

Evaluating the forecasted Yuan-Dollar evolution (2010)

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Last year on 26 November 2009, I try to forecast the evolution of the Yuan-Dollar exchange rate for the year 2010. A very simple long-run model assuming the Purchasing Power Parity (PPP) and a negative relation between the level of prices and the short run interest rate was considered. From this model I derived a long run relationship between the China-USA exchange rate, and the interest rates of China and USA (see my previous report). If the long-run evolution between the two economies in the last years (from 2005 to 2009) maintained, I forecasted a decrease of 5% in Yuan-dollar exchange rate, an increase of 117% in US T-Bills 3 month, and a increase of 27% in the Chinese lending rate for December 2010.

In this year some interest things have happened. US government has asked Chinese government to let appreciate its currency. However, China has tried to maintain the exchange rate at a level almost constant the most of the year avoiding the Yuan appreciation.

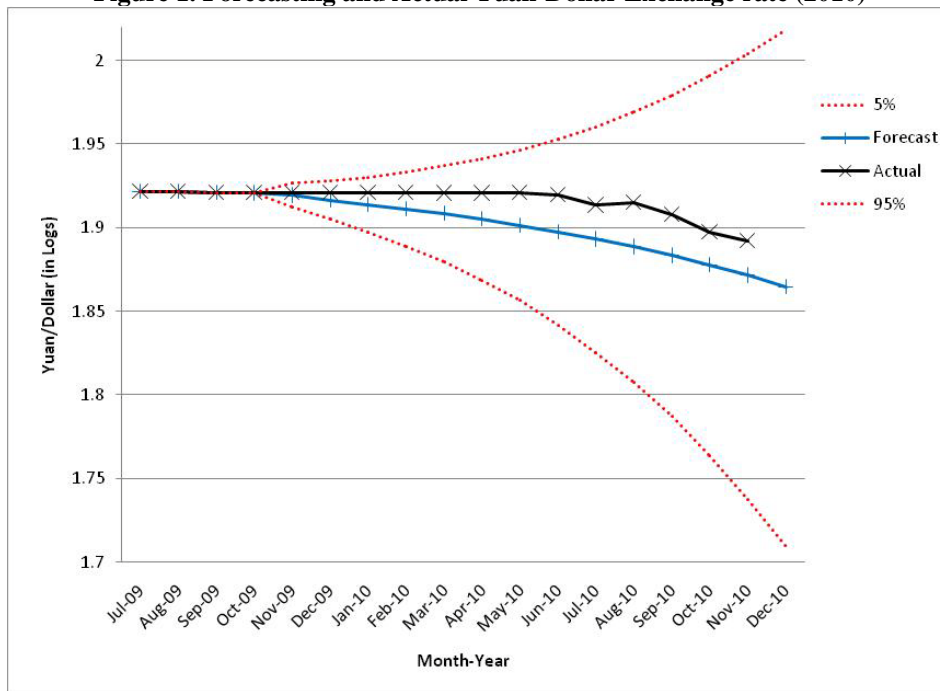
Despite the Chinese effort to avoid appreciation, inflation pressures make China consider some measures who appreciate Yuan. In October, inflation climbed to 4% over the annual target of 3%, as a result the central bank raised interest rate last month for the first time in nearly three years and some analyst believe another increase could be around the corner. This week Popular Bank of China launched a slew of tightening measure to fight excessive liquidity, including a rise in the reserve ratio for all banks on top.

While some critics have demanded the Chinese currency should rise up to 40%, China has controlled its pace under the 7% in a year.

But let's evaluate the levels I predicted with the actual results and let's try to explain what is going on.

