China[1]

These notes discuss the role of Chinese monetary policy, focusing on the impact of exchange rates on Chinese growth and the U.S. economy. I admit that this is an area of macroeconomics that I don't know too much about. But it is fundamentally related to issues of Central Banking because setting exchange rates is a major way that many economies conduct monetary policy. We begin with some background on Chinese macroeconomics.

The Chinese Economy Prior to 1980

Prior to about 1980, Chinese economic policy was essentially communistic. The key feature here is is that the economy sought to be centrally planned with the Communist party coordinating production decisions across the economy. Communism does not work well. Consider a simple and general model of a typical capitalist economy. Producers and consumers make their choices resulting in a certain allocation of resources. Market failures such as externalities, asymmetric information, public goods problems, etc. may, however, cause this allocation to be inefficient or to exhibit an undesirable level of inequality. Economic policy may then intervene in an effort to improve efficiency or alter the distribution of income or wealth. Of course this is hard and there is vast disagreement over the nature of market failures and the best way to fix them. But most mainstream economists would view this as a reasonable way to go about conducting economic policy.

Conceptually, a communistic economy tries to achieve its preferred allocation in one step by directly making production and consumption choices. In theory, it is possible that political constraints could make it easier to achieve a preferred allocation in this manner. In practice, however, I see a few almost intractable problems that make it doomed to fail.

1. The central planner's problem is simply too complex. It is not realistic to expect a centralized system to make economic decisions for a large economy without making significant mistakes. A

[1]These are undergraduate lecture notes. They do not represent academic work. Expect typos, sloppy formatting, and occasional (possibly stupefying) errors.

market system uses the price mechanism to aggregate individual information on things such as preferences. This tool is not available to the central planner it faces a nearly impossible problem in correctly processing all of this information.

2. The lack of incentives. In a fully (which no economy ever achieved) communistic economy, all property is owned by the state (which later magically disappears) so there are no private profits. Likewise all profits are kept by the state which is similar to a 100%tax rate on income.

This creates incentive problems. The incentive to supply labor is dramatically reduced when workers are not allowed to keep their wages and are instead reliant on transfers from the government. Likewise, the incentive for private innovation is eliminated without any property rights. It has turned out the people are largely unwilling to work on behalf of the general welfare when private incentives are gone.

3. Coercion. If incentives are eliminated, this may require government coercion to induce labor labor, for example. It is notable that most communistic economies tend to have governments that are oppressive and authoritarian. Consideration of the need to create incentives, it seems that causation flows from the former to the latter.

Through 1980, China was among the poorer countries in the world and had experienced famine that was related to its political and economic policies. This was in sharp contrast to many other East Asian economies at the time which had experienced rapid economic growth in the prior few decades.

These reforms have almost certainly led to rapid Chinese economic growth in the past few decades. Whatever the downside, it is important to note that the switch to capitalism has literally led to hundreds of millions of people being elevated out of poverty.

Reforms

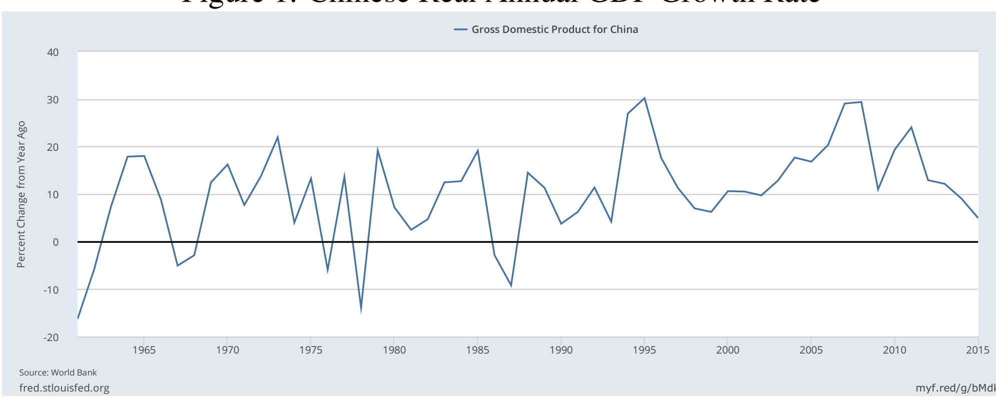
Around 1980, the Chinese government began a series of well-known reforms that have moved China towards a free market economy. These include.

