Discussion: "Expanding the Frontier of Economic Statistics Using Big Data: A Case Study of Regional Employment"

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Big Picture: Private Data

- There is high interest in labor market dynamics from economists and policy makers for various questions and application, however often times we are let down by the available data.
- This became especially evident during the Covid pandemic where labor markets across the world moved at unprecedented speeds.
  - High frequency and detailed data were necessary (daily and weekly data vs monthly and quarterly data).
- In addition, with a drop in survey response rates, private data has become even more important.

—> There often times is no "ground truth" for any data and triangulation becomes more important.

Advantages of Private Data

- Timely (often only a few days' processing time)
- Granular (detailed occupations and geographies)
- Often big data
- Can be forward-looking
- In the case of labor data from online job sites, we are able to show both sides of the market using a single source, e.g., labor supply and demand
- Consistent across countries

Disadvantages of Private Data

- Representativeness, still heavily relies on benchmarking to public data
- Can be "black box"
- Business movements/actions can "contaminate" the data
- Stability over time and competing incentives can be issues

Two Examples from Indeed

1. Job Postings Index
2. Wage Tracker

Job Postings Index vs JOLTS

US job openings and postings track each other
Index, Jan 31, 2020 - June 7, 2024
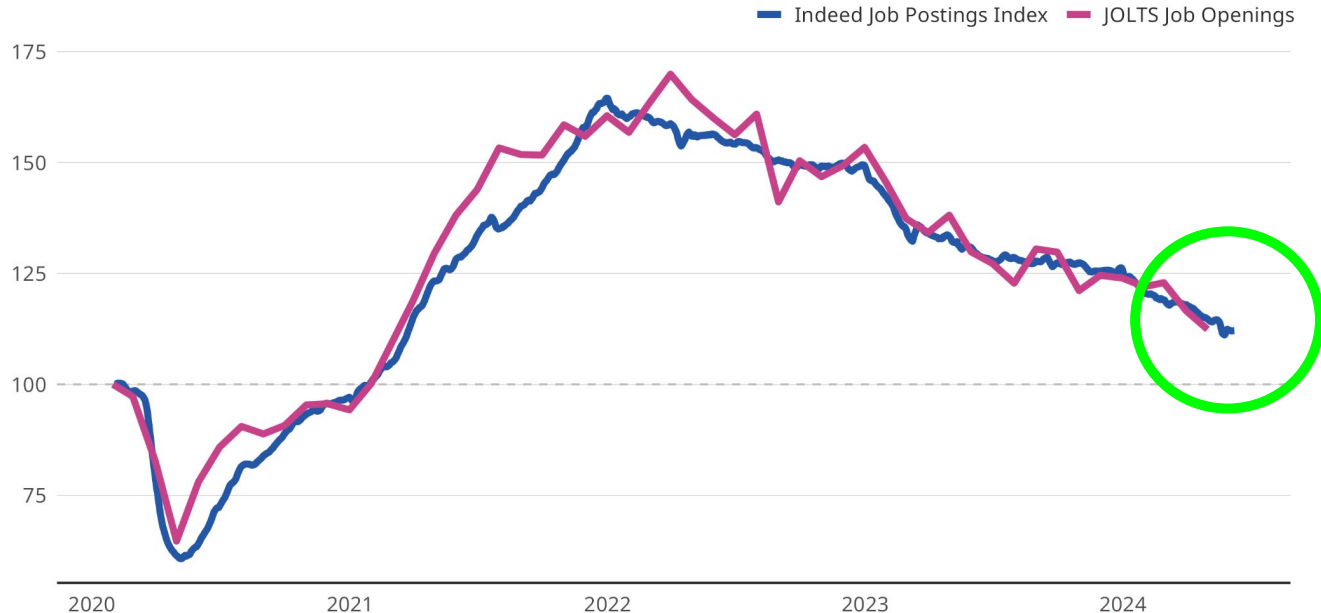
Source: Indeed Job Postings Index, Job Openings and Labor Turnover Survey.
Note: Index is set to 100 = Feb 1, 2020 for Indeed and Jan 2020 (Jan 31, 2020) for JOLTS
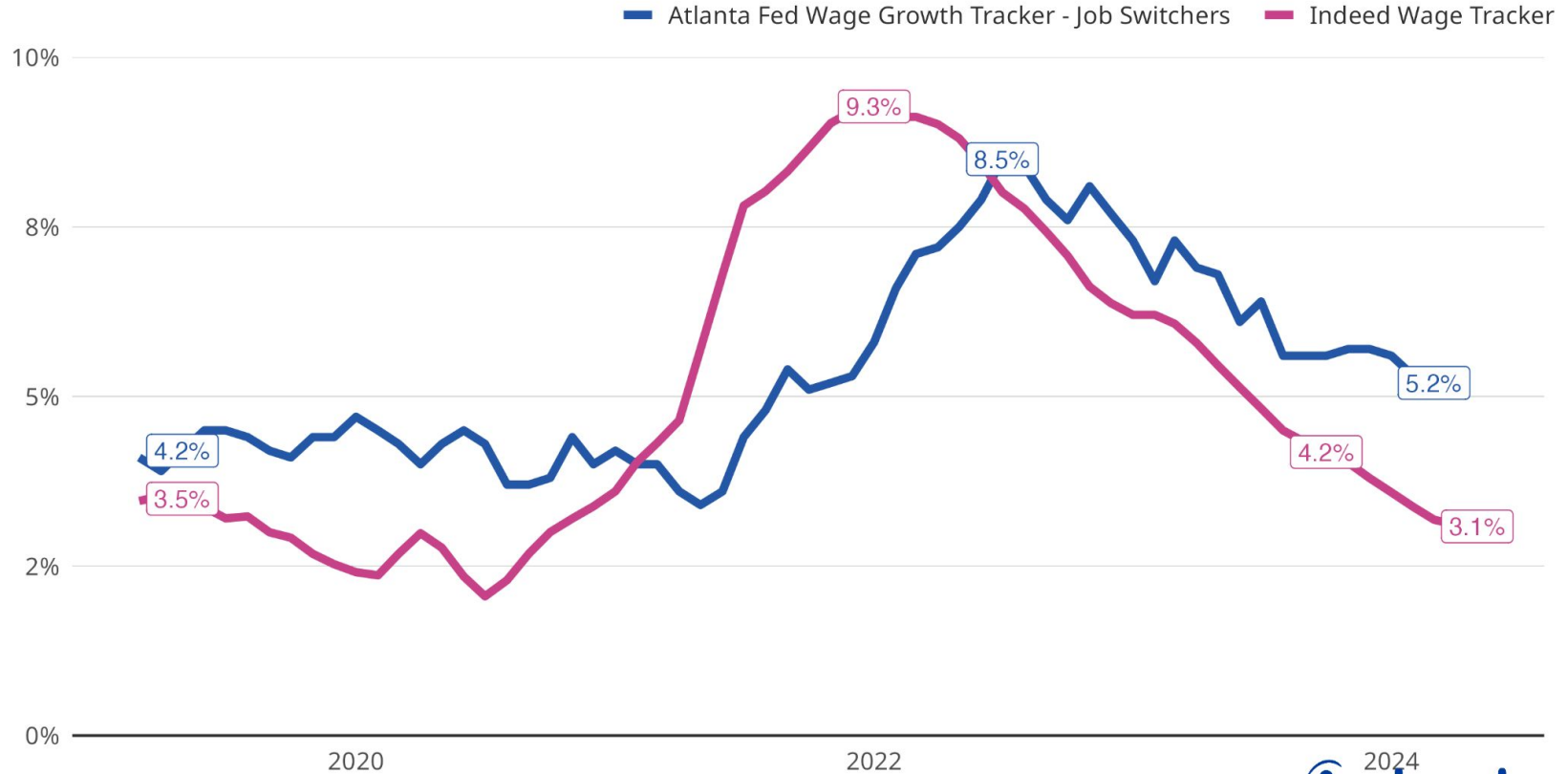
Indeed Wage Tracker

- Understanding wage dynamics is essential for monetary policy
  - But timely data is hard to find, especially in Europe
- Wages advertised in job postings
  - Timely (only a few days' processing time)
  - Detailed (occupations, geographies)
  - Highly predictive of key official series