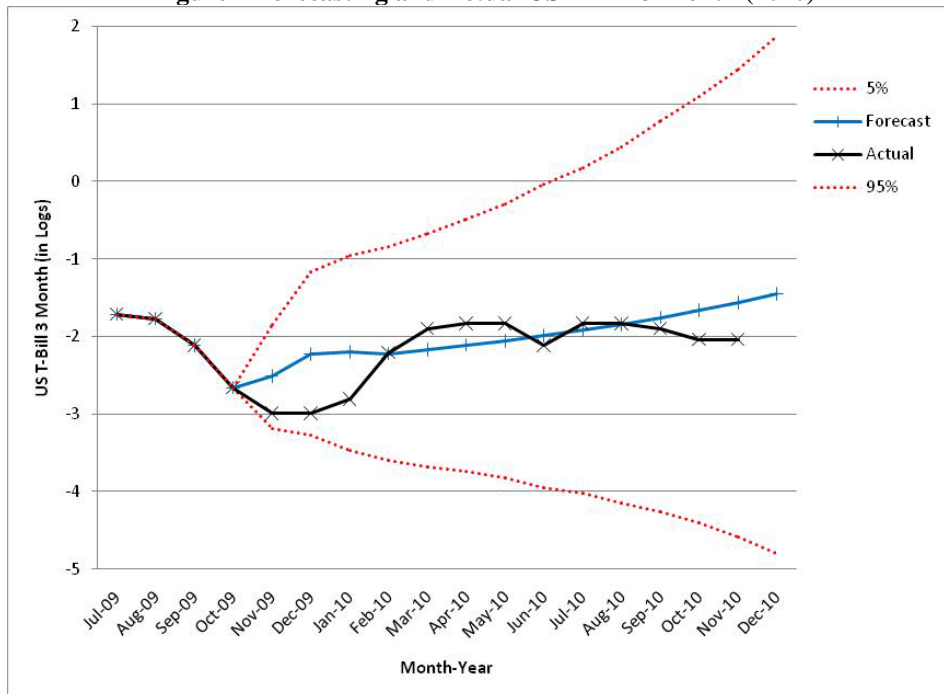
Figure 1 shows the prediction I made last year about the evolution of Yuan-Dollar in blue and the actual values in black. The first thing we observe is that the direction was the correct. In fact, the Yuan is appreciating against the dollar as was expected, however the rate of appreciation is not enough to maintain the long-run equilibrium of the model. Whereas the model predicted a 5% of appreciation for December 2010, we found almost 3% of appreciation on November 2010. However, this is not a bad result as a prediction considering that I used monthly data making a dynamic prediction staring on November 2009.

Figure 1. Forecasting and Actual Yuan-Dollar Exchange rate (2010)



Let's focus now on the instruments of both countries, the short run interest rate. Figure 2 shows the predicted and actual US Treasury-Bill 3 Month for the whole year 2010.

Figure 2 Forecasting and Actual US T-Bill 3 Month (2010)



This is an excellent result for who knows that actual values can be divided in long run trend plus shocks. Note how the Actual values oscillate around my long-run Forecasted (last year) trend. It is like the US government is moving considering a similar long-run tendency. Since 2007 US government has been decreasing its short-run interest rate and

I predicted an increase of 117% this year. Well, considering Nov-2009 to Nov-2010 it increases 160% over long run trend in a clear policy of avoiding Yuan appreciation against Dollar.

Figure 3. Forecasting and Actual Chinese Yearly Lending Rate (2010)