1. Openness. Whereas the Chinese economy had been fairly closed to trade and foreign investment, it has subsequently opened itself to these factors. It is notable that many other East Asian economies had attributed their rapid economic growth to openness, including thriving export sectors.

2. Privatization. China has also began the process of allowing for the private ownership of property in an effort to mitigate the existing incentive problems. There continue to be, however, a large share of state owned firms and the government continues to maintain a monopoly in some sectors such as petroleum. The current Chinese economy is still far less private than most.

3. Despite these economic reforms, the Communist party still maintains a monopoly on political power. You may hear that China is communist in name only. This has some truth.

Figure 1: Chinese Real Annual GDP Growth Rate

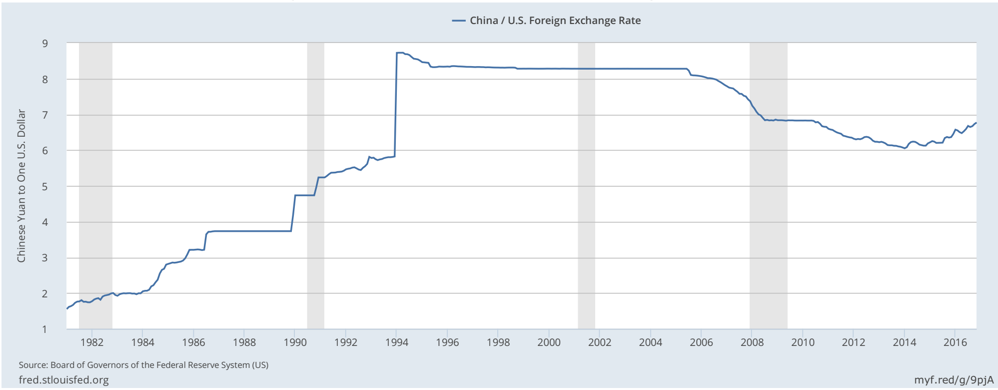


Chinese monetary policy

Increased openness amplified the importance of Chinese monetary policy. Like many poorer economies, China chose a fixed exchange rate regime with the Yuan pegged to the dollar. Chinese monetary policy currently works in the following way. The Central Bank, the People's Bank of China (PBOC), sets a band for the Yuan/dollar exchange rate each day. It then intervenes by purchasing foreign currency or other reserves from exporters in order to maintain the exchange rate within its band. These foreign reserves are paid for with newly issued high power money. Because the Yuan has generally been undervalued, the PBOC has acquired a very large volume of foreign reserves as part of its exchange rate policy. This is why a fair sized chunk of the U.s. national debt is held by the PBOC.

In addition to targeting the exchange rates, the PBOC also targets interest rates in a manner not too unlike the Federal Reserve. Here, it runs into the Trilemma which states that, in the long run, the only way a Central Bank can target both exchange rates and interest rates is to enact capital controls. Most Chinese citizens thus have very limited access to foreign capital markets. they cannot typically obtain credit form foreign creditors. Importantly, this is not universal. Some Chinese firms have acquired large amounts of foreign denominated debt and this is now a significant factor in Chinese monetary policy.

