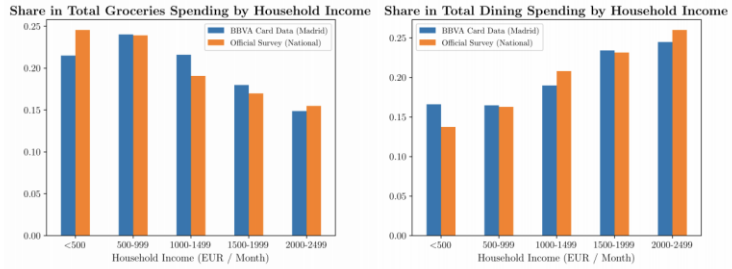




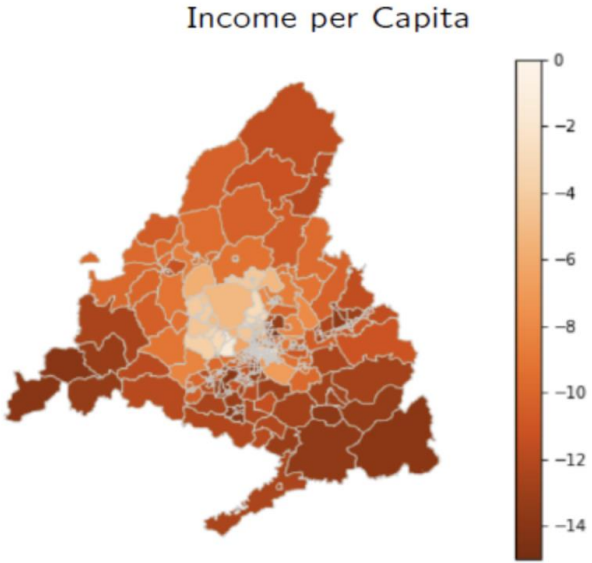
… as well as to analyze critical events such as the Covid-19 pandemic in a very granular way to design better “targeted” policies





(a) Groceries (b) Dining

Fig. 6: Comparison of Consumption Shares by Income in Food Categories



Source: https://conference.nber.org/sched/EFGs20

https://conference.nber.org/conf_papers/f143494.pdf

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