Measuring Slack in the Labor Market

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The U.S. Labor Market in the 21st Century
November 22, 2024
NY FED

Based on joint works with
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Questions

- How should we measure slack/tightness in the labor market?
- What are the desirable properties of a good measure of labor market slack?
- Are there specific indicators we should track besides the traditional ones (unemployment, vacancies, etc.)?
- Is the gap between u* and the unemployment rate a useful measure of labor market slack?
- How should we define and estimate u*, and what are the merits and limitations of existing measures of u*(CBO, etc.)?
- Has the Beveridge curve shifted post-pandemic and, if so, what are some possible factors?
- What is the link between labor market slack and immigration?

How should we measure slack/tightness in the labor market?

Let's first define slack

- Slack refers to underutilization of labor in the economy
- Historically defined as shortfall of employment from its full-employment level

Keynes (1936); Robinson (1943)

- With the emergence of the Phillips curve, focus shifted to unemployment

Phillips (1958); Friedman (1968)

- Various slack measures emerged to better account for labor market and price dynamics

What are the desirable properties of a good measure of slack?

Conceptually well defined

Allows for a well-defined benchmark

Directly and consistently measurable in realtime

Allows for real-time policy considerations

Has an established time series

Allows for documenting stylized facts

Can be measured at a disaggregated level

Allows for identifying trends and heterogeneity

Popular approaches

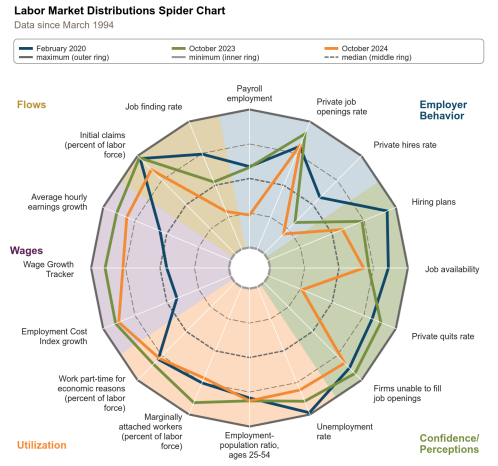
Popular approaches to measuring slack

Scoreboard approach

Common components approach

Inflation and variable du-jour approach

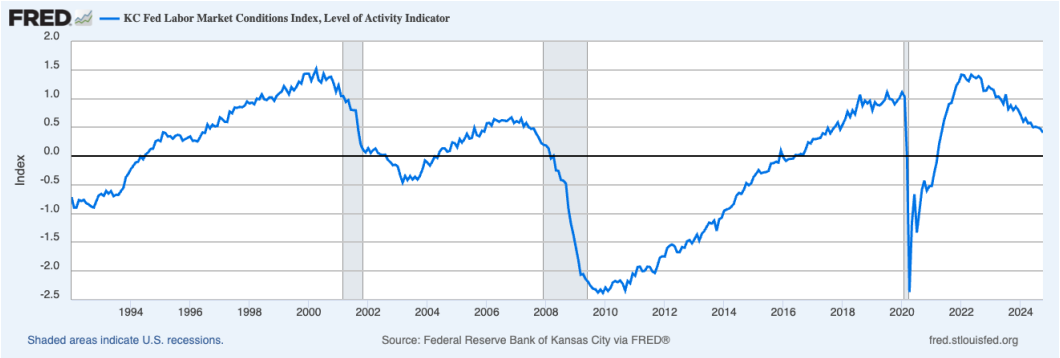
Scoreboard approach



Sources: U.S. Bureau of Labor Statistics, U.S. Department of Labor, National Federation of Independent Business, The Conference Board, and Haver Analytics

- Provides a compelling visual assessment
- Relies on comparisons across time periods
- Trends in indicators complicate interpretation
- Not clear how to weights or aggregate different indicators

Common components approach



- Based on a broad set of labor market indicators
- Allows for quantitative assessment based on long-run averages
- Does not consider inflationary pressures

Inflation and variable-du-jour approach

To *fix* the Phillips curve to account for rising inflation, missing inflation/deflation

1970s

Demographically-adjusted unemployment rate

1980s

Prime-age male unemployment rate

2010s

Short-term unemployment rate

2020s

Vacancy-to-unemployment ratio

Popular approaches to measuring slack

Scoreboard approach

Not clear how to weight different measures, aggregate the indicators and pick a benchmark

Common components approach

While useful masks economically valuable deviations

Inflation and variable-du-jour approach

Typically used to capture inflation dynamics *ex-post* and does not take a stand on a clear benchmark

Popular approaches to measuring slack

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We should neither throw away measures that do not co-move with others nor rely on them to explain peculiar features of each episode.

