

“Missing” Workers and “Missing” Jobs Since the Pandemic

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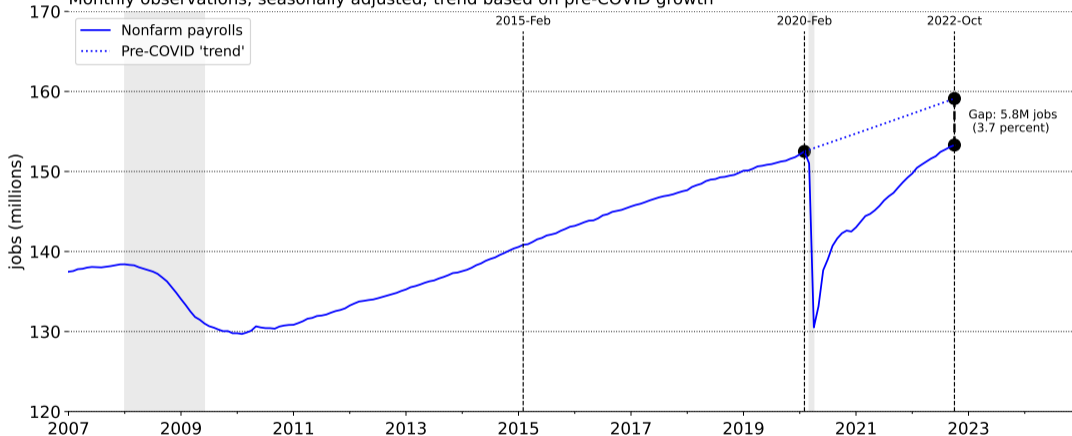
2022 Boston Fed Conference on “Labor Markets During and After the Pandemic”

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Payroll employment 5+ million jobs below pre-COVID trend

Post-COVID 'Gap' in Nonfarm Payroll Employment

Monthly observations; seasonally adjusted; trend based on pre-COVID growth

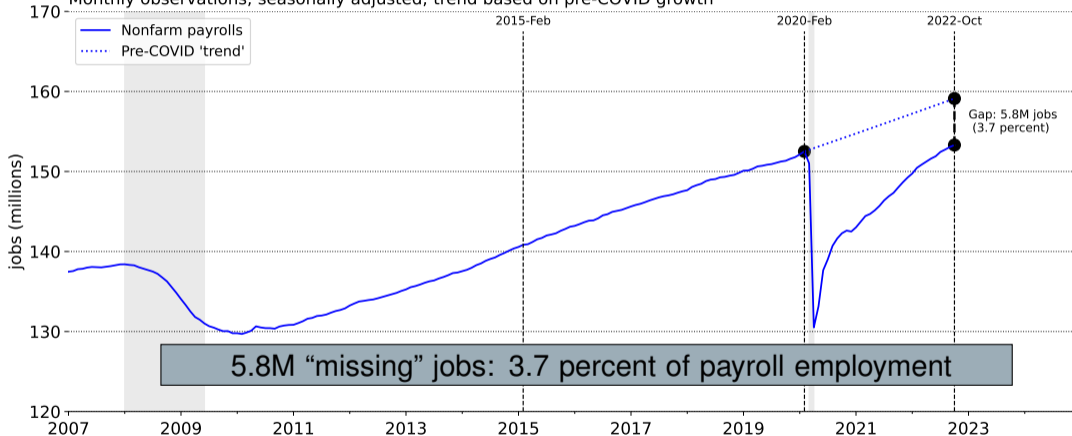


Source: Bureau of Labor Statistics and authors' calculations

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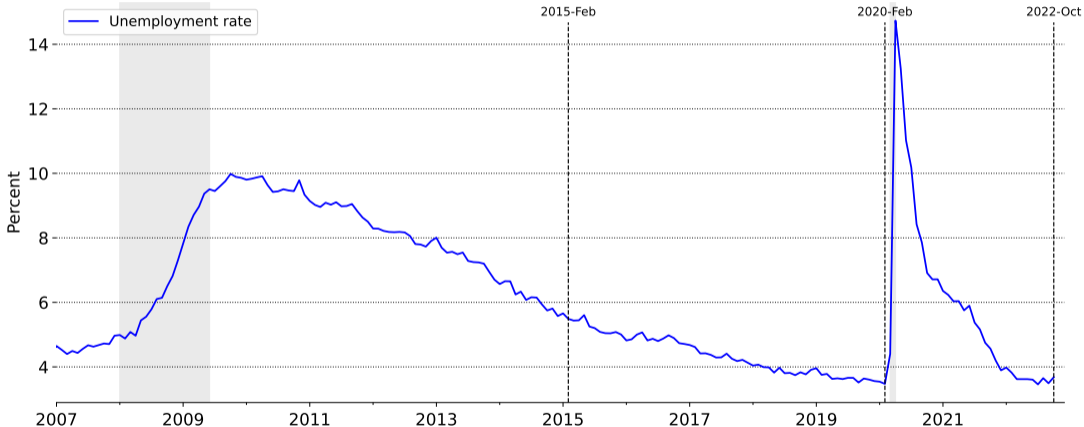
5.8M "missing" jobs: 3.7 percent of payroll employment

