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Is the Chinese Currency Undervalued? Empirical Evidence and Policy Implications

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Abstract

This article estimates the equilibrium value of the Chinese currency Renminbi (RMB) by controlling for the per capita income level and structural changes in the 1980s and 1990s. It finds that the Chinese currency is moderately undervalued by 22%. Revaluation to the equilibrium level can lead to a net efficiency gain for both China and the rest of the world, although the adjustment should be carefully designed and implemented. I suggest that the revaluation be a one-time adjustment combined with a control on the capital account, to minimize damages from speculations in the foreign exchange market.

Keywords:

China   currency   valuation   undervalued

Notes

1. For instance, see an article by Paul Blustein, Washington Post, June 18, 2003, page E1.

3. McKinnon, R. Do Not Revalue Yuan. Wall Street Journal, June 27, 2003; A9.

4. One method is to trace the trend of the real exchange rate, taking into account changes in the nominal exchange rate and the inflation rates. While this is the standard method, it suffers from a major limitation — that is, the initial period that serves as the benchmark should be an equilibrium state defined by purchasing power parity. The RMB exchange rate has never been a market outcome. It is therefore difficult to find an "initial period" in which the RMB value is at an equilibrium level.

6. In the concept of "real exchange rate," p^* and p may refer to two different consumption baskets. In addition, "real exchange rate" often uses price indexes for p^* and p. Consequently, the ratio p^*/p can only be interpreted for the relative changes but not the absolute level.

7. See the discussion on the Big Mac Index in Yang, J. The Big Mac Index and the Valuation of the Chinese Currency. Mimeo, School of Business and Public Mangement, the George Washington University, 2003.

9. The several major currency devaluation events during the periods can be important reasons. For instance, devaluations in the former Soviet republics, Central Europe, Asian countries in the 1997 financial crisis, and similar events in Southern American and French Africa.

10. The information can be used to infer the confidence interval of the disequilibrium state as economy grows. It deserves an extensive study that is beyond the scope of this article. There are several approaches for estimating heteroskedasticity. A simple but robust way is regressing the error term on the GDP per capita. This gives us the

error term equalling 1.548 – 0.0547 GDPpc (measured at 1000 dollar) for the 2001 sample. All are with correct signs. T-statistics for both coefficient estimates are significant at the 0.00001 level. Detailed information in a separate study is available on request.

11. First, almost all macroeconomic data contain measurement errors, and the ICP estimates are among the best we could obtain for this study purpose. Secondly, a higher GDP per capita is supposedly associated with a larger error in absolute term, but at the same time, high-income countries have better statistical systems. So the two factors offset each other. Finally, China is close to the middle level in the range of GDP per capita among the observations, so the interference is minimized.

12. This is derived by 4.41/2.97-1.

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