ÉTAT DES LIEUX EN FRANCE ET EXPÉRIENCES ÉTRANGÈRES RÉUSSIES

CNIS - Commission *Système financier et financement de l'économie – 27 Mai 2021*
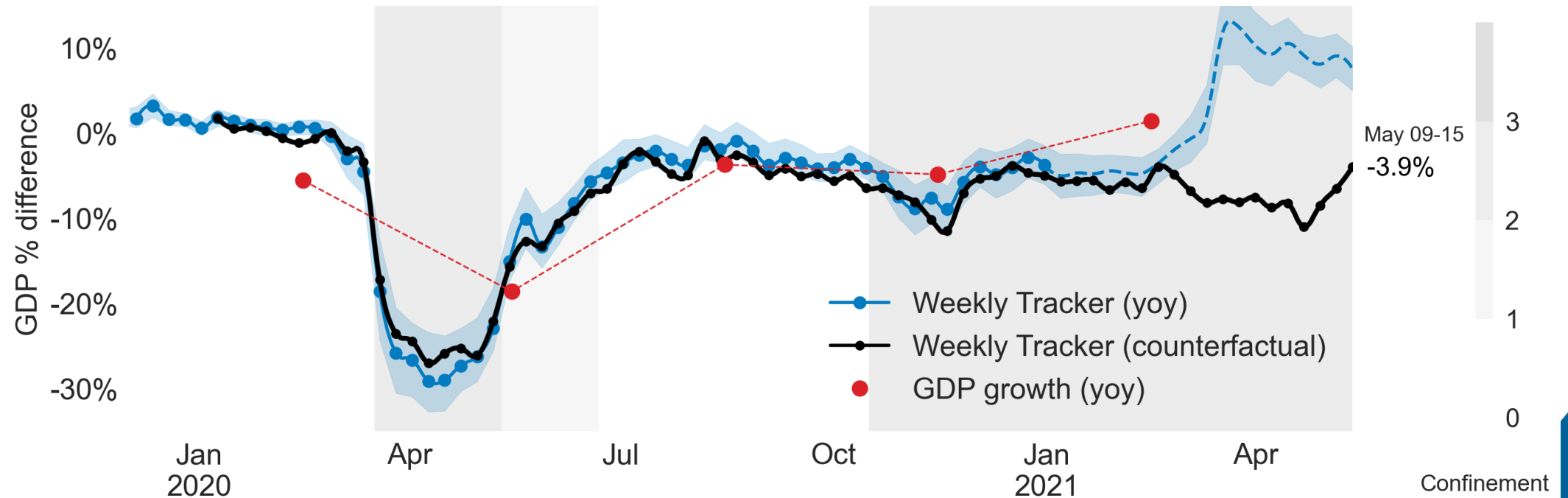
Nicolas Woloszko, OCDE

Outline

1. The OECD Weekly Tracker of GDP based on Google Trends
2. The Linked In Hiring Rate
3. Job posting data from Indeed
4. The Harvard Opportunity Insight Economic Tracker
5. Credit card data
6. The Development Data Partnership

The OECD Weekly Tracker of GDP

- The Weekly Tracker **nowcasts the economy in real time at a weekly frequency** for 45 countries based on Google Trends. It provides estimates of year-on-year growth rate in **weekly GDP** with a 2-day publication delay.

- An ML **algorithm extracts signals from search intensities related to 250+ categories of keywords** to infer a timely picture of the economy.

What's in Google Trends ?

Google Trends provides **Search Volume Indices** $= \frac{\#searches\ for\ "car"}{total\ \#searches} * constant$

Search Indices can be based on categories of keywords.