Source: Bureau of Labor Statistics and authors' calculations

Unemployment has recovered to its pre-COVID trend

Unemployment rate

Monthly observations; seasonally adjusted; share of labor force

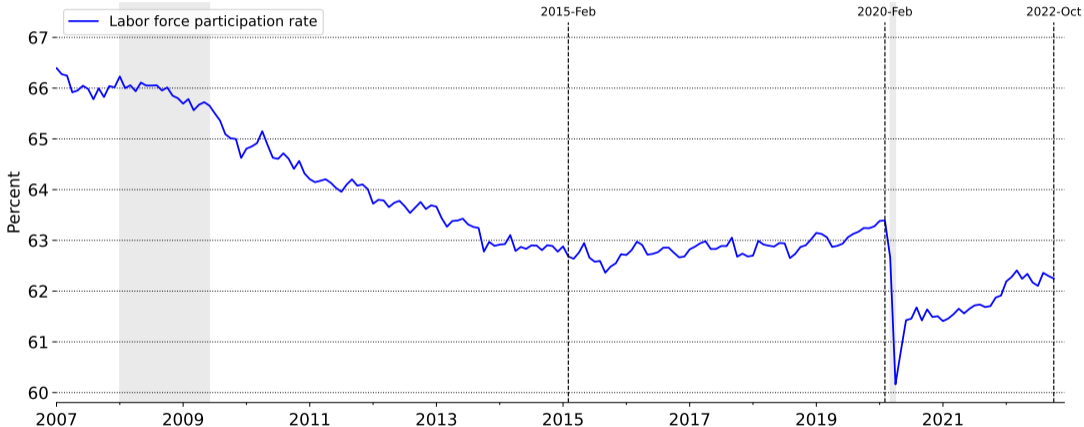


Source: Bureau of Labor Statistics

But there is a drop in participation since COVID

Labor force participation rate

Monthly observations; seasonally adjusted; share of civilian noninst. population

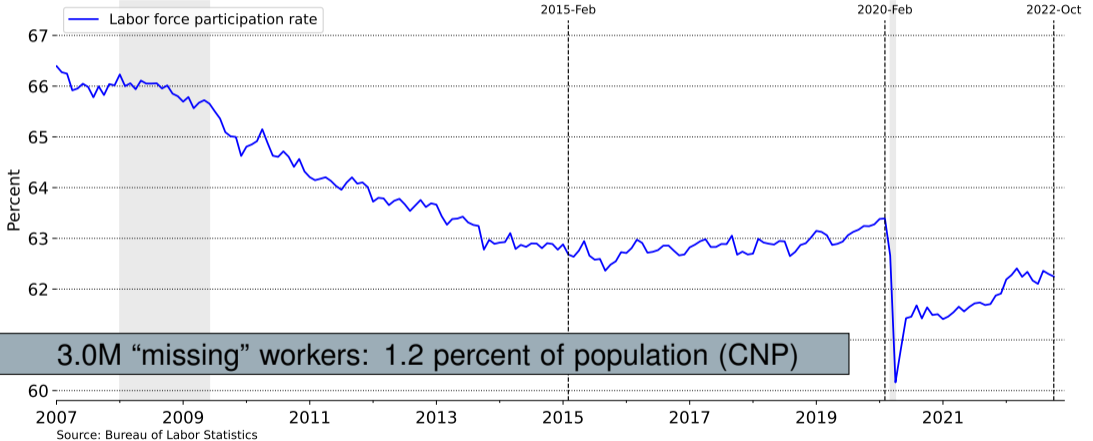


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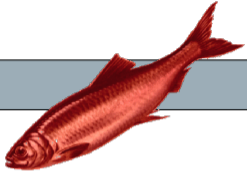
Common “Missing”-Workers-“Missing”-Jobs narrative

“Missing” workers: Labor supply response to COVID

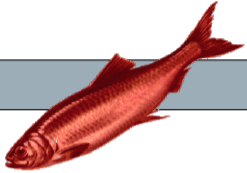
- Many persons permanently dropped out of labor force (retired) in response to health risk posed by pandemic
- COVID resulted in an unexpected shortfall in U.S. labor supply

“Missing” jobs: COVID-induced labor shortage drag on job creation

- Worker shortage has hampered job creation and subdued labor demand
- Shortfall in payroll job creation because of lack of available workers due to pandemic



This is a red herring...



This is a red herring...

... because it does not add up:

3.0M “missing” workers \neq 5.8M “missing” jobs

Accounting identity that links “Missing” jobs and workers

“Missing” jobs (payroll jobs) related to “Missing” workers (LFPR)

$$\underbrace{J_t}_{\text{Payroll jobs}} = \underbrace{\left(\frac{J_t}{J_t^H}\right)}_{\text{Survey difference}} \underbrace{\left(\frac{J_t^H}{E_t}\right)}_{\text{Scope difference}} \underbrace{(1 - u_t)}_{\text{(Un-)employment rate}} \underbrace{LFPR_t}_{\text{Participation rate}} \underbrace{POP_t}_{\text{Population}}$$

- J_t^H is CPS-based proxy of nonfarm payroll employment.

Rules of thumb about job growth, unemployment, and participation

$$\underbrace{\Delta \ln J_t}_{\text{Payroll growth}} \approx \underbrace{\Delta \ln \left(\frac{J_t}{J_t^H} \right)}_{\text{Change in survey difference}} + \underbrace{\Delta \ln \left(\frac{J_t^H}{E_t} \right)}_{\text{Change in scope difference}} - \underbrace{\Delta u_t}_{\text{Unemployment change}} + \underbrace{\Delta \ln LFPR_t}_{\text{Participation change}} + \underbrace{\Delta \ln POP_t}_{\text{Population growth}}$$

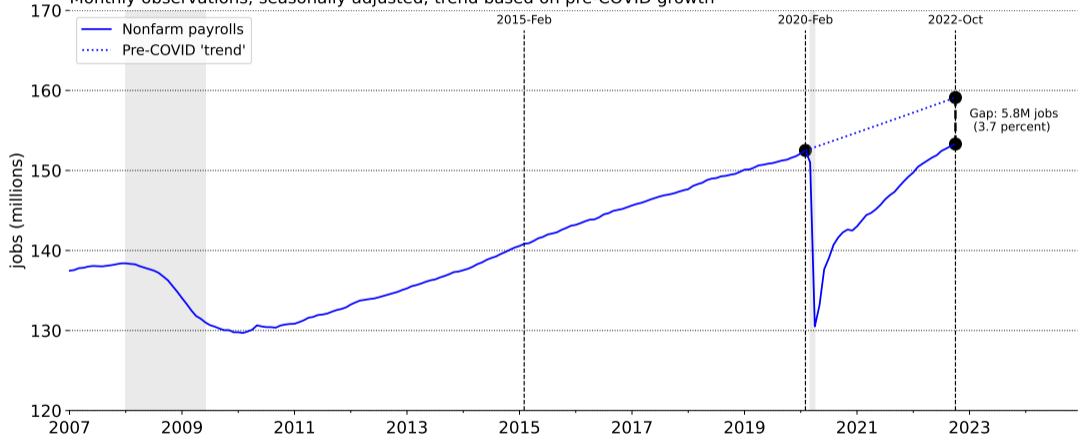
Relates payroll jobs growth to changes in unemployment rate and LFPR...

