

June 11, 2018

China's Foreign Reserves: Part II

In the first part of this report, we discussed the evolution of foreign reserves from gold to the dollar, with a historical focus. This week, we will use the macroeconomic saving identity to analyze the economic relationship between China and the U.S. Next week, using this analysis, we will discuss the likelihood that China will “dump” its Treasuries and potential repercussions if it were to do so. From there, we will examine the impact of such a decision by China to reallocate its reserves. Finally, as always, we will conclude with market ramifications.

The Macroeconomic Identities

Here is the basic macroeconomic identity—Gross Domestic Product (GDP) is equal to consumption (C), investment (I), government spending (G) and net exports (X-M):

$$\text{GDP} = C + I + G + (X-M)$$

All things produced must fall into the above equation's components—everything produced is either consumed by households, represents investment for firms, consumed by the government or consumed by foreigners via exports. But, from the uses perspective, the economy comprises consumption (C), saving (S) and taxes (Tx). In other words, the funds for investment come from saving from current consumption. Consumption is further reduced to supply the government with funding.

$$\text{GDP} = C + S + \text{Tx}$$

So, by equating these two together, we get the following:

$$C + S + \text{Tx} = C + I + G + (X-M)$$

Rearranging again gives us this identity:

$$S + \text{Tx} + M = I + G + X$$

Simplifying and rearranging again:

$$(M-X) = (I-S) + (G-\text{Tx})$$

This identity means that the private investment/savings balance (I-S) plus the public spending balance (G-Tx) is equal to the trade account. This is true in the same way a balance sheet is true—the numbers will simply add up that way. ***However, it doesn't tell us the direction of causality!***

So, let's look at an example. If a nation's saving equals its investment and it runs a balanced fiscal budget, then it will run a balanced trade account. It doesn't matter what the exchange rate is or what trade policy is in place; if the private and public sectors balance, there will also be balanced trade. It isn't magic, it's just a balance sheet.

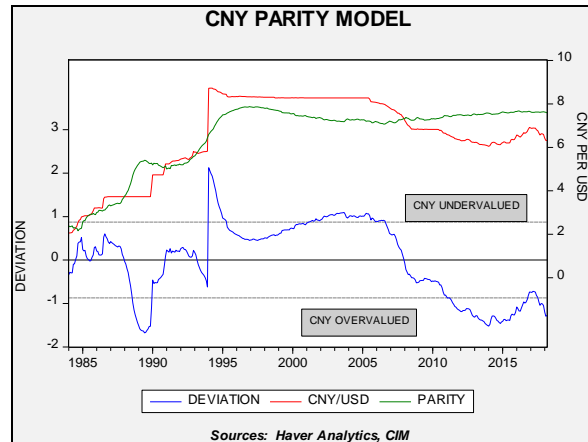
Next, let's assume that taxes are cut and the government balance is “positive.” If trade is going to remain balanced, the private sector must have an equally negative balance, meaning saving must rise relative to investment. If the private saving/investment balance is unchanged, a trade deficit will result.

This means that by cutting taxes and not addressing the government deficit, either

private saving must rise relative to investment or imports must exceed exports, leading to a trade deficit. **Consequently, a trade deficit, in effect, is the acquisition of foreign saving.** This shows that a negative domestic saving imbalance will lead to a trade deficit. At the same time, a positive domestic saving balance will lead to a trade surplus.

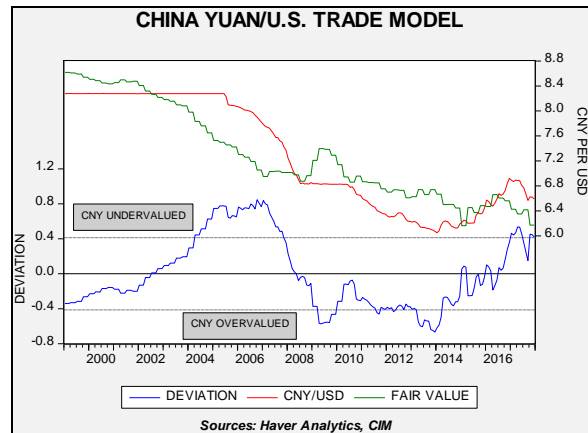
If a nation runs a trade surplus, they face the same issue that comes under the gold standard except now it holds currency. If the country holds dollars, it will recycle those dollars into financial or real dollar-denominated assets. In a floating exchange rate regime, eventually, the exchange rate in the current account surplus nation should appreciate and the current account deficit nation in the currency should depreciate. However, unlike the gold standard, there is no guarantee that the exchange rates will adjust. Instead, the central bank in the surplus nation may take steps to aggressively buy dollar assets, preventing the textbook exchange rate adjustment.