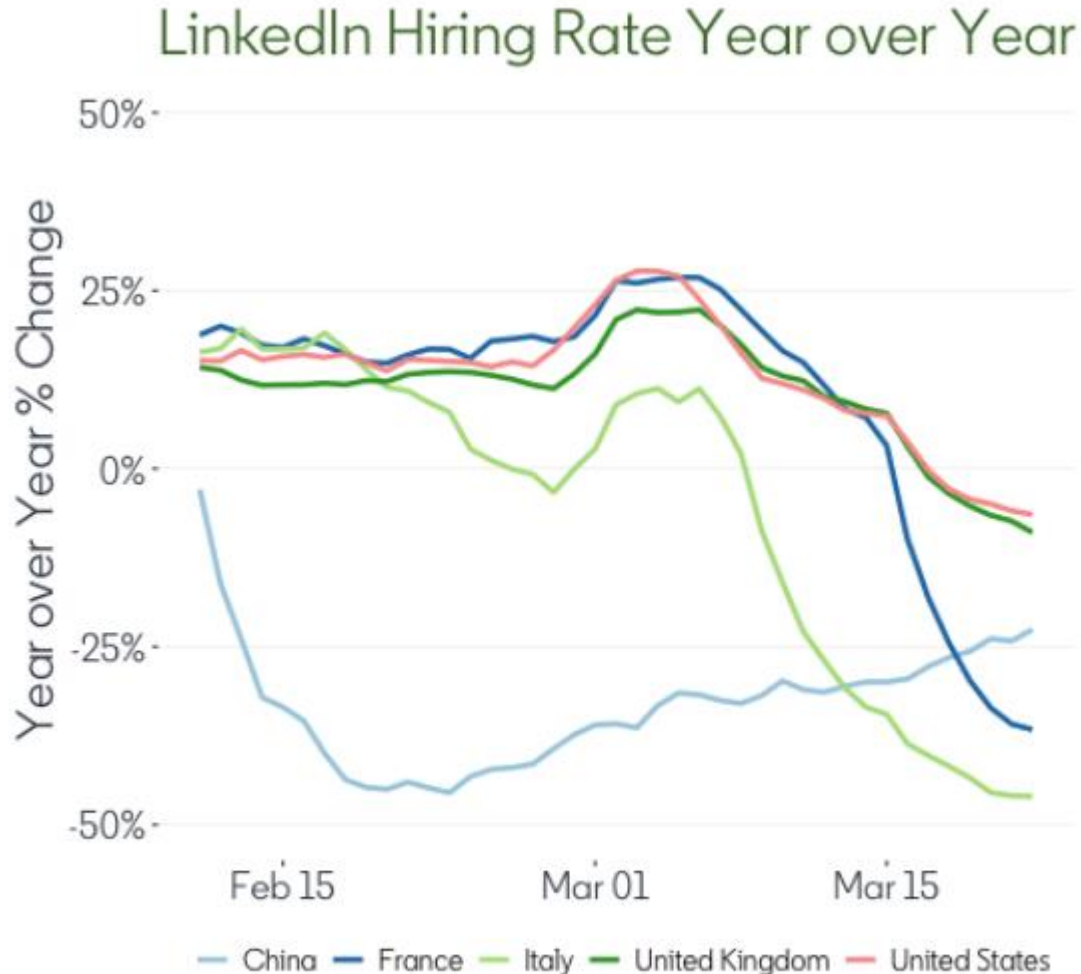**250 Google Trends variables were hand-picked** and cover, eg:

- *Consumption*. Eg: Food & Drink, Tourist Destinations, Vehicle Brands, Home Appliances
- *Labour market*. Eg: Unemployment benefits, Developer Jobs, Temporary jobs
- *Housing & Debt*. Eg: Real Estate Agencies, Credit & Lending, Forbearance