Change in u_t or $LFPR_t$	Percent change in Nonfarm payrolls	Change in nonfarm payroll jobs
0.1 pct point decrease in the <i>unemployment rate</i>	0.1 pct increase in nonfarm payrolls	150K more nonfarm payroll jobs
0.1 pct point increase in the <i>participation rate</i>	0.16 pct increase in nonfarm payrolls	250K more nonfarm payroll jobs

Split 5.8M “missing” jobs into parts from identity

Post-COVID 'Gap' in Nonfarm Payroll Employment

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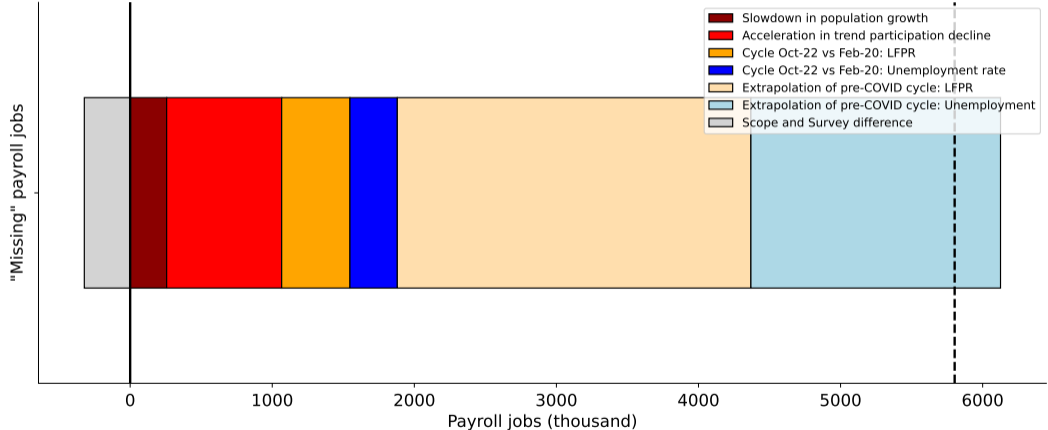


Source: Bureau of Labor Statistics and authors' calculations

Split 5.8M "missing" jobs into parts from identity

Dissection of "Missing" payroll jobs

Deviation of number payroll jobs in Oct-22 from pre-COVID trend

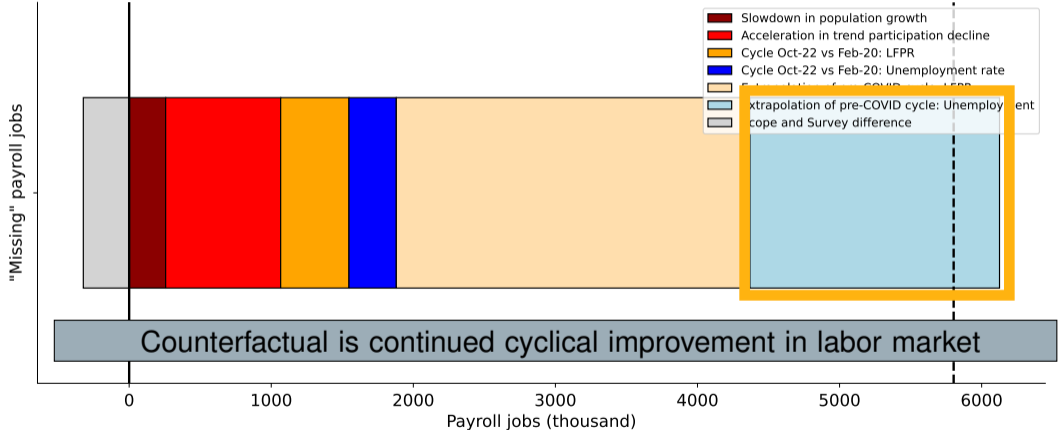


Source: Bureau of Labor Statistics and authors' calculations

Unemployment rate did not continue to decline after 2020

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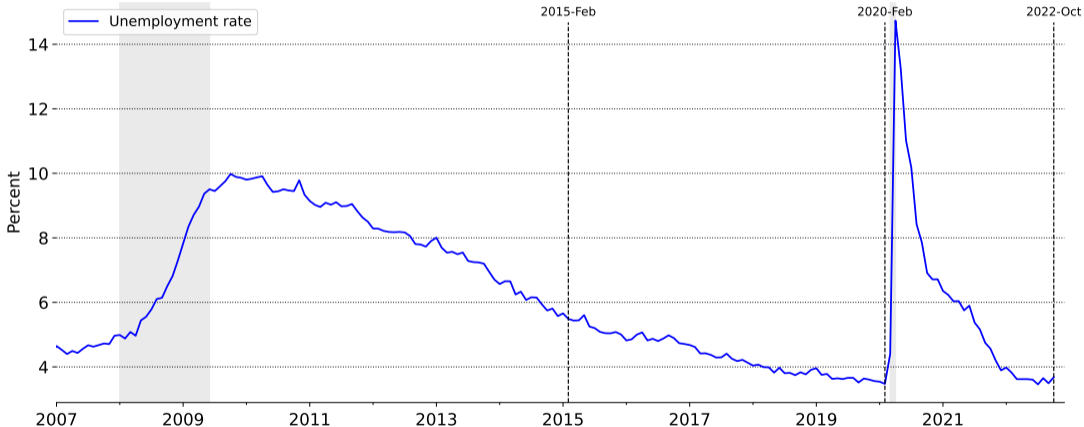