My favorite slack measure

My favorite slack measure is boring

It is the unemployment rate.

Conceptually well defined

Consistent with leading equilibrium models of the labor market and can be tied to maximum employment

Directly and consistently measurable in realtime

No change in definition

Has an established time series

Starts in 1948

Can be measured at a disaggregated level

Micro data allows for real-time disaggregation by demographics, geographies, industries, occupations

Commonly used unemployment benchmarks

Two broad set of unemployment benchmarks

1. Measures that are based on the structure of the labor market
2. Measures that are informed by inflationary pressures

Unemployment rate benchmarks

Structural, long-run, frictional, average, equilibrium, normal, full-employment, steady-state, efficient and natural

Rogerson (1997)

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The Fed

NAIRU, natural rate of unemployment, longer run unemployment (SEP)

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CBO

Natural Rate of Unemployment (Short-Term and Long-Term) until 2021. Recent focus on Noncyclical Rate of Unemployment (NROU)

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Rogerson (1997)

These are not portable concepts. What is useful long-run budget projections and short-run stabilization policy need not be the same.

Suggestion: use two different unemployment concepts

Trend unemployment rate, $\bar{u}$

- rich cross-sectional data help pin down $\bar{u}$
- useful in assessing *policy room*

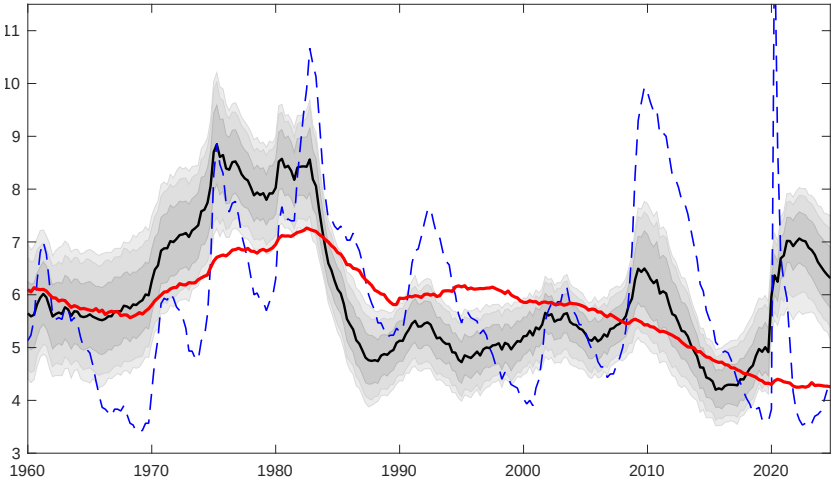
Natural rate of unemployment, u^*

- Wage and price inflation
  $\longrightarrow$ Informative about *unemployment-inflation* trade-off
- Inflation expectations
  $\longrightarrow$ Informative about *current and future* unemployment gaps

Reference: Crump, Eusepi, Giannoni, and Şahin (2019, 2022)

