



Tracking the Impact of COVID-19 on Economic Inequality at High Frequency

2nd July 2021, XIV Meeting on Labour Economics

Josep Mestres Domenech, CaixaBank Research

Joint work with Oriol Aspachs (CaixaBank Research), Ruben Durante (ICREA-UPF, IPEG, Barcelona GSE), Jose G. Montalvo (UPF, IPEG, Barcelona GSE), Alberto Graziano (CaixaBank Research), Marta Reynal-Querol (ICREA-UPF, IPEG, Barcelona GSE).



- 1. Motivation**
- 2. Objectives**
- 3. Related work and contribution**
- 4. Data & Representativeness**
- 5. Results**
- 6. Conclusions & Next steps**

- ▶ **COVID-19 has taken a heavy toll on economic activity.** Spanish GDP fell 11% in 2020.
- ▶ Concerns that the economic impact of the pandemic may hit the most vulnerable segments of the population disproportionately, leading to a surge in **economic inequality**
- ▶ Governments are investing vast resources to support families' income and provide credit to firms (IMF, 2020; ILO 2020)
- ▶ How effective these policies are remains unclear due to the difficulty to track **economic inequality at a high frequency** and with a high degree of spatial granularity
- ▶ Official statistics on inequality only available at yearly frequency and often with long delays. Not useful to allow policymakers to **quickly evaluate and adjust their responses**

- ▶ We propose a new methodology to track the evolution of income inequality at a high frequency using **anonymized data from bank records**
- ▶ We focus on Spain and use data from **CaixaBank** - Spain's largest bank by total assets and direct payroll deposits
- ▶ Data on all account holders receiving **payroll payments** from a private or public employer and/or **government transfers**
- ▶ Overall sample includes over **3 million retail depositors**
- ▶ Period of interest: from **February 2020** (compared to two years before), i.e., **before, during, and after different national lockdowns**
- ▶ Ongoing effort: **update analysis regularly**

1. Increasing use of real-time data to track economic activity:

- ▶ Data on electricity usage (Cicala, 2020)
- ▶ Data on hours worked and mobility from phone records (Chen et al., 2020)
- ▶ Data on payroll, benefits, and taxes (Cajner et al., 2020)
- ▶ Data on credit card use, payroll, job postings, financial transactions (Chetty et al., 2020)

Contribution: first attempt to use high-frequency data to study inequality

2. Measuring inequality using real-time labor surveys (Bick-Blandin, 2020; Adams-Prassl et al., 2020)

Contribution: use administrative data to overcome the limitations of (online) surveys

3. Use of bank data to study the response of consumption to income shocks (Carvalho et al., 2020, Montalvo and Reynal-Querol, 2020)

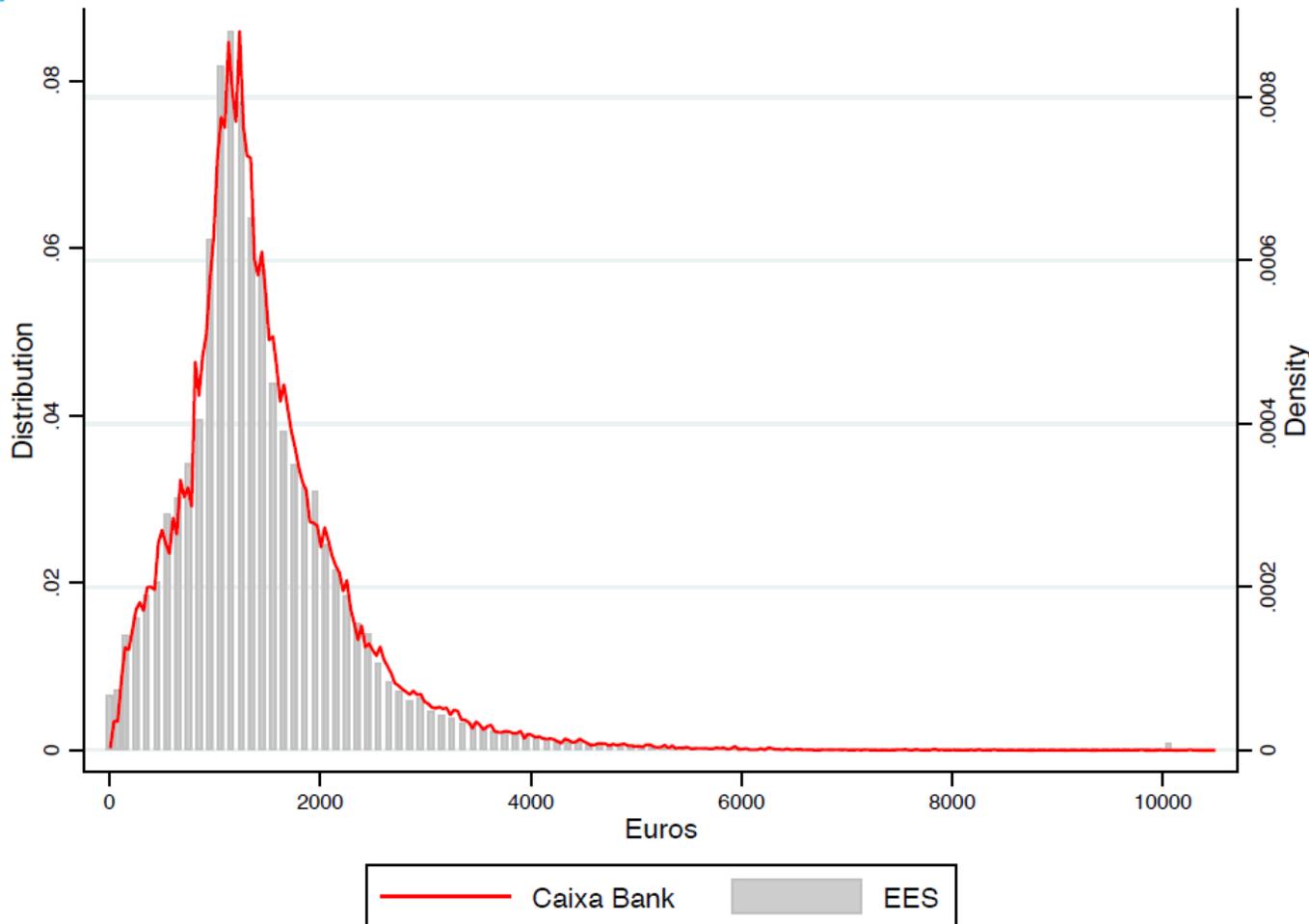
Contribution: focus on pre- and post-tax inequality using data on payroll and subsidies

SAMPLE DEFINITION

- ▶ **Individuals aged 16 to 64 years old** / not self-employed / positive wages or benefits previous 2 months
- ▶ **Salaries and unemployment benefits in month t** : from the 16th of month t to the 15th of month $t+1$
- ▶ **Restrictions**
 - ▶ (1) one account holder or multiple account co-holders but only one employer paying-in wages (*around 5% of initial sample excluded*)
 - ▶ (2) using the bank account for usual financial transactions (*0.7% of initial sample excluded*)
- ▶ **No other filters applied** (income level, etc.)

➡ **About 3 million individuals followed each month**

Net wages comparison: CaixaBank vs. Official Wage Survey (EES) 2018

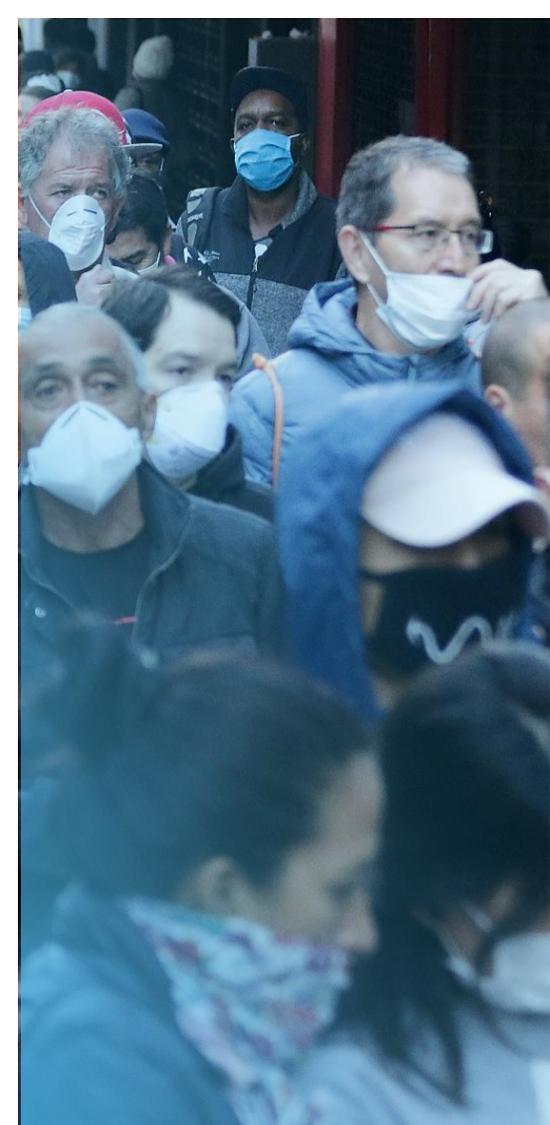


	EES 2018 (net wages)	CABK
P90/P10	4.14	4.24
P90/P50	1.86	1.88
P10/P50	0.46	0.44
P75/P25	1.82	1.85

