

## Appendix to CFL No.359, Is there still slack in the labor market?

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Figures A1–A4 show the payroll employment gap and trend payroll employment growth based on two sets of underlying assumptions for trend labor force participation and the natural rate of unemployment. The figures on the left (A1 and A3), referred to as baseline, are described in full in the text. The figures on the right (A2 and A4) refer to the alternative assumptions described in the text, which replace the Congressional Budget Office’s trend participation and natural rates with those described in Aaronson et al.<sup>1</sup>

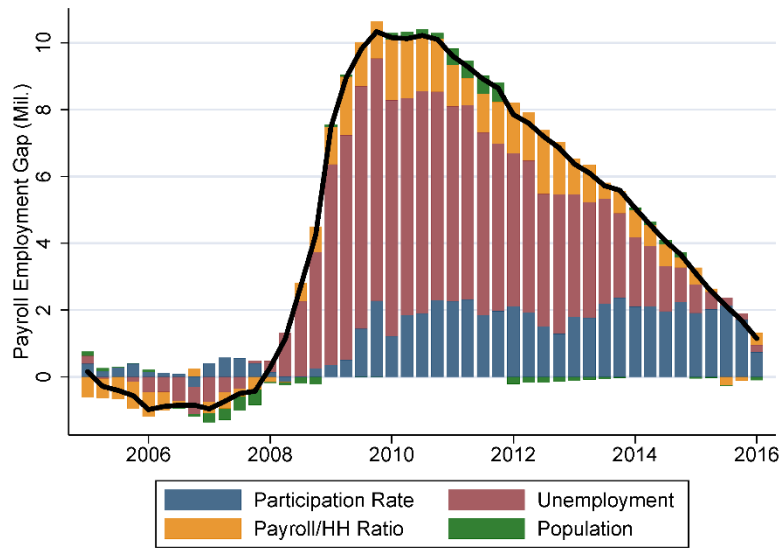
The top two panels (A1 and A2) depict estimates of the number of jobs separating actual and trend payroll employment, i.e., the payroll employment gap on a quarterly basis from 2005:Q1 through 2016:Q1. The black line indicates the total payroll employment gap. The colored bars indicate the contribution to the gap from each of the four components of payroll employment discussed in the text. Estimates prior to and including 2015 are based on historical data, while estimates beyond 2015 are based on projections.

The bottom two panels (A3 and A4) depict estimates of the annual average monthly change in trend payroll employment from 2005 through 2020. The black line indicates the total monthly change. The colored bars indicate the contribution to trend employment growth from each of the four components discussed in the text. Estimates prior to and including 2015 are based on historical data, while estimates beyond 2015 are based on projections.

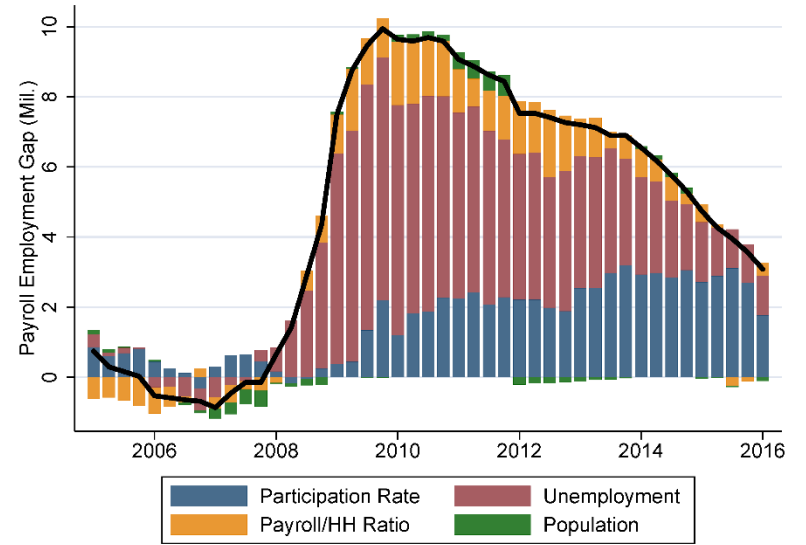
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<sup>1</sup> See Daniel Aaronson, Luoia Hu, Arian Seifoddini, and Daniel G. Sullivan, 2014, “Declining labor force participation and its implications for unemployment and employment growth,” *Economic Perspectives*, Federal Reserve Bank of Chicago, Vol. 38, Fourth Quarter, pp. 100–138, <https://chicagofed.org/publications/economic-perspectives/2014/4q-aaronson-et-al>; and Daniel Aaronson, Luoia Hu, Arian Seifoddini, and Daniel G. Sullivan, 2015, “Changing labor force composition and the natural rate of unemployment,” *Chicago Fed Letter*, Federal Reserve Bank of Chicago, No. 338, <https://chicagofed.org/publications/chicago-fed-letter/2015/338>.

