

Discussion of “ Monetary Regime Switches in  
India: Policy or Structure”  
by M. Hutchison, R. Sengupta and N. Singh

Ila Patnaik

# Motivation: Inflation targeting

- What does a central bank do? Sets interest rates looking at forecasts of inflation and output.
- What weight to attach to each? John Taylor proposed a simple formula with one weight on output and another on inflation.
- In the Indian debate, inflation targeting has been portrayed as output coefficient of 0 (which is wrong).
- Inflation targeting central banks typically have an inflation coefficient of 1.5 and an output coefficient of 0.5
- Taylor principle: In a closed economy, monetary policy is destabilising if the inflation coef is below 1.
- Existing evidence on RBI: Inflation coefs of 0.1 to 0.3.
- "Multiple objectives framework"? "Conflicts of interest"? "Lack of framework"?

# Main argument of the paper

- Maybe the overall inflation coef comes out to 0.1 to 0.3 because sometimes it's 0 and sometimes it's a sensible value
- Maybe RBI is sometimes behaves like an inflation targeting central bank.
- As RBI says: there is no framework, the policy objectives vary through time
- RBI sometimes gives a bigger weight to output gap (dove) and sometimes to inflation (hawk)
- A Markov switching model can estimate the probability of being in two states, hawk and dove, at each point in time

# Model estimated

A backward looking Taylor rule with interest rate smoothing, no target inflation rate, output gap, and with two states

$$i_t = c + \alpha_{st}y_t + \beta_{st}\pi_t + \chi\Delta e_t + \delta i_{t-1} + \epsilon_t$$

where

$i_t$  is the nominal interest rate

$y_t$  is the output gap

$\pi_t$  is the inflation rate

$\Delta e_t$  is the first difference of the exchange rate

and  $i_{t-1}$  is the lagged nominal interest rate

# Data used

**Data** WPI inflation, deviation of IIP from HP trend, call money rate, and the nominal exchange rate.

**Frequency** Quarterly

**Span** 1987Q1 to 2008Q4

**Method** OLS with correction for heteroscedasticity and autocorrelation autocorrelation

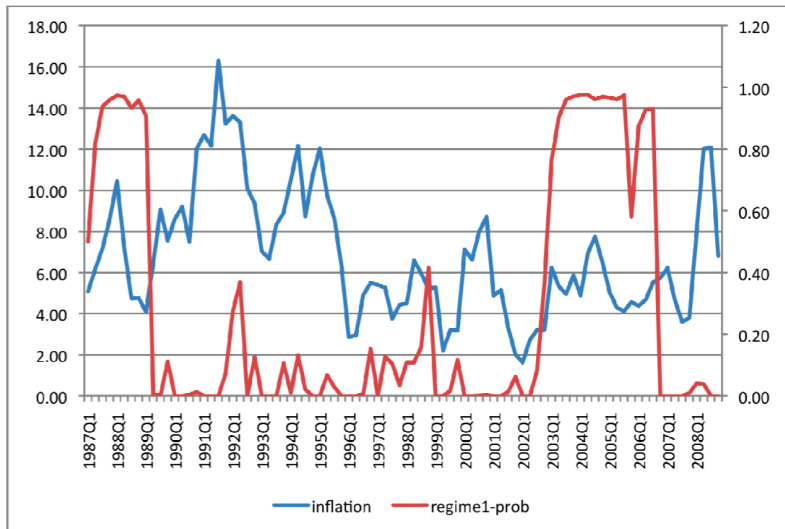
# Results

- The results support a Markov Switching model
- Hawk : 1987-1989 and 2003-06
- Dove : 1999-2002 and 2007-08
- 72 percent of the time, RBI is a dove (inflation coef of 0)
- RBI does not react to exchange rate changes
- The trilemma is not a major concern.

# Problem with the results

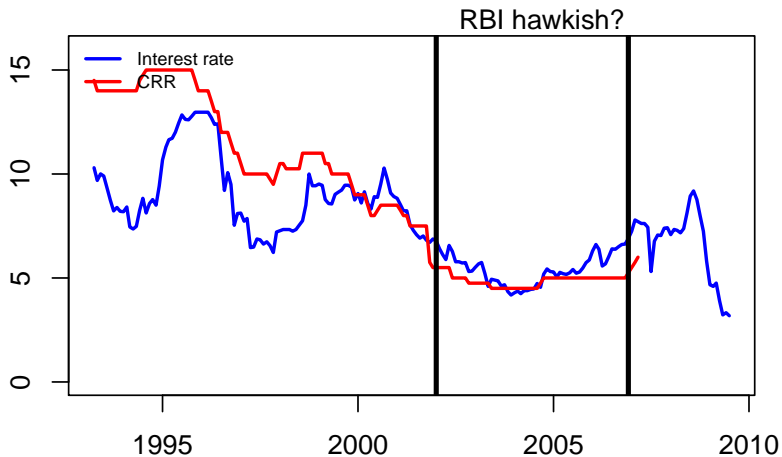
Results about hawk/dove periods contradict accounts of macroeconomic developments in the Hawkish period.

