



Relevant international experience of real exchange rate adjustment for China

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ABSTRACT

Is the real appreciation of the Chinese yuan essential for correcting global imbalances? The present study offers a new perspective to the debate by drawing upon the rich international experience embodied in World Bank's World Development Indicators database. We find that the price levels of China and the United States are both low relative to the world's average. Therefore, the discrepancy between the price levels of China and the United States has been, in fact, close to zero since 2002. The difference in per capita income can fully account for the price difference between China and the United States. However, the Balassa–Samuelson effect is not a reliable guide for projecting the trend of real appreciation. According to the experience of those economies that have experienced real currency appreciation against the US dollar in 1985–2005, the mode of faster wage growth and inflation is as common as nominal appreciation, far more common for economies with a low initial price level. We do not find empirical evidence to substantiate the claim that low price levels tend to cause external surpluses. But real appreciation has a powerful effect in boosting job creation in the service sector. Therefore, the real appreciation of the Chinese yuan would contribute to restructuring the Chinese economy towards a domestic demand-based growth track.

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1. Introduction

The value of the Chinese yuan has been a highly controversial issue ever since the US dollar began to depreciate against other major currencies in February 2002. How much is it under-valued? If there is a need for it to appreciate, what should be the right way: nominal appreciation or faster domestic inflation? How would the real appreciation of the Chinese yuan impact the structure and growth of the Chinese economy? There exists an extensive literature that addresses these issues (e.g., Chang & Shao, 2004; Coudert & Couharde, 2005; Frankel, 2005; Gao, 2006; Goldstein, 2006; Huang & Wang, 2004; McKinnon, 2004; Obstfeld, 2006; Xu, 2000; Yang, 2004).

The present study presents a somewhat different perspective to the current debate on the Chinese exchange rate policy. Many of the previous studies attempt to estimate the extent of under-valuation of the Chinese yuan on the basis of the times series data of the exchange rate and trade balance of China alone. Because the time span available for estimation is too short, it is unavoidable that the equilibrium level of the Chinese yuan exchange rate cannot be estimated with reasonable precision. To overcome this limitation, we draw upon the rich international experience as embodied in World Bank's World Development Indicators (WDI) database by estimating a series of pool regression models. Pool regression with international data can yield relevant long-run structural relationships that can shed light on the following three questions. Is China's price level too low in comparison with other economies at similar levels of per capita income? If China's price level is, indeed, too low and there is a tendency for China's relative price level to rise, is it better to bring it about through nominal appreciation of the China yuan or faster domestic inflation? Finally, how would the structure of the Chinese economy be affected? Would a slowdown in export production be fully offset by a pickup in the domestic demand for non-traded services?

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The conceptual framework for the first question is purchasing power parity (PPP) extended to incorporate the Balassa (1964) and Samuelson (1964) effect (hereafter referred as the BS effect). Within this framework, the main variable of interest is price level index (PLI), defined as the ratio of two countries' price levels (of GDP) measured in the same currency. In the simple version of PPP, price levels tend to be equalized through international trade so that this ratio is around unity. Extended to incorporate the BS effect, relative price level between two economies is a positive function of the relative per capita income between them.

Though some previous studies have applied this approach in estimating the misalignments of the Chinese yuan (Chang & Shao, 2004; Coudert & Couharde, 2005; Gao, 2006), the present study extends the existing literature in two important ways. First, we use the most current WDI database which has been extended to 2005. The inclusion of new data in recent years affects some of the estimation results reported in previous studies. Second, we take a different interpretation of the extended PPP model. We argue that the predicted value of the extended PPP model should not be interpreted as the equilibrium price level for a given country, but rather the world average price level for economies at the level of a given relative per capita income. Unfamiliar to most people, our main result is that after taking into account the BS effect, both the Chinese price level and the US price level were about 18% below world average in 2005, so the discrepancy between the price levels of China and the United States was actually close to zero in the recent years of 2002–2006. In other words, the BS effect can fully account for the price level difference between China and the United States, and in this sense, there has been no significant misalignments in the value of the Chinese yuan.