US posted wage growth has led job switcher wage growth

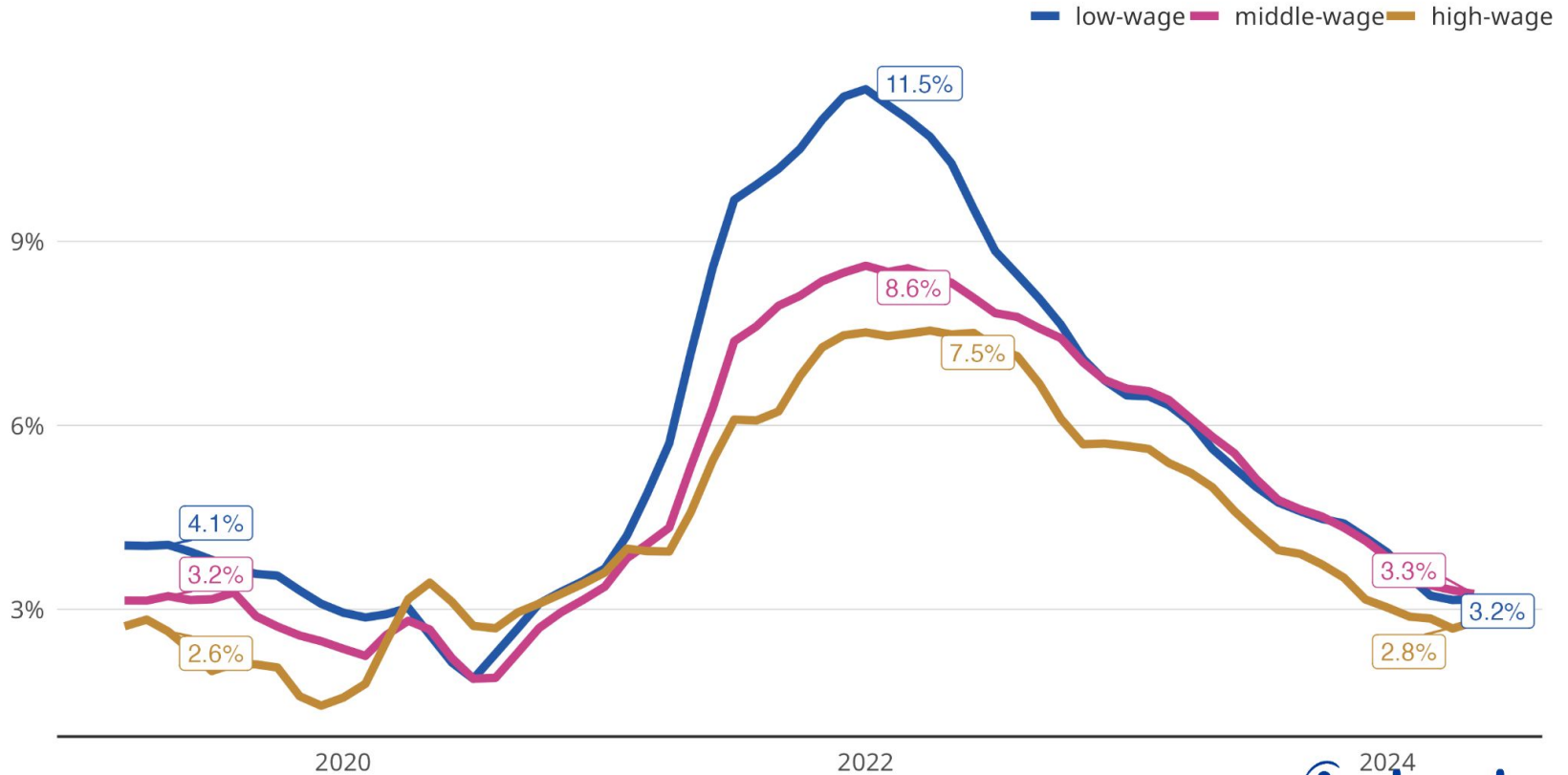Year-over-year growth, 3 mo moving average, Mar 2019 - May 2024

Legend: ■ Atlanta Fed Wage Growth Tracker - Job Switchers   ■ Indeed Wage Tracker