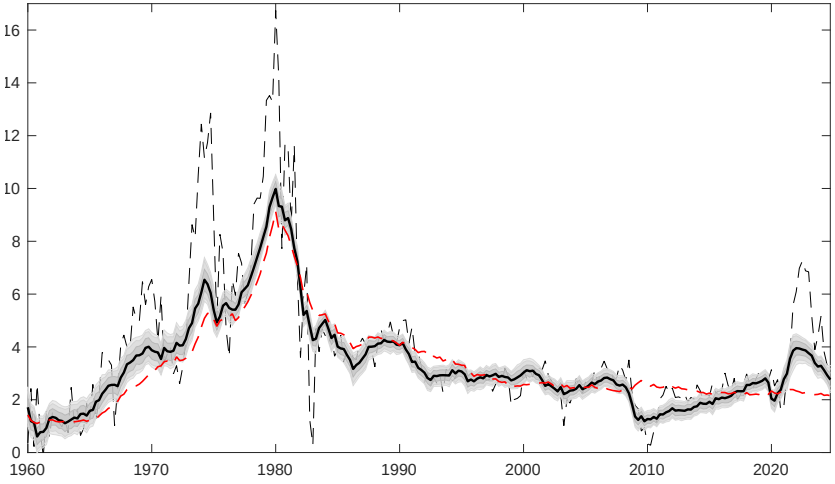
▸ NKPC

Secular trend $\bar{u}$ and natural rate u^*



Reference: Update from Crump, Eusepi, Giannoni, and Şahin (2019, 2022)

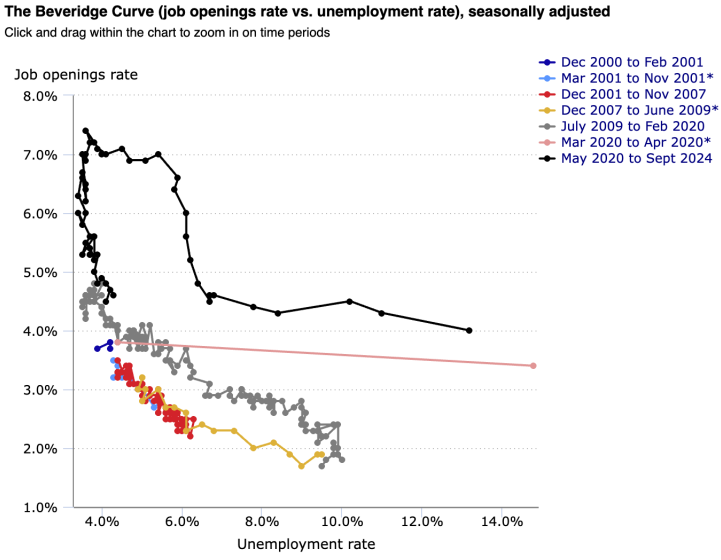
Underlying inflation



Reference: Update from Crump, Eusepi, Giannoni, and Şahin (2019, 2022)

Beveridge Curve

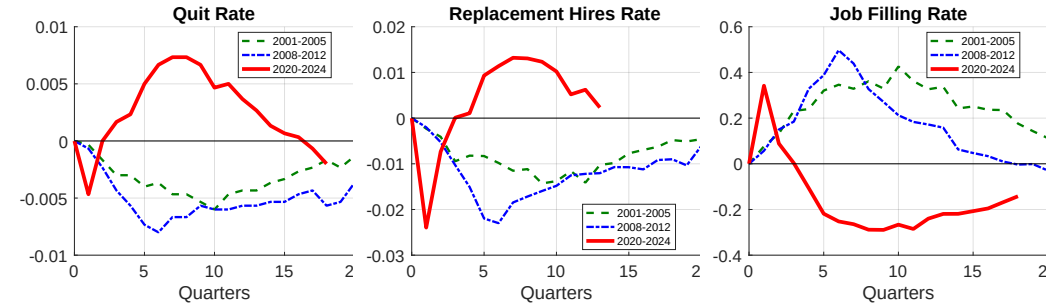
The reasons for shifts matter for policy



Notion of vacancies

- What is a vacancy?
- JOLTS: *A position that is available, could start within 30 days, and which the employer is actively trying to fill from outside the organization.*
  - It indicates an effort to recruit
  - It indicates failure to hire
- Distinction between job creation rate and hiring rate
- Quits generate vacancies if firms want to replace the worker
- Many vacancies are posted to replace workers who separate

Quits, replacement hires and job-filling rate



Reference: Bagga, Mann, Şahin, Violante (2023)

Post-pandemic labor market dynamics: A unified explanation

Rapid recovery in labor demand coupled with **shift in workers' preferences**

- Quits and job-to-job transitions ↑↑
  ⟶ Great Resignation in search for more flexible job opportunities and higher wages
- Vacancies ↑↑
  ⟶ partly due to hard-to-fill replacement vacancies
- Job-filling rate ↓↓
  ⟶ due to a shift in worker preferences to more flexible jobs
- Matching efficiency ↓↓
  ⟶ vacancy durations increase
- Wage dynamics
  ⟶ consistent with wage changes along the distribution

Reference: Bagga, Mann, Şahin, Violante (2023)

Takeaways

- Labor market slack should be based on a well-defined concept and solid measurement.
- While there are many different benchmarks, we should be careful in picking the appropriate benchmark for the policy we have in mind.
- It is tempting to rely on commonality of various indicators but deviations between indicators provide us hints about what is going on in the economy.
- The unemployment rate and two well-defined benchmarks are useful in assessing maximum employment and price stability goals.
- Relying on episode-specific indicators is not desirable for consistency and credibility.