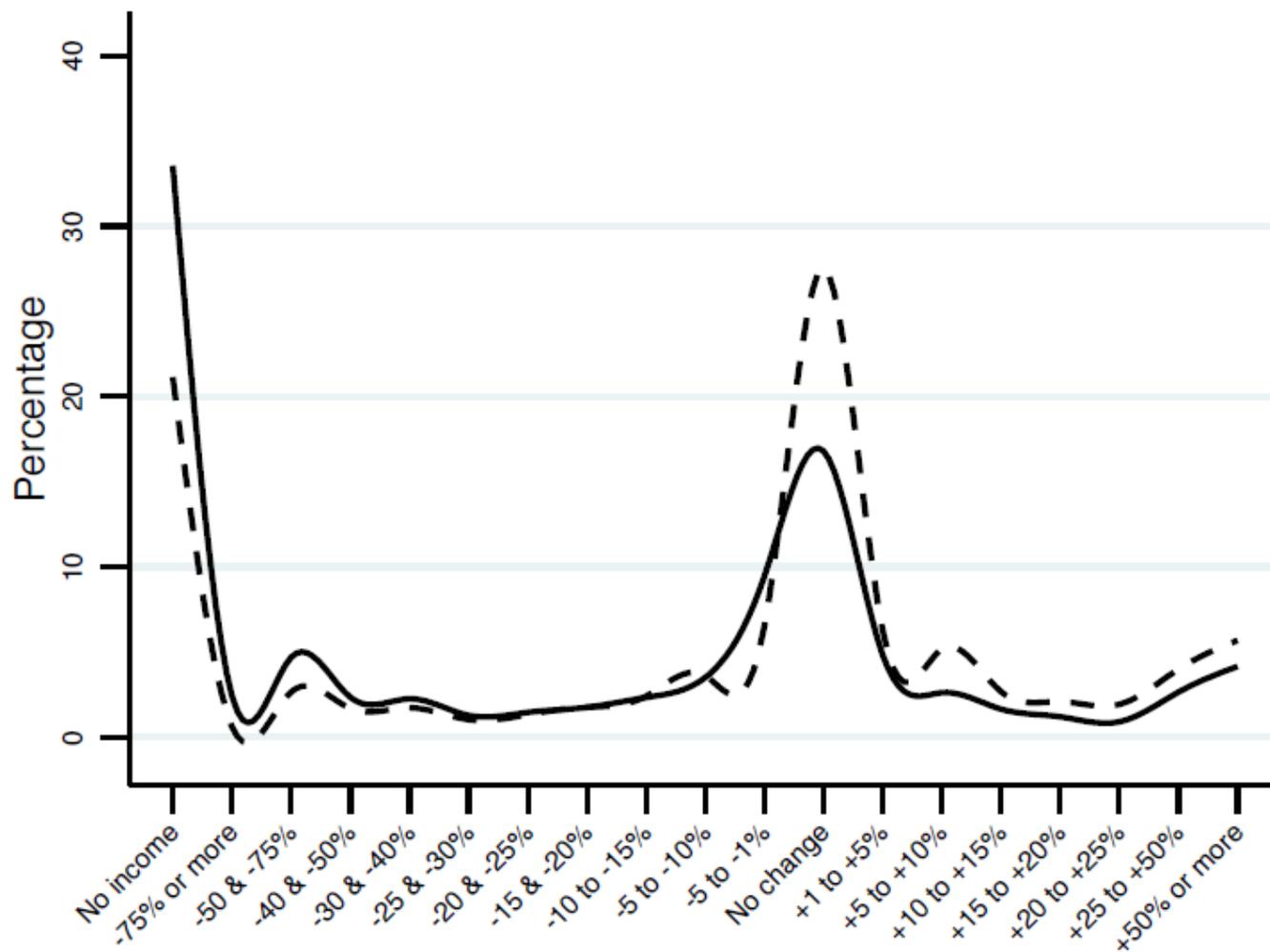
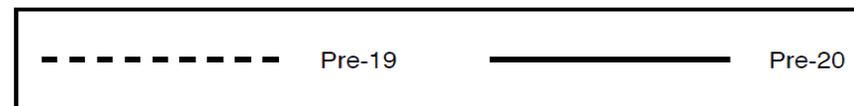
Sample characteristics comparison:

CaixaBank sample (CABK) vs. Official Wage Survey (EES) and Labour Force Survey (EPA)

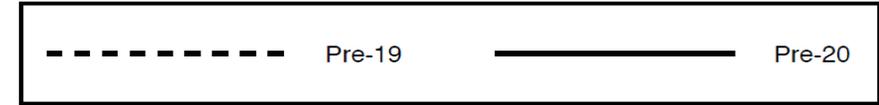
(%)	EES (2018)	EPA (4T 19)	CABK (2020)
Gender			
Male	53	52	54
Female	47	48	46
Age			
15-19	-	0.8	1
20-29	14	14.5	18
30-39	25	24.6	25
40-49	30	30.5	28
50-59	23	23.3	21
60+	7	6	7



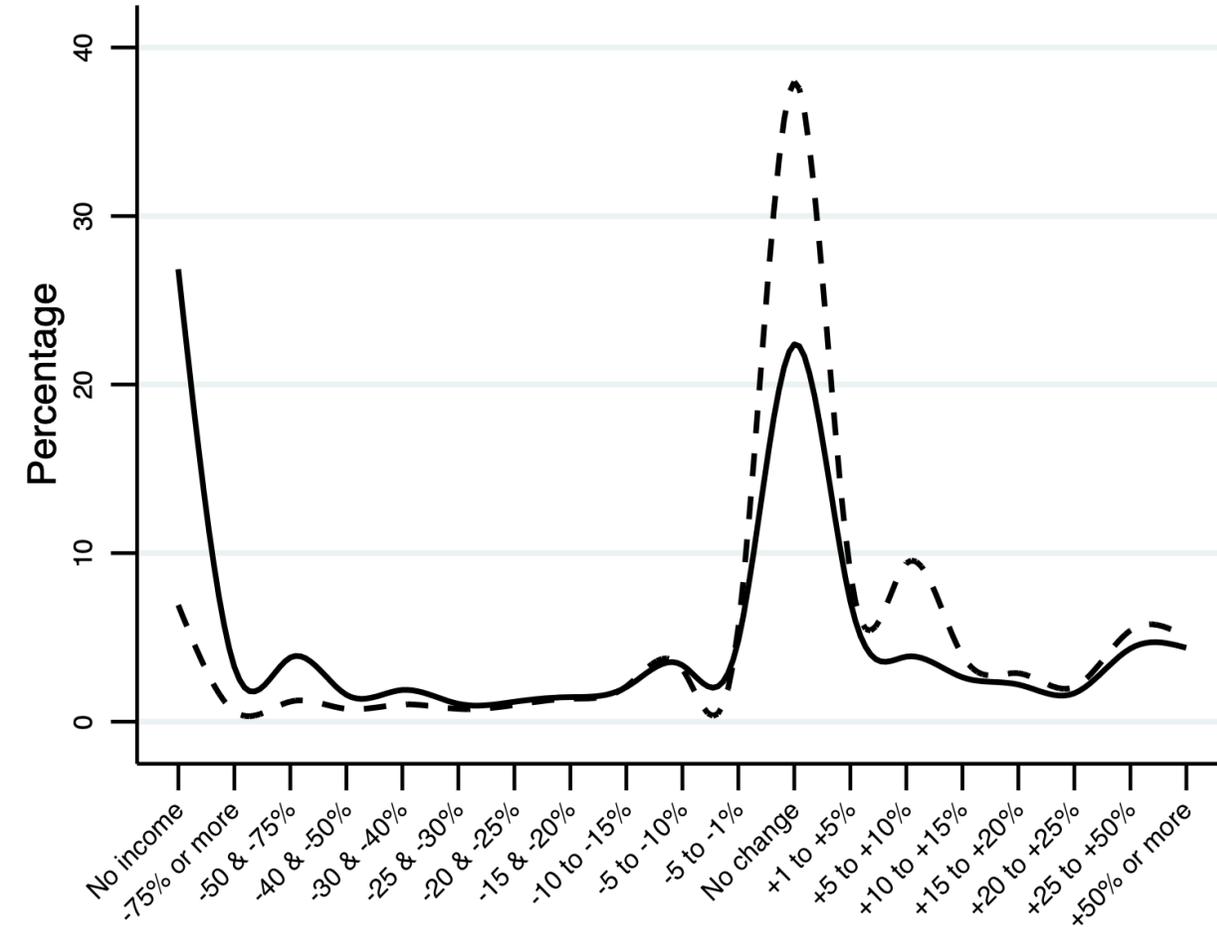
Changes in labor earnings (pre-tax): (April - Feb 2020) vs. (April - Feb 2019)



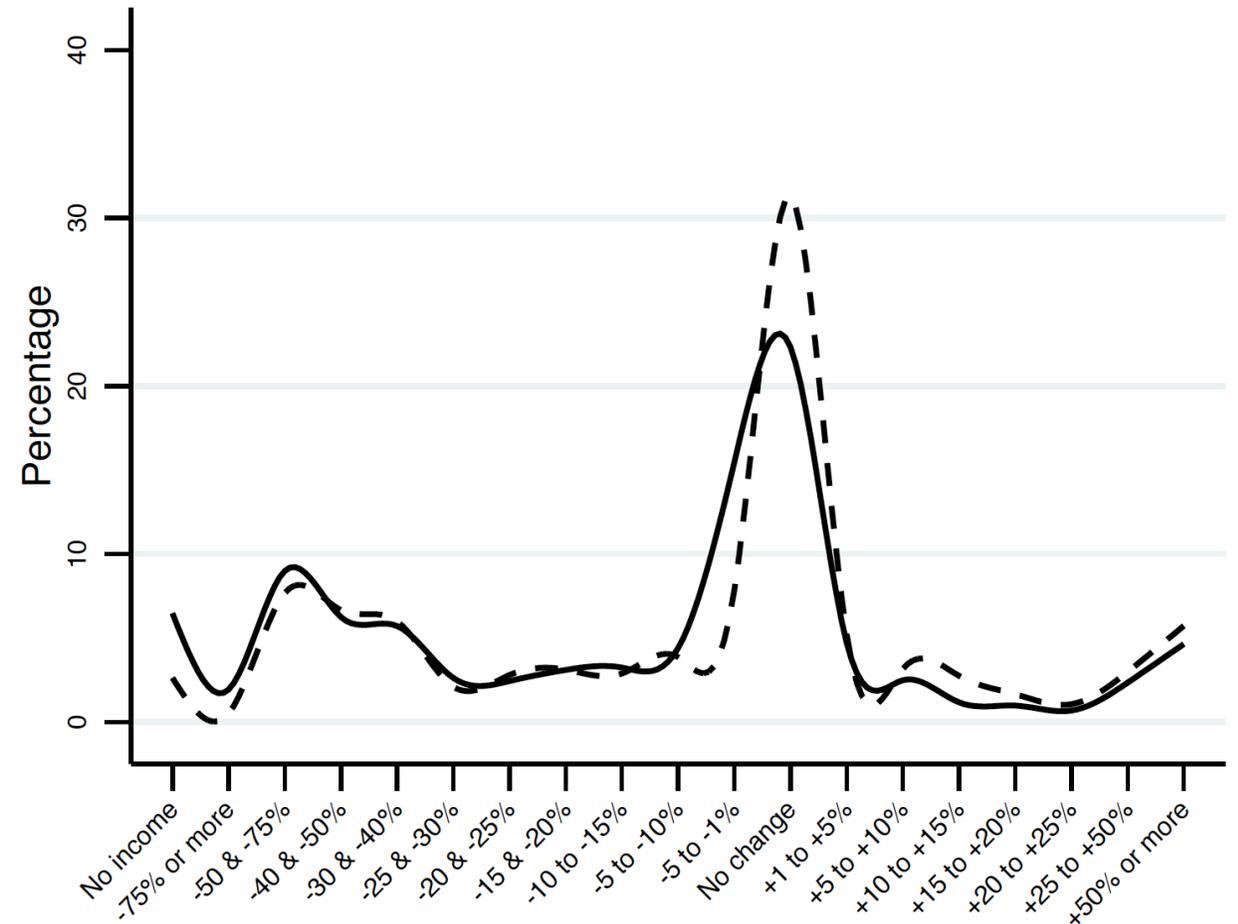
Changes in labor earnings (pre-tax): (April - Feb 2020) vs. (April - Feb 2019)



