Stock Market Liquidity and Bond Risk Premia
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Discussion by W. Lemke (ECB)

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The views in this presentation are those of the presenter and do not necessarily represent the views of the ECB or the Eurosystem

Scope of the paper

- Re-visit forecastability of excess returns on US government bonds
- Add measure of stock market illiquidity to established predictors (Cochrane-Piazzesi factor, Ludvigson-NG macro factors)
- Small - but statistically and economically significant - increase in forecasting quality: R^2 rises by 3-6 ppt across maturities
- Increase in stock market illiquidity by one standard deviation leads to increase in expected excess return of ca 45 bps
- Results withstand a host of robustness checks
- Tentative economic interpretation

Summary assessment

- Classic topic
- Clear exposition, transparent on techniques, good to read
- New - incremental - results to established literature
- **Two main points of my discussion:**
  - Can get clearer interpretation of results?
  - Forecasting "out of paper": looking to Europe and into the crisis

Understanding the results

- **Flight to liquidity?**
  - Stock market liquidity drying up in month t …
  - … investors shifting to liquid government debt market,
  - … as bonds relatively more attractive, investors require less compensation to hold these assets.
  - So: illiquidity up $\Rightarrow$ bond risk premium down?

- **Paper: No. The other way round.**

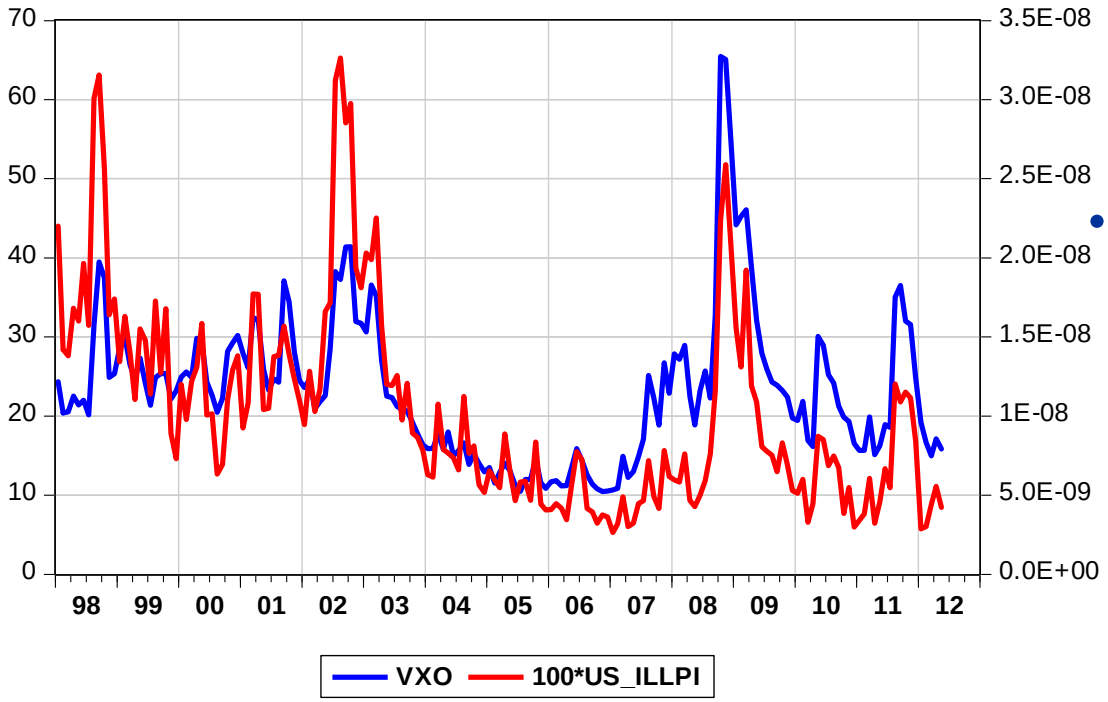
- **Other effects at work?**

Other effects at work?

- **Stock market illiquidity proxies broader market illiquidity**
  - … interacting with funding illiquidity (Brunnermeier and Pedersen, RFS, 2008)
  - … and funding liquidity predicting bond excess returns, e.g. one-stdev shock decreasing expected 1-year excess returns by 85 bps (Fontaine and Garcia, RFS, 2012)

- **Stock market illiquidity highly correlated with volatility**
  - … the latter proxying for risk aversion
  - …. if risk aversion up, risk compensation on all assets up
  - … i.e. also bond risk premia rising

Correlation of stock market illiquidity and volatility



- Strong correlation (0.74) between volatility and illiquidity level (see chart)
- By the way: Found higher explanatory power of lagged y-on-y log change in illiquidity for volatility than in paper:
  - Sample 1986 - 2007: adj. $R^2 = 0.22$ vs $R^2 < 0.10$ in paper
  - Sample 1986 - April 2012 adj. $R^2 = 0.29$

