Comments on the payroll data

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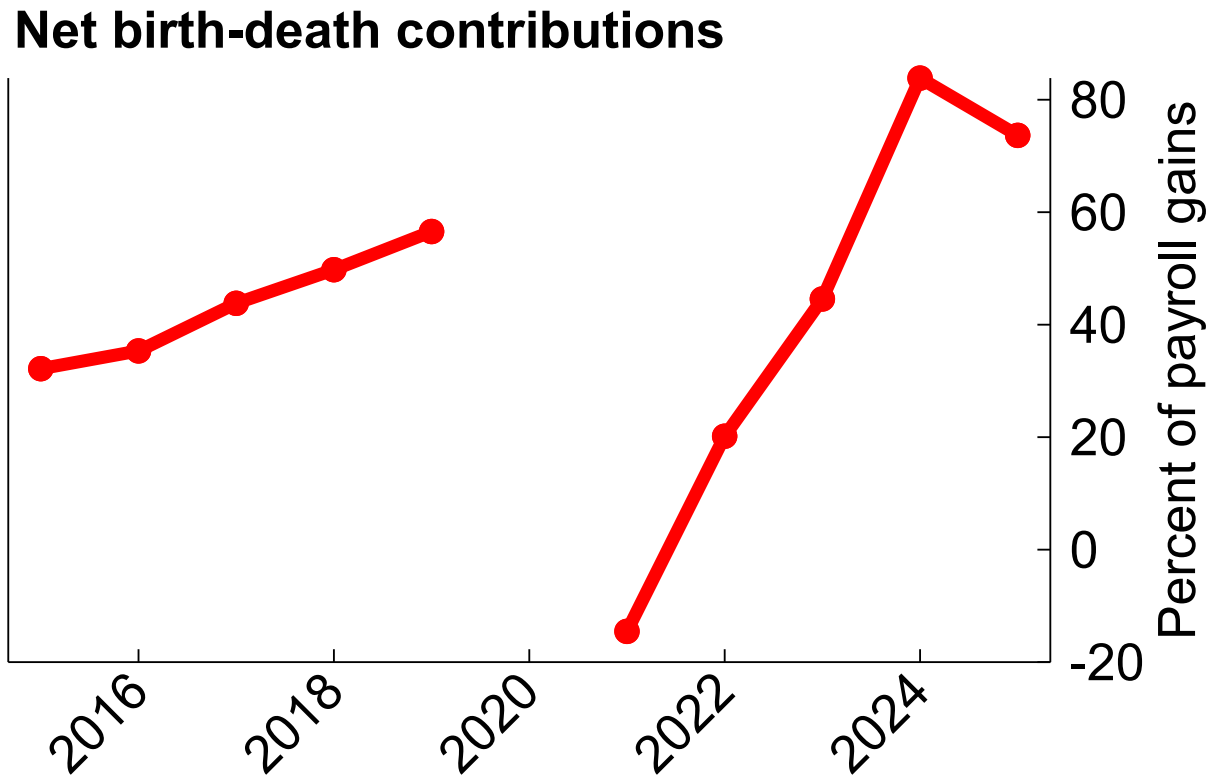
Without implication, these comments draw on joint work and/or conversations with Tomaz Cajner, Leland Crane, John Haltiwanger, Adrian Hamins-Puertolas, Joshua Hu, Chris Kurz, John Stevens, Mason Thieu, and David Wilcox.

The “payroll” or “establishment” survey: BLS Current Employment Statistics (CES)

- “Matched” continuer sample of establishments
- Net Establishment Birth-Death Model forecast with quarterly re-estimation
  - Large share of published payroll growth
  - Birth/death is a challenge for *all* business surveys (e.g., MRTS)
- Revisions:
  - 2-month revision window (3 prints in monthly cadence)
  - Annually benchmarked to a full census: Q1 Quarterly Census of Employment and Wages (QCEW) with ~3-quarter lag



Note: NBD forecast contributions to annual private payroll gains. August 2025 vintage CES private. 2020 observation omitted. Annual observations on March reference month.