Source: Bureau of Labor Statistics and authors' calculations

But labor market was in mature stage of business cycle in early 2020

Unemployment rate

Monthly observations; seasonally adjusted; share of labor force

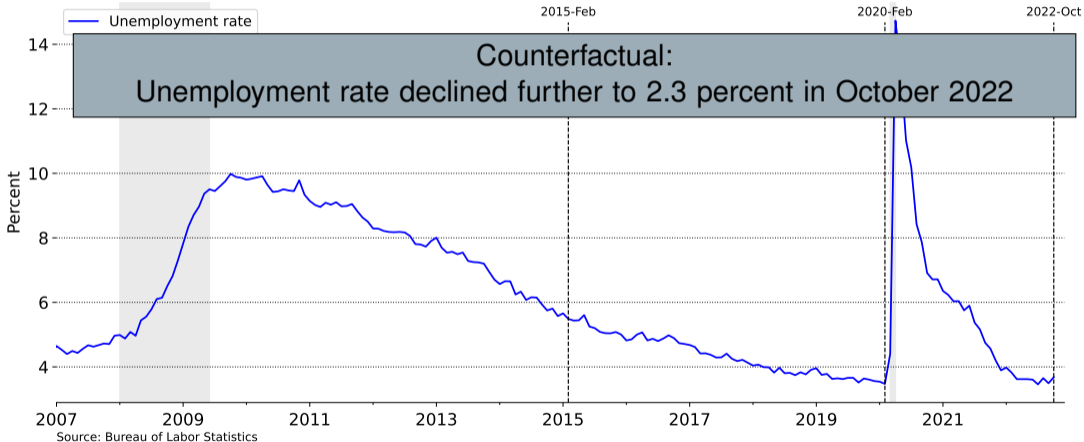


Source: Bureau of Labor Statistics

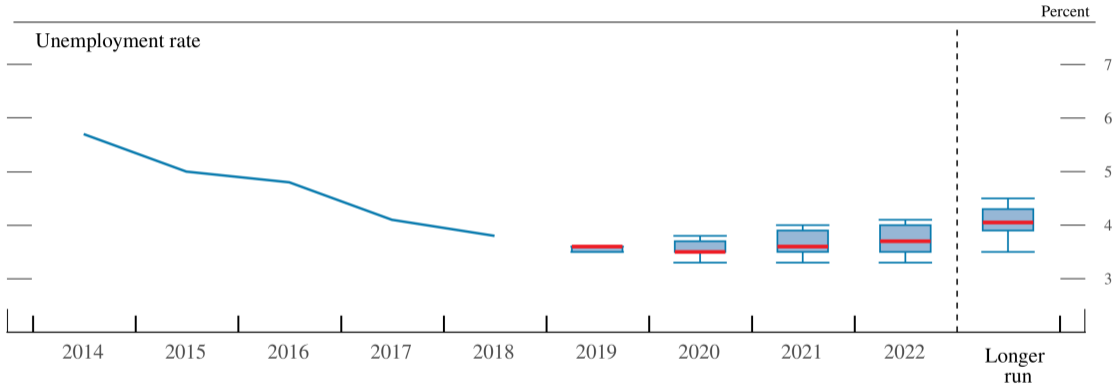
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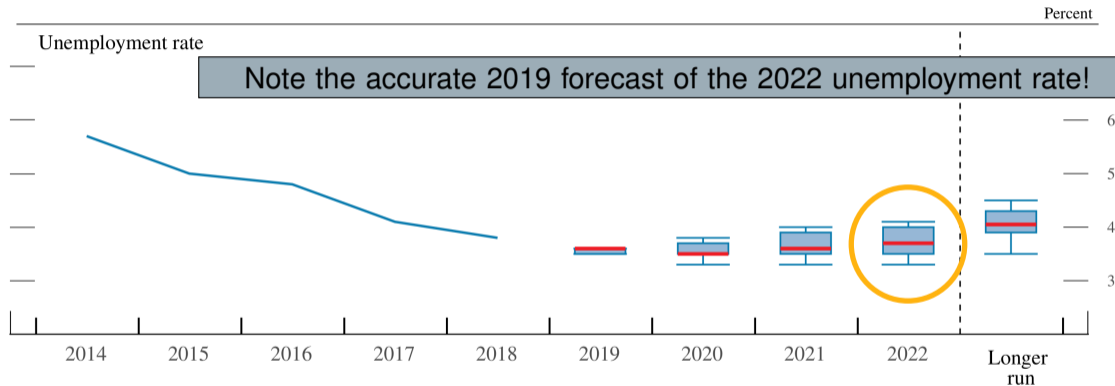


Decline in unemployment rate from 2020-2022 was not projected



Source: FOMC, Summary of Economic Projections, December 2019

Decline in unemployment rate from 2020-2022 was not projected

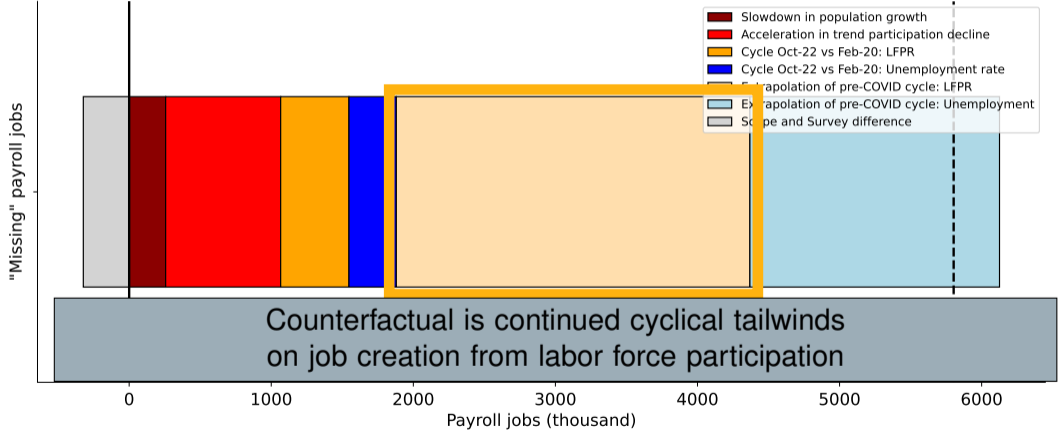


Source: FOMC, Summary of Economic Projections, December 2019

Upward cyclical participation pressures did not continue after 2020

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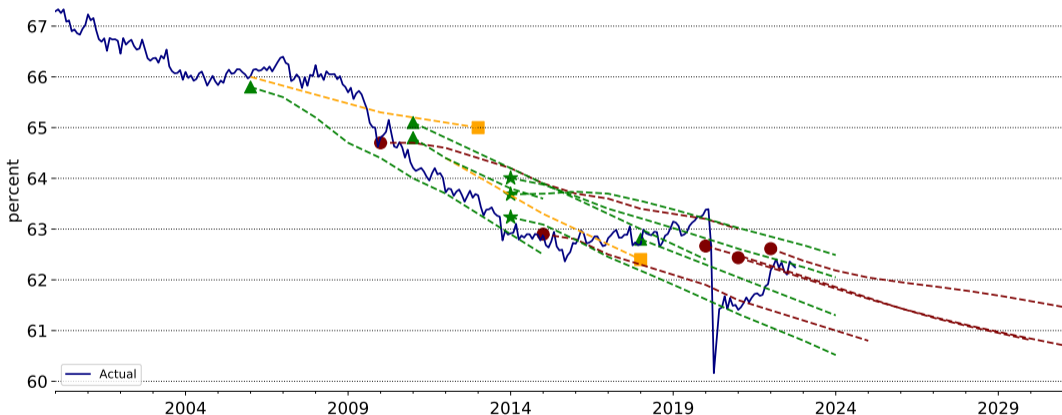