Google Trends API

- Allows to request data programatically
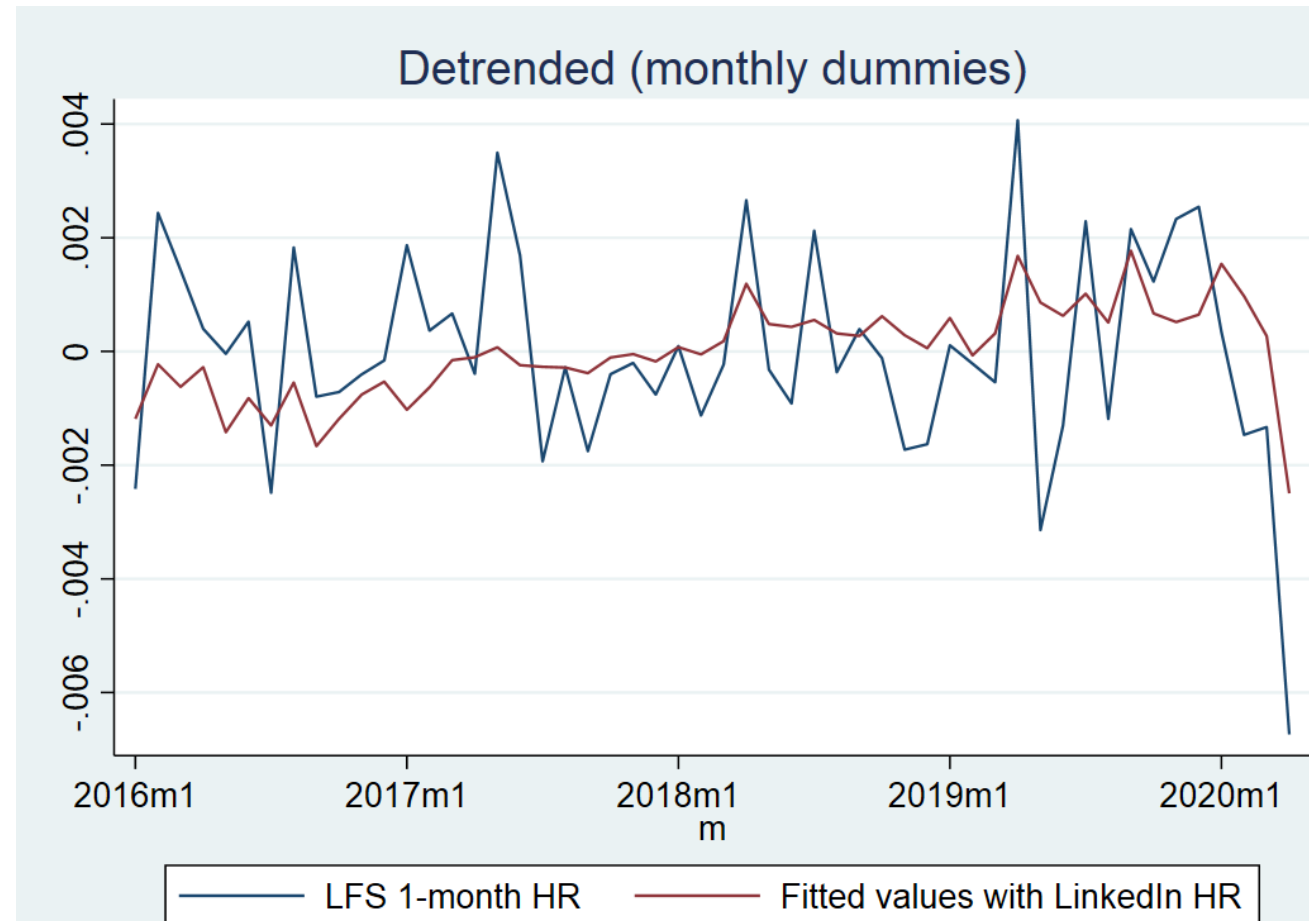- Access is confidential and was granted to us by Hal Varian

Linked In Hiring Rate

LinkedIn Hiring Rate Year over Year

China — France — Italy — United Kingdom — United States

Source: LinkedIn Economic Graph Research & Insights.