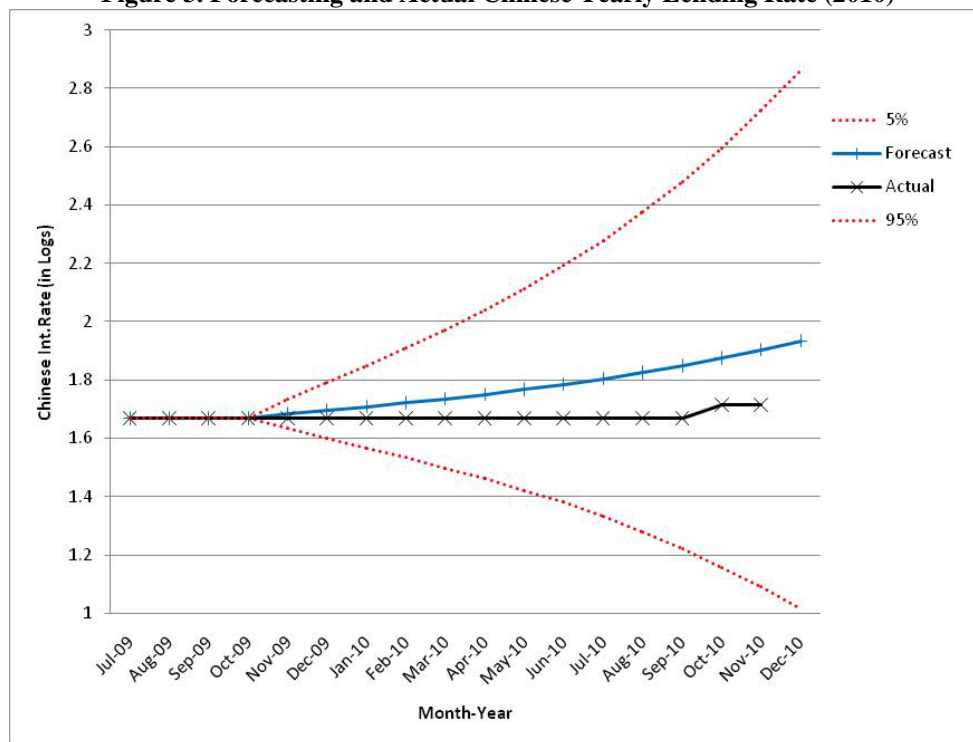


Figure 3 shows the evolution of the Chinese yearly lending rate for 2010. Note that my long run trend is over the actual values. It is a clear result of the Chinese policy of avoiding the appreciation of its currency. The rate remained constant until September; in October 2010 China increases its rate to control inflation and as mentioned some analysts believed another increase. The model forecasted a 27% of increase in the rate and the actual increase was just 4.7%. The Chinese policy is far from the long-run trend of the last year.

Table 1. Annual Variation of the Exchange rate Yuan/Dollar, US 3-month T-Bills and Chinese lending rate. Actual and Forecasted (in Red)

Period	Exchange Rate Yuan/Dollar	US interest	Chinese Int.
2005-2006	-2.551%	81.974%	0.000%
2006-2007	-3.444%	17.453%	9.677%
2007-2008	-7.025%	-44.779%	22.059%
2008-2009	-5.587%	-95.273%	-28.916%
oct.08-oct.09	-0.133%	-89.552%	-20.270%
Pred. 12/09-12-10	-5.058%	117.407%	27.036%
Nov.09-Nov.10	-2.833%	160.000%	4.708%

As conclusion, the forecasting was not bad and the small difference can be perfectly explained by government policies.

According to Table 1 the Yuan-dollar has continued appreciated since 2005, considering the last year the appreciation was inferior to expected values. I forecasted a 5% of

appreciation for December 2010 and now (13rd November 2010) it arrived to 3%. This result is explained basically for two reasons in my model. First, even if US government who has cutting the interest rate since 2005 (Table 1) has decided to increase the interest rate this year as expected, the increase was larger than the expected value. This is consequence of a policy avoiding the devaluation of Yuan against dollar, note in equation (1), in our model and increase in the US interest rate (r_{US}) increase the Yuan-Dollar exchange rate (e).

Long run relationship using data from 2005-2009: $e_t = 3.399 - 0.827(r_{China})_t + 0.055(r_{US})_t$ (1)

Second, there was a more clear policy in China of avoiding appreciation in Yuan against dollar. Increasing just 4.7% the interest rate when the model needs a 27%, of course the secondary effect is an increase in inflation rate over the equilibrium level. For this reason some analysts expect a new increase in Chinese interest rate to maintain the inflation target of 3%.

My simple model considering Purchasing Power of Parity between China and US and negative relationships between the short run interest rates and level of prices is not far from the evolution of reality.