With regards to currency manipulation, China has clearly taken steps in the past to weaken its currency but China's actions are currently not excessive. There are a number of different ways to value currencies. One method is with purchasing power parity. This method suggests that the exchange rate should adjust to make prices similar across nations. It isn't perfect because not all goods and services are tradeable, but it does give a rough estimate of valuation.



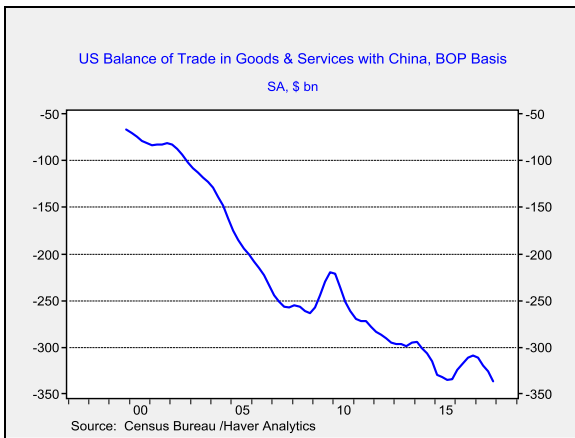
This chart shows the parity value of the Chinese yuan (CNY) relative to inflation in the U.S. and China. China devalued its currency in the mid-1990s (it used a fixed exchange rate for most of its history). This devaluation made the CNY undervalued relative to the dollar and the mispricing continued until the financial crisis, although the currency's undervaluation began to narrow in 2005. In the wake of the financial crisis, China has kept its currency overvalued, as measured by parity. This is probably done, in part, to discourage capital flight.

Another way to examine the exchange rate is to compare it to trade flows. A similar pattern emerges compared to the below model.



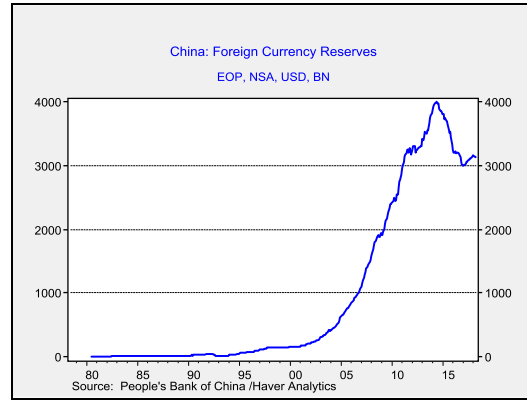
This model compares the CNY/USD exchange rate with the U.S./China bilateral trade relationship. As with the parity model, the CNY was undervalued until the financial crisis. However, since 2014, the dollar has become increasingly overvalued based on this model.

Both models indicate that China did purposely keep its exchange rate depressed to foster export growth. In addition, the undervalued exchange rate also kept import prices elevated, discouraging consumption and boosting saving. Thus, even with an exchange rate that is not egregiously undervalued, as the chart below shows, the U.S./China trade relationship remains problematic. The 2017 trade deficit with China was \$337.2 bn, representing more than half of the total \$568.4 bn deficit with the rest of the world.



China and Foreign Reserves

China’s foreign reserve accumulation has been significant. The next chart shows China’s foreign currency reserves.



Although reserve levels are below their peak, they remain above \$3.0 trillion. The composition is a state secret, but the consensus is that about 70% is in dollar assets.

How did this happen? The above identity, $(M-X) = (I-S) + (G-T_x)$ offers a clue. If $X > M$, either $S > I$ or $T_x > G$. In the case of China, it’s mostly the former; private sector saving is very high, by policy design. China has tended to undervalue its exchange rate, lacks a social safety net (which encourages saving) and puts up trade barriers (both tariffs and regulations that discourage imports) to generate a trade surplus. This policy, known as export promotion, has been the preferred model for development since WWII. China is just the latest nation to use the development scheme.

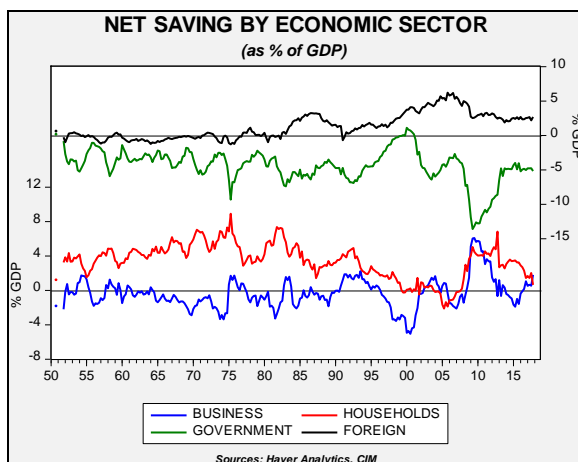
So, the accumulated reserves are the outgrowth of China’s development model. China is relying on the American consumer as a more reliable source of demand. The benefits to the U.S. are low inflation and interest rates. The downside is that either U.S. employment will be depressed, especially in import-competing businesses, or the excess investment will contribute to asset bubbles.