Reference Slides

Commonly used unemployment benchmark definitions

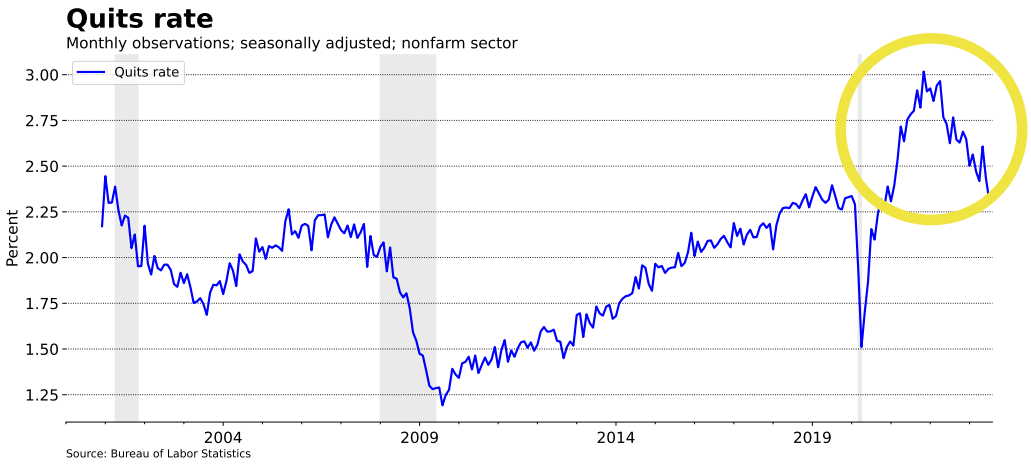
The natural rate of unemployment u^* (Friedman, 1968): the unemployment rate such that, controlling for supply shocks, inflation remains stable.

Noncyclical rate of unemployment (CBO, NROU): is the rate that results from all sources except fluctuations in aggregate demand, including normal turnover of jobs and mismatches between the skills of available workers and the skills necessary to fill vacant positions.

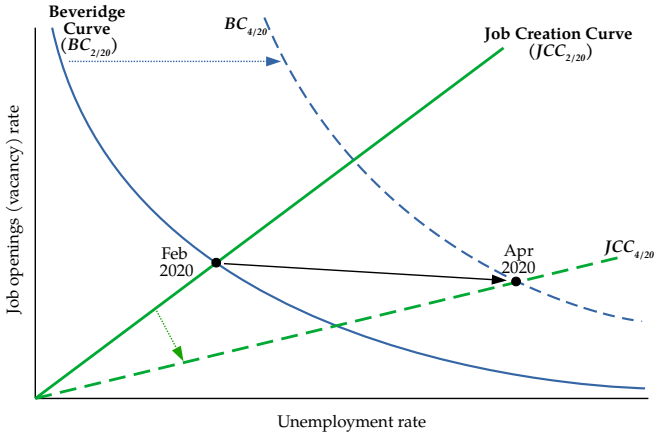
Longer-run unemployment (SEP): represents each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy.