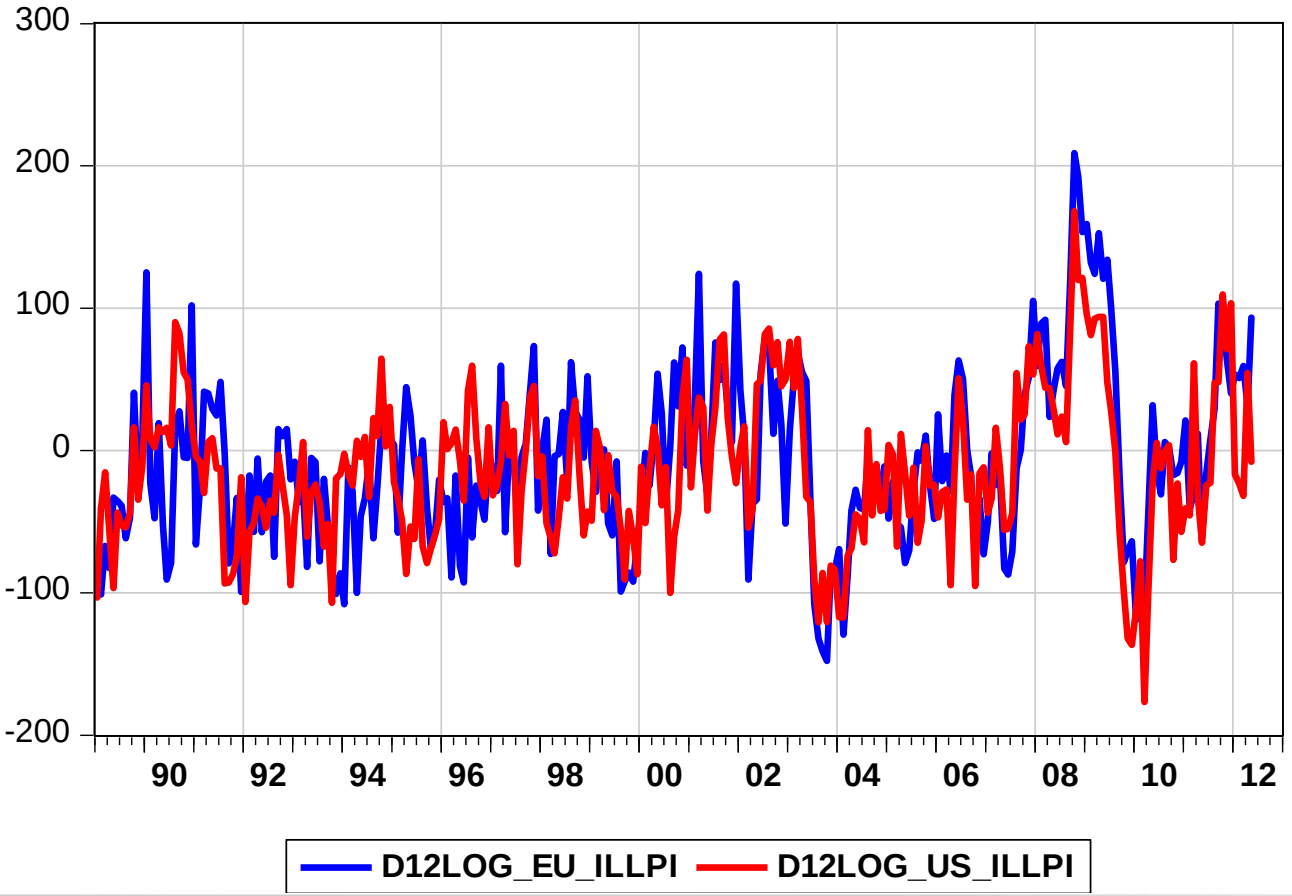
Would need a model to understand effects

- Could follow Cochrane and Piazzesi (Bond risk premia, AER, 2005): write "a discrete-time affine term structure model that reproduces the pattern of bond return predictability we find in the data"
  - Specify general form of pricing kernel M=f(.)
  - … pricing bonds i.e. $P_t(n) = E_t[M_{t+1} P_{t+1}(n-1)]$
  - … so that the model-implied projections of excess returns, $E_t[rx_{t+12}(n)] \equiv E_t[p_{t+12}(n-1) - p_t(n)] + p_t(1)$
  - … match those empirically found

- Here: could make pricing kernel function of illiquidity variable as in R. Goyenko (2008) "Stock and Bond Pricing with Liquidity Risk".

Comovement of stock market illiquidity between EU and US

- My simple proxies for illiquidity: Amihud-type measure as in BST paper, but directly based on (Datastream) broad market indices
- Correlation 1989-2002: 0.42; 2003-2012: 0.83



Similar results for EU?

