Discussion of

Adaptive Learning and Survey Expectations of Inflation

by Sergey Slobodyan and Raf Wouters

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KC Fed 2018
TWO LITERATURES BEHIND THIS PAPER

• New Keynesian DSGE models (*non-dilettantes*):
  o Workhorse models for monetary policy analysis and forecasting
TWO LITERATURES BEHIND THIS PAPER

- New Keynesian DSGE models (*non-dilettantes*):
- Expectations formation process (*some dilettantes*):
TWO LITERATURES BEHIND THIS PAPER

- New Keynesian DSGE models (*non-dilettantes*):
- Expectations formation process (*some dilettantes*):
    - Document economically significant deviations from FIRE
    - Expectations affect economic decisions.
TWO LITERATURES BEHIND THIS PAPER

- New Keynesian DSGE models (non-dilettantes)
- Expectations formation process (some dilettantes)
- Are we due for the Great Synthesis?
  - Take small or medium-scale NK DSGE models and:
    - Use survey measures of inflation expectations from professional forecasters (SPF) as observable and/or
    - Introduce learning by agents.
  - What we learn:
    - Expectations in standard DSGE models ≠ SPF forecasts.
    - Learning helps match survey expectations.
    - Doing both can significantly affect other estimates of model.
THREE SMALL SUGGESTIONS FOR FUTURE WORK

It seems odd to restrict oneself to 1-quarter ahead forecasts of inflation from SPF. Instead, one could use…

- Forecasts of other variables (the SPF provides forecasts for all of the observable variables in Smets-Wouters. This could further help discipline models and provide identification.

- Entire term structure of forecasts (forecasts range from nowcasts to long-run horizons).

- Measures of forecast uncertainty, to further identify estimated DSGE models with stochastic volatility.
TWO BIGGER SUGGESTIONS FOR FUTURE WORK

- The Great Synthesis should completely* stop using forecasts of professional forecasters.

- The Great Synthesis should completely abandon models of learning.

* subject to caveats.
**POINT 1: WHY WE SHOULD IGNORE THE SPF**

1. Professional forecasters are largely irrelevant as economic agents.
   a. Even in “kitchen sink” models, there are no professional forecasters.
   b. There is little evidence so far that their forecasts “guide” those of other economic agents.
   c. If we believe they do serve as a source of information for other more important agents, we need to formalize this information diffusion in our DSGE models (lest we be dilettantes).
POINT 1: WHY WE SHOULD IGNORE THE SPF

1. Professional forecasters are largely irrelevant as economic agents.
2. Professional forecasts are NOT a good proxy for forecasts or beliefs of economic agents in DSGE models.
   a. Evidence from households and firms in New Zealand:

<table>
<thead>
<tr>
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<th>Central Bank</th>
<th>Professional Forecasters</th>
<th>Households</th>
<th>Firms</th>
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</thead>
<tbody>
<tr>
<td>2013Q4</td>
<td>1.3</td>
<td>2.0</td>
<td>3.6*</td>
<td>5.3</td>
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<tr>
<td>2014Q4</td>
<td>1.1</td>
<td>1.7</td>
<td>3.1*</td>
<td>4.5</td>
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<tr>
<td>2016Q2</td>
<td>1.6</td>
<td>1.3</td>
<td>2.3*</td>
<td>2.8</td>
</tr>
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</table>

Source: Coibion, Gorodnichenko and Kumar (2018). * indicates only households who can define inflation are included.
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<tbody>
<tr>
<td>2018Q1-Q2</td>
<td>Todd/Ed?</td>
<td>2.3</td>
<td>3.3</td>
<td>4.0</td>
</tr>
<tr>
<td>Std.</td>
<td>(0.4)</td>
<td>(3.0)</td>
<td>(4.1)</td>
<td></td>
</tr>
</tbody>
</table>

Source: New survey of firms in the U.S.

Note: Almost 50% of nationally representative sample of firms respond “Don’t know” when asked about inflation over next 12 months.
POINT 1: WHY WE SHOULD IGNORE THE SPF

1. Professional forecasters are largely irrelevant as economic agents.
2. Professional forecasts are NOT a good proxy for forecasts or beliefs of economic agents in DSGE models.
   a. Evidence from households and firms in New Zealand.
   b. Evidence from households and firms in U.S.
   c. Differences in hh’s and SPF arise specifically after oil price shocks

Should we really rely on SPF to identify transitory fluctuations in price shocks?
**POINT 1: WHY WE SHOULD IGNORE THE SPF**

1. Professional forecasters are largely irrelevant as economic agents.
2. Professional forecasts are NOT a good proxy for forecasts or beliefs of economic agents in DSGE models.
3. Professional forecasts might be a good proxy for beliefs of financial market participants…

![](image)

but financial market participants are not modelled in Smets-Wouters either…
POINT 1: WHY WE SHOULD IGNORE THE SPF

Summary: Unless we have an explicit mechanism linking professional forecasts to economic dynamics or the expectations of other agents, let’s focus on the expectations of agents who appear in our models, as *the beliefs of different agents are not interchangeable.*
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

1- Disagreement about recent inflation:

One of the strongest predictors of what a household or firm expects for future inflation is what they believe inflation has recently been.

\[ F_t^i \pi_{t+12,t} = 0.52 + 0.94F_t^i \pi_{t,t-12} + \varepsilon_t^i \]

\( (0.06) \quad (0.01) \quad R^2 = 0.69 \)
**POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING**

1- Disagreement about recent inflation:

One of the strongest predictors of what a household or firm expects for future inflation is what they believe inflation has recently *been*.

Learning models completely miss this inattention to recent inflation.
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

2- Agents are uninformed about more than just inflation:

Source: New survey of firms.
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

3- But they are not uninformed about everything.

Source: Coibion, Gorodnichenko and Kumar (forthcoming)
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

4- Inattention to inflation varies across countries:

Households in Argentina are more informed about inflation than households in the U.S. (cavallo)

Firms in Iran (Afrouzi 2019), Ukraine (CG 2016), Israel (Goldstein-Zilberfarb 2017) and Uruguay (Frische and Lluberas 2018) are more informed about inflation than firms in New Zealand or the U.S.
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

5- Agents respond to strongly to new information (and like Bayesians).

Panel A: mean expected inflation

Source: Ongoing work.
POINT 2: WHY WE SHOULD NOT FOCUS ON LEARNING

All these facts point toward models of expectations formation that emphasize different and imperfect information sets that are chosen endogenously (i.e. rational inattention models) by agents.
CONCLUSION

The Great Synthesis is a very promising endeavor. Papers like this one can help bridge the very large existing gap between the NK DSGE literature and the expectations formation literature.

Doing so successfully however will likely require going beyond surveys of professional forecasters and learning models.