- Hiring Rate = #users declaring a new job in the course of the month / #users

- Governance: Linked In Economic Graph team

- Used in Linked In's Workforce reports, see also ECB Economic Bulletin, Issue 5/2020.
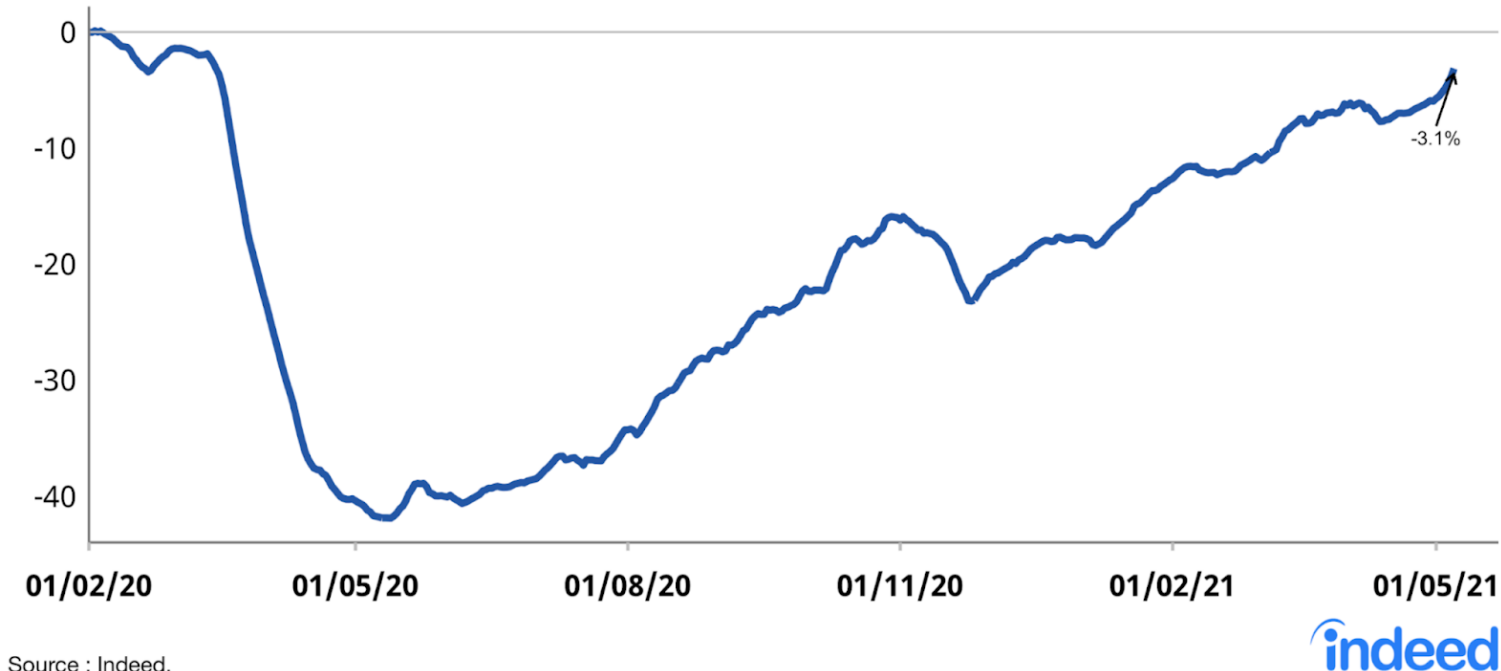
Linked In Hiring Rate (cntd.)

- Validation was done against **EU LFS** data. Last available batch: 2019…

- Results:
  - Works for large shocks
  - Works for countries where Linked In participate rate is very high

- Key takeaway: big is not necessarily big enough in case of sampling bias.

Detrended (monthly dummies)

LFS 1-month HR — Fitted values with LinkedIn HR

Indeed

Offres d'emploi en France

Évolution au 07 mai (en %) par rapport au 1er févr. 2020, corrigée des variations saisonnières

Source : Indeed.

- Data on job postings from Indeed

- Governance: Indeed Hiring Lab

- Main figure: Tara Sinclair

- Cover USA, Canada, France, Italy, UK, Ireland.

- Reports are public, not the data. Used in the IMF WEO.

Harvard Opportunity Insights

Raj Chetty *et al.* have built a publicly available database that tracks US economic activity at a granular level in real time using anonymized data **from several private companies**.