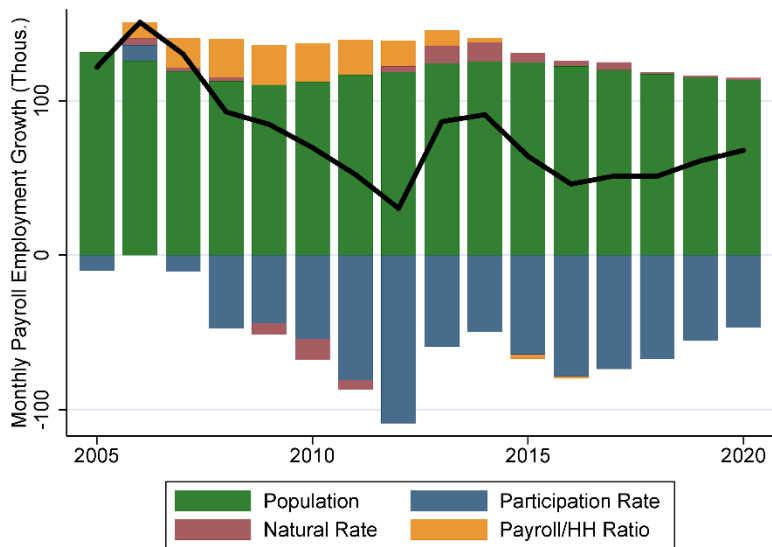
**A1. Baseline Payroll Employment Gap**



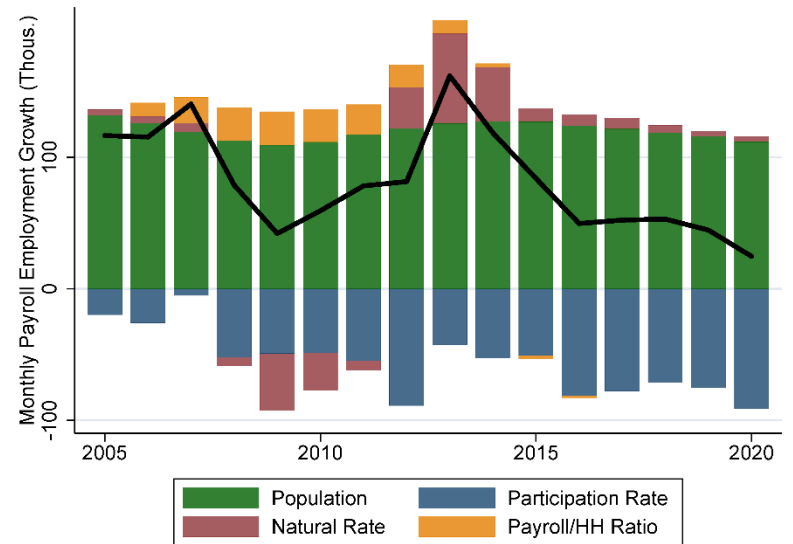
**A2. Alternative Payroll Employment Gap**



**A3. Baseline Trend Payroll Employment Growth**



**A4. Alternative Trend Payroll Employment Growth**



Sources: Haver Analytics and authors' calculations.