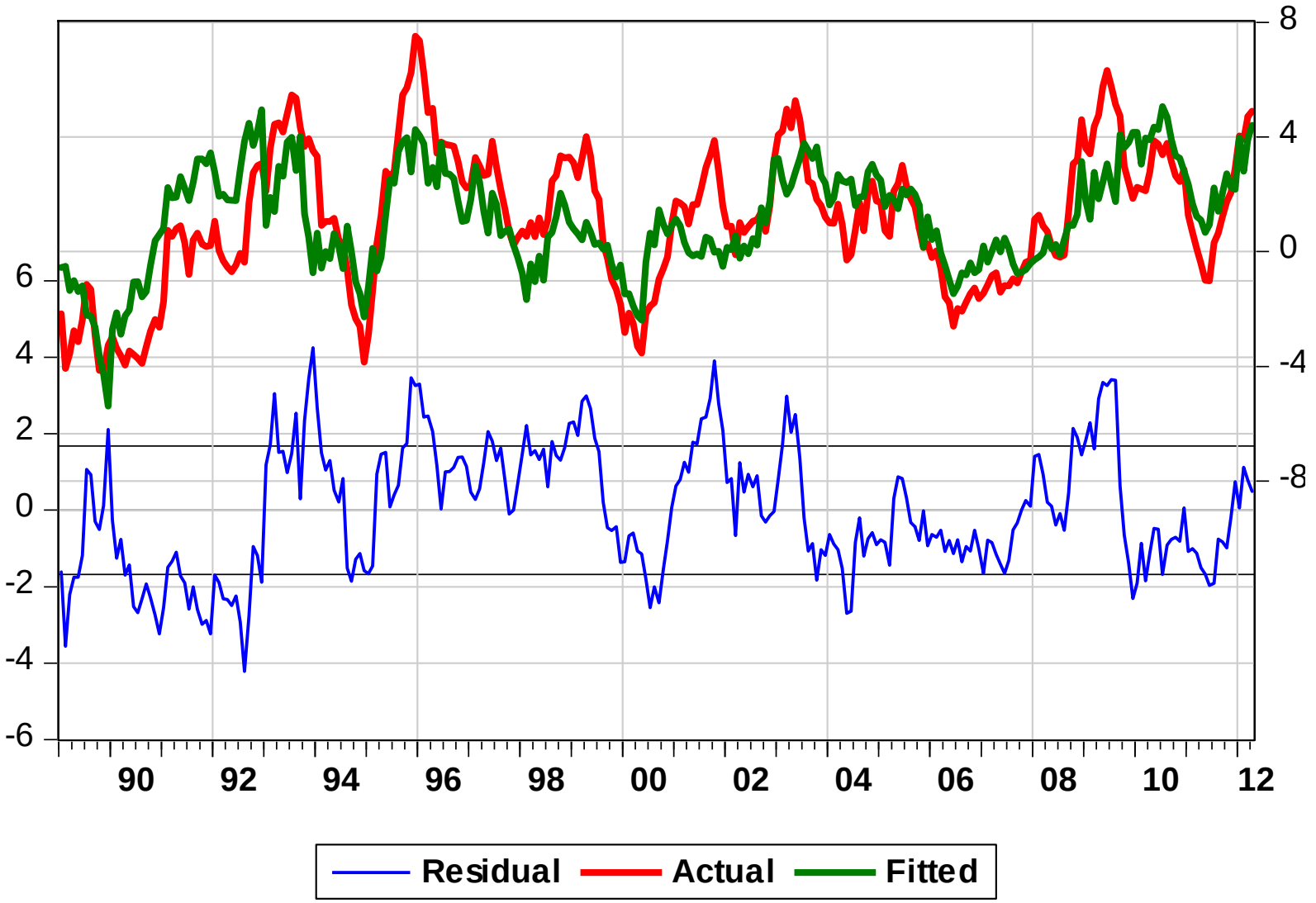
- **Forecast bond excess returns rx(3) on DE government bonds**, regressors lagged by 12 months, sample Jan89 – Apr12

- **Specifications** (always with constant):
  1. Only 1y, 2y, 3y forwards: → adj R^2 = 0.05
  2. Only stock illiquidity: → adj R^2 = 0.06
  3. Combined: → adj R^2 = 0.12
  4. Adding US 3-y forward: → adj R^2 = 0.54

- Raising Illiq_EU by 1 std increases expected excess return E[rx(3)] by 31 (spec 4) to 65 (spec 3) bps: same ball-park as in BST (45 bps)

- Obvious caveats: different sample, only in-sample results

Prediction of 1-y excess return on 3-y DE bond



Outlook and possible next steps (next paper?)

- **Clarify economic interpretation** of results further, possibly using (stylized) small model

- **Do results carry over to other countries?**
  - See Kessler and Scherer, JBF, 2009, as well as Sekkel, JBF, 2011 (role of CP factor internationally, role of crisis)
  - Also: I found some evidence that Illiq_EU helps forecasting rx_US

- **Currently, other premia and driving forces maybe (more) prominent:**
  - Impact of Fed's LSAPs on bond returns? Asymmetries due to ZLB?
  - Can updated model (residuals) shed light on special factors currently effecting US bond market?
  - Euro area: role of credit risk premia for excess returns