Discussion of

'A DSGE Model of the Term Structure with Regime Shifts'

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Introduction

- From the central bank's perspective, there's a strong case for
  - for extracting term (risk) premia,
  - and for understanding their determinants

Why?

Jean-Claude Trichet, September 14 2005:

"*On the domestic side, investment should benefit from the exceptionally low level of both nominal and real market interest rates prevailing across the entire maturity spectrum.*"

(Testimony before the Committee on Economic and Monetary Affairs of the European Parliament)

Ben Bernanke, March 20 2006:

"*. . . (I)f spending depends on long-term interest rates, special factors that lower the spread between short-term and long-term rates will stimulate aggregate demand. Thus, when the term premium declines, a higher short-term rate is required to obtain the long-term rate and the overall mix of financial conditions consistent with maximum sustainable employment and stable prices..*"

('Reflections on the Yield Curve and Monetary Policy', Speech before the Economic Club of New York)

Amisano and Tristani

The approach:

- Go fully microfounded (barebone NK model)
- Second-order Taylor approximation (quadratic bond pricing)
- Markov switching in shocks: $\sigma_t = \alpha_t \sigma_L + (1 - \alpha_t)\sigma_H$, $\alpha_t \in \{0, 1\}$
  - 'Market price of regime switching'

The results:

- Nonlinearity matters in terms of economic interpretation
  - Lower $\widehat{\gamma}$, a.k.a. higher sensitivity of output real rate
- R.S. improves fit
- R.S. identifies relevant episodes:
  - n.-s. monetary policy shock identifies the Fed's experiment of 1980-1983,
  - technology shock identifies the Great Moderation,
  - preference shock is broadly consistent with economic cycle
- Nonlinearity can induce substantial variability in risk premia

My views

- A number of models and methods are available to extract and study term premia

- From Rudebusch, Sack and Swanson (2007), we know that premia extracted from very different methods are strongly correlated

- Hence, the literature faces two broad challenges, i.e. understanding
  - what determines term premia,
  - the role of the yield curve in the monetary transmission mechanism,

Monetary transmission mechanism

- How to price bonds of maturity $n \geq 1$? $\mathcal{P}_t^n = \mathbf{E}_t\left(M_{t+1}\mathcal{P}_{t+1}^{n-1}\right) = \mathbf{E}_t\left(\prod_{j=1}^{n} M_{t+j}\right)$

- The T.S. incorporates future views of monetary policy
  - However, this is conditional on the impact of the T.S. on the macroeconomy
    - Is this reasonable? Is this acceptable?
    - Can this be a form of misspecification of the model?

- Bernanke, March 20 2006: this affects the range of term structure implications for monetary policy

  "...(I)f the behavior of long-term yields reflects current or prospective economic conditions, the implications for policy may be quite different–indeed, quite the opposite. ...If investors expect that weakness to require policy easing in the medium term, they will mark down their projected path of future spot interest rates, lowering far-forward rates and causing the yield curve to flatten or even to invert."

  ('Reflections on the Yield Curve and Monetary Policy')

Monetary transmission mechanism

- Why do affine-term structure models disregard the feedback?
  For analytical convenience! See Rudebusch and Wu (2008), p. 15

- How empirically relevant is the feedback from the T.S.?
  - Very relevant: Diebold, Rudebusch and Aruoba (2006), Marzo, Söderström and Zagaglia (2007)

- How feasible in a DSGE framework?
  - Rather feasible: Marzo, Söderström and Zagaglia (2007)

- Amisano and Tristani: the nonlinear solution delivers estimates of the real interest elasticity of output of more plausible magnitude
  . . . because risk premia could account for some of the yields dynamics which must otherwise be explained by expectations terms."

  - Does output respond directly risk premia in their model?

  - Are they suggesting risk premia are important in the monetary transmission mechanism?

Sources of risk

- In a certain way, this model does not follow the avenue of the literature on estimated DSGEs with Bayesian methods:
  - very few shocks
  - very little structure for the macro aggregates,
    - but a lot of demand for the yield curve to generate large premia

These aspects are important for investigating the following issues:

- What source of risk drives the market price of regime switching?
- How does R.S. risk filter out the macro shocks?
  - Are the main shocks that drive macro variables important also for T.S.?
    - What shocks require a compensation for hedging or insurance?
- All the more important as the MrQ nests the available specifications. . .

Additional points

- Is the SDF consistent with the microfoundations?

- The 'bond premium puzzle' of Rudebusch and Swanson (2008)?
  - Premia are volatile enough to be credible,
    - but the estimates of γ can be a source of trouble . . .

Model	marg. lik.	post. mean γ
$M0L$	3584.8	14.2483
$M3L$	**3626.2**	**15.1056**
$M0Q$	3554.5	9.7311

- It's unclear whether using the yield data helps for the identification problem,
  - especially when coupled with a nonlinear model solution:
    - why hot devote more attention to that?

- Acceptance rate of $M3L$ (.44) is a lot lower than the others (.75). . .

Conclusion

- This can be a relevant step ahead for the main branch of macro-finance:
  - introduction of a new form of risk in a compelling way,
  - methodological points.

- Looking forward to seeing the results for MrQ...
  - What T.S. view of the good luck/good policy debate would that deliver?
  - And what about the episodes of 'conundrum'?

- Is this *really* the direction we want the literature on T.S. to take?
  - There are first-order issues that are disregarded...
    - Why not a proper term structure in general equilibrium?

References

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