Source: Indeed, Federal Reserve Bank of Atlanta

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US wage growth is fading across wage tiers
Year-over-year growth in posted wages, 3mo avg, Mar 2019 - May 2024
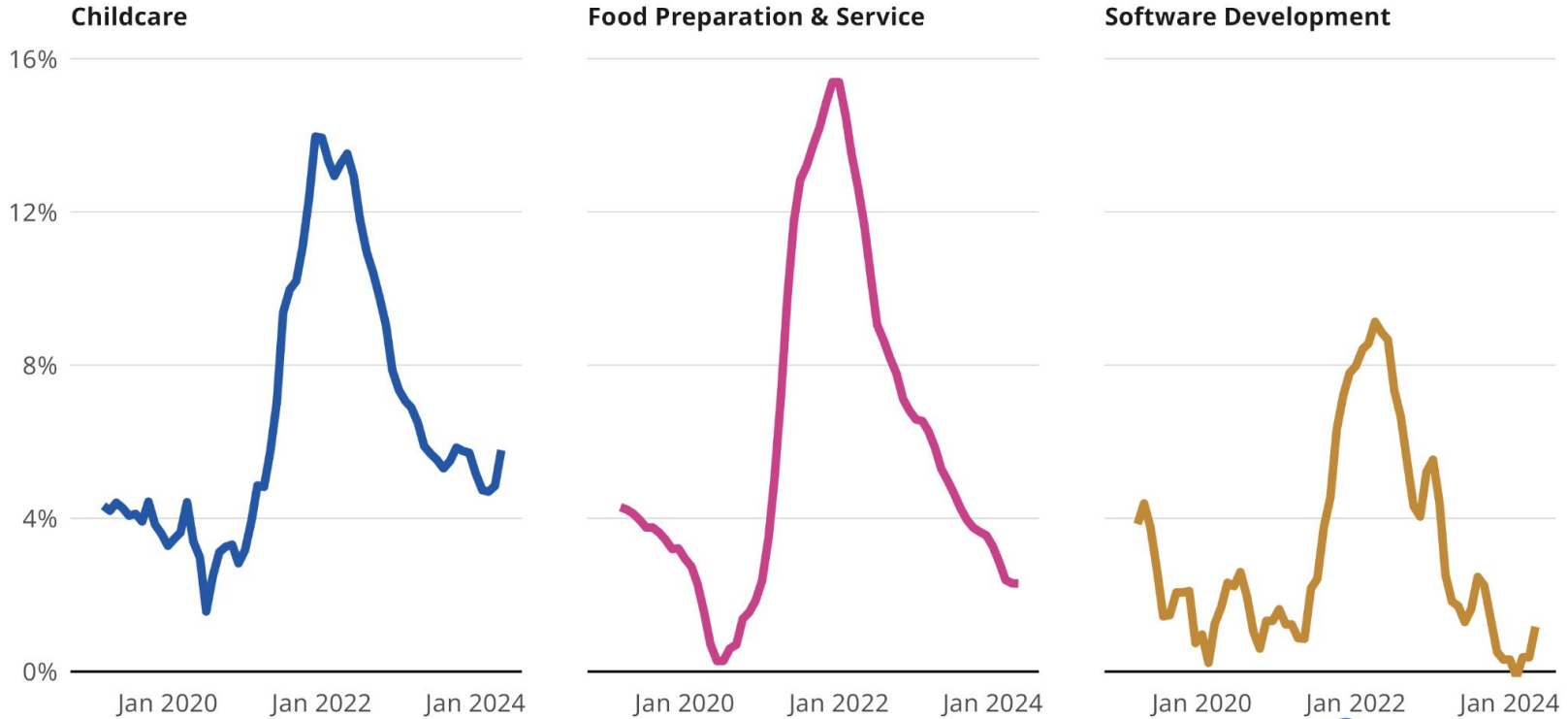

Source: Indeed Wage Tracker. Wage tiers based on a category's median posted wage in 2023

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Trends in posted wage growth by occupational sector
Year-over-year growth in posted wages, 3mo avg, Mar 2019 - May 2024