Source: Bureau of Labor Statistics and authors' calculations

Large disagreement about trend and cycle in participation rate

Labor Force Participation Rate, Actual and Trend Estimates

Monthly observations; seasonally adjusted



Source: Bureau of Labor Statistic, CBO, FRBoG, several other publications

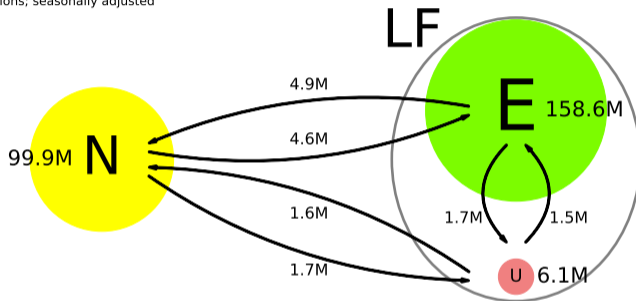
Note: Vintage of forecast is indicated by dot. Actual is seasonally adjusted monthly observations. Trend estimates in bottom panel by source:

- : CBO trend estimates (2011, 2015, 2020, 2021), ■: Tealbook estimates (backward-looking, Jan 2011 and Jan 2015), *: Aaronson *et al.* (2014), and ▲: from Aaronson *et al.* (2006), Aaronson *et al.* (2012), Zandweghe (2012), and Hornstein *et al.* (2018).

A flow-based decomposition to uncover the participation cycle

Flow Origins of Participation: Oct 2022

Monthly observations; seasonally adjusted



- Flows \gg Net changes in stocks
 - Large flows in and out of labor force
- Unemployed are less attached than the employed
 - *Attachment wedge*

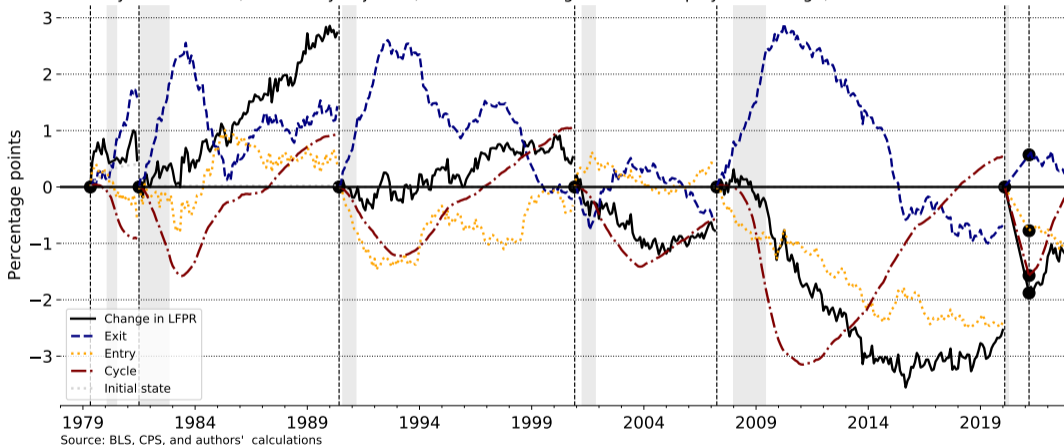
Source: Bureau of Labor Statistics

Key Intuition: When someone moves from U to E, they are more likely to remain in the labor force going forward. This simple mechanism (*the participation cycle*) is the source of procyclicality of participation, *not* labor force entry and exit.

Participation cycle driven by job-loss and job-finding

Trough to trough LFPR changes decomposed

Monthly observations; seasonally adjusted; cumulative change since unemployment trough; Total



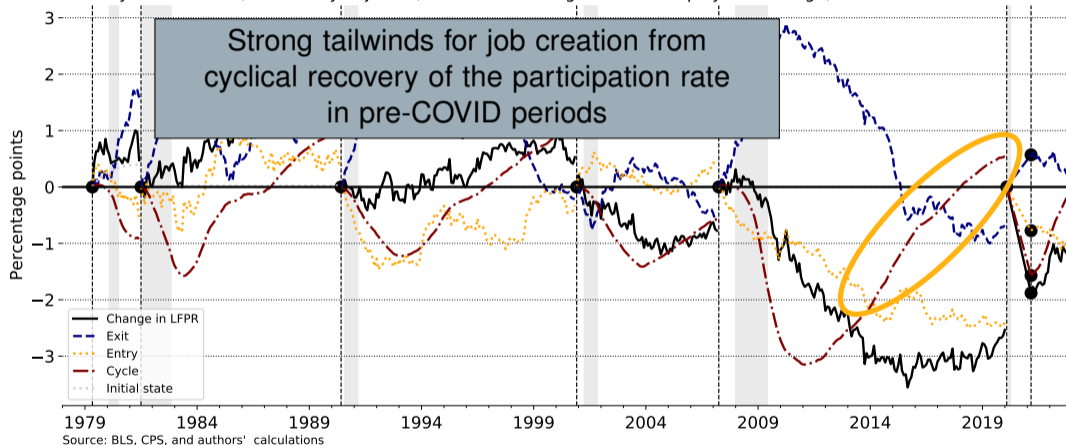
Update of Hobijn and Şahin (2021)

