The Loose Concept of Labor-Market Slack

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Four things about labor-market “slack” that I will cover

A Brief History of “Slack”

- Unemployment-inflation “menu” interpretation Samuelson and Solow (1960) and Phillips (1958)

“Slack” is not a unidimensional concept

- Quantification of resource slack a dimension reduction problem

“Common” and “uncommon” movements in labor market indicators

- A host of labor-market indicators have most of their cyclical fluctuations in common

What drives current deviations from historical patterns?

- Covid recession a very peculiar mixture of shocks against the backdrop of longer-term trends in demographics and technology

A Brief History of “Slack”

Samuelson and Solow (1960) interpretation of results in Phillips (1958)

Original Phillips curve was about wage growth and unemployment

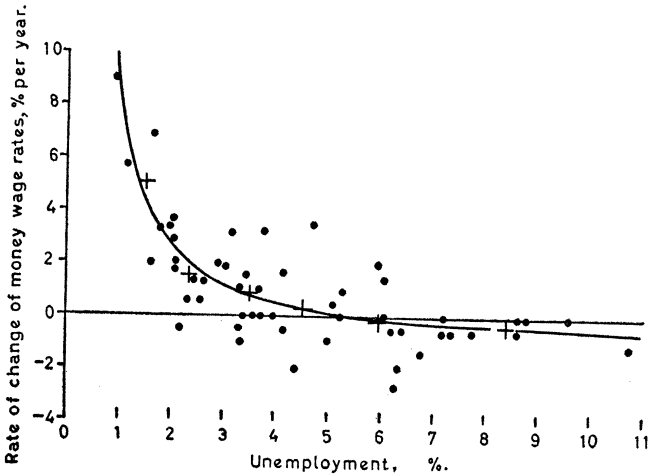

Fig.1. 1861 – 1913

Source: Phillips (1958), annual data for the United Kingdom

Phillips curve as trade off between inflation and “slack”

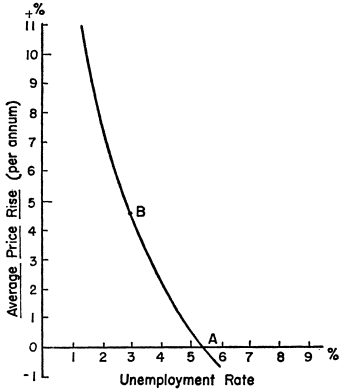

FIGURE 2

MODIFIED PHILLIPS CURVE FOR U.S.
This shows the menu of choice between different degrees of unemployment and price stability, as roughly estimated from last twenty-five years of American data.

Source: Samuelson and Solow (1960), called it a “menu” of unemployment-inflation options.

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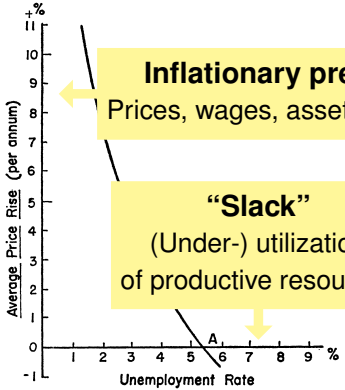

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“Slack” not a unidimensional concept

There are many aspects of inflation and “Slack”

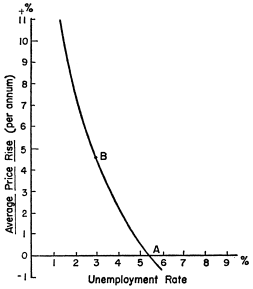
Inflationary pressures

- **Prices**
  - CPI vs PCE
  - Core vs Headline
  - Consumer, producer, and producer prices
  - Prices with different flexibility
  - . . .
- **Wages**
  - Hourly wages
  - Benefits and variable pay
  - Employer cost of compensation
  - . . .
- **Other**
  - Asset prices
  - Interest rates
  - Exchange rates
  - . . .

Slack

- **Labor**
  - Unemployment rate
  - Vacancies/job openings
  - Underutilization (U1 - U6) and participation
  - Jobs, Hours, multiple job holders, participation
  - . . .
- **Capital**
  - Capacity utilization
  - Vacancy rates
  - Electricity usage
  - . . .
- **Other**
  - Containers arriving at international ports
  - Delivery times for orders
  - Waiting times for services
  - . . .