They report daily statistics on consumer spending, business revenues, employment rates, and other key indicators *disaggregated by ZIP code, industry, income group, and business size*
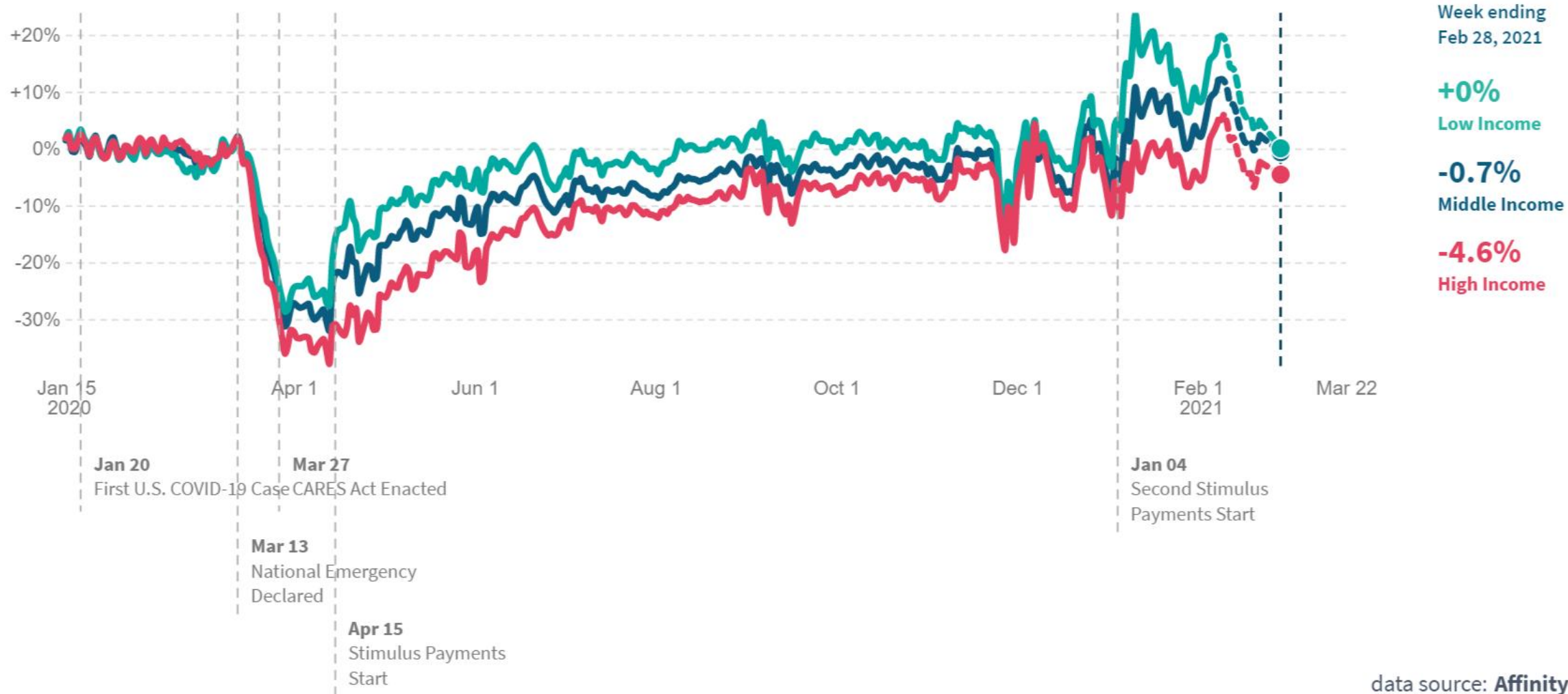
Tracktherecovery.org

Harvard Opportunity Insights: sources

- **Consumer Spending**:
  - Affinity Solutions [a company that aggregates consumer credit it card spending information to support a variety of financial service products]
  - CoinOut [a company that allows individuals to receive rewards by uploading photos of their receipts to a mobile app]
- **Small Business Revenue**: Womply [a company that aggregates data from several credit card processors to provide analytical insights to small businesses and other clients]
- **Employment**:
  - Paychex [provides payroll services to approximately 670,000 small- and medium-sized businesses]
  - Earnin [a financial management application that provides its members with access to their income as they earn it, in advance of their paychecks]
  - Kronos [a workforce management service used by many firms across the U.S]
- **Job Postings**: Burning Glass [an online job adds aggregator]
- **Education**: Zearn [a non-profit math curriculum publisher that combines in-person instruction with digital lessons]

Percent Change in All Consumer Spending*

In **the United States**, as of **February 28 2021**, total spending by middle-income consumers **decreased** by **0.7%** compared to January 2020.