Entry and Exit

Participation cycle driven by job-loss and job-finding

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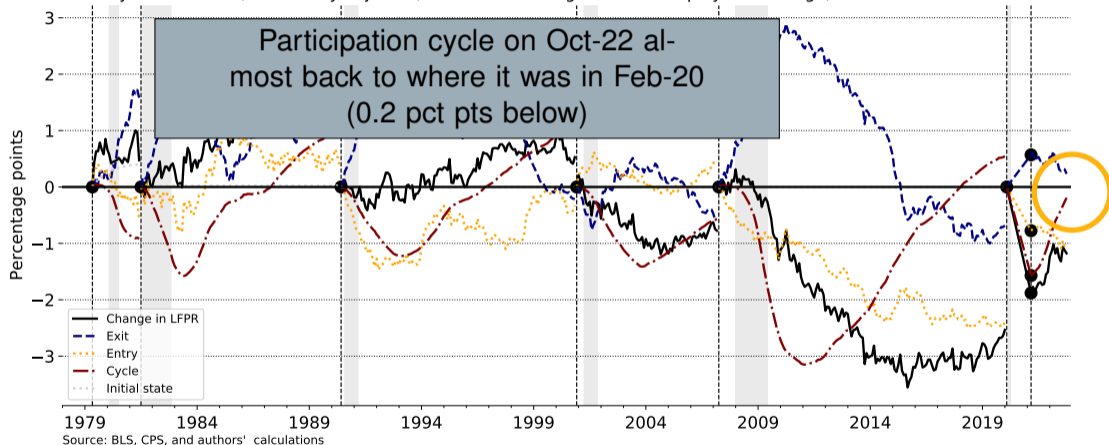
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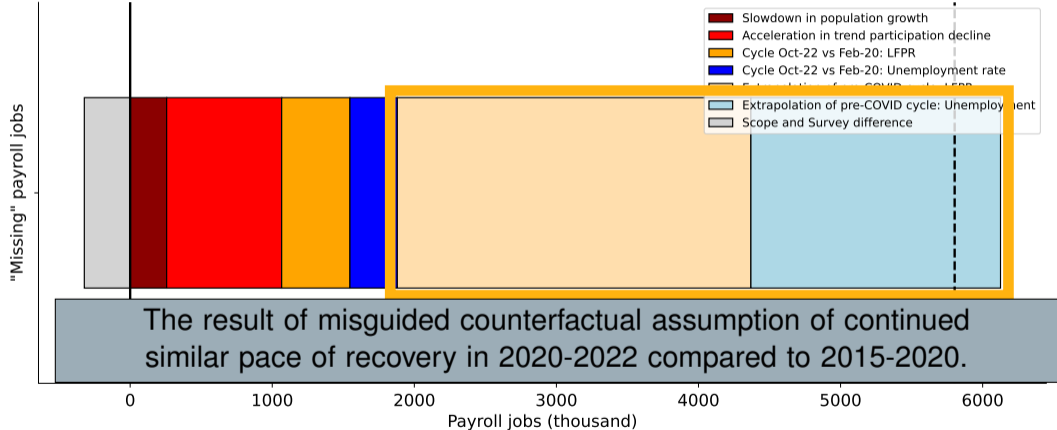
Update of Hobijn and Şahin (2021)

Entry and Exit

These jobs are not “missing” at all!

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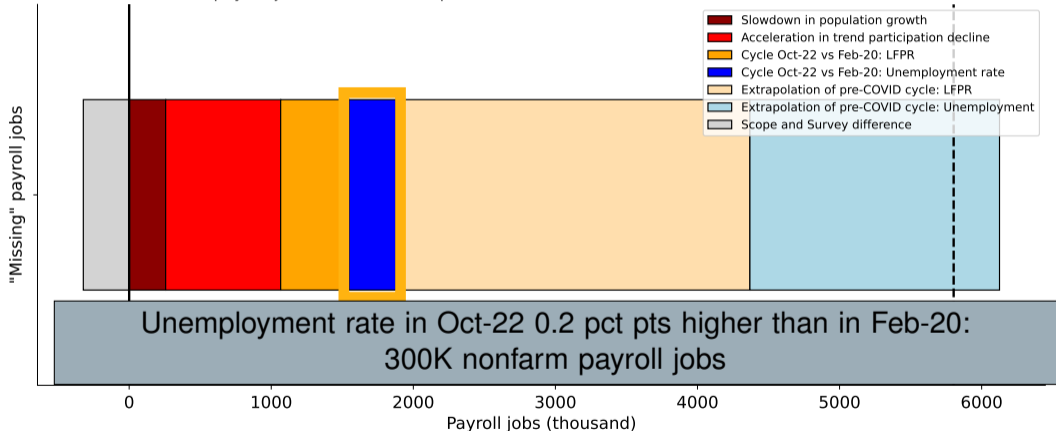


Source: Bureau of Labor Statistics and authors' calculations

Unemployment now slightly higher than right before the pandemic

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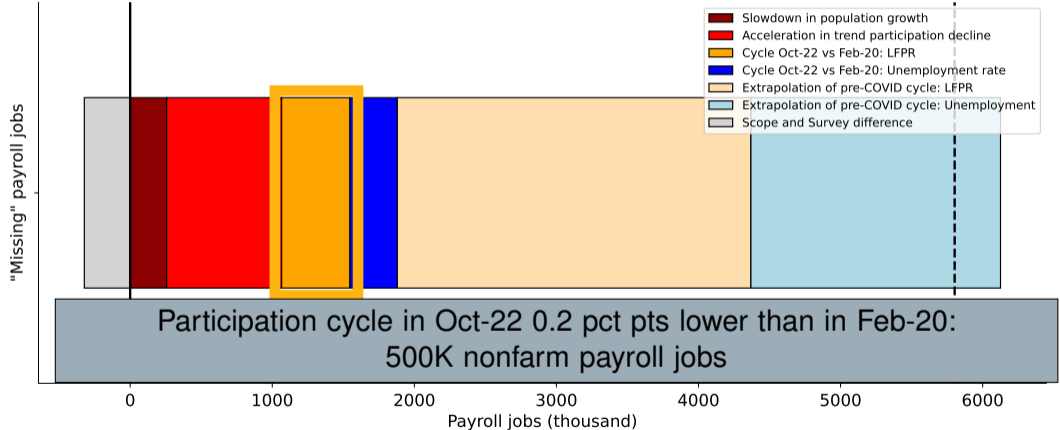