Figure 2: Yuan/Dollar Exchange Rate

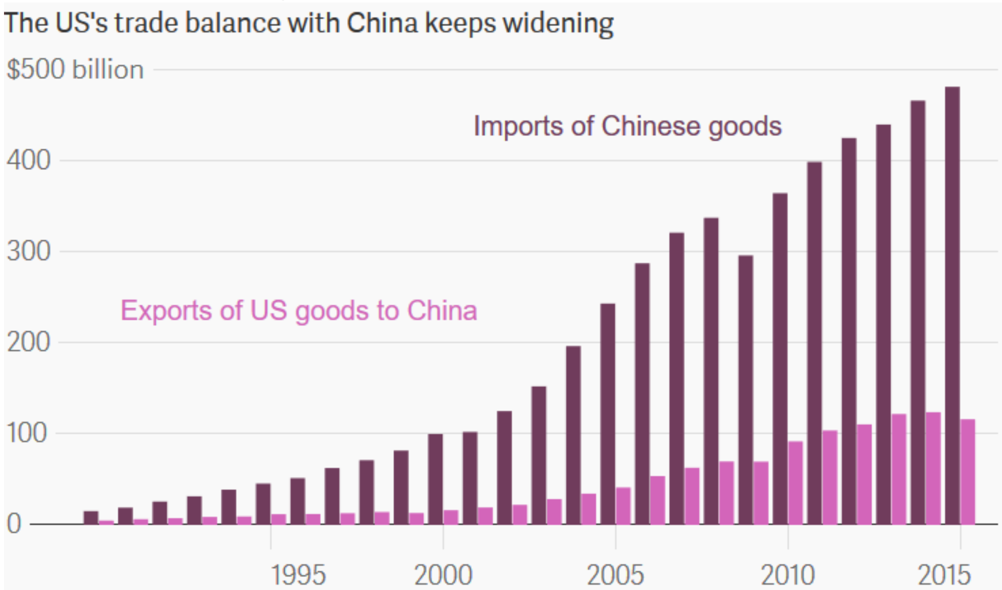


Our tracking of recent Chinese monetary policy begins in early 1994. At this time, the PBOC raised its exchange rate to 8.72 Yuan per dollar. The PBOC itself does not seem to have been aware of the eventual impact of this policy, it does not seem to have been an intentional plan to boost the Chinese export sector. This represented a dramatic undervaluation of the Yuan versus what would have been expected to prevail under a flexible exchange rate (some estimates have that figure around 5.5). A devalued currency made Chinese exports cheaper and foreign imports more expensive. As a result, the U.S. trade deficit with China increased dramatically.[2]

We now consider some of the economic effects of the devalued yuan:

[2]Source: Forex

Figure 3: U.S. Trade Deficit with China



1. From China's perspective, it likely contributed to export-based growth which many international macroeconomists consider to among the most effective growth based strategies. The obvious channel is through net exports, which are part of GDP. In addition allowing domestic firms to interact with foreign economies on a larger scale may allow for production spillovers where, for example, they are able to acquire more efficient means of production. It is important to note, however, that while exports create GDP, they do not directly affect consumption. Thus, in the short run, export based growth may not be passed on to household utility. It has also contributed to the industrialization and urbanization of China as it has become a more manufacturing based economy.

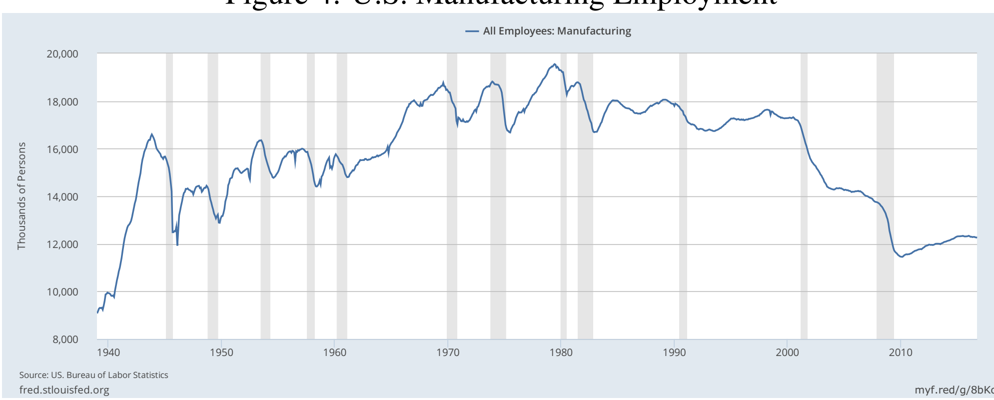
2. From the perspective of the U.S., consumers have benefited from cheap Chinese imports. These are easily visible if you go to the local Walmart. In my opinion, the benefits of trade have not been accurately labeled over the past decades. Trade does not benefit everyone, within an economy, it produces winners and losers. And trade does not always quickly produce jobs that replace the ones that are lost as part of trade. Trade can produce significant and long-lasting structural unemployment. The most significant benefit of trade is that it lowers the cost of living through cheaper imports. These benefit almost all households, including the poorest.