# Probabilities of Hawk Regime Inflation





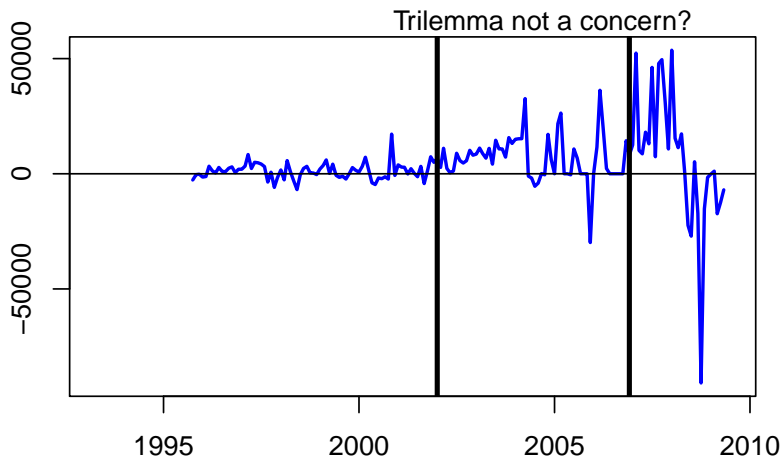
# Interest rates and CRR



# Exchange rate not relevant

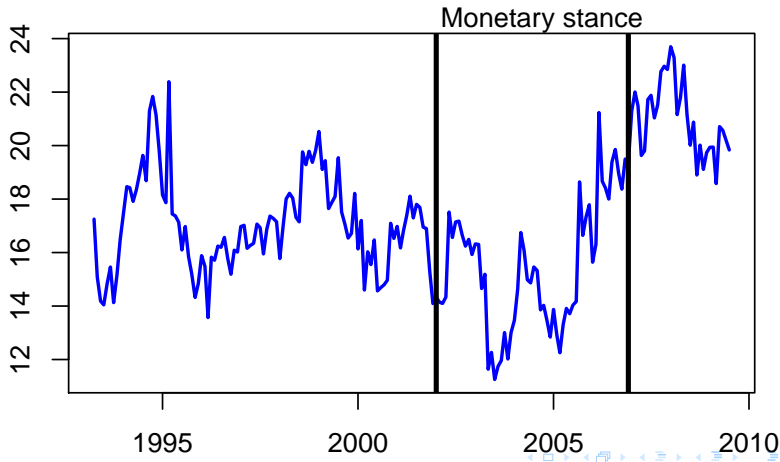
- This is not consistent with the strong evidence that RBI is a *de facto* pegger
- See literature on India and the exchange rate regime.

# Trilemma I: Intervention



## Trilemma II: Incomplete sterilisation, high M3 growth

This was a period of low interest rates and easy liquidity. Despite attempts at sterilisation money supply growth was much faster in this period than in earlier periods.



# Breaks of the exchange rate regime

- The methodology of ZSP finds structural changes in the INR exchange rate regime. Most of this period was a tight peg to the USD.

Period	$R^2$
1998-08-28 to 2004-03-19	0.97
2004-03-26 to 2007-03-16	0.86
2007-03-23 to 2009-12-25	0.62

- The period before each break was a period of acute stress for RBI, with a prime focus on implementing the pegged exchange rate. E.g. rumoured to have intervention of over a billion dollars per day before the exchange rate regime was abandoned.
- Every lever - monetary policy, banking regulation, capital controls, debt management - was devoted to the one job of exchange rate pegging
- There were no degrees of freedom left to focus on inflation.

# Key suggestions

- 1 Estimation method: Markov Switching SVAR (or VECM if there is cointegration)
- 2 Use lagged data in place of real time data to reflect information available at time  $t$ .
- 3 Sensitivity analysis to other measures of inflation: WPI minus food and oil and CPI
- 4 Robustness checks with different sample periods, other measures of output gap, other interest rates.



N. Francis and M.T. Owyang.

Monetary Policy in a Markov-Switching Vector Error-Correction Model: Implications for the Cost of Disinflation and the Price Puzzle.

*Journal of Business & Economic Statistics*, 23(3):305–314, 2005.



T.W. Hendricks and B. Kempa.

Asymmetric transmission of monetary policy in Europe: A Markov-switching approach.

*Journal of Economic Integration*, 23(4):873–895, 2008.



C.A. Sims and T. Zha.

Were there regime switches in US monetary policy?

*The American Economic Review*, 96(1):54–81, 2006.

**Thank You**