Source: Bureau of Labor Statistics and authors' calculations

Participation cycle slightly lower now than in February 2020

Dissection of "Missing" payroll jobs

Deviation of number payroll jobs in Oct-22 from pre-COVID trend



Source: Bureau of Labor Statistics and authors' calculations

Cyclical shortfall compared to February 2020: 800K jobs

Dissection of "Missing" payroll jobs

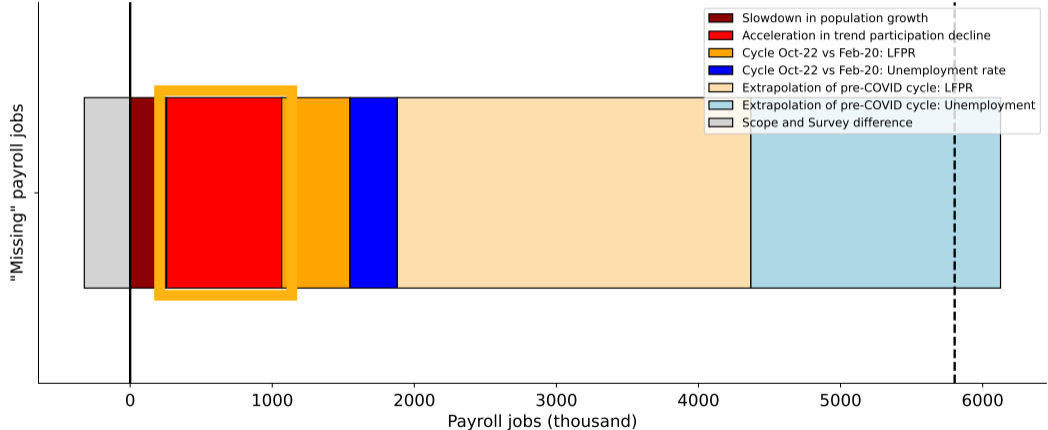
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About 800 thousand “missing” jobs linked to “missing” workers

Dissection of "Missing" payroll jobs

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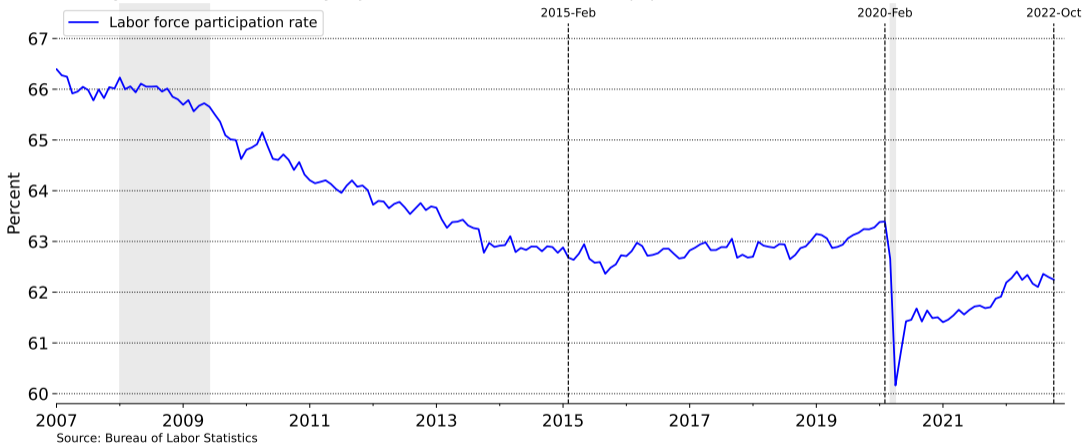


Source: Bureau of Labor Statistics and authors' calculations

Drop in participation since COVID split up...

Labor force participation rate

Monthly observations; seasonally adjusted; share of civilian noninst. population

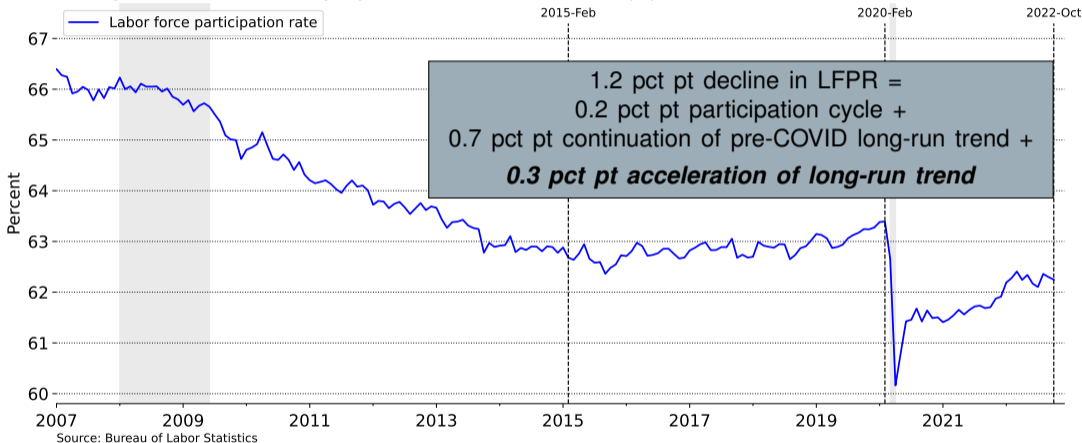


Importance of taking into account pre-COVID long-run trend echoes Cooper *et al.* (2021)

Drop in participation since COVID split up...

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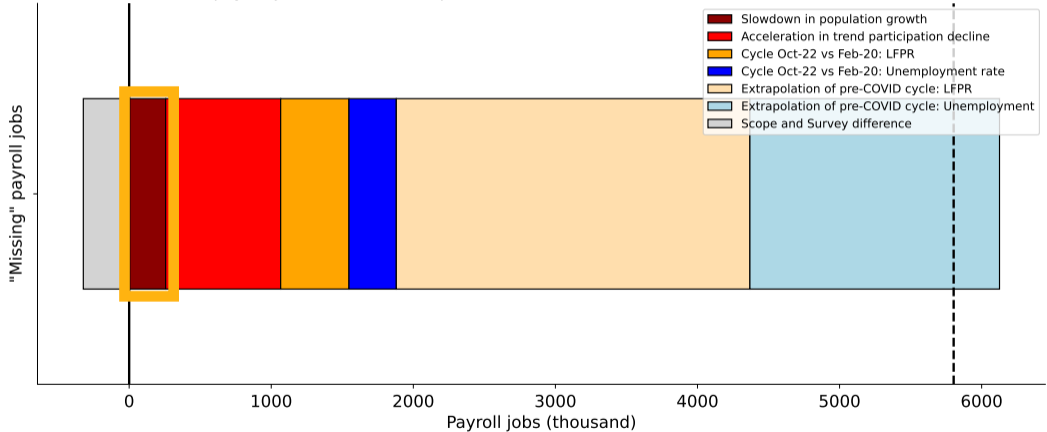


Importance of taking into account pre-COVID long-run trend echoes Cooper *et al.* (2021)