Back

Great Resignation: Record share of employed quit



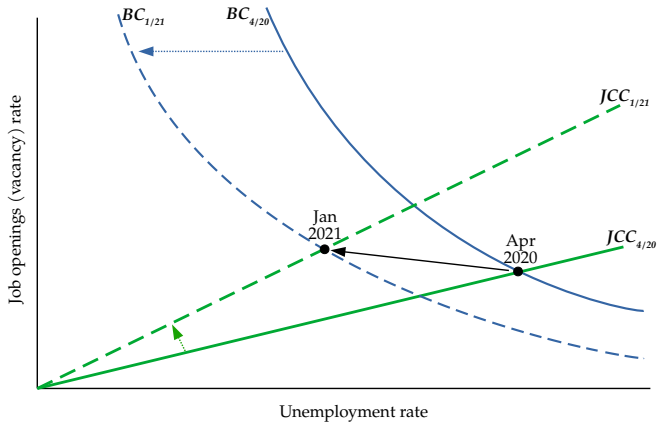
Layoffs at onset of pandemic in u-v space



Surge in temporary layoffs

Reference: Barlevy, Faberman, Hobijn, and Şahin (2023)

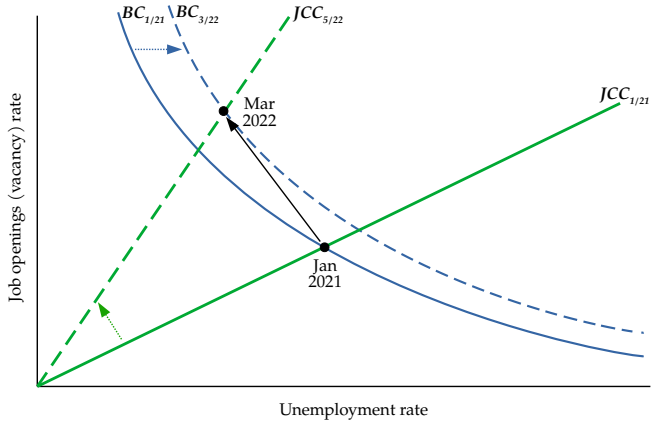
Recall hiring of those on temporary layoff



Recall hiring not subject to search frictions

Reference: Barlevy, Faberman, Hobijn, and Şahin (2023)

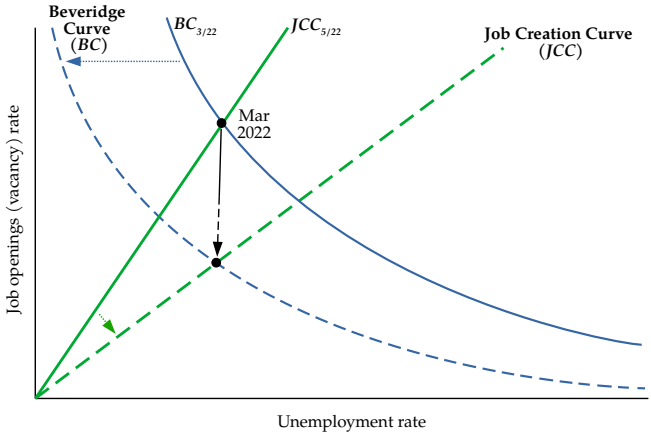
On-the-job search affects both Beveridge and JC curves



Great resignation further amplifies the rise in vacancies

Reference: Barlevy, Faberman, Hobijn, and Şahin (2023)

The free fall in the Beveridge curve



... coincides with the decline in quits...

Reference: Barlevy, Faberman, Hobijn, and Şahin (2023)

The New Keynesian Phillips curve

- Inflation is driven by transient supply factors, inflation expectations and labor market conditions.
- Define the unemployment gap as

$$gap_t = u_t - u_t^*$$

- The NK Phillips curve relates wage and price inflation to the current gap (gap_t), and the expectation about the future gaps (gap_{t+1}, gap_{t+2}, and so on).
- This gives us a useful way of decomposing inflation to ("underlying inflation") and supply shocks:

$$\pi_t = \underbrace{\pi_t^* - \kappa(\text{Current Gap}) - \kappa(\text{Expected Future Gaps})}_{\text{"Underlying Inflation"}} + \text{Supply shocks}$$

Reference: Crump, Eusepi, Giannoni and Şahin, 2019, 2022

Estimating the NKPC

- Sample: 1960Q1-2024Q3
- Price and wage inflation: core CPI; five wage series
- Inflation expectations:
  - Six-months-ahead: Livingston Survey; Survey of Professional Forecasters (SPF)
  - Five-to-ten years ahead: BCEI/BCFF and SPF
- Unemployment rate and its secular trend

Notable increase in u^* from around 5% before the pandemic to 6% at the end of 2024. Current gap is negative but future gaps also matter! Back