Discussion of "Real time underlying inflation gauges for monetary policy makers" *by* Marlene Amstad and Simon M. Potter

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What the paper does

Step 1: Fit dynamic factor model to 211 US time series from 1993m1

$$x_{it} = \sum_{j=1}^{q} b_{ij}(L) u_{jt} + \xi_{it}$$

Allow limited dynamic correlation in idiosyncratic component (FHLR)

Step 2: Regress inflation (PCE or CPI) on the identified dynamic factors

$$\pi_t^* = \bar{\pi} + \sum_{k=1}^{q} \sum_{l=1}^{p} \beta_{kl} F_{kt-l} + v_t$$

Step 3: Underlying inflation gauge (**UIG**) identified from fitted values of regression

$$\pi_t^* = \bar{\pi} + \sum_{k=1}^{q} \sum_{l=1}^{p} \hat{\beta}_{kl} F_{kt-l}$$

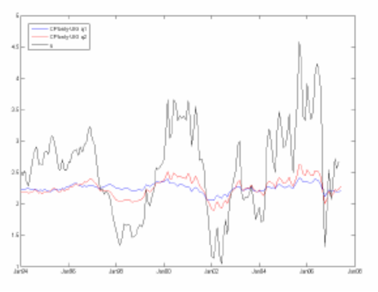
At some stage seasonal adjustment filters are applied (not clear where) so can use unadjusted data at Step 1

Framework is identical to Amstad and Fischer (2004 CEPR wp), so this is an application of their methodology to US data

Results

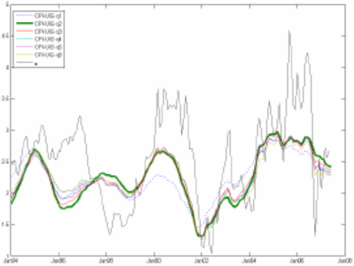
The authors find a small number of dynamic factors explain a significant proportion of variation in the large panel. Same as Giannone, Reichlin and Sala.

When only price data is used:



UIG is almost flat

When other data (labor market, money, producer surveys, financial) is added:



This is not surprising as it is impossible to identify shocks (demand, supply etc) from only price data

Suggests **factors other than prices important in forecasting inflation**

Comments

Nice to see transatlantic cooperation between NYFed and SNB

Removes some of “home bias” in consumption of factor models, whereby US does Stock-Watson and Europe does FHLR

Welcome addition to literature

Sometime claims overstated

> *This paper complements the existing literature by developing a measure of underlying inflation ... that is not sensitive to data revisions*

But this is only by excluding data that tends to be subject to revisions

Is the effort worth it?

Setting up and maintaining a daily UIG is expensive

What is benefit vis-à-vis an indicator updated less frequently? What is benefit vis-à-vis an indicator based on a smaller dataset?

Paper attempts to address this by running a horse race of UIG against various alternatives in terms of out-of-sample forecasting performance:

AR(6), AR(3), random walk
inflation excluding food and energy
trimmed mean inflation
trimmed median inflation

These alternative **"horses" are based only on price data**, so not surprising that they struggle against **UIG derived from wider panel**. UIG derived only from price data would probably struggle too. Need a better benchmark

How useful is UIG for forecasting?

My friends in central banks tell me that most important thing in inflation forecasting is **judgement**

What would the UIG forecaster do with the following special factors?

forthcoming discrete tax hikes
outbreak of foot and mouth disease
change in computation of statistics (baskets, base years etc)

Difficult to incorporate these into Amstad-Potter

Or any other unstructured dynamic factor framework for that matter

How useful is UIG for practical policy purposes?

This paper shows again a tension we are all familiar with:

Dynamic factor models use a small number of (unidentified) stochastic processes to explain variation in a large number of variables

Dynamic stochastic general equilibrium models use a large number of (identified) stochastic processes to explain variation in a small number of variables

Until we resolve this tension we will have problems, with time-series econometricians liking dynamic factor models and macro theorists preferring DSGE models. Policymakers?

Tension apparent in this paper:

> *We take the stand of a policy-oriented concept, and define underlying inflation as "an inflation measure free of aspects which* **should not** *affect the policymaker's decision"*

Difficult for me (and presumably rest of DSGE crowd) to understand how we can arrive at such a statement from an unidentified statistical exercise. How can we say what policymaker should or should not do if (i) policymaker's objective is undefined and (ii) there is no structural model of the economy?

Need to bridge the gap between DSGE and dynamic factor models. Recently **Boivin-Giannoni** construct factors that embody restrictions consistent with laws of motion of unobservables in a DSGE model. In my opinion it is most exciting current research in this area.