Low inflation in advanced economies: causes and challenges for central banks

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Presentation at Curtin Corner
March, 9, 2018

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Inflation in Advanced Economies

Long term perspective
Australia, US, Japan and the euro area

Inflation in percent, annual rate, CPI
Inflation in Advanced Economies

Recent years

Inflation in percent, annual rate, CPI
Inflation track record in recent years: below target

- In most AE central banks inflation target is 2% or so

<table>
<thead>
<tr>
<th>Country/Zone</th>
<th>Inflation target</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>PCE 2%</td>
</tr>
<tr>
<td>Euro area</td>
<td>HICP « below but close to 2% »</td>
</tr>
<tr>
<td>Australia</td>
<td>CPI 2 to 3 % range</td>
</tr>
<tr>
<td>Japan</td>
<td>CPI 2%</td>
</tr>
</tbody>
</table>
Inflation track record in recent years: below target

- Why the ‘universal’ 2% target?
  2 percent as “Price stability”?

- Measurement errors in the CPI
  Actual inflation may be overestimated
  Concern in the 1990s in the US – Boskin report

- Downward wage rigidity:
  inflation “greases the wheel” of labor market

- The interest rate Zero Lower Bound (more on it later)
Why was inflation so low

- The great recession aka Global Financial Crisis, and euro area sovereign crisis
- Oil prices
- Exchange rate (not a ‘global’ explanation however), globalisation
- “De-anchoring” of expectations, deflation dynamics
The GFC and recovery

OECD GDP, yearly growth rate, pct
The GFC and recovery

US GDP, year-on-year growth rate, pct
The GFC and recovery: the output gap

Source: OECD, data for 2018 and 2019 are forecast.
Role of Energy prices: Oil prices

Brent oil price, USD per barrel
Role of Energy prices

But ‘core’ inflation was also low
Exchange rates

Huge role in some circumstances, especially for small open economies
Cannot be a global explanation...

US and euro area nominal effective exchange rate
Inflation Expectations: Risks of “de-anchoring”

Example: euro area. Long run Inflation expectations from surveys
The response of central banks

- Conventional response: lower policy interest rate
- Until the **zero lower bound** is reached
- Except for “lucky countries”!
The response of central banks

- Non Conventional response (1):
- Asset purchases “Quantitative easing”
- Credit easing
The response of central banks

• Non Conventional policy (2):
  • “Forward Guidance”

Example: euro area OIS curve
Akin to market forecast of policy rate

Sources: Bloomberg and ECB calculations.
Note: Evolution of the overnight index swap forward curve from pre-negative interest rate policy (black dotted lines) to post-negative interest rate policy (red dotted lines) period.
The response of central banks

Non Conventional response (3): Negative interest rates.
Example: euro area
Also in Japan, Denmark, Switzerland, Sweden
Challenge #1: Has the Phillips curve disappeared?

The Phillips curve: a standard tool for analyzing inflation dynamics

Many versions: wage/price, forward-looking/backward-looking, « accelerationist »...

A typical illustrative example:

$$\pi_t = c + a\pi_{t-1} + bY_t + d\Delta P^{imp} + e_t$$

where
- $\pi_t$ is inflation
- $Y_t$ the output gap (or unemployment rate)
- $\Delta P^{imp}$ import prices
- $e_t$ shock

Parameter $b$ is the slope of the Phillips curve
Crucial for transmission of monetary policy
Challenge: Has the Phillips curve disappeared?

Lessons from a study of the euro area Phillips curve  Berson et al, BDF, 2018
Challenge: Has the Phillips curve disappeared?

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C4 Contributions to euro area Inflation
(deviation from the sample average, in percentage points)

C5 Inflation expectations in the euro area
(annual average - %)

Source: authors’ calculations.
Note: Average HICP inflation of the sample: 1.9%.

Sources: ECB (SPF); Bloomberg (ILS).
Note: The ILS are expressed in quarterly terms by forming calendar averages.
Challenge: Has the Phillips curve disappeared?

Bottom line: some flattening but PC is still in the background
Central Bank Forecasts point to gradual convergence to target
Challenge #2: equilibrium real interest rates are lower

Source: RBA Bulletin sept 2017

Source: Fries et al BdF WP 2017
A long term identity:

\[ i = r^* + \pi \]

Where

- \( i \) steady-state nominal interest rate
- \( r^* \) real equilibrium interest rate
- \( \pi \) average inflation, hopefully equal to the central bank target

In a recession or downturn or low inflation event:
\[ \rightarrow \text{central banks want to decrease } i_t \text{ by a large amount} \]

This is challenging if \( r^* \) is low
Challenge: equilibrium real interest rates are lower

- Causes of decline in $r^*$: ‘secular stagnation’; taste for safe assets

- Risk: more episodes of Zero Lower Bound in the future

- What are the options if this materializes?
  - Negative rates (extreme version: banning cash)
  - More frequent use of asset purchases
  - Reconsider inflation target