

Money and Inflation in China

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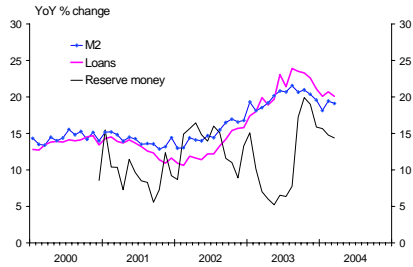
Motivation

- Developments in China
 - is there inflationary pressure
 - what drives inflation in the long run
 - what drives inflation in the short-run

Inflation or not?



Is money the culprit?



Framework of inflation determination

- Equilibrium model of business cycle
 - supply and demand determine inflation
 - cost push
 - demand pull
- Monetarist view of inflation
 - *"Inflation is always and everywhere a monetary phenomenon"*

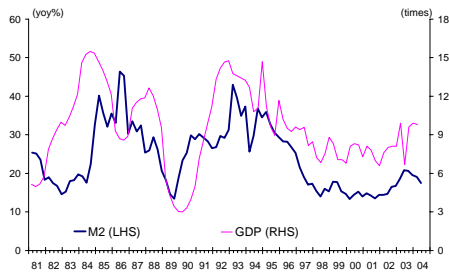
Is there too much money?

- Money supply:
 - sources of increases: capital inflow, current account surpluses (another paper)
- Money demand:
 - is supply overtaking demand?

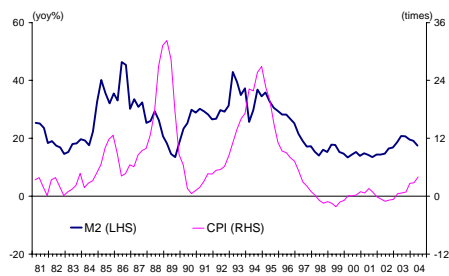
The Literature

- Chow (1987) pioneered the work
- Portes and Santorum (1987) found evidence of unitary income elasticity.
- Felstenstein and Farhadian(1987), Chan, Cheng and Deaves (1991) and Ma (1992) focused the analysis on the right measure of price level.
- Blejer et al (1991) estimated an error correction model using data for the 1980s
- Hafer and Kutan (1994) found that M2 is a better measure of money demand

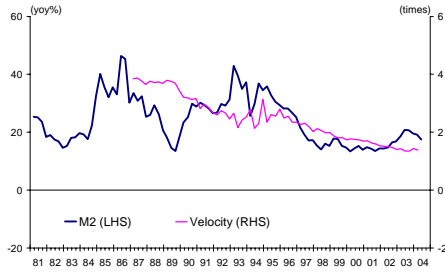
Money and growth



Money and inflation



Money and velocity



Data and Methods

- Quarterly data: M2, CPI, real GDP, and CPI-based inflation
- From 1981 to 2003
- Long-run money demand-cointegration analysis

A conventional long-run money demand function

$$\frac{M}{P}_t = \alpha_0 + \alpha_1 y_t + \alpha_2 r_t + \varepsilon_t$$

Unit root tests

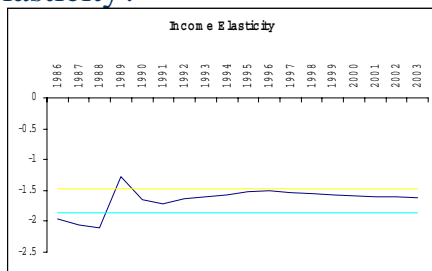
variable	ADF	p-value
real (M2)	-2.42	0.37
real (M0)	-1.93	0.63
real income	-1.34	0.6
CPI inflation	-3.03	0.04
CPI	-1.06	0.72

The estimated long-run money demand function for M2

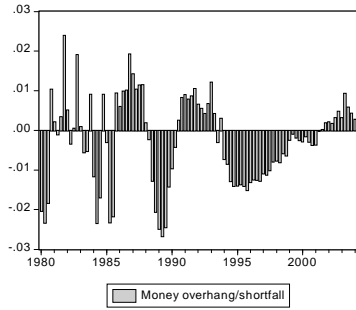
$$M_t = -8.12 + 1.67y_t + 0.94P_t + \varepsilon_t$$

(0.1)
(0.1)

How stable is the income elasticity?



Money Overhang



Short-run dynamics

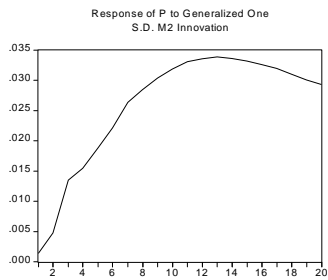
$$\Delta(P_t) = -0.01 + 0.09^*(M_{t-1} - 1.67^* y_{t-1} - 1^* P_{t-1}) + 0.19^* \Delta(P_{t-1}) + 0.5^* \Delta(P_{t-2})$$

(-1.0) (2.75) (1.74) (5.37)

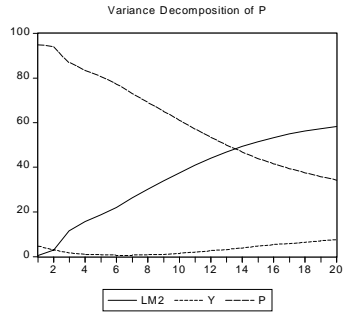
$$-0.07^* \Delta y_{t-1} + 0.13^* \Delta(M_{t-1}) + 0.16^* \Delta(M_{t-2})$$

(4.97) (2.27) (3.23)

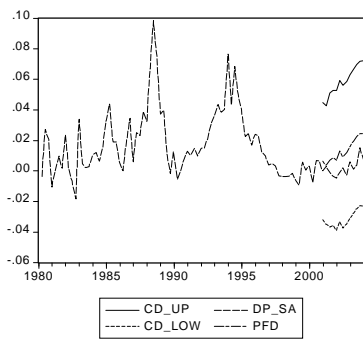
Impact of M2 on inflation



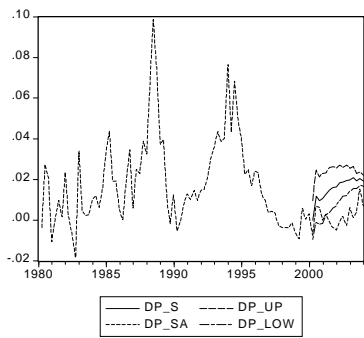
What drives P?



Short-run inflation forecast



Short-run inflation forecast

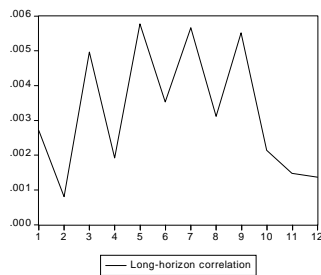


Long-run predictability

$$\Delta(\ln(\text{inf}_{i,t+k})) = \alpha_k + \beta_k X_t + u_{t+k}$$

$$\Delta(\ln(\text{inf}_{i,t+k})) = \alpha + \beta \sum_{j=0}^{k-1} X_{t-j} + u_{t+k}$$

Long-run predictability



Conclusion

- the money demand function for China appears to reasonably stable over the past ten years
- The response of inflation to money supply shock tops at 12 quarters
- in the short-term inflation is rather persistent but is mostly driven by monetary shocks in the long-run.
- A 1 percent increase in real money balance could lead to about 3 percent inflation in the ensuing three years