This slide oversimplifies CES methodology; in particular, birth-death estimates feature an additional “imputation step” (BLS 2025), and QCEW does not cover the entire business universe (see Decker et al. 2020)

1. Keeping CES in perspective

- CES has exceptional benchmark data
  - CES gets a near-census benchmark every year with a 3-quarter lag (QCEW)
  - Most surveys (e.g. retail trade) benchmarked to other (larger) surveys with multiyear lag
- Data revisions are a good thing and happen because better data become available
- The Net Birth-Death Model is transparent and impressive
  - BLS has been flexible in adapting to special circumstances (e.g., 2020, 2024)
- CES technical documentation is clear and thorough

But… falling response rates, recent revision patterns have raised concerns

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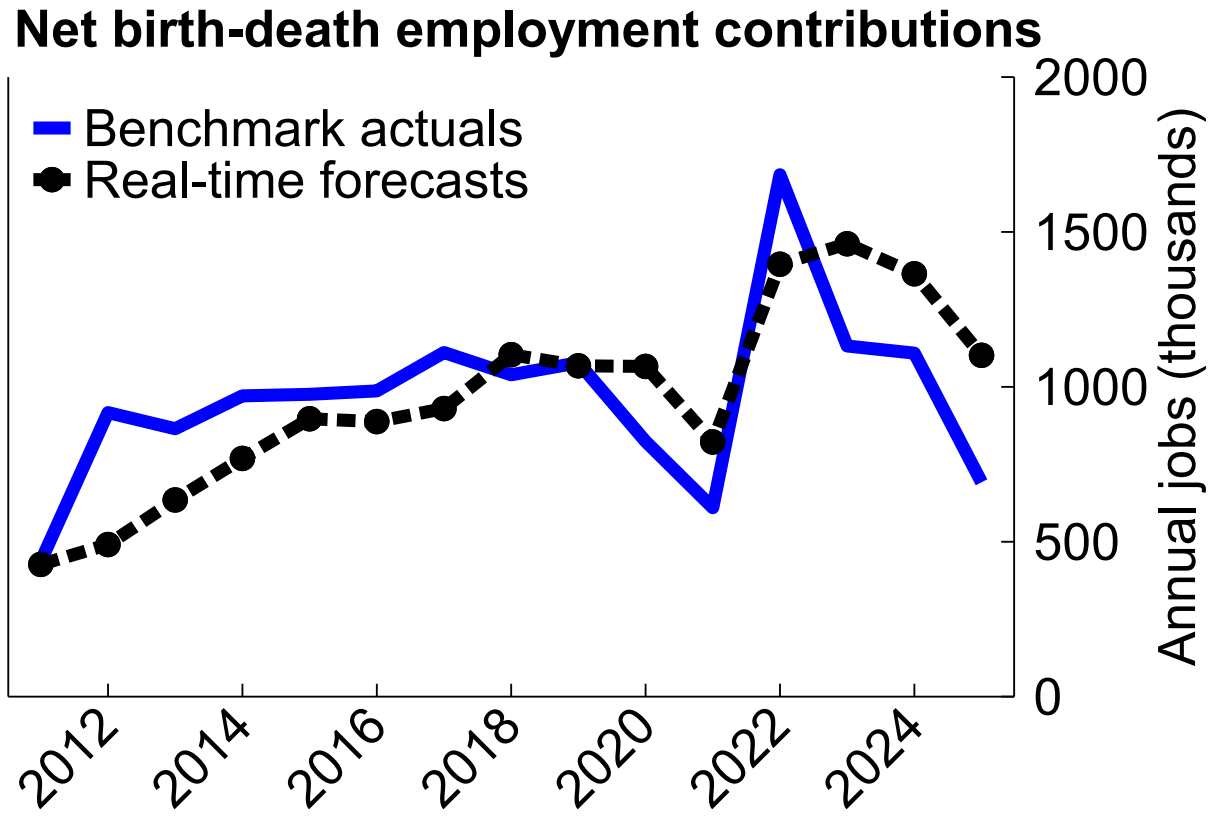

Note: NBD actual contributions from benchmark articles.
2025 actual is author estimate.