From 900€ to 1000€ (25th percentile)

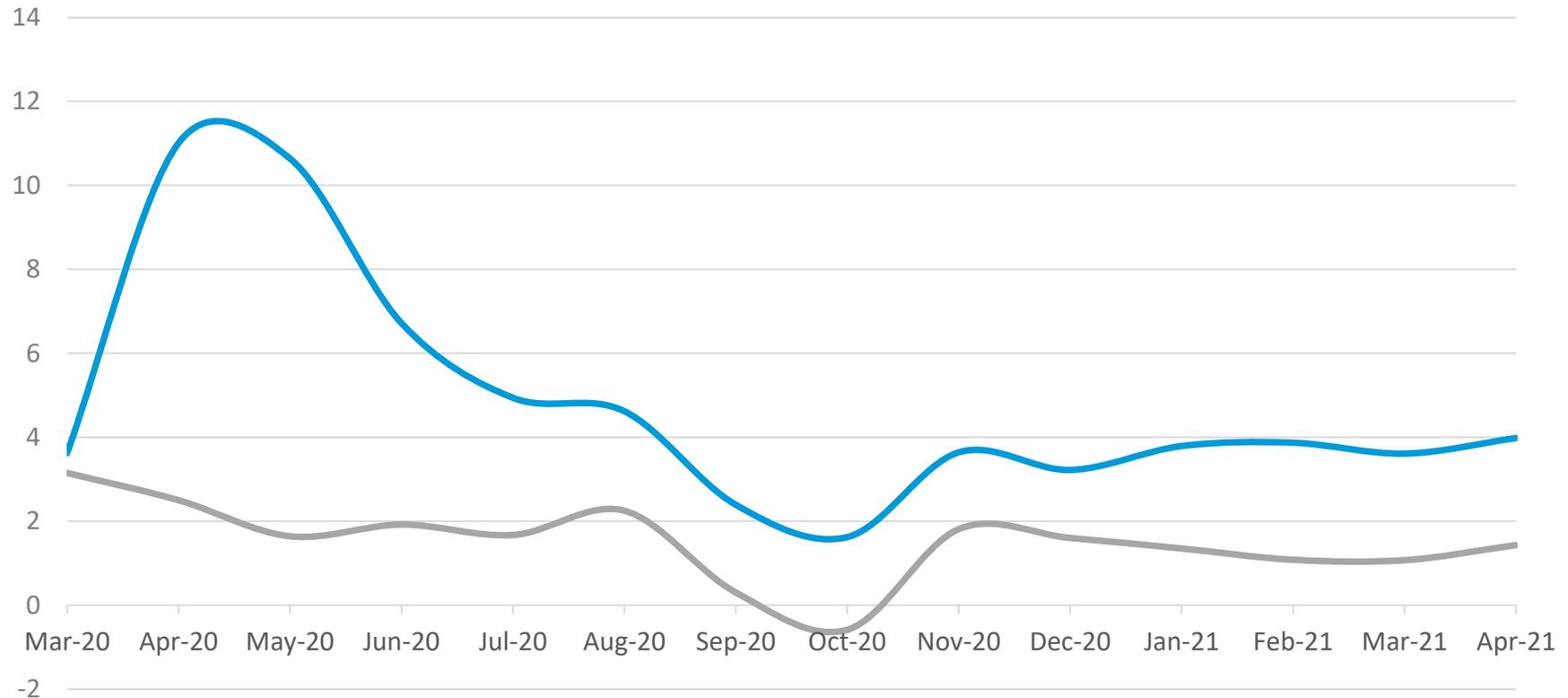


From 2900€ to 3000€ (95th percentile)



Monthly Evolution of the Gini Index since the start of the pandemic

Change with respect to February 2020 Level*

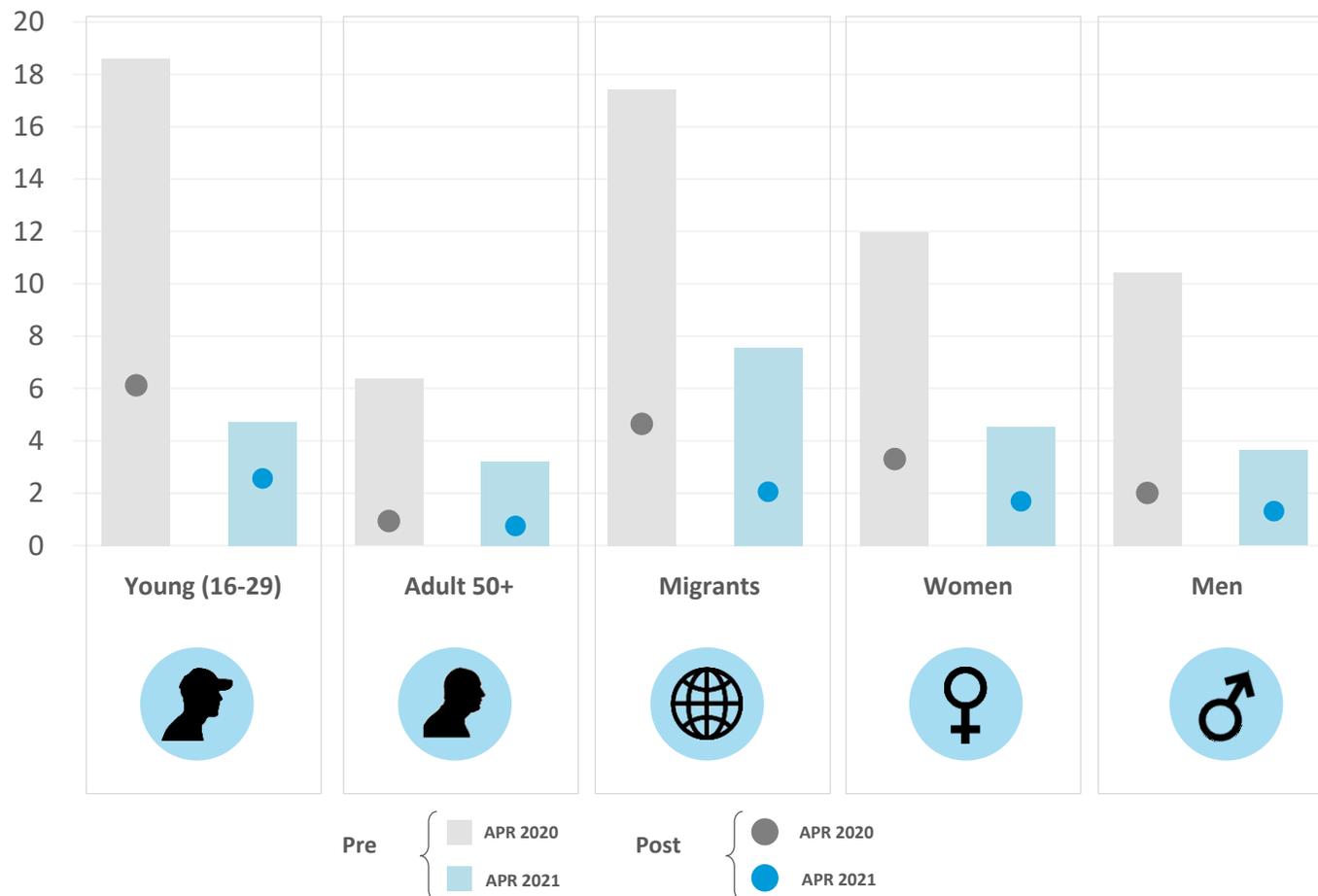


Note (*): The change in the Gini index compared with February 2020 has been adjusted for seasonal variations observed during the same period 2 years previously. "Post" refers to the Gini index after public transfers and "Pre" before public transfers.

Source: CaixaBank Research, using internal bank data.

Monthly Evolution of the Gini Index by groups

Change with respect to February 2020 Level*



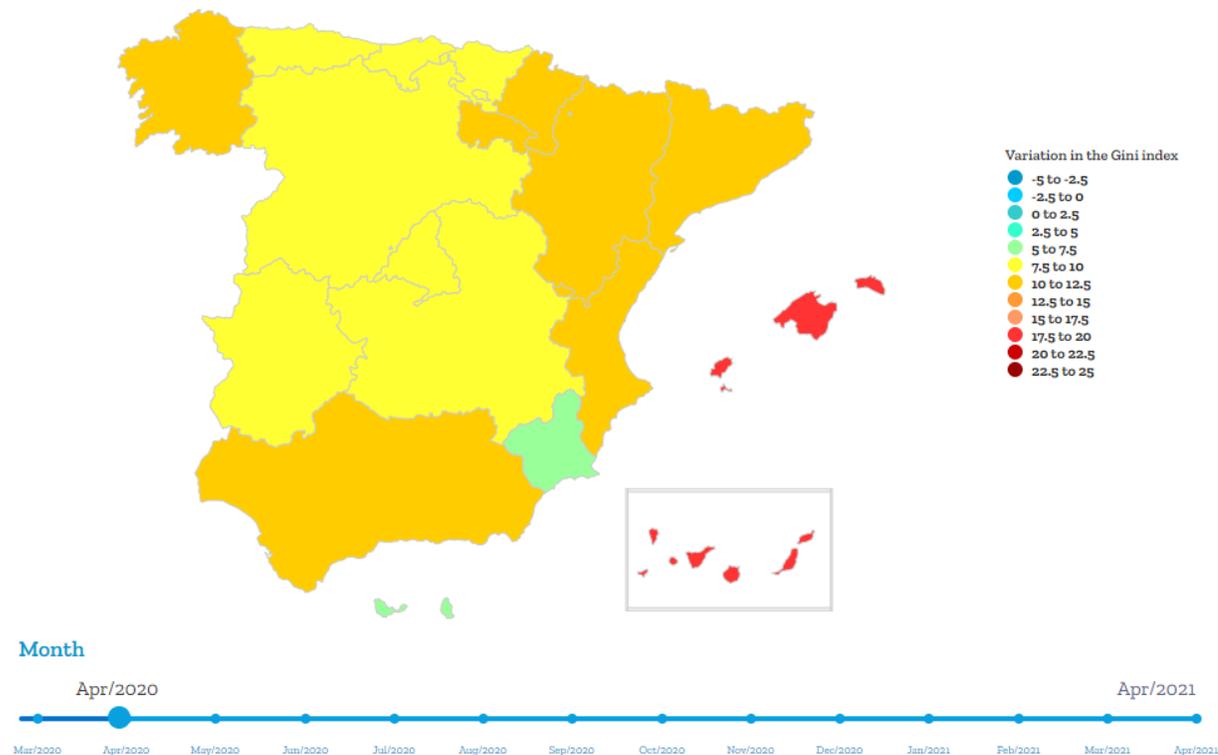
Note (*): The change in the Gini index compared with February 2020 has been adjusted for seasonal variations observed during the same period 2 years previously.