3. In exchange for additional consumption now, the Chinese have received U.S. assets, including Treasuries and other dollar denominated assets. Because of this demand for U.S. debt, the U.S. government has been able to borrow at lower interest rates than would otherwise prevail since 1994. This has fundamentally strengthened the U.S. fiscal position. Notably, the debt servicing of the sizable U.S. national debt is less because of past trade deficits with China.

4. Recall from ECO 101 that trade allows countries to specialize in the production of goods in which they have a comparative advantage. The Chinese comparative advantage is in relatively low skilled manufacturing. As a result, China's low exchange rate has had an adverse effect on U.S. manufacturing. This effect is in addition to the (probably larger) effects of reduced demand for low skilled labor that has come about because of technological progress (such as automation) that reduces the need for manufacturing labor.

5. Chinese demand for foreign capital and real estate has increased. In some North American cities, this has had a significant effect on real estate prices.

Figure 4: U.S. Manufacturing Employment



The decline in manufacturing has had significant political effects. It may have been decisive in the 2016 U.S. Presidential election.

The U.S. and China permanently normalized trade relations in 2000, an action that greatly reduced the risk of high future tariffs. There is disagreement over how much of the decline in manufacturing is due to trade with China. Autor, Dorn, and Hansen (2013) argue that trade with china explains about 25% of the decline in U.S. manufacturing between 1991 and 2007.[3] Other papers, however, claim that the effect is much smaller.[4]

It is therefore possible that a large tariff on Chinese goods, in the range of 30-40% prior to 2008 could have prevented some of the decline in U.S. manufacturing. And if one views preserving this sector as an important stand-alone policy, as many voters in the Midwest do, then such a policy may have made some sense. More generally, however, it must be weighed against the substantial benefits of this trade.

Re-valuation

Since about 2008, however, the PBOC has substantially appreciated the Yuan versus the dollar. It now seems to be near the level that would exist absent an exchange rate peg, undoing some of the advantages facing Chinese exporters. There seem to be a few reasons why China has made this change to monetary policy.

1. Political pressure from the U.S. and other trading partners. I am not sure how much weight to put on this one as opposed to the economic factors that follow. The decline of manufacturing has become a major political issue in the West and China has been blamed, sometimes as a "currency manipulator." Perhaps the PBOC appreciated its currency in order to reduce the risk of retaliatory tariffs or the enactment of other barriers to trade.

2. As China has become more open, Chinese firms have amassed over $1 trillion dollars in foreign debt, something that was not important only a decade ago. A stronger Yuan benefits these firms because it renders their foreign debt as worth less in real terms. This is an important disincentive for the Chinese to de-value their currency in the future as these firms would be harmed.

[3] See Autor, D., Dorn, D. and G. Hanson. 2013. "The China Syndrome: Local Labor Market Effects of Import Competition in the United States." *The American Economic Review*, 103(6): 2121-68.

[4] See Edwards, L. and R. Lawerence. 2013. "Rising Tide: Is Growth in Emerging Economies Good for the United States?" Washington D.C.: Peterson Institute for International Economics.

3. Chinese growth has slowed over the past few years. A weaker Yuan would likely increase net exports, but at the expense of domestic consumption. This may be harder to accept given the lower growth.

It is not obvious how the PBOC will mange its currency in the future with speculation continuing that it will de-value to spur growth.

Effects on U.S. Policy

It seems likely that the election of Donald Trump will affect U.S. policy toward China. We conclude by briefly discussing some of the possible actions that the U.S. might take.

1. The Fed. The Fed's dual mandate deals only with inflation and unemployment. It is therefore unlikely to respond directly to any change in PBOC policy. Slowing Chinese growth, however, is generally bad for the U.S. export sector and would likely have small negative effects on inflation and output. A direct depreciation of the Yuan would have similar effects.

2. The Trump administration may pursue barriers to trade against China. It is somewhat ironic that given the stronger Yuan, such a policy is probably no longer likely to have the same effects as it would have 15 years ago. It is somewhat reminiscent of how the gold-silver debate peaked in 1896, after gold supplies had begun to grow and the issue had become moot. I will avoid speculating on how likely such policies are.

3. Trump has indicated that he may seek to have the Treasury Department officially designate China as a "currency manipulator." This is an official designation that then requires negotiations over ending the manipulation. For the life of me, I cannot figure out how this matters.