Week ending Feb 28, 2021

+0%
Low Income

-0.7%
Middle Income

-4.6%
High Income

Jan 20
First U.S. COVID-19 Case

Mar 27
CARES Act Enacted

Mar 13
National Emergency
Declared

Apr 15
Stimulus Payments
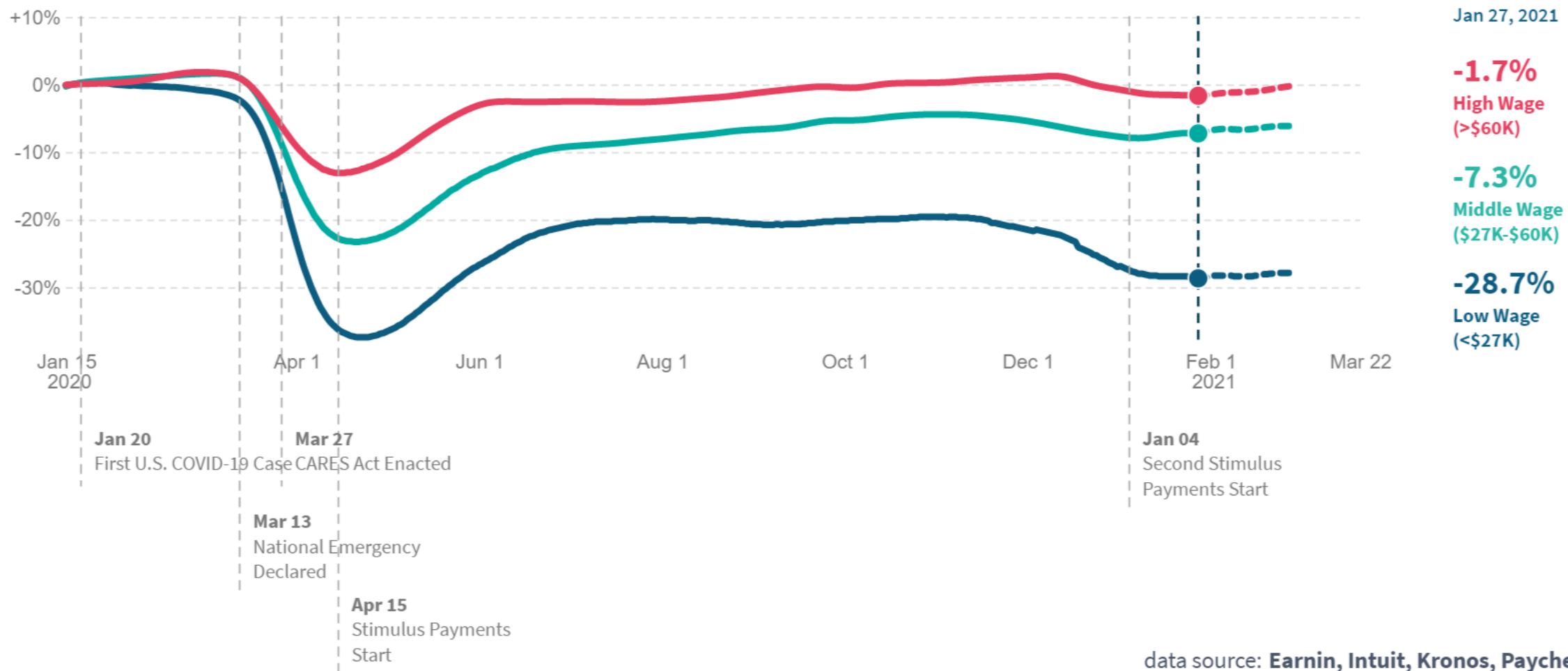Start

Jan 04
Second Stimulus
Payments Start

data source: **Affinity**

*Change in average consumer credit and debit card spending, indexed to January 4-31, 2020 and seasonally adjusted. The dashed segment of the line is provisional data, which may be subject to non-negligible revisions as newer data is posted. This series is based on data from Affinity Solutions.

last updated: **March 12, 2021**   *next update expected:* **March 24, 2021**

Percent Change in Employment*

In **the United States**, as of **January 27 2021**, employment rates among workers in the bottom wage quartile **decreased** by **28.7%** compared to January 2020 (not seasonally adjusted).

Jan 27, 2021

-1.7%
High Wage
(>$60K)

-7.3%
Middle Wage
($27K-$60K)

-28.7%
Low Wage
(<$27K)

