Great Moderation or Great Mistake: Can rising confidence in low macro-risk explain the boom in asset prices?

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What is the paper about?

- Simple model with assets pricing under incomplete information

- EZ preferences + exogenous dividend process (random walk with drift)

- Two regimes for volatility, but same drift. Two realized switches:
  - ≈ 1984: high to low
  - ≈ 2007: low to high

- For given regime, probability of switch i.i.d.

- Complete information on:
  - Drift in growth rate of dividends
  - Levels of volatility in two regimes
  - History of realizations of regime switches (and dividends)

- Incomplete information "only" on the probability of regime switch

- Bayesian learning through history of realizations of regimes
What are the results of the paper?

Learning about the persistence explains part of post-84 boom in asset prices:

- Learning implies "gradual" increase in asset prices:
  - More probability mass on "permanent" low volatility regime
  - Asset prices highly non-linear convex function of persistence

Complete information model cannot explain post-84 increase in asset prices:

- Increase in asset prices at the switch to low-volatility regime:
  - too low
  - too fast
Posterior distribution of "persistence" of regime $i$ after $x$ years of regime $i$
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The figure plots the price dividend ratio in US data (upper Panel), and in the model (lower panel), for the benchmark calibration of the model.
Comment #1: post-2007 vs pre-1984

- Assumption: New high volatility regime equal to pre-1984’s regime.

- Duration of pre-1984’s high volatility regime: 31 years!
  - During post-1984, switching from low to high volatility is really "bad news".
  - During post-1984, higher persistence of low volatility is really "good news".

- Interaction between persistences of low and high volatility regime
  - Convexity on persistence of low volatility larger with (belief of) larger persistence of high volatility?

- Next high volatility regime possibly different from pre-1984
  - Draw a new persistence parameter?
  - Impact on the boom/bust in asset prices predicted by the model?
Comment #2: Posterior uncertainty about volatility?

- Agents in the model know *when* and to which *value* volatility changes.

- In reality, agents only observe realization of asset prices and dividends.
  - Swing in price/dividend may be due to change in regime or large innovation.
  - May take time to reduce uncertainty about level of volatility as well.

- Does it matter? Would convexity apply to level of volatility as well?

- Is learning persistence more relevant? Is persistence "harder" to learn?
Other comments and concluding remarks

► What is path of model predicted P/D during 1955-1975?

► Peak of P/D in 2000 (data) vs 2007 (model)?

► "State dependent" hazard of regime change?

► Overall, paper studies a relevant and topical question. I found it very interesting!
For the simplified case of symmetric transition probabilities \((F_{ll} = F_{hh})\), the figure plots the price dividend ratio as a function of persistence for different values of the tightness of priors for the benchmark calibration of the model.