How will the Pandemic and the War Shape Future Monetary Policy?

AUGUST 26, 2022

Presentation at Jackson Hole Conference

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How will the pandemic and the war in Ukraine shape future monetary policy?

Headline inflation
(Percent, year-on-year)

- Even if no structural change:
  - What lessons for future monetary policy strategy?
- Pandemic/war may induce structural change:
  - Aggregate supply shifts that significantly affect monetary policy tradeoffs?
  - Persistent effects on r*, or on transmission of policy to aggregate demand?

Sources: Haver, OECD, and IMF staff calculations.
Note: Median of year-on-year headline inflation rates across AEs and EMs.
Existing models cannot explain the inflation surge

Flat Phillips Curve does not fit well post-COVID

Core inflation: deviation (Percent, quarter-on-quarter, annual rate)

- COVID-19
- Past recessions

Sources: Gudmundsson and others (forthcoming), Haver, IMF staff estimates.

IMF forecasts underpredicted core inflation

Core inflation: 2021 forecast errors (Percent)

- 2021 Forecast Error
- Linear fit
- Linear (Pre-pandemic Phillips Curve estimate)

Sources: IMF WEO, IMF staff calculations.
Note: Size of bubble indicates purchasing-power-parity GDP. Forecast errors relative to January 2021 WEO projections.

Unemployment gap only accounts for small part of rise in US core inflation

Core inflation: out-of-sample forecasts (Percent, quarterly average, annual rate)

Source: IMF staff estimates based on model of Hooper, Mishkin, and Sufi (2020).
What factors have driven the inflation surge?

**Massive global stimulus**
Primary government expenditure
(Percent, Level change vs trend)

**Spending tilted to goods**
Core inflation
(Percent, year-on-year)

**Speed effects & non-linearities**
Gross Domestic Product
(Percent, Level change vs trend)

Sources: Gudmundsson and others (forthcoming), Haver, OECD, and IMF staff estimates.
Note: Average response using local projections estimated on advanced economies since 1990. Swath represents 90% confidence interval.

Note: Aggregated across advanced economies and emerging markets using purchasing-power-parity weights.

Sources: Haver and IMF staff estimates.
Note: Average response using local projections estimated on advanced economies since 1990. Swath represents 90% confidence interval.

Alongside a contraction in potential output and employment.
What lessons for future monetary policy strategy?

• “Running the economy hot” entails significant risks
  ► Mismeasurement of employment gap a serious risk, especially with Phillips Curve nonlinearities (Orphanides, 2002; Hooper, Mishkin, and Sufi, 2020)
  ► More likely to get overheating in key sectors
  ► Speed effects may intensify pressures

• Need to refine when to “look through” temporary supply shocks
  ► Size of shocks/initial conditions matter (e.g., react more in hot economy)
Will the pandemic induce persistent structural shifts?

- Key supply-side risk: high inflation causes de-anchoring of inflation expectations
- Estimates from options suggest elevated risk that inflation may run persistently high
- Also, household expectations have shifted
- Would worsen policy tradeoffs

Source: Gelos and others (forthcoming).
Note: The charts fit kernel densities to households’ inflation forecasts, using methodology similar to Reis (2021).
Other key risks to aggregate supply in medium-term

- Post-pandemic labor supply more uncertain (Duval and others, 2022; Faberman, Mueller, and Sahin, 2022)
- Disorderly climate transition: need to support renewables
- Disorderly global supply chain restructuring: need to support diversified trade

Need big shift toward renewables to avoid disorderly transition

How electricity shares need to change (Percent, deviation from baseline)

Greater diversification reduces GDP losses following a supply disruption

GDP losses following a supply disruption in a large supplier country (Percent)

Sources: IMF WEO (Fall 2022), Chapter 3; IMF Global Macroeconomic Model for the Energy Transition; and IMF staff estimates.

Source: IMF WEO (April 2022), Chapter 4.
Risks more acute for emerging markets (EMs)

- Tradeoffs worse: pass-through of commodity price and exchange rate changes higher
- De-anchoring of inflation expectations a bigger risk
  - Central bank independence less secure

Exchange rate shocks have a larger effect on price levels in EMs

CPI responses to an exchange rate shock (Percent)


Oil price shocks have a larger effect on price levels in EMs

Core CPI responses to an oil price shock (Percent)

Source: Baba and Lee (forthcoming). Note: Sample covers European EMs and AEs

Debt surprises in EMs boost inflation expectations, not in AEs

Impact of debt surprises on 3-year-ahead inflation expectations (Percent, quarter-on-quarter, annual rate)

Sources: Brandao-Marques and others (forthcoming), Consensus Forecasts, IMF WEO, IMF staff calculations.
## Potential shifts in r*

- Some factors point to r* staying low, but high uncertainty

<table>
<thead>
<tr>
<th>Key factors driving r*</th>
<th>Pre-pandemic trends (Impact on r*)</th>
<th>Post-COVID outlook</th>
<th>Likely net effect on r*, relative to trend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inequality</td>
<td>Increasing inequality (-)</td>
<td>Despite pandemic support programs, wealth inequality higher</td>
<td>Negative</td>
</tr>
<tr>
<td>Demographics</td>
<td>Aging societies (-)</td>
<td>No trend change</td>
<td>No effect</td>
</tr>
<tr>
<td>Labor supply</td>
<td>Declining labor force (-)</td>
<td>Adverse effect on level of labor supply but unclear on growth</td>
<td>Unclear</td>
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<tr>
<td>Productivity</td>
<td>Declining TFP growth (-)</td>
<td>Pandemic-driven technological advances, but also increase in monopoly power</td>
<td>Unclear</td>
</tr>
<tr>
<td>Savings and safe assets demand</td>
<td>Higher savings rates and preference shift to safe assets (-)</td>
<td>Higher uncertainty may increase precautionary savings and demand for safe assets</td>
<td>Negative</td>
</tr>
<tr>
<td>Debt</td>
<td>Rise in AE public debt (+)</td>
<td>Pandemic-induced increase in debt</td>
<td>Positive</td>
</tr>
<tr>
<td>Climate transition</td>
<td>High investment needs have been mostly postponed (.)</td>
<td>Increased urgency (unrelated to COVID-19)</td>
<td>Positive</td>
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</tbody>
</table>
Summary: Lessons, future risks, and what central banks must do today

• **Lessons:** Pandemic and war raise new challenges for central banks
  ► Risk management must take more account of upside inflation risks
  ► Should refine strategies of “running the economy hot” and “looking through” temporary supply shocks
  ► Need better models of aggregate supply

• **Regime shifts:** Relative to pre-pandemic, monetary policy tradeoffs could get worse given risks of inflation expectations de-anchoring, and supply shocks playing a bigger role

• **Policies:** Central banks must act decisively to ensure inflation expectations are anchored

• Other policies:
  ► Near-term fiscal support should be targeted and not provide macro-stimulus
  ► Urgently push ahead on climate agenda and support growth in diversified global trade