2. Sources of revisions and ideas for improvements

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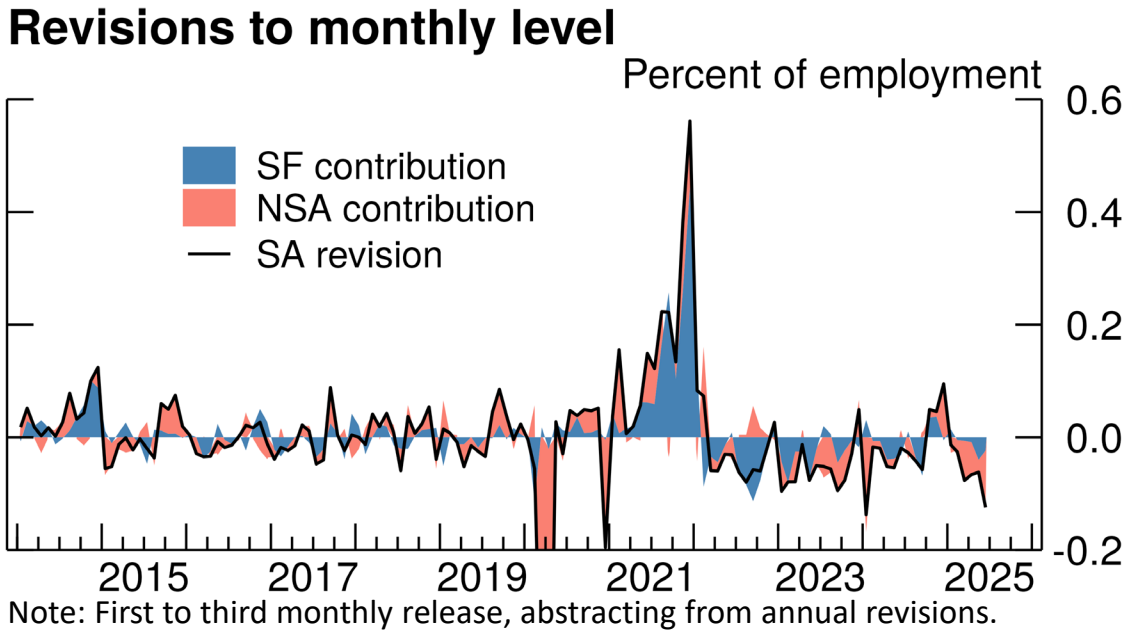
- *Monthly* revisions may receive more focus than they deserve
  - Seasonal adjustment plays a large role; post-pandemic seasonals have been challenging
  - CES never benchmarked to monthly "truth" anyway; sample error & birth-death model remain forever



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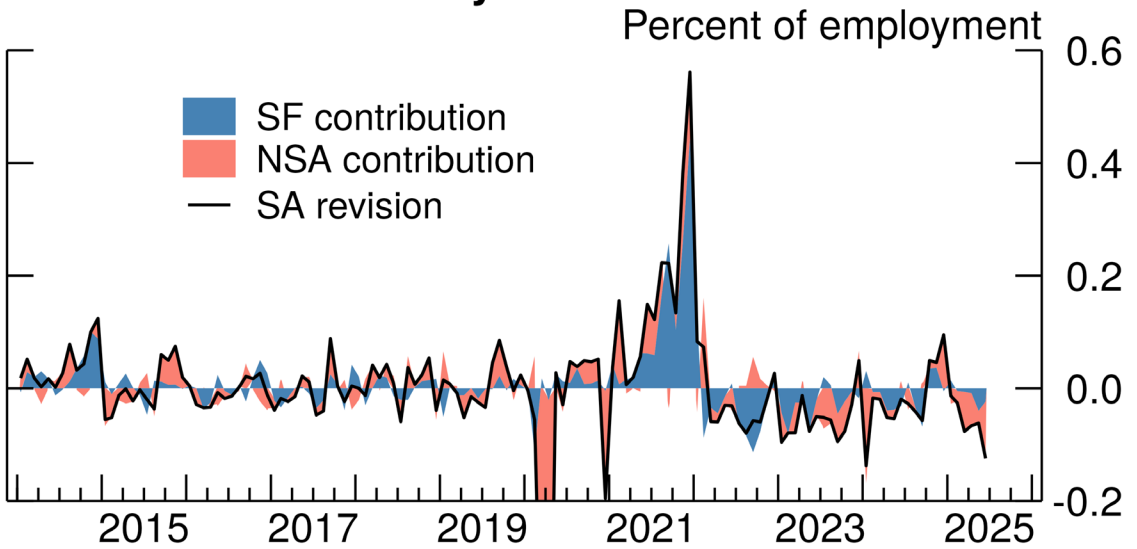
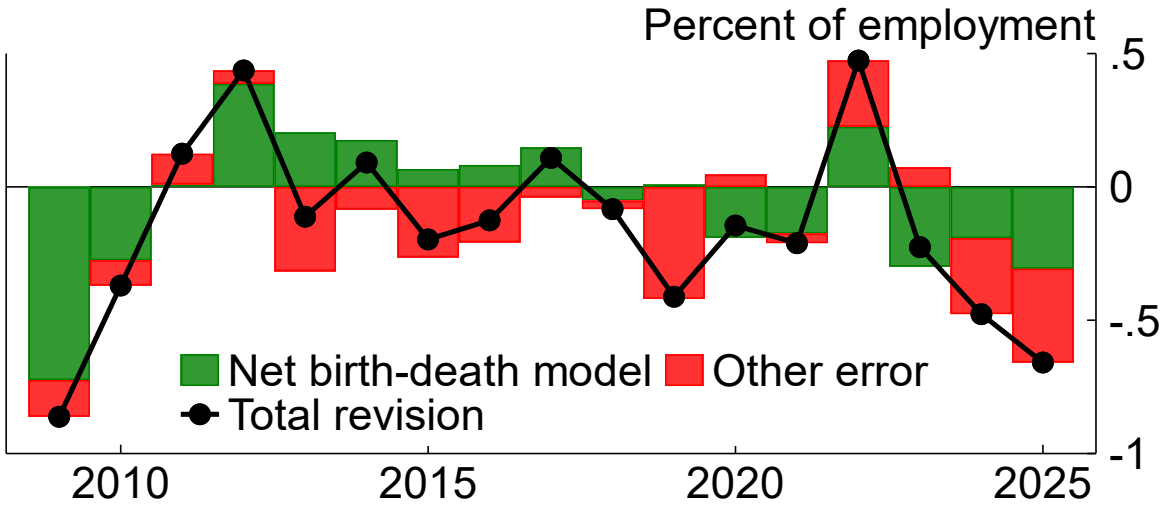
  - CES never benchmarked to monthly "truth" anyway; sample error & birth-death model remain forever
- More important to improve annual benchmark revisions
  - Response and nonresponse error (and declining response rates)
  - Net birth-death model

