Muted response of inflation to business cycles since the 1990s
A well-known puzzle

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Labor markets:
measurement of slack
or
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Labor markets:
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Flatter aggregate supply
- or Phillips curve
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Muted response of inflation to business cycles since the 1990s

- Labor markets: measurement of slack or transmission to costs
- Flatter aggregate supply or Phillips curve
- Flatter aggregate demand, due to monetary policy
Stylized facts

- **VAR**
  - 8 variables, including inflation and unemployment
  - quarterly data, 4 lags

Results are nearly identical if we look at typical business-cycle shock for unemployment using Giannone et al. (2019), Angeletos et al. (2019)'s approach

Sample: pre and post 1990

What's Up with the Phillips Curve?
Stylized facts

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  - quarterly data, 4 lags

- **Compute impulse responses to a typical “unemployment shock”**
  - Cholesky structure with UR ordered first. No structural interpretation. We simply answer the forecasting question:
    
    *If unemployment is $x\%$ higher than expected, what is going to happen to inflation?*
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Facts: Unemployment and inflation

Impulse responses to an *unemployment* shock
Facts: Unemployment and inflation

Impulse responses to an unemployment shock

What's Up with the Phillips Curve?
Facts: Unemployment and inflation

Response of inflation, conditional on *same unemployment path*
A well-known puzzle

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Labor markets: measurement of slack or transmission to costs

Flatter aggregate supply or Phillips curve

Flatter aggregate demand, due to monetary policy
Facts: Unemployment and other indicators of real activity

Response of GDP and hours, conditional on same unemployment path

⇒ No change in co-movement of measures of slack and real activity
Facts: Unemployment and unit-labor costs

Response of unit-labor costs, conditional on same unemployment path

⇒ No change in co-movement between slack and cost pressures
A well-known puzzle

Muted response of inflation to business cycles since the 1990s

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- measurement of slack
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Flatter aggregate supply or Phillips curve

Flatter aggregate demand, due to monetary policy
Aggregate demand and supply

\[ \pi \]

\[ AD \]

\[ \text{Real activity} \]

⇒ identification problem

What’s Up with the Phillips Curve?
Flat Phillips curve

\[ \pi \]

Stable inflation

AS / PC

AD

Real activity
What's up with the Phillips curve?

Flat aggregate demand

\[ \pi \]

Stable inflation

Real activity

AS / PC

McLeay and Tenreyro (2019)
What's up with the Phillips curve?

Flat Phillips curve

\[
\pi
\]

Real activity

Stable inflation

AD

AS / PC

Flat PC ➞ shocks to AD affect real activity
Flat aggregate demand

What's up with the Phillips curve?

Flat AD ➞ shocks to AD do NOT affect real activity
Impulse responses to a demand shock

⇒ Unemployment still increases significantly; inflation barely reacts
⇒ The slope of the PC must have declined
A well-known puzzle

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Estimated DSGE model

• NY Fed DSGE model
  • Medium scale: Smets & Wouters + financial frictions
  • Estimated on pre- and post-1990 data, like the VAR
Estimated DSGE model

- **NY Fed DSGE model**
  - Medium scale: Smets & Wouters + financial frictions
  - Estimated on pre- and post-1990 data, like the VAR
  - Tighter restrictions than VAR
  - Reproduces the VAR responses the unemployment shock

What's Up with the Phillips Curve?
Posterior distribution of the slope of the price PC
Counterfactuals

• “Slope counterfactual” matches post-1990 IRFs
  hours inflation unit labor costs

What’s Up with the Phillips Curve?
Counterfactuals

• “Slope counterfactual” matches post-1990 IRFs

- Hours inflation unit labor costs

• “Monetary policy counterfactual” does not
Policy implications

- The economy is more Keynesian
  - Demand shocks have larger effect on real activity and smaller on inflation
  - Higher sacrifice ratio for surprise policy measures
Policy implications

- The economy is more Keynesian
  - Demand shocks have larger effect on real activity and smaller on inflation
  - Higher sacrifice ratio for *surprise* policy measures
  - But worse trade-off can be improved by changing **policy strategy** (Del Negro, Giannoni, Schorfheide, 2015)
Conclusions

• Muted response of inflation to BC primarily due to flatter PC
  • Open question: What structural forces reduced the PC slope?

• Implications for Covid-19 shock
  • To the extent that the shock is a demand shock, small (relative to the size of the unemployment shock!) response of inflation initially, but potentially persistent