Slowdown in population growth drag of 250 thousand jobs

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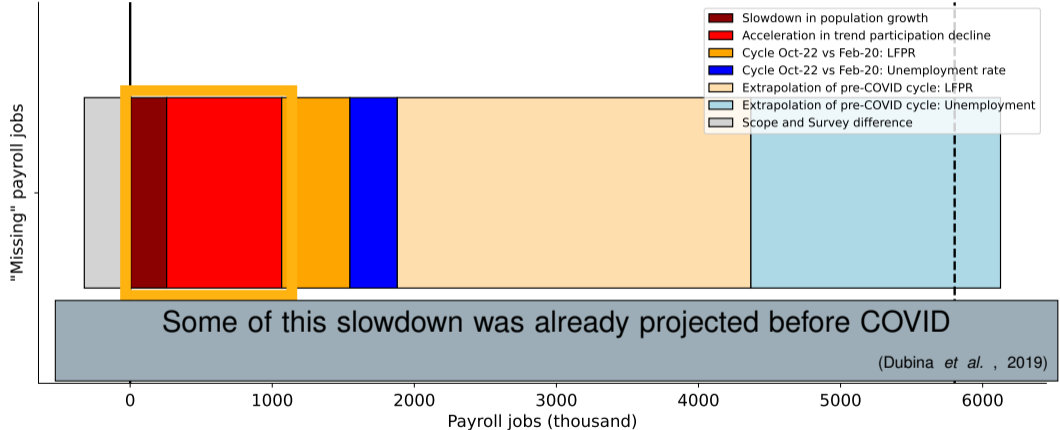


Source: Bureau of Labor Statistics and authors' calculations

Slowdown in trend labor supply since start of the pandemic

Dissection of "Missing" payroll jobs

Deviation of number payroll jobs in Oct-22 from pre-COVID trend



Source: Bureau of Labor Statistics and authors' calculations

Slow growth of labor supply translates into slow job growth

Trend payroll job growth is about 65K jobs a month

- Latest BLS projections is labor force growth of 0.5 percent annually over coming decade
- Implies 0.5 percent trend payroll job growth: About 65K jobs a month

Mature state of cycle implies substantial slowdown in job growth

- Even in the absence of monetary and fiscal tightening one should expect substantial slowdown in job creation
- Caution! Don't attribute all of slowdown in job creation to policy. Unemployment rate and participation cycles are better gauges of policy impact on labor market.

Sorry Harry... We are no one-handed economists...

On the one hand:

U.S. labor market aggregates recovered quickly back to pre-COVID levels relative to trend

- A testament to the resilience of the U.S. economy
- Little evidence of a long-run impact of COVID on path of aggregates

On the other hand:

What is restraining U.S. job creation is long-run trend factors

- Trend growth of labor supply in coming decade very low
- We have a vaccine (and cure) for COVID, but have not found a way to reverse aging

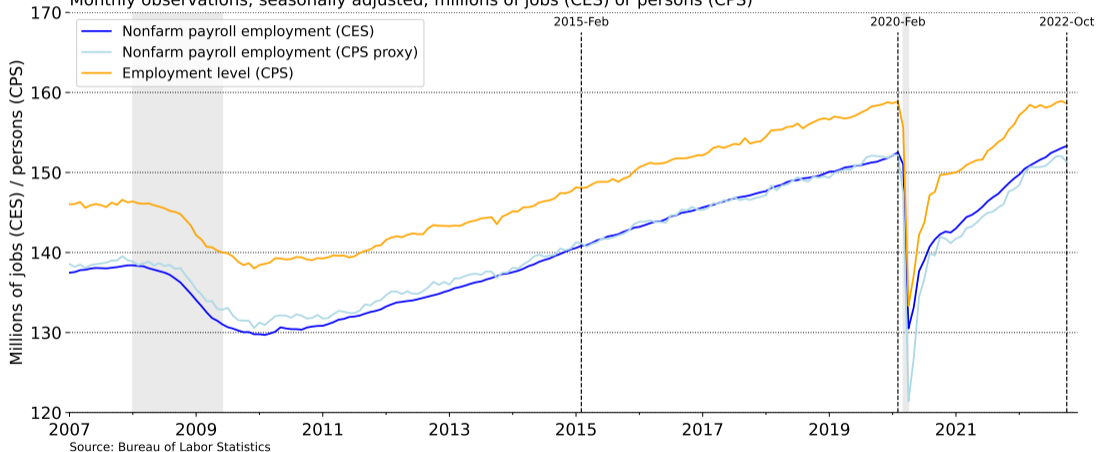
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Payroll and total employment from the different surveys

Three employment concepts

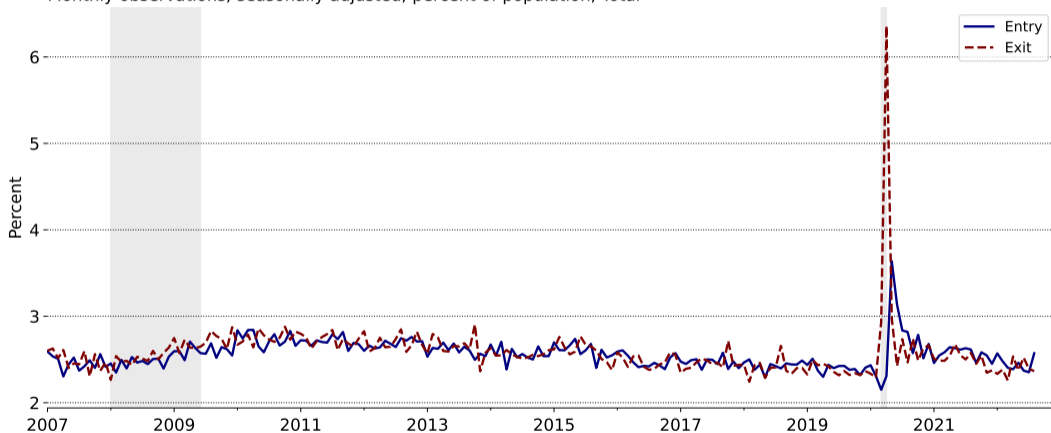
Monthly observations; seasonally adjusted; millions of jobs (CES) or persons (CPS)



Labor force entry and exit

Labor Force Entry and Exit as a Share of the Population

Monthly observations; seasonally adjusted; percent of population; Total



Source: Bureau of Labor Statistics, CPS, and authors' calculations

Source: BLS