"Post" refers to the Gini index after public transfers and "Pre" before public transfers.

Source: CaixaBank Research, using internal bank data.

Variation in the Gini index by autonomous region regarding February 2020

Before public transfers: 2020 - April



Public transfers

- Before public transfers
- Afeter public transfers

Variation in the Gini index by autonomous region regarding February 2020

Afeter public transfers: 2020 - April

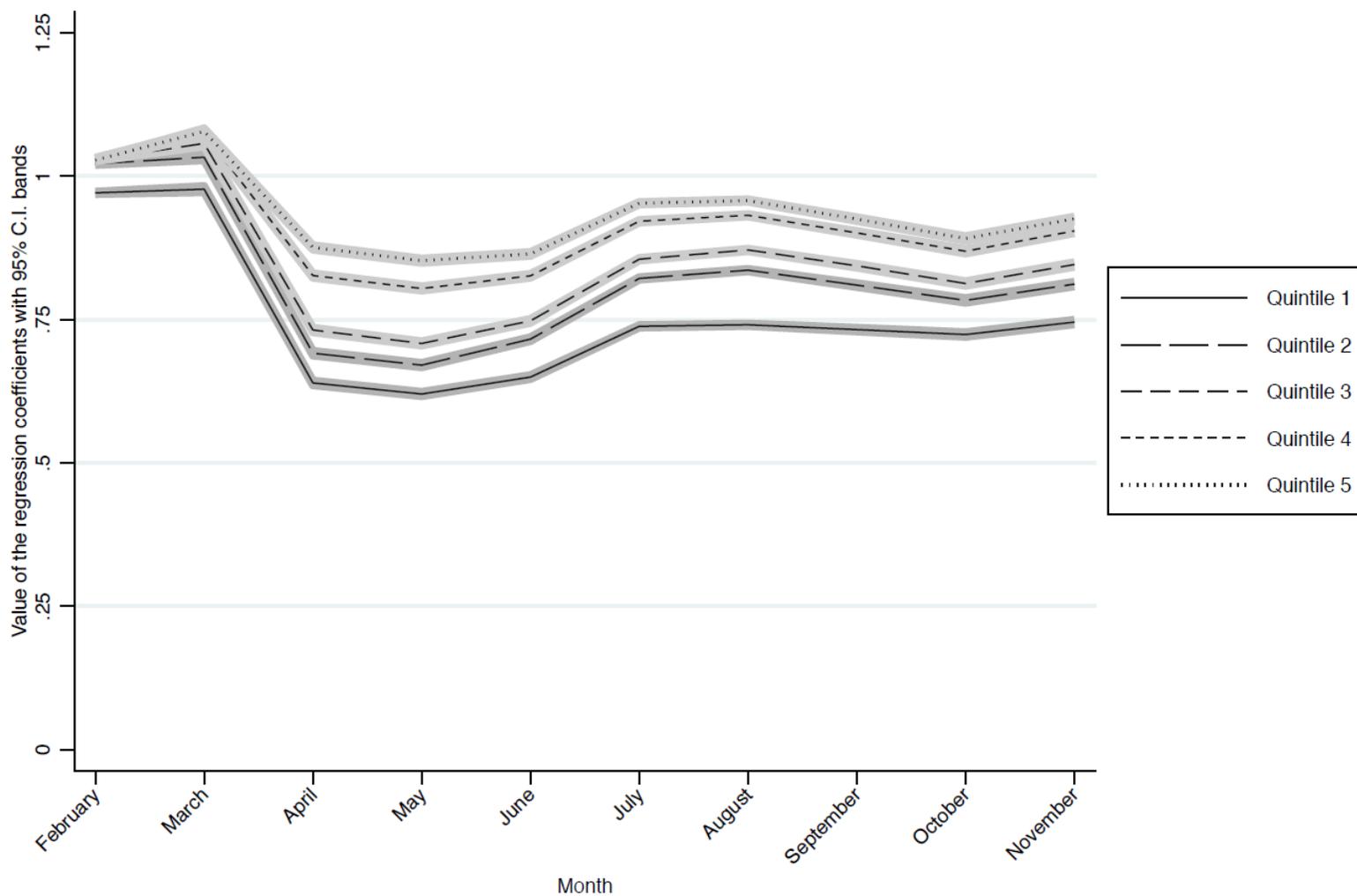


Public transfers

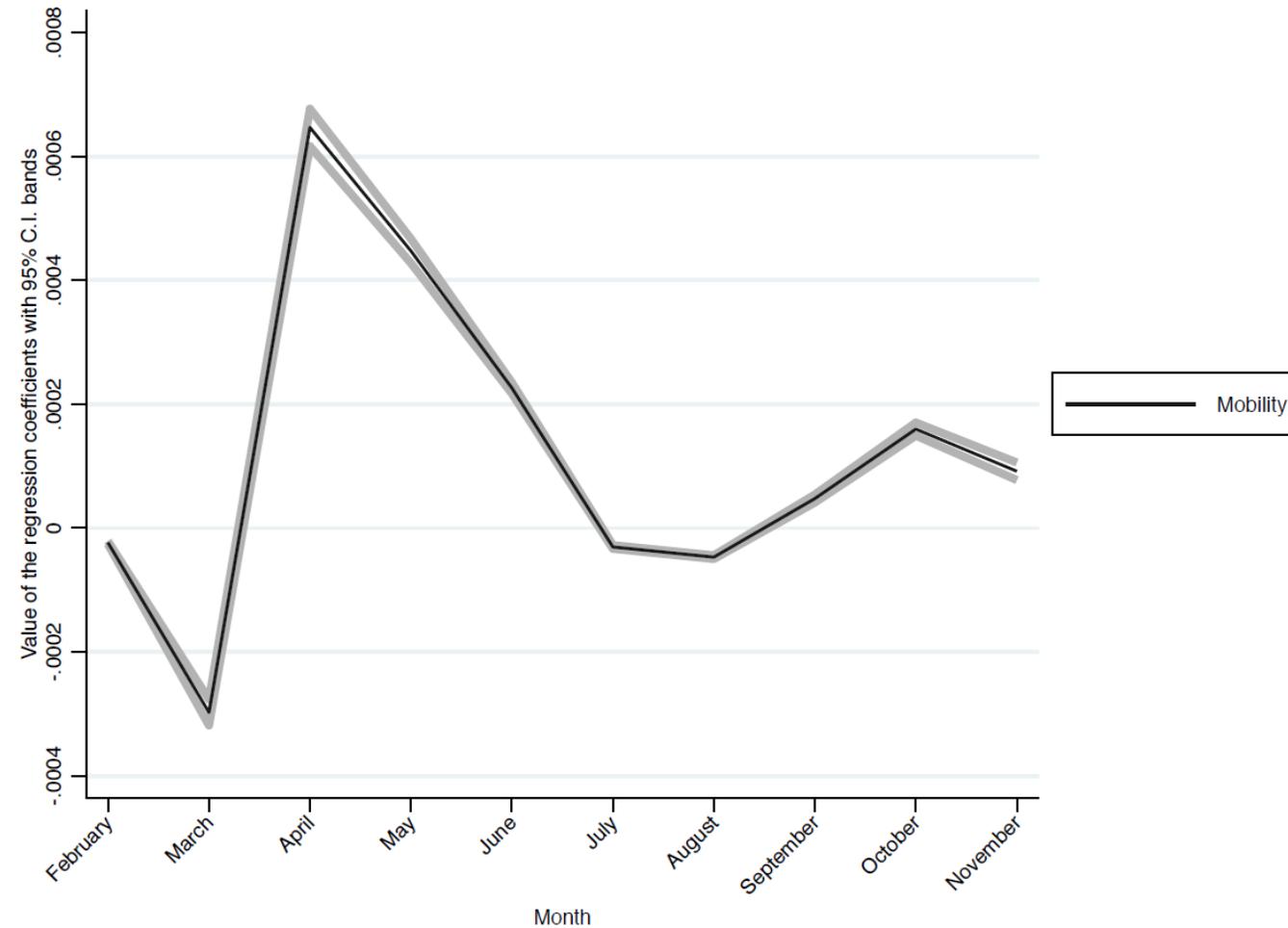
- Before public transfers
- Afeter public transfers

- ▶ Larger increase in pre-transfer inequality in **regions that rely more on industry and services**
- ▶ Larger increase in pre-transfer inequality in regions **where mobility restrictions were tighter**
- ▶ Some (though not all) of these differences offset by government transfers
- ▶ **Sensitivity of inequality to mobility restrictions declines over time**, suggesting individuals and organizations adapted better with time
- ▶ **Administrative efficiency of Public Employment Services influences the capacity to reduce inequality** through public transfers.