Unidimensionality a “Divine Coincidence”



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Distortions and dimensions of slack

- **Divine Coincidence**

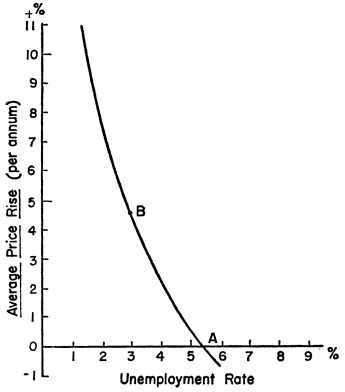
  With only one nominal rigidity, output and inflation stabilization in a simple New-Keynesion model are one and the same. Blanchard and Gali (2007)

- **Many models with multiple distortions**
  - Different degrees of price rigidity
    Aoki (2001), Nakamura and Steinsson (2010), Eusepi *et al.* (2011)
  - Distortions along the supply chain Huang and Liu (2004), Rubbo (2023)
  - Real rigidities Klenow and Willis (2016), and many others
  - Search and matching / J2J transitions
    Moscarini and Postel-Vinay (2022), Dupraz *et al.* (2019)

- **Which distortions matter depends on shocks**

  What margins are distorted depends on history of shocks and endogenous response by agents and policymakers. Ramey (2016)

Back to our ”Unidimensional straightjacket”...



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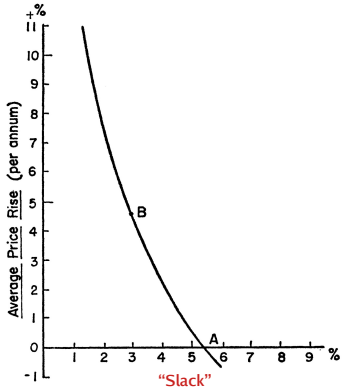
But we should really think of “slack” on the x-axis



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Part of “slack” not captured by unemployment shifts the Phillips curve

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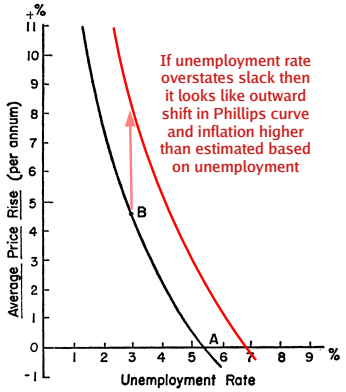

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Thus, deviations of “slack” from unemployment rate are equivalent to changes in the natural rate of unemployment

Two approaches to measure “Slack”

A unique measure of “Slack” does not exist. At the end, quantification of resource slack a dimension reduction problem. Two broad approaches have been applied:

Extract common component(s) from measures of resource (under-)utilization

Burns and Mitchell (1946), NBER Business Cycle Dating Committee, Stock and Watson (2016)

- **Pro:** Uses non- and semi-parametric methods to identify common statistical properties of a broad set of measures of resource (under-)utilization.
- **Con:** Does not directly link slack measure to inflation.

Joint analysis of slack and inflationary pressures

DSGE models, e.g. Campbell *et al.* (2023), and more reduced-form joint analyses, e.g. Crump *et al.* (2019)

- **Pro:** Joint analyses of broad set of measures of real activity and inflation.
- **Con:** Requires very specific identifying assumptions to uncover slack that matters for Phillips curve.

Flat empirical Phillips curve due to policy response: Edge and Gurkaynak (2010), McLeay and Tenreyro (2020)