Revisions to monthly level



Note: First to third monthly release, abstracting from annual revisions.

Revisions to annual level



Note: Percent of real-time vintage benchmark employment level.
2025 is preliminary benchmark with author estimate of NBD model share.

Performance of CES and alternatives should be judged by benchmark revisions

Addressing response and nonresponse error: More data

- Are there other **public sector** resources?
  - Australia uses tax authority reporting (ABS 2025, under redesign)
- What about **private sector** data?
  - Top payroll/etc. firms can likely cover at least 1/3rd of U.S. employment
  - Private payroll data may help predict CES benchmark revisions (Cajner et al. 2018, 2022, etc.)
- Strongly prefer enabling access to raw establishment-level microdata to BLS versus published aggregates (e.g., RESET project, but for payrolls)
  - This is a key lesson of our work with various private sector employment data sources (Cajner et al. various papers; Crane et al. 2022)
  - Private sector providers have different needs, incentives, and goals with their aggregated products
  - "Bias adjustment" choices (e.g., birth-death model) heavily influence aggregate estimates and will make/break benchmark performance
  - Sample overlap between sources is unknown
  - BLS has the methodological/statistical firepower and can combine multiple sources before aggregation

Addressing response and nonresponse error: Quarterly adjustments

- QCEW is published quarterly, but CES only uses Q1 for nationwide benchmarking
- BLS staff have considered quarterly benchmarking many times over the years (e.g., BLS 2015, Robertson 2017, BLS 2021)
  - Advantages:
    - Would make use of relatively timely census data
    - More consistent with NIPA wage and salary data
    - Outside forecasters/analysts are already doing this; better leave it to the BLS professionals
  - Disadvantages:
    - Cost (staff time and budget)
    - Differing seasonality, QCEW vs. CES
    - QCEW volatility (but maybe truth is volatile!)
    - QCEW data quality: Revisions have increased; Q1 QCEW is most accurate (most revised)
- It need not be a full benchmark:
  - Take inspiration from Industrial Production use of Quarterly Survey of Plant Capacity (see FRB 2018): Model-based adjustments to supplement NBD model updates.
  - Insights from Davis et al. (2010) JOLTS work?

Addressing net birth-death (NBD) model error: **More data**

- Can more recent **public sector** resources be folded into NBD model forecasts than the current 9-12 month lag?
  - Current method: August jobs report used NBD contributions jumping off 2024:Q3 QCEW, but 2024:Q4 QCEW and BED were already public
  - BED public data in hand can improve NBD model forecasts
    - Business Formation Statistics data too (Bayard et al. 2018)—though more research needed
  - National Directory of New Hires (ACF 2024)? What does IRS know? These are policy questions.
- Can **private sector** data inform real-time establishment birth/death?
  - Key challenge: Birth/death cannot be measured by tracking businesses
  - Instead: track customers or vendors (Crane et al. 2022, Kurmann et al. 2025)
    - Transaction data (e.g. consumer cards with merchant codes), cell phone data, Google/Facebook listings, ecommerce deliveries
    - Likely requires industry-specific solutions or changes in legal framework

	RMSE	Available?
NBD forecast	315	
+ Q2 BED	325	January
+ Q3 BED	280	April
+ Q4 BED	230	July
+ Q1 BED	120	October

Annual regressions predicting NBD actuals from NBD forecasts and others.

RMSE in thousands of jobs.

Thanks

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