Employment probability over time conditional on observable characteristics



Employment probability over time conditional on observable characteristics



- ▶ COVID-19 has produced a **massive increase in pre-tax income inequality**
- ▶ Most of it has been driven by **job losses** and **wage cuts to low income earners**
- ▶ **Government intervention has been effective** at containing inequality
- ▶ **Reopening of economic activity has reduced inequality**, especially among the most vulnerable workers (young, foreign-born)
- ▶ **New reliable methodology to track economic inequality in quasi-real time**
- ▶ **Useful to evaluate policy** responses and adapt them to the evolution of events and specific local needs

New inequality tracker available on CaixaBank Research website:



Monitor CaixaBank de Desigualtat
CaixaBank Research

Distribución de los ingresos brutos de los españoles

Última actualización: 15 junio 2018 - 10:00

Mostrar el filtro

Categoría	2015	2016	2017	2018	2019
Total	3.0	2.0	1.0	2.0	1.0
Homes	2.0	1.0	0.5	1.5	0.5
Dones	1.0	1.0	0.5	0.5	0.5
Joves	1.0	0.5	0.5	1.0	0.5
Adults	2.0	1.5	1.0	1.0	0.5
Gen8 Gran	1.0	0.5	0.5	1.0	0.5

Gràfic simulat

Distribución geográfica de la desigualdad en España

Mostrar el filtro

Gràfic simulat

Documentació relacionada

Articles relacionats

www.inequality-tracker.caixabankresearch.com

- ▶ Tracking economic inequality at high frequency and the impact of social transfers
- ▶ Interactive graphs and the possibility to download data
- ▶ Access to published articles



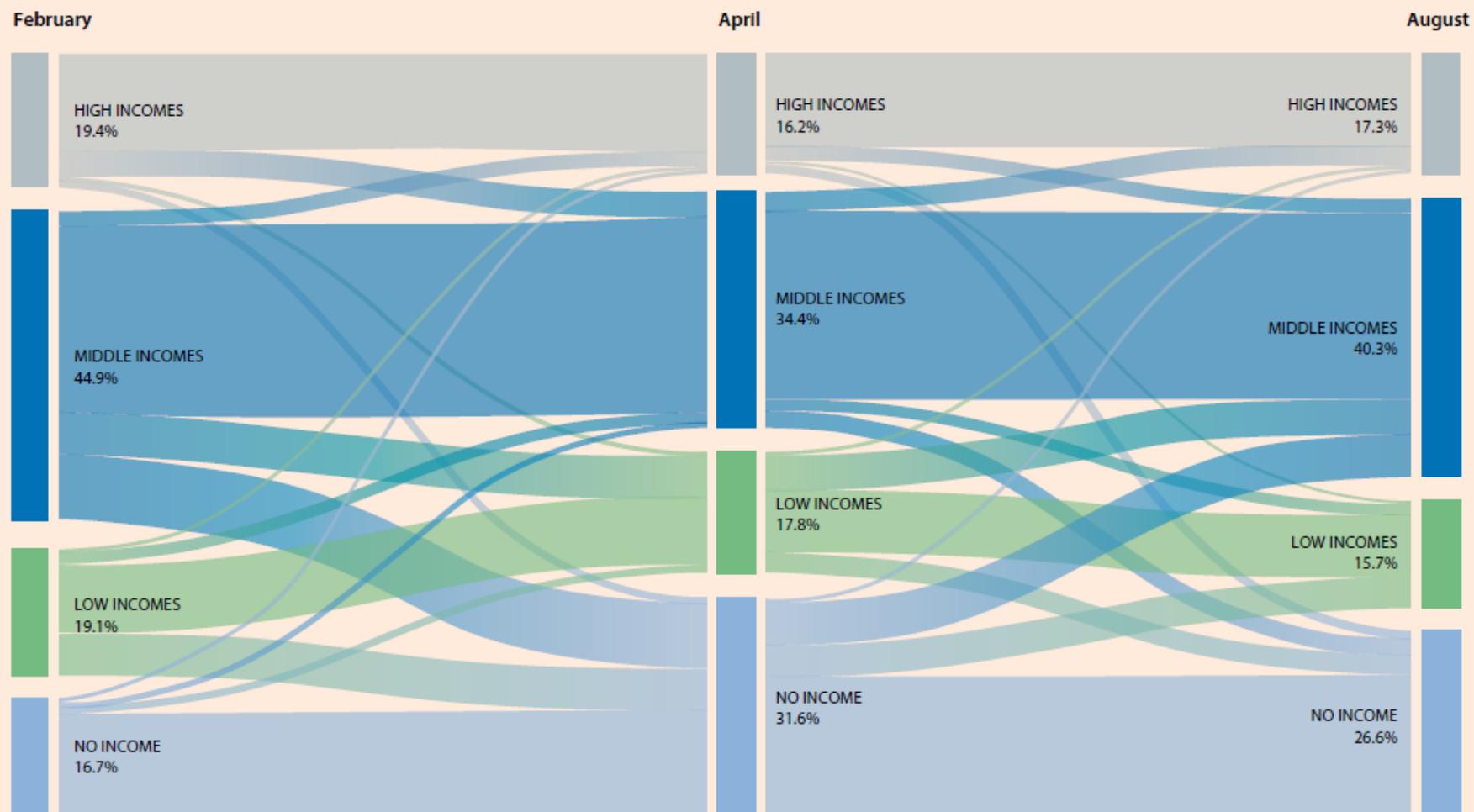
www.caixabankresearch.com

CaixaBank Research on Twitter  @CABK_Research

ANNEX

Distribution of wage incomes before public sector transfers

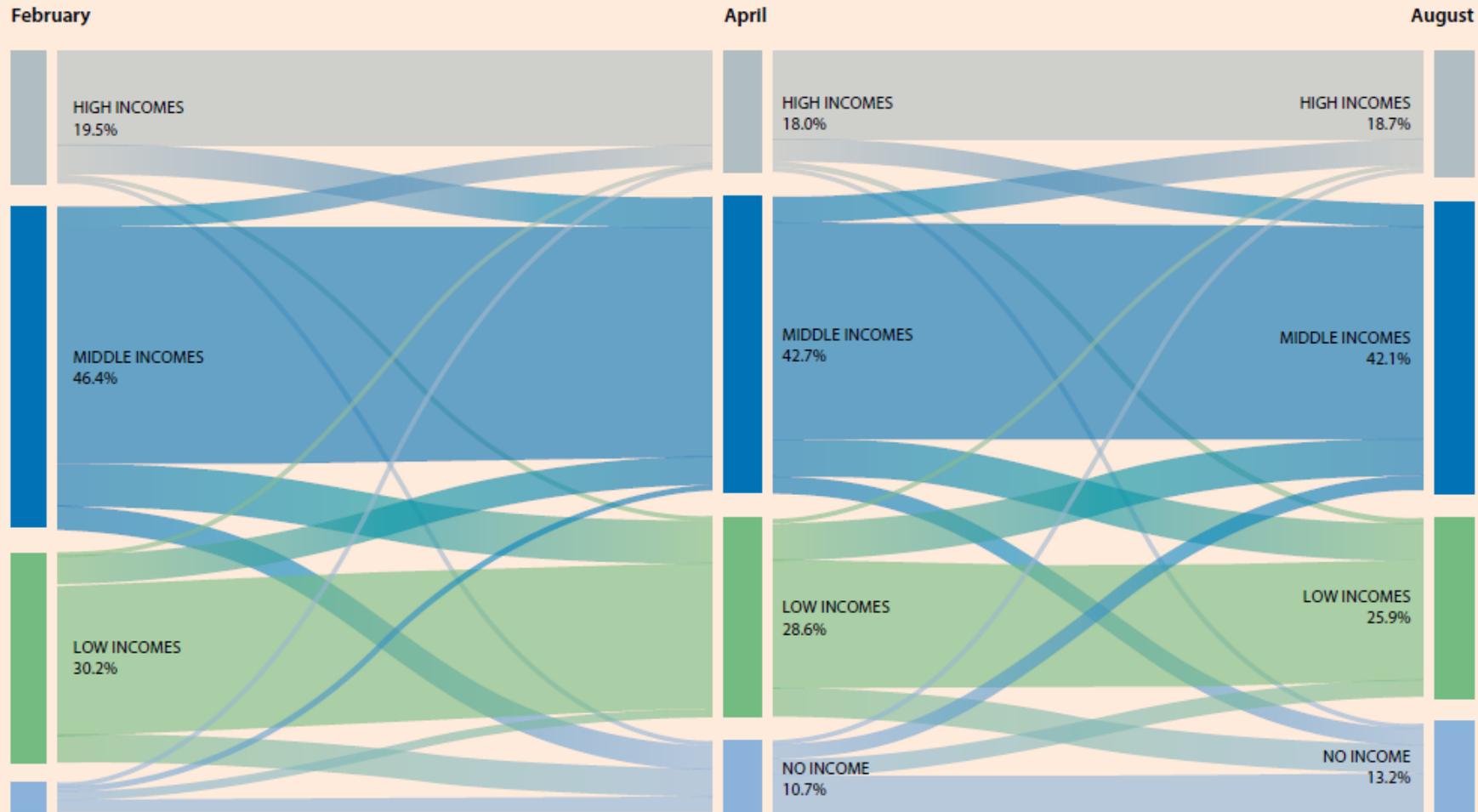
(% of population in each group)



Note: "low incomes" group refers to wages or transfers below 1,000€/month; "middle incomes" between 1,000 and 2,000€/month; "high incomes" more than 2,000 €/month.

Distribution of wage incomes after public sector transfers

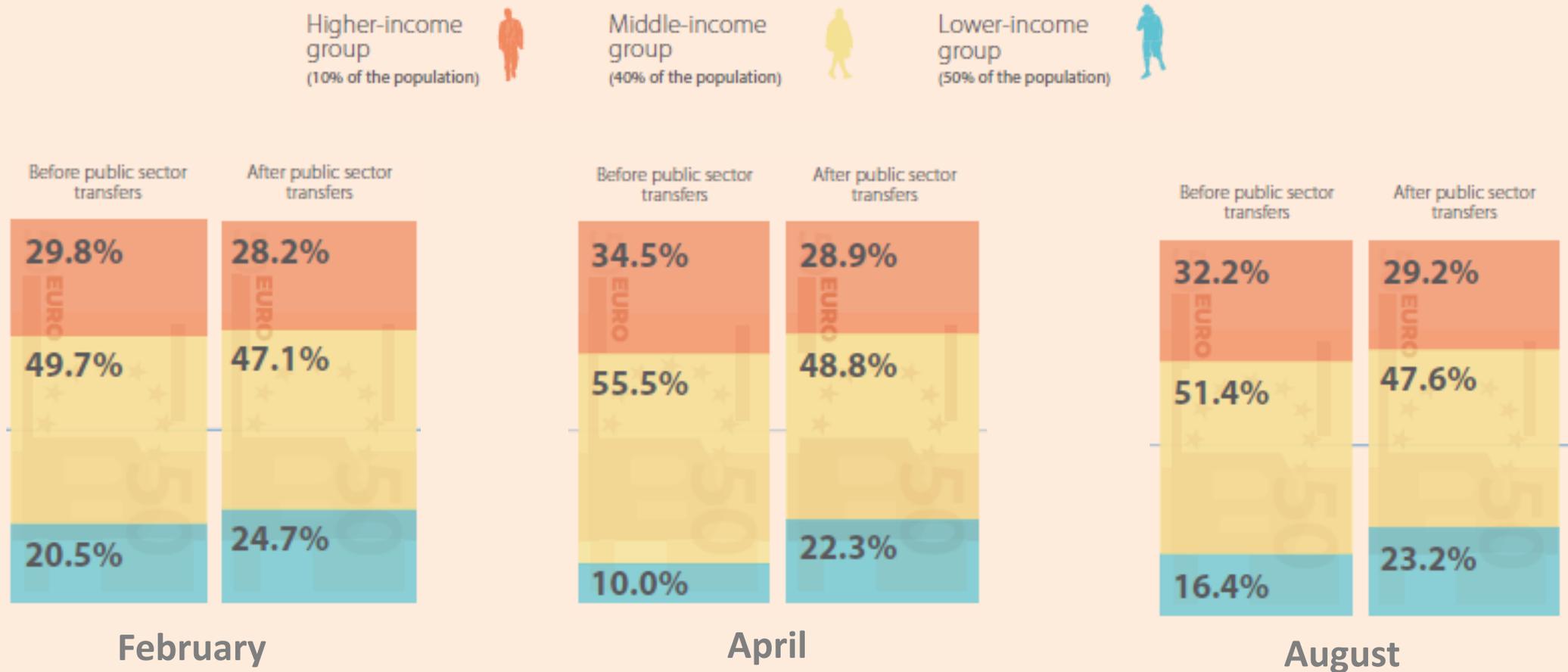
(% of population in each group)



