Ten thoughts on forecasting for policy

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Workshop on Forecasting Issues in Developing Economies

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1. Ridiculously simple forecasts (RSFs) are hard to beat beyond very short term

- Exchange rates as a random walk
- GDP growth is about iid
- Interest rates as a random walk
- Stock prices as unforecastable (in conditional mean)
A simple inflation forecast

Nowcast

Steady State
Caveats

Not saying that other information (e.g. slack) is entirely useless.
Caveats

- Not saying that other information (e.g. slack) is entirely useless.

- Not a law of physics, but an equilibrium outcome with an effective central bank.
1. Ridiculously simple forecasts (RSFs) are hard to beat beyond very short term

- Disappointing for forecasting
- Reality that has powerful implications
2. Survey/Institutional forecasts do well

- But still only about as well as RSFs
- Strength is especially in nowcasting
- Might be partly automated, but judgmental element is key
Four-quarter-ahead PCE inflation forecast RMSE

<table>
<thead>
<tr>
<th>Source</th>
<th>RMSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark</td>
<td>1.90</td>
</tr>
<tr>
<td>Greenbook</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Source: Faust and Wright (2013)
Four-quarter-ahead PCE inflation forecast
RMSE: Combination Forecast
3. Out of sample forecasts give limited protection against overfitting

- Out-of-sample methodology would be magic bullet if you did it just once
- But researchers data mine, and so it is a limited protection against overfitting
4. Some apparent *ex-post* forecast inefficiency is not worrisome

- Forecasters are bound to be slow in learning about trend breaks

- Data mining problem

- At the same time shouldn’t be a limitless license for inefficiency
5. Great Moderation is alive and well

- Most effort goes into point forecasts
- Yet density forecasts are important
- Can add on historical standard deviations of forecast errors
- An alternative is to fit GARCH model to forecast errors
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Uncertainty around 4-Quarter SPF Real Growth Forecast

![Graph showing uncertainty around 4-Quarter SPF Real Growth Forecast. The graph compares the All Great Moderation and GARCH Model scenarios. The Y-axis represents annualized growth, ranging from 0 to 0.2, and the X-axis represents time in years. The graph shows two curves, one for each scenario, peaking around the second year.](image-url)
6. Seasonal Adjustment is important
Nonfarm Payrolls: SA
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Nonfarm Payrolls: NSA
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GDP: SA
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GDP: SA

- US uses X-13 which is a moving average
- EU estimates a parametric model (TRAMO/SEATS)
US Employment Data: EU-SA - USA-SA
7. “Market” forecasts are dodgy

- Inflation breakevens were hoped to be a source of information on inflation expectations

- Too volatile and too correlated with oil prices to be credible

- Doesn’t mean that they have no information content

- Danger of selective reference of market forecasts
8. Interest Rate forecasts
SPF Ten year yield forecasts
## 8. Interest Rate forecasts

<table>
<thead>
<tr>
<th>Actual</th>
<th>Growth</th>
<th>3 month yield</th>
<th>10 year yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955-2005</td>
<td>3.4</td>
<td>1.8</td>
<td>3.2</td>
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<tr>
<td>10-year CBO forecast</td>
<td></td>
<td></td>
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<tr>
<td>Feb 2014</td>
<td>2.0</td>
<td>1.5</td>
<td>2.7</td>
</tr>
<tr>
<td>Jan 2017</td>
<td>1.9</td>
<td>0.8</td>
<td>1.6</td>
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</tbody>
</table>
Odd long range CBO ten-year yield forecast
Implies unsustainable debt/GDP
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Implies unsustainable debt/GDP

Reasoning is that the debt/GDP ratio makes borrowing costs spiral up

“There is nothing either good or bad, but thinking makes it so.” (Hamlet)
Implies unsustainable debt/GDP

Reasoning is that the debt/GDP ratio makes borrowing costs spiral up

We’re doomed because we’re doomed

“There is nothing either good or bad, but thinking makes it so.” (Hamlet)
9. A flat to inverted yield curve is quite likely within 2 years

- Plausible Fed tightening and low/negative term premium
- Conundrum is the new normal
  - Hanson, Lucca and Wright (2017)
- Inverted yield curves have an undeniable ability to predict recessions
10. Forecasters need to avoid overconfidence

Unfortunately economists don’t know answers to questions people want to know answers to.

Our ability to forecast is very limited.

Economists do themselves damage by pretending otherwise.