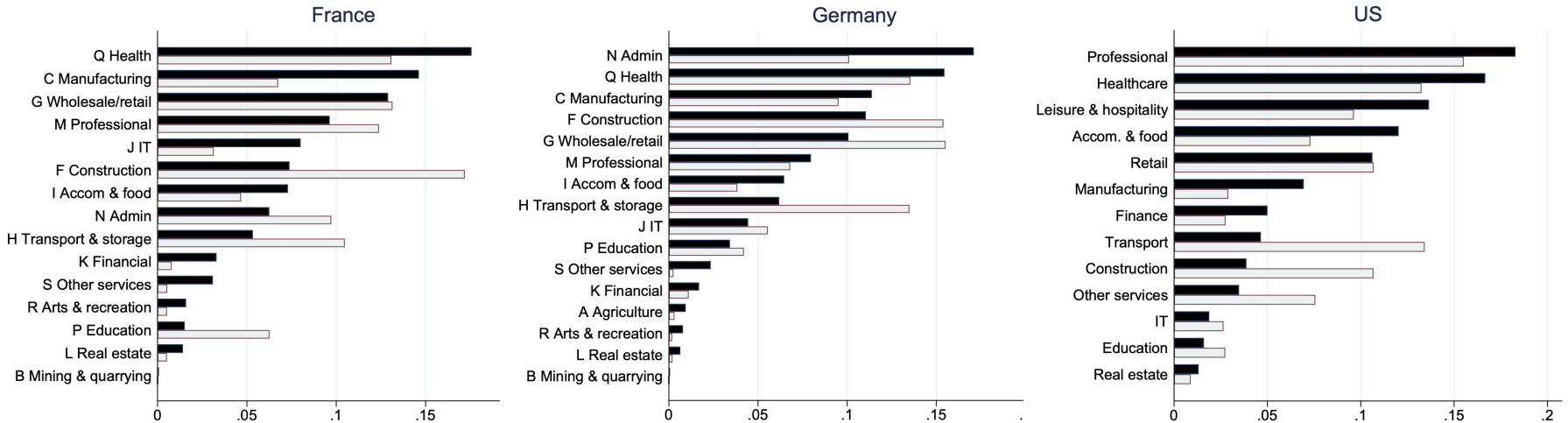■ Childcare   ■ Food Preparation & Service   ■ Software Development

Source: Indeed Wage Tracker

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Benchmarking is important

Job vacancies (national statistical agencies)
Online job postings (Indeed)

Questions for the Committee

1. Do you have any suggestions for extensions, applications, or policy analyses related to employment statistics? Or suggested applications of this methodology outside of employment statistics?

2. Considering this effort and other work across the statistical agencies, how should alternative data sources be used to improve timeliness and granularity of Federal Statistics, while maintaining standards of accuracy and reliability?

3. How should federal statistical agencies address other issues that arise with using alternative sources (e.g., transparency, coverage, and stability of data providers)?

Question 1: Additional applications

- Wage growth measure, see the discussion on the Indeed Wage Tracker.

Question 2: How to use private data?

—> It depends on the data!

Factors to consider include:
-   How exhaustive/representative is the data?
-   Timeliness
-   Stability
-   Can it be used as a stand-alone source or does it need to be combined/weighted by other public data?

Question 2: How to use private data?

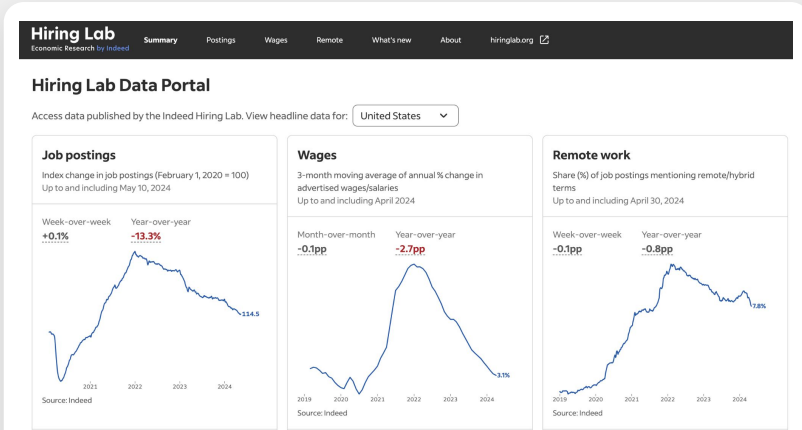Example: Zillow's Zestimates used for the Owner-Occupied Housing Wealth

- Calculation of geographical breakdowns of the aggregate value of owner-occupied real estate from 2001 to the present. The data are derived from property-value estimates constructed by Zillow and property-count estimates from the American Community Survey of the U.S. Census.
- Starting with the 2019Q2 publication of the Financial Accounts, FL155035013 is constructed by combining property value estimates from Zillow with property unit counts from the American Community Survey (ACS) as the primary measure.

Question 3: Addressing issues?

Some suggestions:
- No such thing as "perfect data" - as much **transparency** as possible on source data and methodology
- Produce data products in beta and monitor
- Establish strong relationships/partnerships
- Legal agreements
- If possible, making input data available for public consumption

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