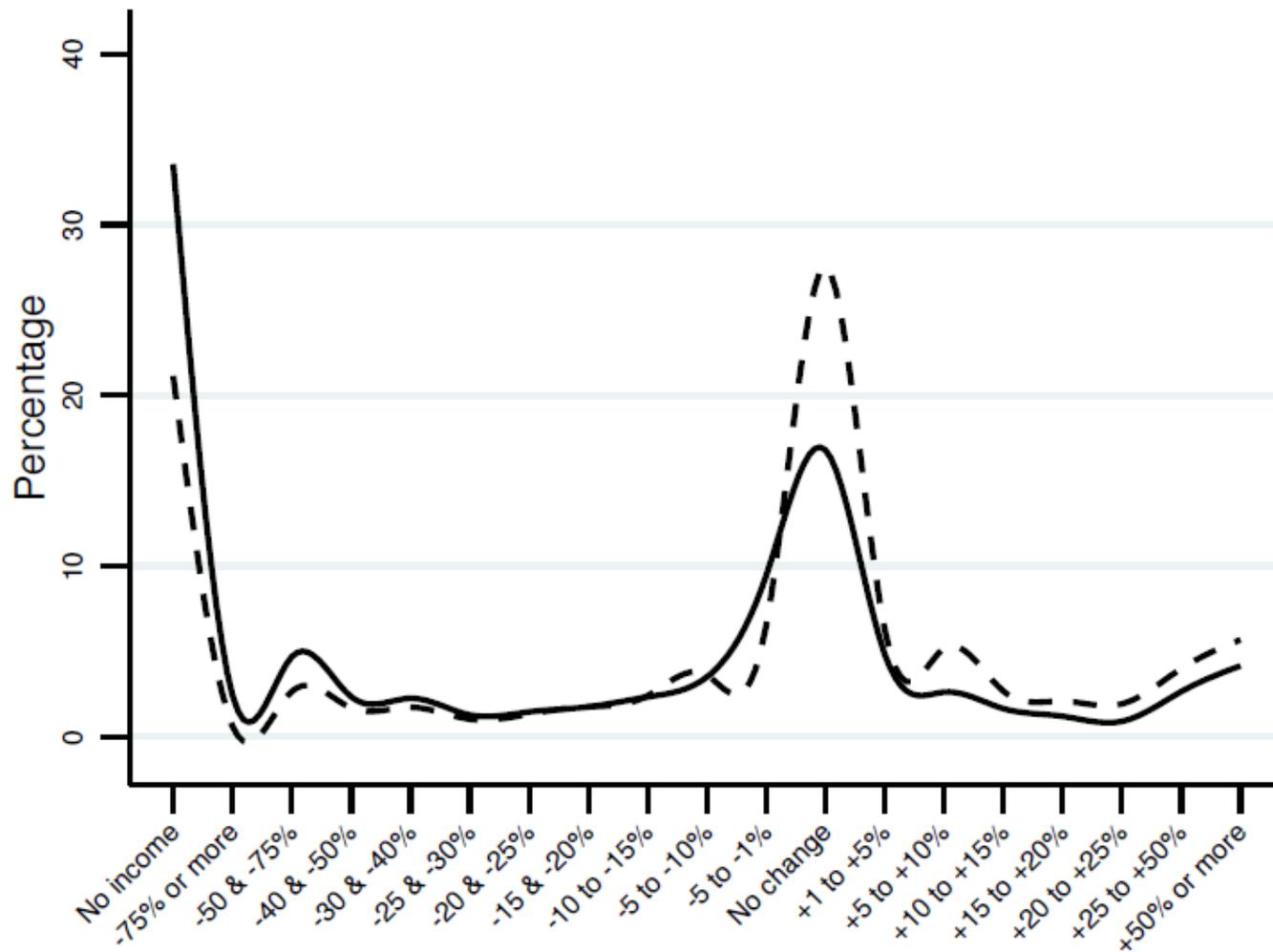
Note: "low incomes" group refers to wages or transfers below 1,000€/month; "middle incomes" between 1,000 and 2,000€/month; "high incomes" more than 2,000 €/month.

Distribution of wage incomes by population group

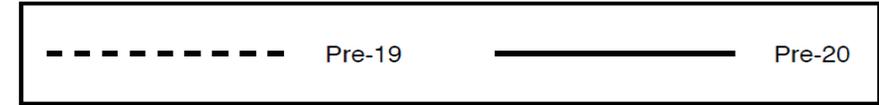
(% of total incomes received by each group)



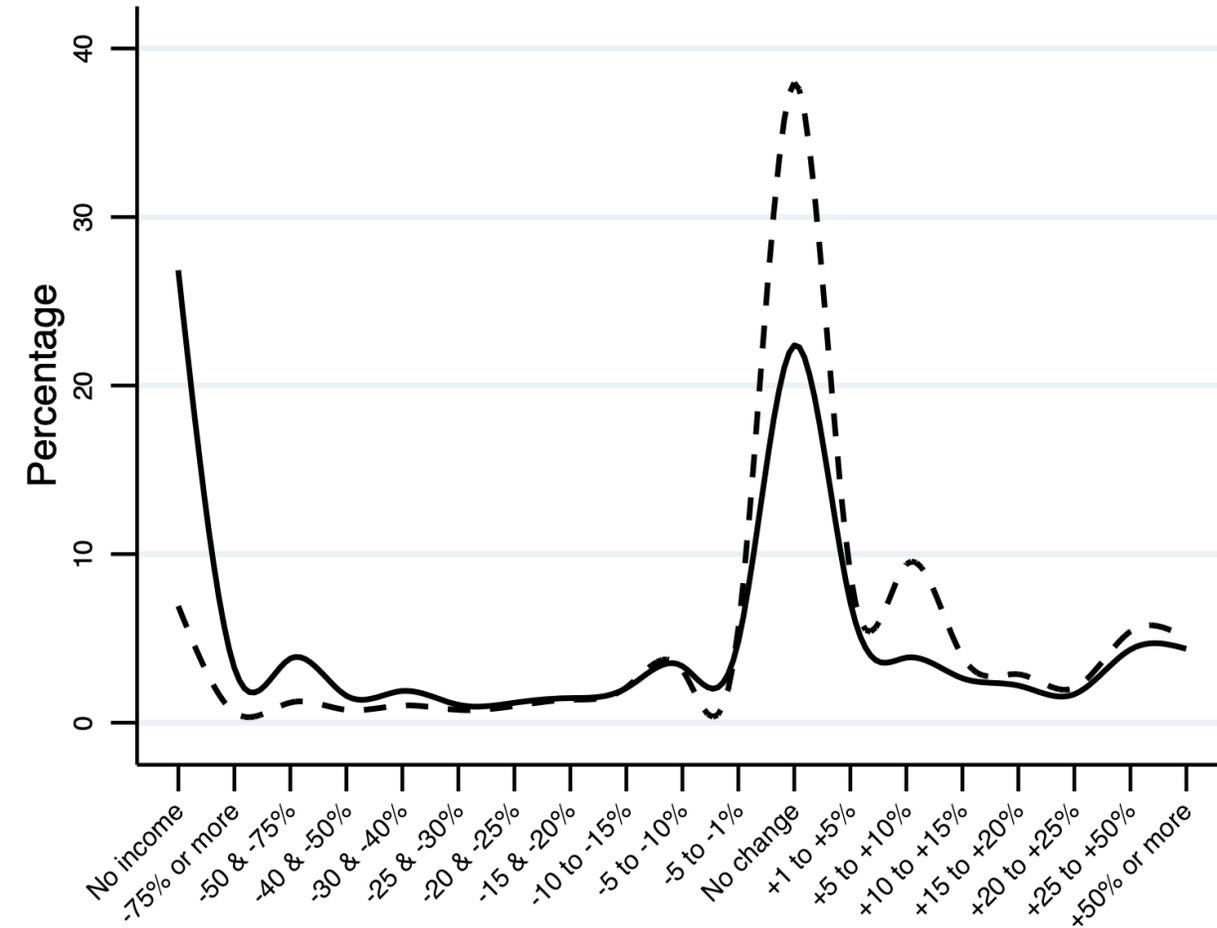
Changes in labor earnings (pre-tax): April vs. Feb 2020 - April vs. Feb 2019