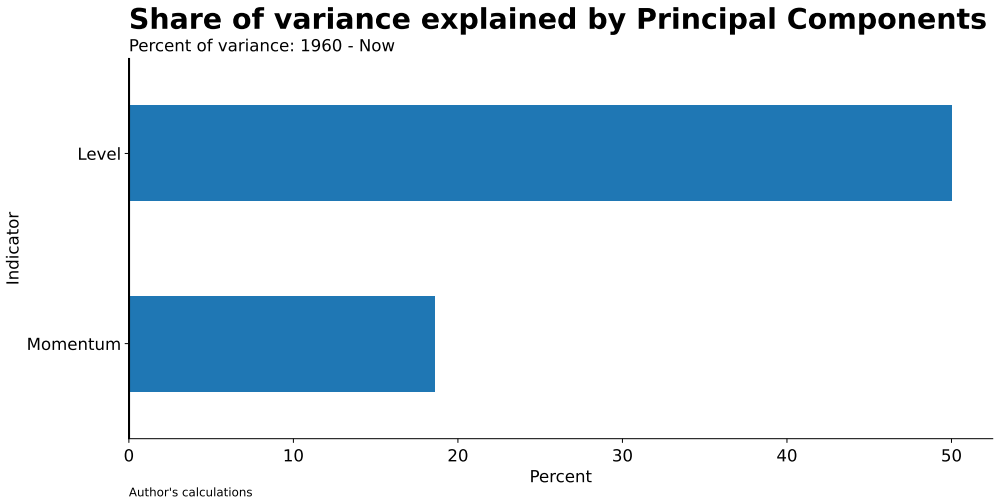
“Common” and “uncommon” movements in labor market indicators

Analysis closely related to KC Fed Labor Market Conditions Indicators and Gilchrist and Hobijn (2021)

Explore a broad menu of cyclical labor-market indicators

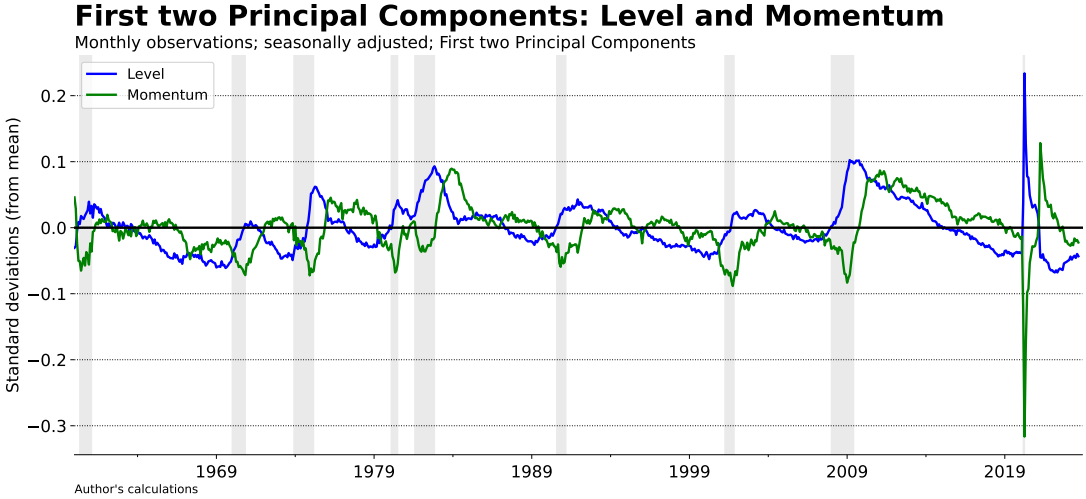
Indicator	Source	Procyclical	First month
Unemployment rate (U3)	Bureau of Labor Statistics	False	1960-01
Part-time for economic reasons	Bureau of Labor Statistics	False	1960-01
Broad unemployment rate (U6)	Bureau of Labor Statistics	False	1994-01
Median duration of unemployment	Bureau of Labor Statistics	False	1967-07
Long-term unemployed (27 weeks or more)	Bureau of Labor Statistics	False	1960-01
Unemployment Rate - 20 Yrs. and Over, Women	Bureau of Labor Statistics	False	1960-01
Unemployment Rate - Black or African American	Bureau of Labor Statistics	False	1972-01
Unemployment Rate - Hispanic or Latino	Bureau of Labor Statistics	False	1973-03
Participation Cycle	FRBC (based on Hobijn and Sahin (2022))	True	1978-01
Expect more jobs, net (CB)	Conference Board	True	1967-02
Expected job availability (U of Michigan)	University of Michigan	True	1978-01
Job Losers as a Percent of Total Unemployed	Bureau of Labor Statistics	False	1967-01
Initial claims	Department of Labor Employment and Training Administration	False	1967-01
Announced Job Cuts	Challenger, Gray, and Christmas	False	1989-03
Layoffs rate	Bureau of Labor Statistics	False	2000-12
Job flows: E to U	Bureau of Labor Statistics	False	1990-02
Job flows: U to E	Bureau of Labor Statistics	True	1990-02
Hires rate	Bureau of Labor Statistics	True	2000-12
Job openings rate	Bureau of Labor Statistics	True	2000-12
Manufacturing Employment Index (ISM)	Institute for Supply Management	True	1960-01
Services Employment Index (ISM)	Institute for Supply Management	True	1997-07
Percent of firms with positions not able to fill right now (NFIB)	National Federation of Independent Businesses	True	1973-10
Percent of firms planning to increase employment (NFIB)	National Federation of Independent Businesses	True	1973-10
Labor shortage (NFIB)	National Federation of Independent Businesses	True	1993-04
Quits rate	Bureau of Labor Statistics	True	2000-12
Job leavers as a percent of the unemployed	Bureau of Labor Statistics	True	1967-01
Capacity utilization	Federal Reserve Board of Governors	True	1967-01
Private nonfarm payroll employment (Change)	Bureau of Labor Statistics	True	1961-01
Aggregate Weekly Hours (Temporary help employment (Change)	Bureau of Labor Statistics	True	1991-01
EPOP ratio (Change)	Bureau of Labor Statistics	True	1961-01
Labor Force Participation Rate (Change)	Bureau of Labor Statistics	True	1961-01