In addressing the second question, we have examined the experience of individual economies that have experienced real appreciation of their currencies during the period of 1985–2005. We have found that the BS effect estimated with cross-country data does not provide a reliable guide for setting or projecting the real appreciation of a currency. We have found that between two modes of real appreciation: nominal appreciation or faster domestic inflation, the latter is just as common as the former, and far more common among economies that had very low initial price level. This is a relevant consideration for China.

The third question we have studied is how the structure of the Chinese economy may be affected by an unavoidable rise in China's price level relative to the rest of the world, either via nominal appreciation of the yuan or faster domestic inflation. We find no evidence to support the often-advocated claim that economies with low real price levels tend to have external surpluses. In fact, the opposite is true. Nevertheless, we do find that a significant rise in the price level of China is in China's interest, because it would exert a powerful pressure to restructure the Chinese economy, generating more jobs in the service sector. Our estimation results suggest that for every 3% real appreciation, the service share of employment may increase by 1%.

The paper is organized as follows. In Section 2, we first discuss the concept of the equilibrium exchange rate relevant to the case of the Chinese yuan. Then in Section 3, we examine how the Chinese price level is compared to that of other economies. Next in Section 4, we review the experience of those economies that have experienced real appreciation of their currencies during the period of 1985–2005. Finally in section 5, we analyze how a rise in China's relative price level may affect economic structure.

2. What is the relevant equilibrium exchange rate?

In the context of debating about the misalignments of the Chinese yuan, it is necessary to define a meaningful concept of the equilibrium exchange rate. But as surveyed by Driver and Westway (2005), economists have proposed a wide variety of equilibrium exchange rate concepts. But in applying them to the Chinese yuan, there has not been much solid empirical evidence to substantiate any one of them.

For those who blame the low exchange rate of the Chinese yuan for global imbalances and advocate a large revaluation of the Chinese yuan, the equilibrium exchange rate that they have in mind is the level of the exchange rate consistent with a “sustainable level” of external balance. In empirical analysis and estimation, the most relevant measure of that exchange rate is the trade-weighted real effective exchange rate. Many prominent economists as well as American politicians have been arguing that the Chinese yuan is grossly under-valued, at least by 20–35% (Goldstein, 2006). In their eyes, the existence of a large US trade deficit on one side and the phenomenal piling up of foreign exchange reserves in China on the other side is *prima facie* evidence of large exchange rate misalignments. That is why they believe that the exchange rate adjustment is an essential measure to correct global imbalances. However, before their results can be accepted, they must produce reliable estimates of 1) the sustainable levels of the external balance for the United States and China and 2) the exchange rate effects on trade flows.

Let us examine the issue of the sustainable level of external balance first. Before and after 2002, there was no significant change in the yuan-dollar exchange rate. Before February 2002, the Chinese yuan was widely regarded as over-valued and China faced a persistent problem of capital flights. But after February 2002, in the eyes of some people, the Chinese yuan became under-valued and private capital (beside foreign direct investment) started to flood into China. How can such a dramatic shift in the equilibrium exchange rate be rationalized? In fact, this change has nothing to do with the external balance of China and that of the United States. The primary cause for dollar depreciation after February 2002 is that the US monetary policy eased more aggressively than other major industrial economies in response to the recession that began in 2001. Stimulated by the US political pressures, market expectations were formed that the Chinese yuan would appreciate. Driven by such expectations of yuan appreciation, China started to experience an escalation of capital inflows and massive increase in foreign exchange reserves after 2002. In other words, the buildup of China's foreign exchange reserves is a consequence of the market expectations that was induced by more aggressive easing of US monetary policy, not by misalignments of the yuan-dollar exchange rate in the first place.

What is the sustainable level of external balance for China and the United States? Can anyone infer really with confidence from the pre-2002 experience of China and the United States the “sustainable level” of external balance for either country? Despite China's increasing buildup of foreign exchange reserves and the ever-widening US current-account deficit, the world economy enjoyed the best economic growth after 2002 and the United States could finance its external deficit easily at the lowest interest

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