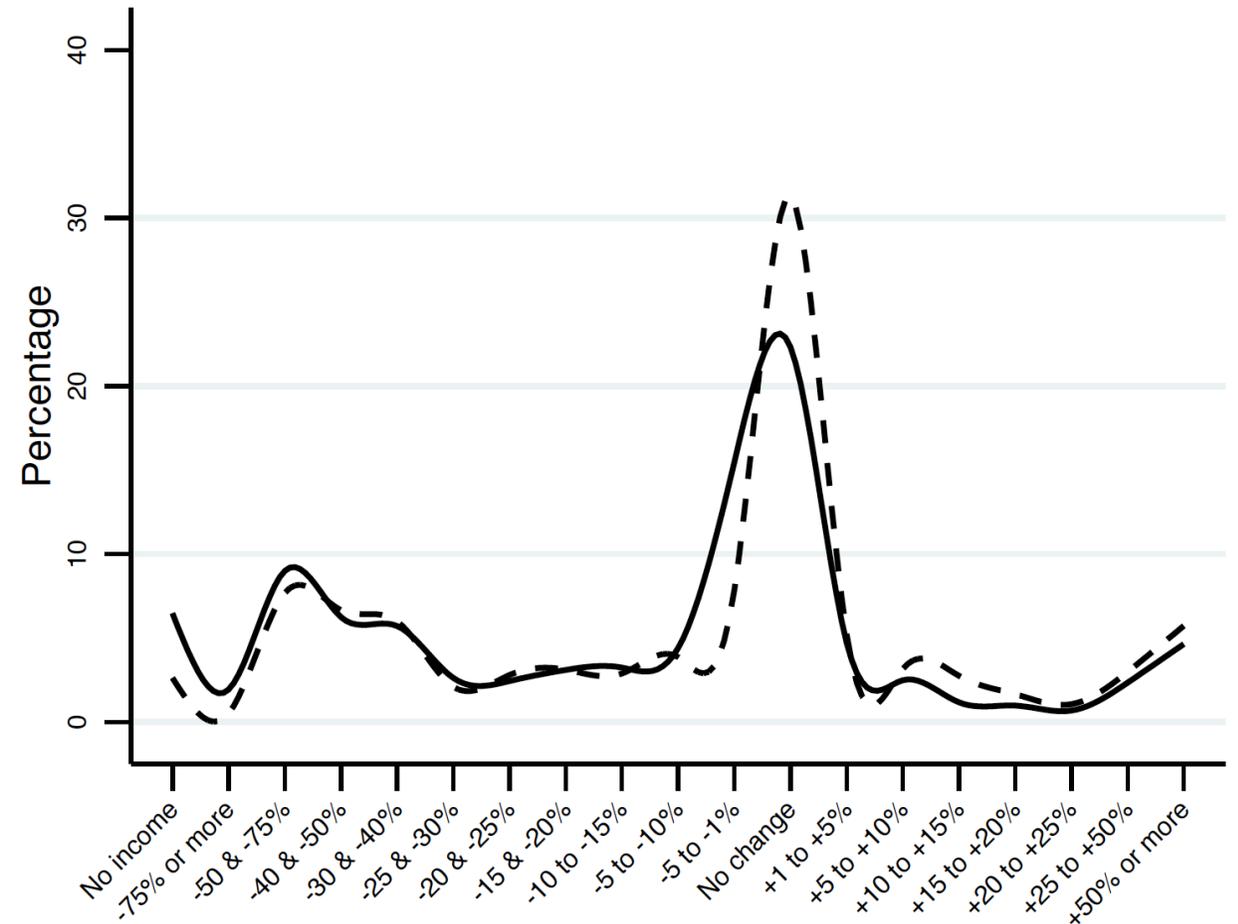
Changes in labor earnings: April vs. Feb 2020 - April vs. Feb 2019



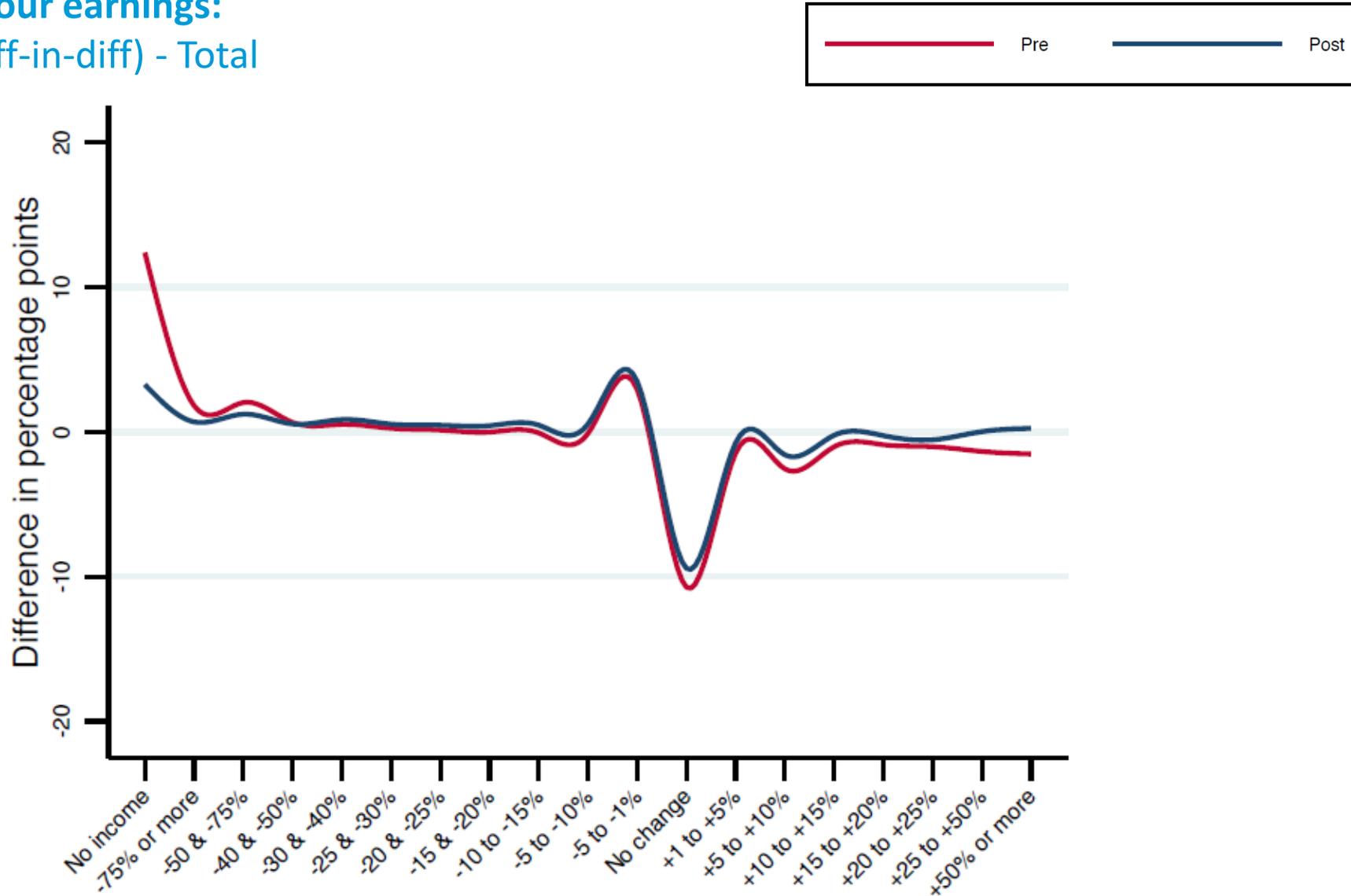
From 900€ to 1000€ (25th percentile)



From 2900€ to 3000€ (95th percentile)