First two Principal Components explain two-thirds of variation

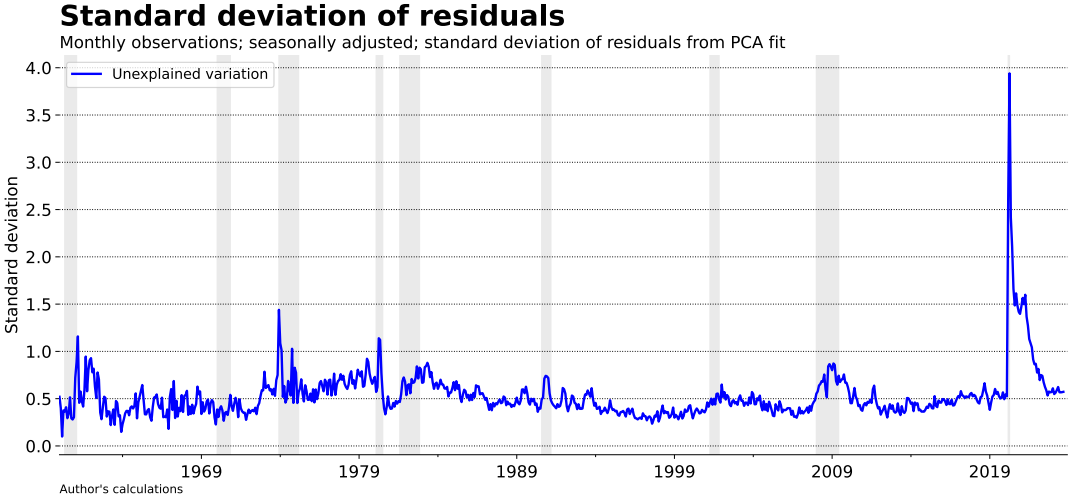


There is a very clear business cycle in the labor market. Hooray for Burns and Mitchell (1946)!

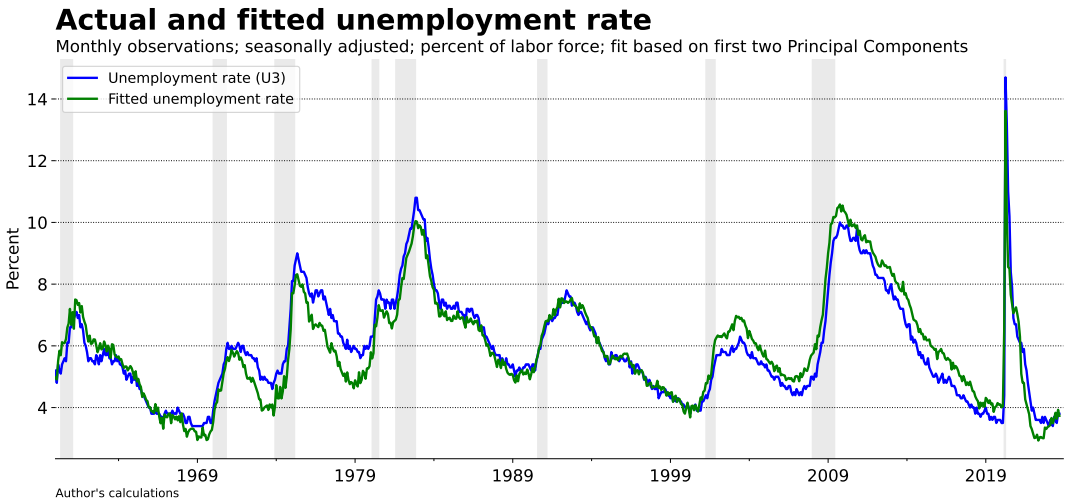
Level and Momentum of labor-market “slack”



