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What has driven Chinese monetary policy since 1990? Investigating the People's bank's policy rule

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A B S T R A C T

Post-1990 Chinese monetary policy is modeled with an augmented McCallum-type rule that takes into account the People's Bank of China's emphasis on targeting the rate of money supply growth. People's Bank policy appears responsive to the gap between target and actual nominal GDP as well as to external pressures. Additional cointegration analysis yields estimates of the gap between estimated money demand and actual money supply that appear to track the inflationary trends evident over our sample period. Chinese inflation and monetary policy outcomes seem reasonably captured using a standard monetary approach without the need to appeal to China-specific "structural" factors.

1. Introduction

There has been an outpouring of recent research on the question of the exchange rate between the US dollar and the Chinese renminbi, with a number of economists making a case for much larger renminbi revaluation than the initial 2% shift announced on July 21, 2005. Notwithstanding the external effects of the ongoing revaluation, allowing some freedom from the fixed exchange rate constraint increases the People's Bank of China's scope for effective monetary control. Ba Shusong, deputy director-general of the Finance Institute of the State Council's Development Research Center, for example, emphasized that the fixed exchange rate had "jeopardized" the independence of Chinese monetary policy.[1] In this study we find a consistent monetary policy response to real output that is

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[1] Quoted in People's Daily Online, July 25, 2005.

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combined, however, with apparent sensitivity to external pressures. The movement away from the old fixed exchange rate policy may well reflect the Chinese authorities' awareness of the benefits for monetary policymaking rather than necessarily representing a response to foreign demands for exchange rate adjustment.

In recent years monetary policy analysis has been increasingly dominated by the estimation of the Taylor rule (Taylor, 1993), whereby central bank interest-rate setting is related to the gap between inflation and its target value and the gap between actual real GDP and its potential level. When interest rates are already very low, a problem with the Taylor rule is that it may call for negative interest rates that cannot be delivered in practice, however. In such cases as Japan, therefore, McCallum's (1988) alternative rule based on explaining movements in the monetary base as a function of GDP and velocity growth may be more applicable (see also McCallum, 1993, 2003). In this paper we consider how this same McCallum rule may also be applied to China. Estimation of a Taylor rule would not be sensible here as not only does the People's Bank of China not have a target interest rate as such but also loan and deposit rates remained largely administratively determined over our sample period. Only recently has any movement from the specified interest rates been permitted. And, when the People's Bank of China announced a rise in loan and deposit rates on October 28, 2004, for example, there was still no scope provided for exceeding the basic deposit rate laid down in the communiqué (People's Bank of China, 2004a).

Given that the People's Bank's money supply targets have generally emphasized broad money (M2), we consider the behavior of M2 as a dependent variable in our empirical work in addition to the monetary base series originally suggested by McCallum (1988). We consider the 1990–2003 period, thereby including the 1993–1994 inflation spike, the subsequent anti-inflationary policy, the attempts to reflate the economy after the 1997–1998 Asian financial crisis, and the pressures for renminbi appreciation that emerged after 2001. Our analysis of Chinese monetary policy relative to the McCallum rule suggests that monetary policy was typically too tight until around 2001. We also find that, if we augment the basic McCallum rule, there is a significant monetary policy response to the rate of change of foreign exchange reserves that suggests less than full sterilization, as well as a significant shift that appears to coincide with the onset of deflation at the time of the Asian financial crisis. Our analysis concludes with a forecasting exercise that points to the central bank loosening policy too much in 2003–2004.

2. Overview of the Post-1990 monetary landscape in China

In 1992–1993 China faced its second inflation spike in five years with consumer price inflation peaking around 24% in 1994. The ensuing monetary tightening brought inflation down to single digits without apparent severe negative output effects until the economy was hit by the initial effects of the Asian financial crisis in 1997. While most other Asian currencies depreciated against the US dollar at this time, in many cases dramatically so, China's scope for domestic monetary loosening was limited by its continuing commitment to a fixed exchange rate with the US dollar. Despite using fiscal pump priming to support the real economy and keeping economic growth rates high enough to avoid large-scale unemployment, deflation set in and persisted until 2002. Deflation in consumer prices remained quite mild (around 1% in the first half of 2002, for example) but was more pronounced for commodity and raw material prices, which fell by nearly 5% over the same period.

Money supply growth had continued to trend down even after the original inflationary threat was ended, with the rate of growth of M2 declining continuously from 42.8% in 1993 to 12.3% in 2000. A seemingly close relationship between inflation and M2 money growth since 1990 in China is apparent in Fig. 1, with the monetary tightening aimed at combating the 1993–1994 inflation spike being accompanied by declining inflation rates and then outright deflation in 1998. The continued price declines after the initial monetary tightening may themselves have been exacerbated by China's banking sector problems and attempts to rein in the level of nonperforming loans. Retrenchment by the banks contributed to an excess of savings over lending that reached approximately RMB 3.65 billion by 2002 (Zhu, 2002). Continued strong productivity growth in China also undoubtedly played some role in contributing to the deflation, with rightward shifts of the aggregate supply curve tending to simultaneously raise output and lower prices (cf., Cargill and Parker, 2004). Siklos and Zhang (2008)