

Discussion of "Regime Switches, Agents' Beliefs, and Post-WW II U.S. Macro Dynamics" by Francesco Bianchi

Discussant: Efreem Castelnuovo (University of Padua)

2nd International Conference in Memory of Carlo Giannini
Bank of Italy, January 19/20, 2010

What Francesco does

- ▶ AD/AS model à la LS (2004)
- ▶ *Regime-dependence* of the policy parameters & heteroskedasticity (two *independent* chains)
- ▶ Agents endowed with **probability distributions over future regimes** - role for credibility, communication
- ▶ Estimates it for the post-WWII U.S. economy - Bayesian algorithm to estimate MS-DSGE *via* Gibbs sampling

Main findings

- ▶ *Recurrent* policy switches during the post-WWII U.S. period - 'pre- vs. post-Volcker' split *unwarranted*

Main findings

- ▶ *Recurrent* policy switches during the post-WWII U.S. period - 'pre- vs. post-Volcker' split *unwarranted*
- ▶ Policy switches and heteroskedasticity: *Not* synchronized

Main findings

- ▶ *Recurrent* policy switches during the post-WWII U.S. period - 'pre- vs. post-Volcker' split *unwarranted*
- ▶ Policy switches and heteroskedasticity: *Not* synchronized
- ▶ **Beliefs** over future regimes: Relevant drivers

My reaction

- ▶ Very rich paper, worth reading

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on

1. Trend inflation

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on
 1. Trend inflation
 2. Indeterminacy and the price puzzle

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on
 1. Trend inflation
 2. Indeterminacy and the price puzzle
 3. Role of beliefs

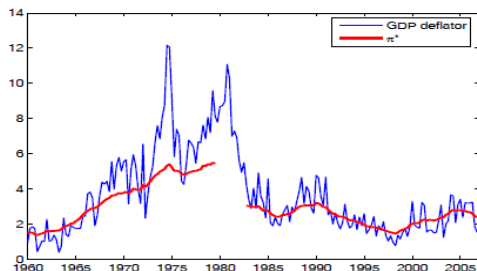
My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on
 1. Trend inflation
 2. Indeterminacy and the price puzzle
 3. Role of beliefs
 4. 'Scale effects'

My reaction

- ▶ Very rich paper, worth reading
- ▶ *Formal* evidence in favor of recurrent switching (ML favors it), beliefs counterfactuals: Novelty!
- ▶ Comments on
 1. Trend inflation
 2. Indeterminacy and the price puzzle
 3. Role of beliefs
 4. 'Scale effects'
 5. Business cycle measurement

Time-varying trend inflation



"Our results suggest that a reduced innovation variance for the inflation target was the single most important improvement in monetary policy during the Volcker-Greenspan years." [CPS (2009)]

Francesco's assumption

- ▶ *Constant* TI over the entire post-WWII U.S. period:
Questionable

Francesco's assumption

- ▶ *Constant* TI over the entire post-WWII U.S. period: Questionable
- ▶ *Switching* TI: Schorfheide (2005) vs. LWZ (2007): Unclear

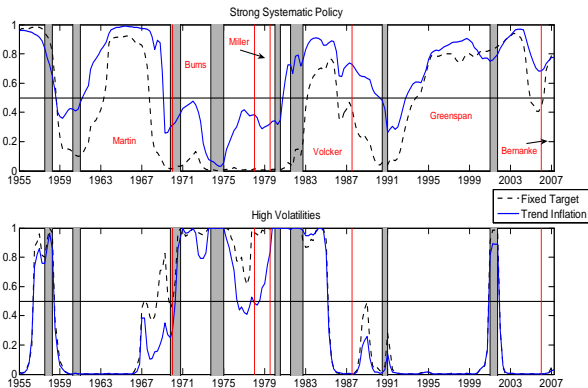
Francesco's assumption

- ▶ *Constant* TI over the entire post-WWII U.S. period:
Questionable
- ▶ *Switching* TI: Schorfheide (2005) vs. LWZ (2007): Unclear
- ▶ *Drifting* TI: Kozicki and Tinsley (2005), Stock and Watson (2007), Ireland (2007), CSbordone (2008), CPS (2009), ... seems to be there

Francesco's assumption

- ▶ *Constant* TI over the entire post-WWII U.S. period: Questionable
- ▶ *Switching* TI: Schorfheide (2005) vs. LWZ (2007): Unclear
- ▶ *Drifting* TI: Kozicki and Tinsley (2005), Stock and Watson (2007), Ireland (2007), CSbordone (2008), CPS (2009), ... seems to be there
- ▶ *Omitted* TVTI in a RS world: *Consequences?*

TV vs. fixed TI: Consequences



- ▶ Castelnovo, Greco, and Raggi (2010): Effects of TVTI

Indeterminacy and the VAR facts

- ▶ *Fact #1*. LS (2004): *Indeterminacy* in the pre-Volcker era, sunspot shocks, *inflation exp. not anchored*