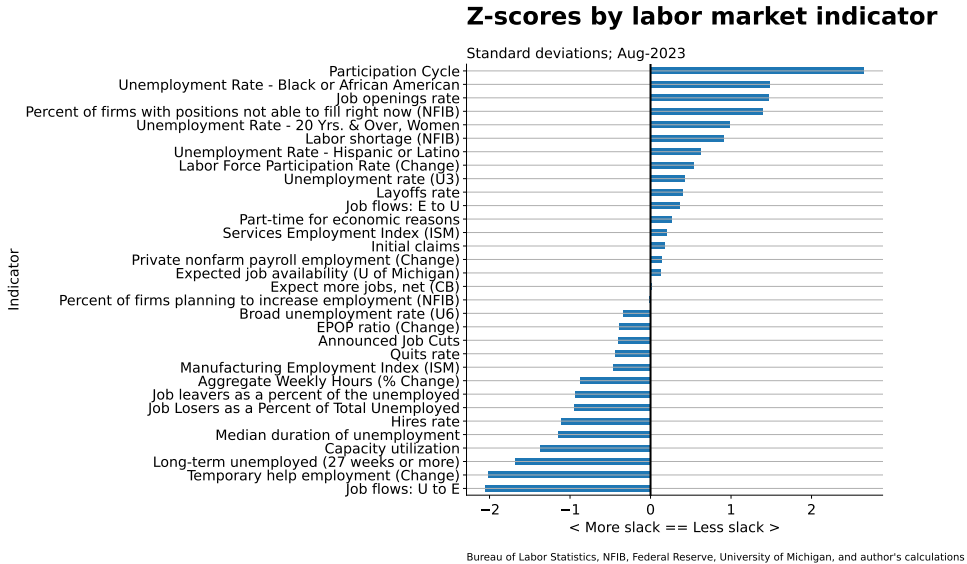
Covid caused major deviations from historical comovements



Unemployment rate in line with broad signal from menu of indicators



But participation elevated and job openings still high and hard to fill



What drives current deviations from historical patterns?

Covid a peculiar mixture of shocks against the backdrop of longer-term demographic and technological trends

1. *Mixture* of shocks: Covid was an unusual combination of shocks

- Covid recession as much a relative demand shock as an aggregate demand shock — Ferrante *et al.* (2023)

2. *Magnitude* of shocks: Covid was an unusually large shock

- Covid recession large shock to labor market with quick rebound — Hall and Kudlyak (2022), Hobijn (2022)

3. Recent developments mainly *continuation of pre-Covid trends*

- Labor supply and participation — Hobijn and Şahin (2023), Abraham and Rendell (2023)

4. Recent developments reflect *Covid-induced change in trends*

- Shift towards (partly) working from home — Bick *et al.* (2023), Hansen *et al.* (2023)

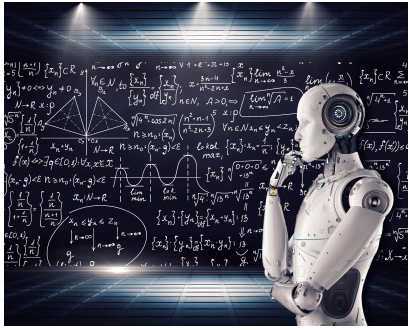
Let me end in true economist-fashion...

On the one hand...
There are more explanations than recessions

- Different shocks in different recessions trigger different margins of slack.
- Tempting to add different variables to Phillips curve specification. e.g. Ball *et al.* (2022)
- But what works now, might not work in the future. Furman and Powell III (2021)
- Non-"slack" factors explain a large part of recent inflation fluctuations.

Bernanke and Blanchard (2023)

On the other hand...
... This makes macroeconomists hard to replace with AI!



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