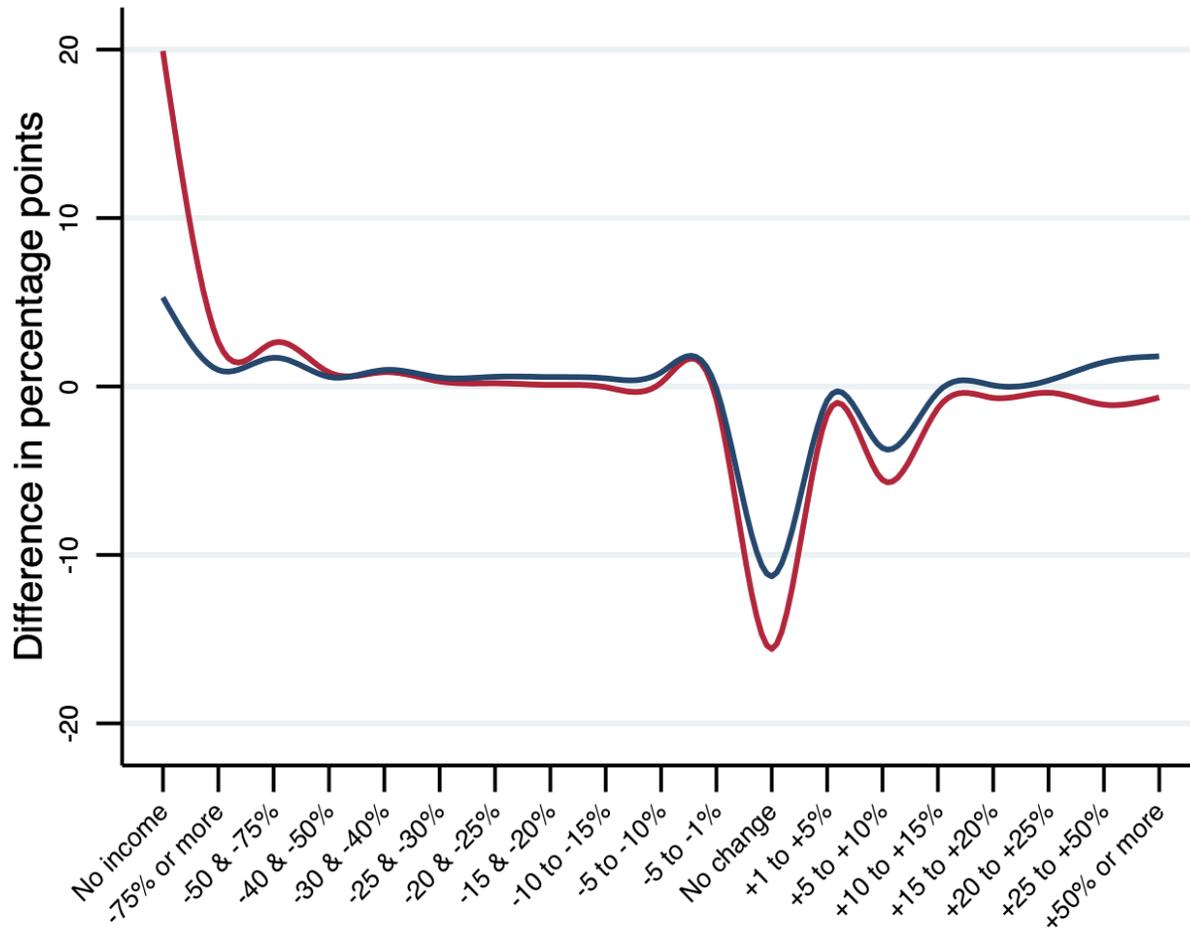


Changes in labour earnings: April vs Feb (diff-in-diff) - Total

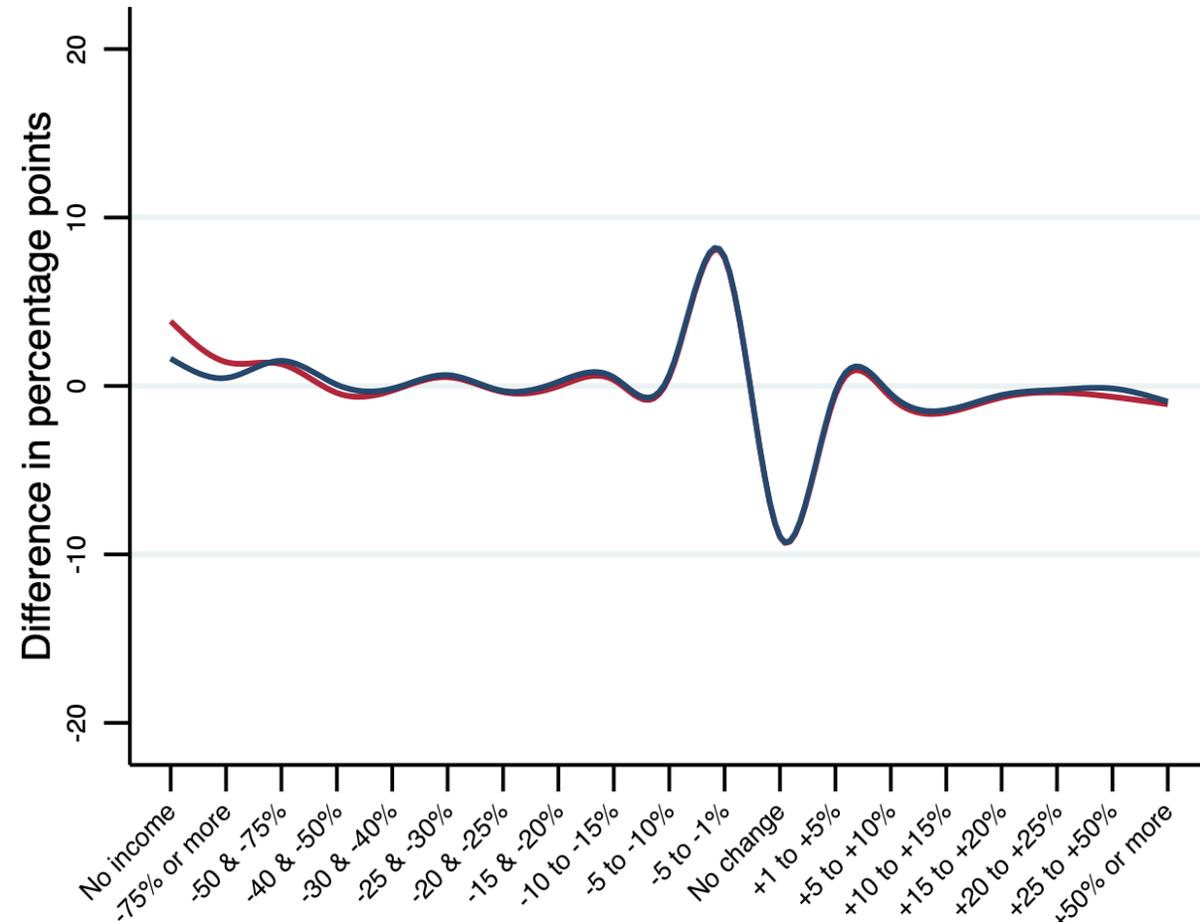


Changes in labour earnings: April vs Feb (diff-in-diff) - Total

From 900€ to 1000€ (25th percentile)



From 2900€ to 3000€ (95th percentile)

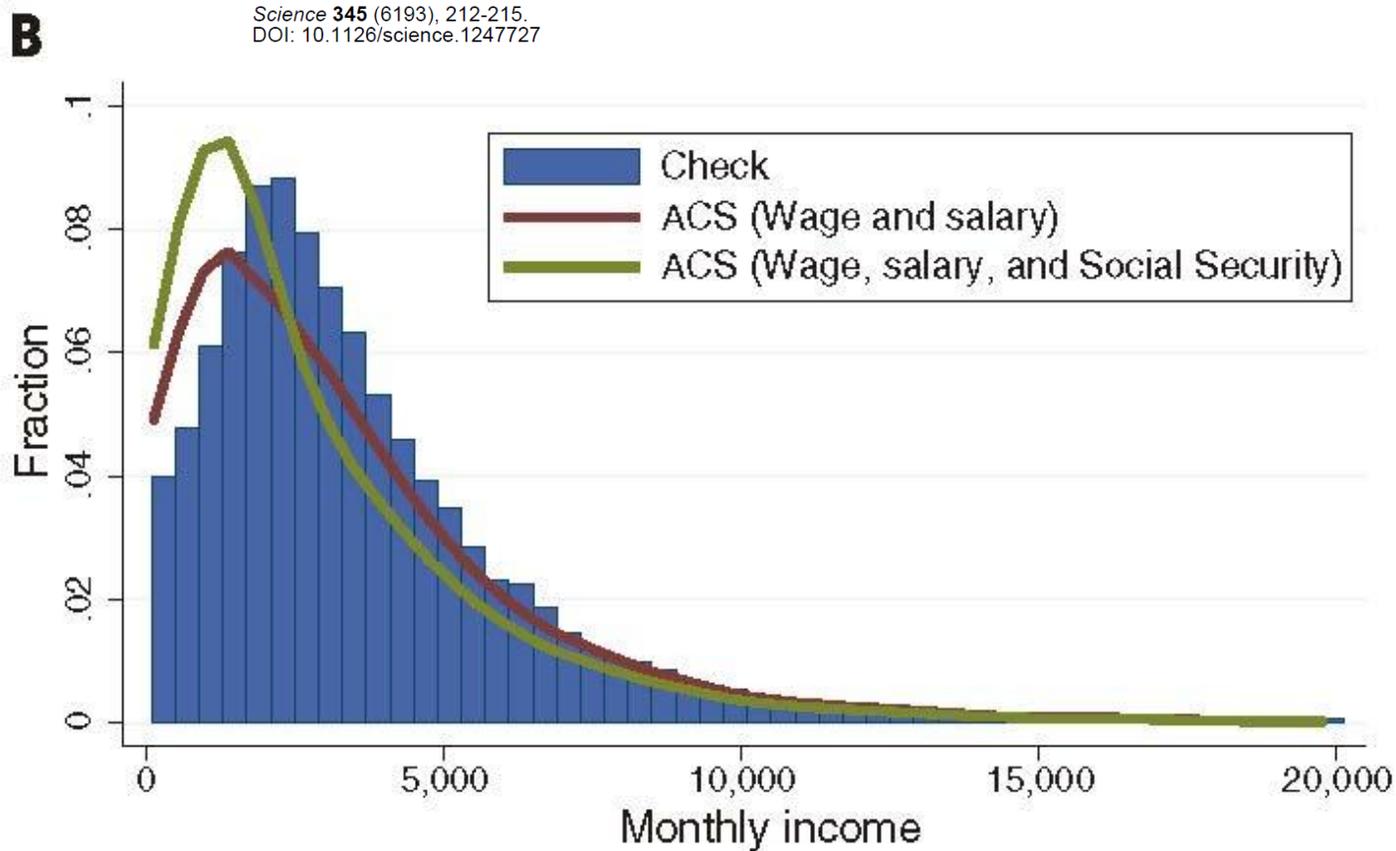


Science

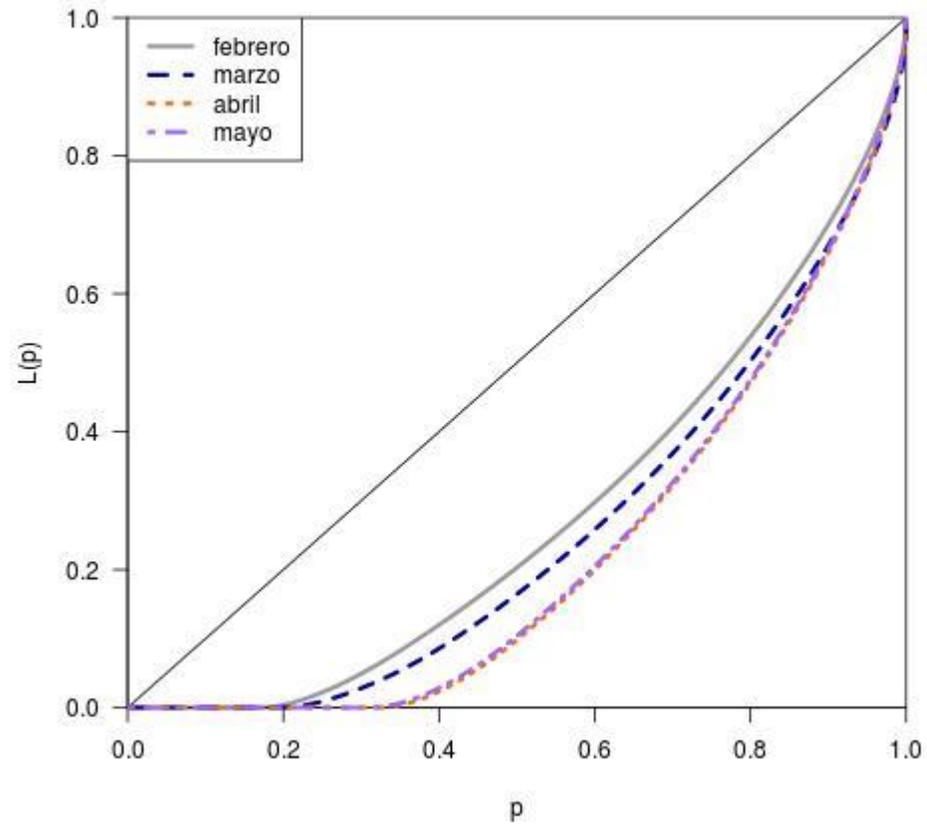
Harnessing naturally occurring data to measure the response of spending to income

Michael Gelman, Shachar Kariv, Matthew D. Shapiro, Dan Silverman and Steven Tadelis

Science **345** (6193), 212-215.
DOI: 10.1126/science.1247727



Curva de Lorenz, 2020 pre-transfers



Curva de Lorenz, 2020 post-transfers