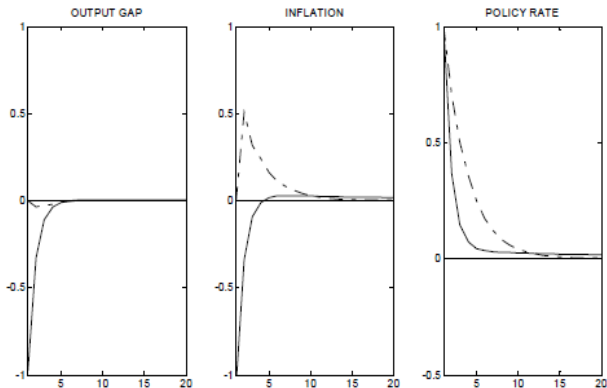
Indeterminacy and the VAR facts

- ▶ *Fact #1*. LS (2004): *Indeterminacy* in the pre-Volcker era, sunspot shocks, *inflation exp. not anchored*
- ▶ *Fact #2*. Trivariate VARs: *Price puzzle*, but *just pre-'79* (Hanson (2004), Boivin and Giannoni (2006))

Indeterminacy and the VAR facts

- ▶ *Fact #1. LS (2004): Indeterminacy in the pre-Volcker era, sunspot shocks, inflation exp. not anchored*
- ▶ *Fact #2. Trivariate VARs: Price puzzle, but just pre-'79 (Hanson (2004), Boivin and Giannoni (2006))*
- ▶ *Passive monetary policy and the price puzzle: Any link?*

Role of indeterminacy



- ▶ [Castelnuovo and Surico \(2009\): Indeterminacy and VARs](#)

Beliefs, mpolicy, and heteroskedasticity: Facts

- ▶ Role of beliefs: How important (vs. policy shifts, shocks's volatility)? On which dimension(s)?

Beliefs, mpolicy, and heteroskedasticity: Facts

- ▶ Role of beliefs: How important (vs. policy shifts, shocks's volatility)? On which dimension(s)?
- ▶ Counterfactuals to assess their contribution in terms of

Beliefs, mpolicy, and heteroskedasticity: Facts

- ▶ Role of beliefs: How important (vs. policy shifts, shocks's volatility)? On which dimension(s)?
- ▶ Counterfactuals to assess their contribution in terms of

1. Inflation persistence

Beliefs, mpolicy, and heteroskedasticity: Facts

- ▶ Role of beliefs: How important (vs. policy shifts, shocks's volatility)? On which dimension(s)?
- ▶ Counterfactuals to assess their contribution in terms of
 1. Inflation persistence
 2. Great Moderation

Small vs. Medium-Scale Models

- ▶ Switches: Relevance of the model *scale*?

Small vs. Medium-Scale Models

- ▶ Switches: Relevance of the model *scale*?
- ▶ Schorfheide (2005): Evidence in favor of RS TI vs. LWZ (2007): Reject it

Small vs. Medium-Scale Models

- ▶ Switches: Relevance of the model *scale*?
- ▶ Schorfheide (2005): Evidence in favor of RS TI vs. LWZ (2007): Reject it
- ▶ Your paper: Policy switches vs. SZ (2006), JP (2008): Reject them

Small vs. Medium-Scale Models

- ▶ Switches: Relevance of the model *scale*?
- ▶ Schorfheide (2005): Evidence in favor of RS TI vs. LWZ (2007): Reject it
- ▶ Your paper: Policy switches vs. SZ (2006), JP (2008): Reject them
- ▶ Policy switches in your fmkt: *Omitted* information?

Business cycle as an observable

- ▶ HP filtering: Robust to model misspecification, but ...

Business cycle as an observable

- ▶ HP filtering: Robust to model misspecification, but ...
1. Distortion of the relevant frequencies (Canova (1998))

Business cycle as an observable

- ▶ HP filtering: Robust to model misspecification, but ...
 1. Distortion of the relevant frequencies (Canova (1998))
 2. Perron and Wada (2009): Piecewise-linear trend, worth checking

Business cycle as an observable

- ▶ HP filtering: Robust to model misspecification, but ...
 1. Distortion of the relevant frequencies (Canova (1998))
 2. Perron and Wada (2009): Piecewise-linear trend, worth checking
- ▶ 'Multiple filtering' approach (Canova and Ferroni (2009))

Wrapping up

- ▶ Nice paper! I would like to understand better ...
 1. Role of TVTInflation
 2. Ability of the model to match some GModeration facts
 3. Contribution of beliefs
 4. How many results survive the 'scale effect'
 5. Robustness to alternative business cycle representations
- ▶ Look forward to reading other papers in Francesco's agenda