Is the Analytical Framework for Inflation Still Valid?

- The New Keynesian view on inflation
  \[ \pi = \alpha \cdot \text{slack} + \beta \cdot \text{expectations} + \gamma \cdot \text{shocks (fx, oil, policy)} \]

- Fact #1: since the 1980s, $\alpha$ has declined, $\beta$ has increased. Not a recent event.

- Fact #2: inflation forecasts are very noisy: standard dev of residual $\approx 1\% \Rightarrow$ large vs inflation at 2\% (Blanchard (2016)). Shocks dominate inflation outcome.

  \[ \Rightarrow \text{Is #1 + #2 why naïve or IMA(1,1) models dominate inflation forecasts outside recessions (Stock and Watson (2010))?} \]

- Questions:
  - Is inflation weaker due to globalization or online retailing?
  - Is there still a Phillips Curve?
  - Have expectations drifted lower?
Is Inflation Weaker due to Globalization or Online Retailing?

1. Decomposition of Shortfall in US Inflation

   - US core inflation shortfall 2012-17 vs 2003-07 mostly in services (healthcare, education), not goods.
   - Disinflationary impact of Emerging Markets on import prices peaked in late 1990s. Possible effects on wages.
   - Online retail share in US still small (10 percent) but increasing. Inflation rates are similar.
   - Cavallo (2017): online and offline prices identical 72 percent of time. If different, only about 4% lower. Similar price changes in size and frequency.
   - Methodological changes have been scarce in last decade – but could add to downside risk.

2. US CPI vs Online Price Index

   - Exhibit 1: The Recent Inflation Shortfall Is Concentrated in Services Categories, Especially Health Care

   - Figure 2: United States

Is there still a Phillips Curve?

1. US City Level Phillips Curve since 2007

- It exists, and looks upward sloping.
  - US MSAs with lower unemployment tend to have higher inflation.
  - Euro area regions with lower unemployment tend to have higher inflation.

- In (w,u) space, similar slope but converges to lower wage growth - due to weaker productivity/weaker labour?

- A question is the markup – are high profits, or lower interest rates, allowing firms to compete for market share?

Sources: Investment Strategy Group, GS Research.
Have Inflation Expectations Drifted Lower?

1. Euro Area: Inflation Swaps vs SPF

- It depends.
- Inflation term premium has shifted from positive to negative.
- Inflation expectations may have become more adaptive (Lyziak and Paloviita (2016)).
  - Large and persistent shocks (USD and oil); ZLB effect.
  - Asymmetry to negative news

Sources: Investment Strategy Group.
Have Inflation Expectations Drifted Lower? (II)

1. Euro Area Probability Distribution of Inflation

- Compression of inflation distribution in the 0-2 range. Asymmetric versus 2%.

2. Euro Area Term Structure of Inflation Expectations

- Term structure of inflation expectations lower. Patience vs credibility vs risk premium.

Sources: Investment Strategy Group.
Some Tentative Conclusions

- No obvious direct evidence of structural change to dynamics of inflation
  - Inflation driven mostly by slack when it declines
  - Inflation driven mostly by expectations and shocks when it increases

- Phillips Curve still alive, maybe flatter and lower. Markups a question mark

- Inflation risk premium negative

- Inflation expectations more adaptive

- Can we tell why inflation is low? Diagnosis matters for policy.
  - Transitory but persistent shocks => risk they become permanent if expectations adaptive. Keep on easing to reduce slack.
  - Permanent shocks – to wage setting, markups, credibility of central bank commitment to targets. Need policy shifts to re-anchor expectations.

- Final thought. Expectations more forward looking since the 1980s => non-accelerationist Phillips Curve => U vs $\pi$, not U vs $\Delta\pi$. Boom needn’t be followed by a bust. Low cost of overshooting.

Sources: Investment Strategy Group.