Jan 20
First U.S. COVID-19 Case

Mar 27
CARES Act Enacted

Jan 04
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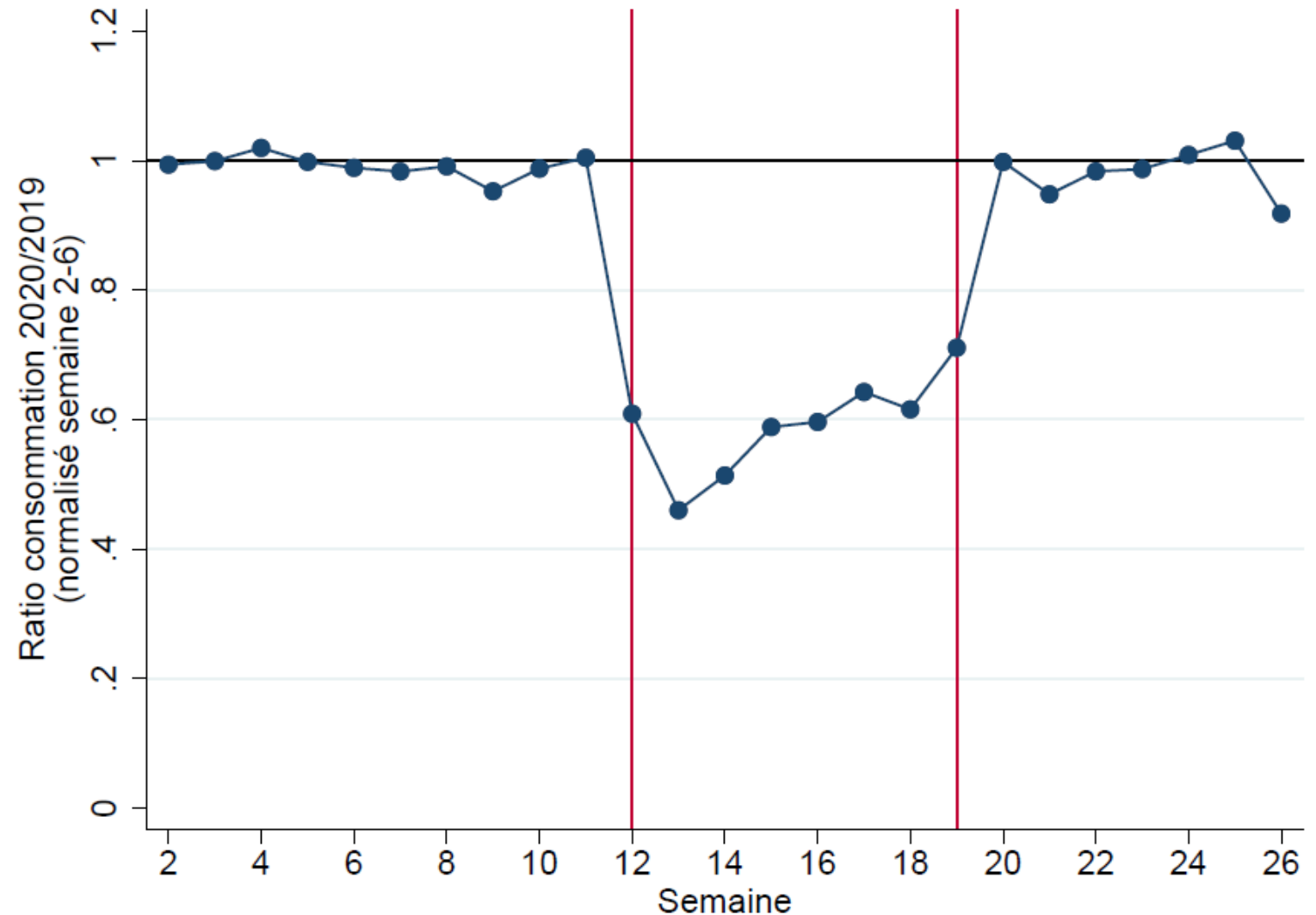data source: **Earnin, Intuit, Kronos, Paychex**

*Change in employment rates (not seasonally adjusted), indexed to January 4-31, 2020. This series is based on payroll data from Paychex and Intuit, worker-level data on employment and earnings from Earnin, and timesheet data from Kronos. The dotted line is a prediction of employment rates based on Kronos and Paychex data.