Here is the key issue—China can’t run trade surpluses unless some nation accepts them. The identity equation for the U.S. would be

that $M > X$; for the identity to balance, $I > S$ or $G > T_x$. At the same time, the direction of causality is not obvious. In other words, is Chinese investment being foisted upon the U.S. or is America draining saving from China to fund its overspending?

Perhaps the best clue would be the behavior of interest rates. If the U.S. needed foreigners to fund its undersaving, it would be reasonable to expect that it would demand higher interest rates to provide the funding. On the other hand, if foreigners are pressing investment into the U.S. to acquire dollars for reserve purposes, the oversupply of saving should depress interest rates.

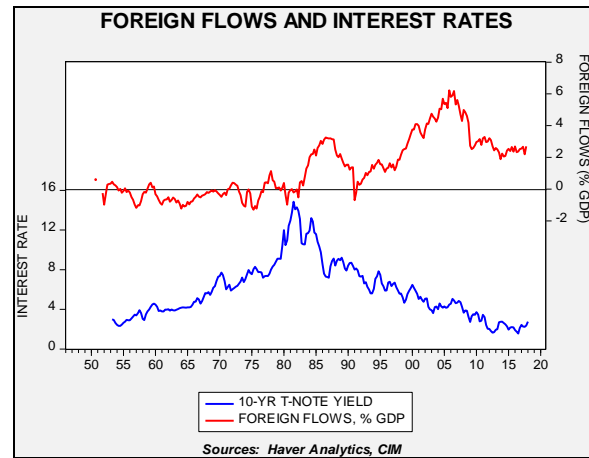
The below chart shows saving flows in the U.S. from households, business, government and foreigners. Because this is a macroeconomic identity, the sum of the four sectors is always zero. One sector's saving becomes dissaving by another sector to ensure there is a balance. In an open global economy, if the sum of the private sector saving (business and households) and government is positive, then it will run a trade surplus, which means the foreign sector for such a nation will have negative foreign sector saving.



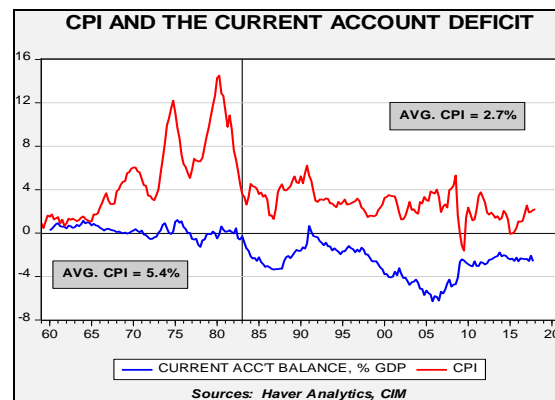
This chart shows the sector saving breakdown for the U.S. Note that as foreign

sector saving has increased, business, household and government saving has either declined or, at some points, become negative.

Now, compare foreign saving to long-term T-note yields.



As foreign saving has come into the U.S. economy, interest rates have steadily declined. This relationship isn't the only important factor for falling long-term interest rates. The Federal Reserve's commitment to low inflation has been a significant contributor. The inflows of foreign saving is the inverse of the current account deficit. Import competition does tend to reduce firms' pricing power and help contain inflation.



The above chart shows the current account as a percentage of GDP relative to CPI. When the U.S. current account was mostly in balance, inflation was significantly higher. However, inflation has been much lower since deficits have become common. And, lower inflation tends to bring lower interest rates. Deregulation, which has allowed nearly unfettered introduction of new technology into the economy, has also supported inflation suppression.

Still, the foreign flows data compared to interest rates tends to support the idea that, much of the time, it is more likely that foreign nations are pushing saving into the U.S. economy rather than the U.S. needing to attract the saving by raising interest rates.

That doesn't mean this situation can remain in place forever; as the Triffin Dilemma states, there is the risk that foreigners could lose faith in the U.S. political system and economy and shun investing here. However, at present, there is no realistic alternative to the U.S. for an export-promoting economy. If a nation decides it doesn't want to invest in the U.S., its current alternative is to reduce its foreign sector.

Part III

Next week, we will conclude this report with an analysis of what would occur if China were to liquidate its dollar holdings.

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