last updated: **March 20, 2021**   *next update expected:* **March 26, 2021**

Credit Card Data – Camille Landais

- Exploits the universe of credit card transaction in France

- Credit card payment = 39% of consumption spending, but the most cyclical part (as opposed to fixed spending such as rent etc.)
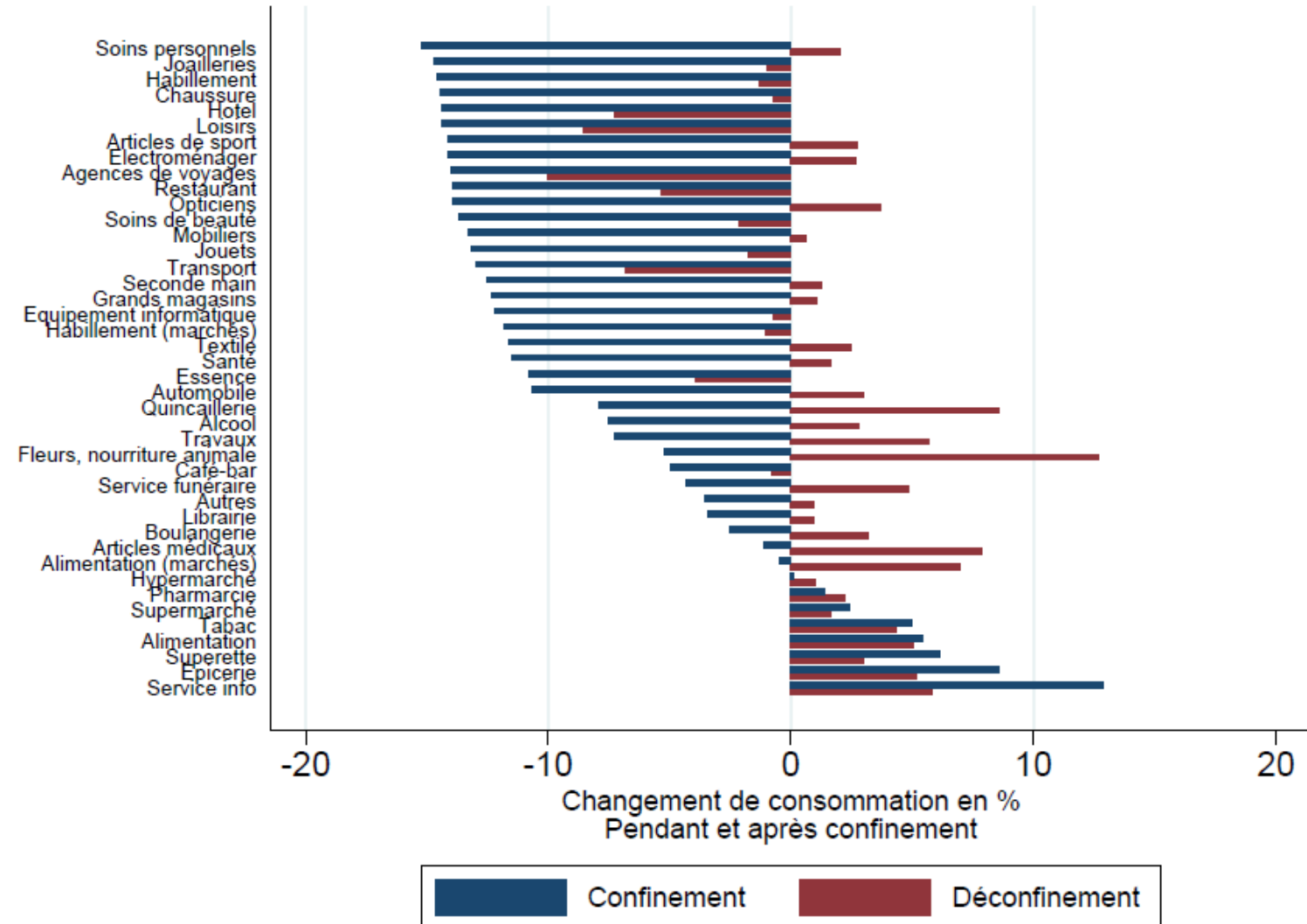
Credit Card Data – Camille Landais

Extreme sectoral heterogeneity.

Policy implications:

- Inefficiency of « blind » measures

- Don't reduce VAT (like in Germany)

- Use targeted measures

Development Data Partnership

A partnership between international organizations and companies, created to facilitate the use of third-party data in research and international development.

DATA PARTNERS

AtlasAI · CARTO · cuebiq · esa · esri · FACEBOOK · Google · indigo · khalti · LinkedIn · mapbox · Mapillary · OLA · OOKLA · Orbital Insight · PREMISE · SAFEGRAPH · SPACEKNOW · tomorrow.io · unacast · veraset · waze · WhereIsMyTransport · X-MODE

DEVELOPMENT PARTNERS

BILL & MELINDA GATES foundation · IDB · OECD · WORLD BANK GROUP

Summing Up

The promise and pitfalls of Big data

+ Timely, Granular, Inexpensive

- Not collected for the purpose of science, representativeness, lack of history, changing definitions…

➔ Need for validation studies (=benchmark against official sources).

Two Stages of Private Data in a Crisis (Tara Sinclair):

- Timeliness matters early
- Granularity matters later

The governance of public access to private data:

- Google is the only tech companies to build tools designed to publicly share private data (eg Google Trends)
- A number of companies build internal research teams to exploit private data (Linked In, Indeed)
- Public-Private Partnerships (Opportunity Insights, Development Data Partnership)

➔ A question for public governance based on a notion of public good ?